STATE OF NEW HAMPSHIRE

REPORTS, 1914

VOLUME III—ANNUAL

CONCORD, N. H.
1914.

Bound by the Cragg Bindery, Concord, N. H.

CONTENTS

FIRST BIENNIAL REPORTS

OF THE

BOARD OF CONTROL

OF

NEW HAMPSHIRE

AND OF THE

PURCHASING AGENT

FOR THE

BIENNIAL PERIOD
ENDING AUGUST 31, 1914

MANCHESTER, N. H.
PRINTED BY JOHN B. CLARKE CO.
1915

Printed by JOHN B. CLARKE CO., Manchester
Bound by CRAGG BINDERY, Concord

LETTERS OF TRANSMITTAL.

CONCORD, N. H., Nov. 2, 1914.

To His Excellency the Governor, and the Honorable Council:

In conformity with the law creating the Board of Control, we have the honor to submit herewith our first biennial report covering the period from June 1st, 1913, to August 31st, 1914.

Respectfully submitted,

SAMUEL D. FELKER,
WILLIAM J. AHERN,
GEORGE W. FOWLER,
GEORGE W. McGREGOR,
BENJAMIN W. COUCH.

CONCORD, N. H. Nov. 2, 1914.

To His Excellency the Governor, and the Honorable Council:

In conformity with the act establishing the office of Purchasing Agent, I have the honor to submit my first biennial report covering the period from September 1, 1913, to August 31, 1914.

Respectfuly submitted,

GEORGE W. FOWLER.

CONTENTS.

BOARD OF CONTROL.

Samuel D. Felker, Rochester, (*ex officio*) Governor of the State.

William J. Ahern, Concord, (*ex officio*) Secretary of the State Board of Charities and Corrections.

George W. Fowler, Pembroke, Secretary, term expires July 19, 1916.

Dr. George W. McGregor, Littleton, term expires May 29, 1917.

Benjamin W. Couch, Concord, term expires August 4, 1915.

Employees of the Board.

Chase R. Whitcher, Architect.
Charles H. Smith, Inspector of Construction.
Alfred L. Guay, Inspector of Construction.

THE PURCHASING AGENT.

George W. Fowler, Pembroke, Purchasing Agent,
Term Expires July 19, 1916.

Employees.

Nora M. Hodnett, Clerk and Stenographer.
Nellie L. Gannon, Bookkeeper.

REPORT OF THE BOARD OF CONTROL

COVERING THE PERIOD FROM JUNE 1, 1913, TO AUGUST 31, 1914.

The act abolishing the Boards of Trustees of the State Hospital, the State Industrial school, the School for Feeble Minded Children and the State Sanatorium, and creating the Board of Control, went into effect June 1, 1913, as to the Board of Control, and on September 1, 1913, as to the Purchasing Agent.

The terms of the act are such that it is necessary that two separate reports should be made, one relating to the Board of Control, and the other relating to the Purchasing Agent.

The Board of Control.

The Board organized July 28, 1913, by electing Mr. Ahern Chairman, and Mr. Fowler Secretary.

In August a contract for a year was made with Chase R. Whitcher of Manchester, N. H., under which he became State Architect, to draw plans and specifications, submit estimates, and generally supervise institutional construction.

The board has held regular, general business meetings at its office in the State House on Friday of each week, at which times the superintendents of the several institutions have appeared and presented their various matters to the board for its consideration.

Such additional meetings as exigencies have required have been held from time to time, both at the board's office and at the various institutions.

One member of the board has made an inspection of each institution each month, the members inspecting the institutions in rotation and reporting any matters found to require the attention of the board.

The system of having the superintendents bring to the board at the regular meetings anything coming to their attention, and of having the members of the board report anything found by them on inspection to require attention, seems to us to provide a double check against failure of the board to know of things which ought to be done for the welfare of the inmates or of the institutions themselves.

Physical Condition of the Plants.

LAND.

Land is a most valuable asset for an institution and especially so for those which have inmates who are benefited mentally and physically by regular out-door work. In this the institutions in the western states are more fortunate than most of those in the East.

TABLE OF LANDS.

Institution.	Class.	Acreage.	Total. Acreage.
State Hospital	building site	115	
	tillage	183	
	pasturage	120	418
School for Feeble Minded Children	building site	90	
	tillage	88	
	pasturage	100	
	wood land	100	
	sprout land	100	478
Industrial School	building site	15	
	tillage	95	
	pasturage	62	
	sprout land	34	206
Sanatorium	building site	10	
	tillage	60	
	pasturage	80	
	wood land	261	411
			1,513

BUILDINGS.

With very few exceptions, the board found the buildings at the various institutions to be in good, serviceable condition.

At the Hospital there is a relatively large per cent of new construction, considering the age of the institution, resulting from the Act of 1903, under which the pauper insane were taken over from the ten county almshouses. This relatively new construction, with capacity, is as follows: The Walker Building, 212; Kent Annex, 81; South Pavilion, 40; North Pavilion, 100; Twitchell House, 30; Peaslee Annex, 45; Hospital Building, 156, and the cow barn, 50 stalls. The older constructions, Peaslee, 24; Kimball & Chandler, 87; Bancroft, 44; Fiske & Rumford, 111; Kent, 63, have been put into a very good state of repair.

At the School for Feeble Minded Children, all of the construction except the farm buildings and the administration building is relatively new and in a good state of repair. These consist of an administration building, which is a remodeled farm house; the Quinby building, a well designed and substantially constructed refectory of sufficient size to take care of reasonable growth of the institution; a school building of three stories; the McLane, 90; the Floyd, 90; and the Felker, 100 (nearing completion) dormitories; laundry, central heating plant, isolation hospital, and farm buildings consisting of three barns, paint shop, carpenter shop, small farm house, and a detached farm house used by employees. The farm buildings are in need of paint, and the horse barn is in a very bad state of repair.

At the Industrial School the girls' dormitory, Wilkins, 50 capacity, is new construction; Riverview Cottage for smaller boys, 28, is relatively new and both are in excellent condition; the main building is old and of poor design for the purpose for which it is used. We shall recommend certain changes for this building in regard to the dining room and kitchen, which are now entirely unsuitable. The two main barns, corn barn, and other farm buildings are in good con-

dition, but at some future time we shall recommend a more suitable arrangement for the piggery.

At the Sanatorium all the construction is relatively new, consisting of a two-story brick administration building, a three-story wood construction refectory with infirmary accommodations upstairs, one-story male and female wards, heat, light and power plant with laundry included in the construction, hydro-electric power house, and cow barn under construction.

INDUSTRIES.

Modern scientific management of public charitable and correctional institutions includes the fostering of industrial pursuits for the inmates, for economic reasons to some extent, but more especially to enhance remedial treatment of the cause which has brought the inmate to the institution.

Two general systems seem to be in practice in this country; the centralized institutional plant doing one particular thing, and small, diversified employments to which various inmates are directed in accordance with what the officers find to be the inmates' natural inclination or adaptation. The board favors the latter, and it is the more difficult to work out.

The industrial idea has already been carried into effect quite extensively, as compared to what has been done in other eastern states, at the Hospital, the School for Feeble Minded Children and the Industrial school, but improvements along this line can be made, the exact details of which the board has not yet determined upon. Reference to the reports of the superintendents to the board, hereto appended, is made for information as to what has already been accomplished in this line.

FARMING.

The institution farm, wherever the inmates can work, is a most valuable asset, and should be extended wherever and whenever a reasonable opportunity presents itself.

In addition to its value for remedial treatment, if it is under the charge of a competent farmer, it is bound to be an economic success.

The piggery pays best, and these institutions are nearer to a normal line of efficiency as to this than as to the cattle and the hens.

Not nearly enough has been done with the hennery in those institutions which have inmates who can give the hens and the henneries that constant care which is necessary in order to make poultry raising successful.

We confess the delinquency of New Hampshire in the matter of its institution herds of cattle.

The herds are not bad, but they are not as good as they should have been by this time. No systematic attempt has been made to keep the complete record on each cow, and to follow this up by weeding her out of the herd as soon as by reason of age or for other cause she has dropped below par for efficiency.

We entertain in our minds an ambitious program for the state: We would gather the experts and decide on the breed of cattle the state shall raise, would carefully purchase a very few registered heifers and a bull of that breed for each institution, would rotate these bulls until they had been kept at each institution for a proper period and then discard and buy new from outside the institution herds. We would gradually eliminate the grades and scrubs until in course of time we could point with pride to the standard State of New Hampshire cattle, and the farmers of the state could purchase with impunity, and at a fair and reasonable price, bull and heifer calves, out of herds in which they have confidence, interest and pride. We say this is ambitious, but not extravagant and would be well worth doing.

Reference to the reports of the superintendents will show the amount and kinds of products which have been raised on the farms during the period.

BEQUESTS.

The board desires to gratefully acknowledge two trust fund legacies to the State Hospital which have been invested and added to the permanent funds of the institution. One legacy was by the will of Charles W. Rawson, late of Gilsum, deceased, who donated the sum of one thousand dollars, and the other from Susan H., Luella B., and Elva A. Wheeler, sisters of Leverett Wheeler, a deceased patient.

CONSTRUCTION.

The Legislature of 1913 made appropriations for new construction and extraordinary repairs as follows:

STATE HOSPITAL.

To rewire buildings	$2,000.00	
To build an addition to the laundry	5,000.00	
For repair of cow barn and for cows	5,000.00	
		$12,000.00

SCHOOL FOR FEEBLE MINDED CHILDREN.

To build a dormitory for epileptics	$40,000.00	
Chapel	20,000.00	
For piping sewerage, water and steam	10,000.00	
Land	3,000.00	
To install an interior telephone system	1,000.00	
Enlarge the schoolhouse	2,550.00	
Insulate steam piping	2.250.00	
For electric wiring	400.00	
To equip the carpenter shop	800.00	
		$80,000.00

STATE SANATORIUM.

To build a stock barn	$7,700.00	
An infirmary	17,500.00	
Alter the dining room building	1,500.00	
Furnish female infirmary	2,800.00	
Install electric apparatus	3,520.00	
Build a coal pocket	1,900.00	
Install a boiler	1,350.00	
Repair the dam	2,000.00	
For sewerage and hydrants	1,000.00	
Live stock	1,500.00	
Kitchen furnishings	600.00	
Repairs	1,600.00	
		$42,970.00
Total		$134,970.00

The State Auditor's report contains tables showing in detail all the expenditures made under the foregoing appropriations, reference to which is here made for all such details, but the following will show the construction and extraordinary repair work of the board during the period.

On all such construction and repair work as has not been contracted, the materials and supplies therefor have been purchased by the purchasing agent.

The board adopted the system of daily inspection by competent inspectors, representing the board solely, for all construction and repair work done under these appropriations, employing for this purpose Mr. Charles H. Smith of Allenstown and Mr. Alfred L. Guay of Laconia.

STATE HOSPITAL.

Rewiring. This has been completed, the work having been done by the electrician of the Hospital.

Repairs to cow barn. An examination of the barn itself, and estimates furnished by the architect disclosed the fact

that this appropriation could not be judiciously expended on the barn as it was. Acting under advice and in accordance with its judgment, the board has in process of erection a one-story, wood construction with cement bottom, cow barn connected to the old barn by trolley. This barn will contain fifty stalls, wash and milk rooms, and be distinctly modern in all its appointments. This work is being done by the regular Hospital force, to which has been added carpenters and masons, all under the direction of the architect. It will be ready for occupancy in December.

Addition to Laundry Building. It was determined that this could be done to better advantage by the Hospital force, with added carpenters and masons, than by contract, the work to commence as soon as the cow barn is finished, so there had been no construction under this appropriation at the end of the period covered by this report.

SCHOOL FOR FEEBLE MINDED CHILDREN.

Dormitory for epileptics. This building is in process of construction, being a two-story brick dormitory of mill construction, designed along the general lines of the McLane and Floyd dormitories, with such improvements as have suggested themselves. The general contract was awarded to Wallace Building Company, Laconia, for $31,075; heating, T. Raiche, Manchester, $2,800; plumbing, T. Raiche, Manchester, $2,075; electric wiring, W. D. Sanborn, Laconia, $925.

Chapel. This building could not be built within the appropriation on plans accepted by the board, so a serviceable part of the building as planned is being constructed and the plans preserved for use at such time in the future when it will be found necessary to make an enlargement. Practically the entire building is devoted to a combination auditorium and gymnasium and is built of brick. It has been named the Charles Sherman Little Building in honor of the first superintendent of the institution. General contract, Hutchinson Building Company, Concord, $14,650; heating,

T. Raiche, $1,200; plumbing, Orr & Rolfe, Concord, $726; electric wiring, Orr & Rolfe, $552.

Piping, sewerage, water and steam. Steam pipe insulation. These appropriations contemplated relaying the old pipe lines as well as supplying the new buildings. A thorough study of the heat, water and sewer line situation brought the board to the conclusion that radical changes should be made in the system involving relocation. Accordingly these appropriations were combined and the steam system changed to high pressure, a main artery cement conduit constructed, with laterals running to various buildings, and additional sewer and water lines laid, the sewer line being a ten-inch main which will take care of future construction. The contracts for this work were awarded as follows: Conduit subway, Wallace Building Company, $2,890; conduit lines, T. Raiche, $2,550; pipe lines, T. Raiche, $3,775; water and sewer lines, John H. Stevens, Manchester, $1,274.43; trenches, Hobbs & Cote, Laconia, for water trench, $160, and $6.50 per cubic yard for ledge, for sewer trench $3 per rod, and $6.50 per cubic yard for ledge. Exposed steam piping in the Quinby Building and dormitories has been covered at a cost of $634, the work being done by John H. Stevens.

To install an interior telephone system. The board decided not to attempt to do anything with this appropriation until after the two new buildings are ready to be occupied.

For land. The board purchased about fifty acres of good pasture land and a barn of Annie M. Huston for the sum of $1,500. A tract of one hundred acres of sprout land was purchased from Jacob Sanborn for $600. This tract has been fenced and will be gradually made over into a good pasture by the use of inmate labor. Neither of these tracts is connected with the other institution lands, but each is accessibly located in the vicinity.

Enlargement of Schoolhouse. The third floor of this building constituted the gymnasium, which will hereafter be in the Little building, and this floor has been made over into a hallway and two school rooms, the interior has been

repainted, and necessary heating and plumbing made. General contract, Wallace Building Company, $1,570; heating and plumbing, T. Raiche, $145.

Electric wiring. This has been done by W. D. Sanborn on a contract as follows: Superintendent's residence, $225; farm house, $50; vegetable cellar, $35; carpenter shop, $65; school building, $100; Little Building, dimmer, $25; switch board, $75; fixtures, $25.

Equipment of carpenter shop. A buzz planer, bandsaw, power grinder, saw bench with saws, and a ten-horse power motor have been installed at an expense, together with shafting, freight, and electrical work, of $785.03.

Mr. Smith has been inspector of the construction at this institution.

INDUSTRIAL SCHOOL.

The upper story of the Wilkins Building had been left unfinished and was practically waste space. There being an unexpended balance of the building appropriation which could be used for the purpose, the board decided to finish the upper story to provide accommodations for an increase in the number of inmates. This has been done under the supervision of the architect. General contract, Bunton & Bernard, Manchester, $4,550; plumbing and steam heating, $830.

STATE SANATORIUM.

Several transfers from one item to another were found to be necessary and were made, under the terms of the act (Chap. 252, 1913) which provided "Said sum ($42,970) to be expended under the supervision of the governor and council (board of control), who may make any changes in the direction of the expenditures above itemized as, in their best judgment, they may see fit," and under the advice and direction of the governor and council.

Stock barn. A cement bottom and wood construction combination horse and cow barn, with silo, is being built to

contain eight horse and twenty cow stalls. General contract, Cummings Construction Company, Ware, Mass., $7,687; plumbing, T. Raiche, $200; wiring, A. L. Franks & Co., $240. It will cost about $1,000 to connect the barn with the water system and the entire expense of the barn item has been provided for by a transfer of $1,500 from the infirmary item.

Infirmary. The lowest bid on any plans and specifications for a building which the board believed it wise or economical to build, was $25,282, the appropriation being $17,500. After due consideration, the board voted that it was inexpedient to attempt any construction under this item. The isolated location of this institution makes it hard for contractors to take care of their employees, the long freight haul and the transfer from the railroad of about two and a half miles up a very steep grade and the conformation of the land, all increase the cost of construction to such an extent that the board found that, as to most of the items in the appropriation, the amounts required had been underestimated.

Alterations to dining room building. The open third story has been finished into rooms to be used for employees until provision is made for them elsewhere, when it may be used as an addition to the infirmary accommodations. General contract, Cummings Construction Company, $2,468.67; heating, T. Raiche, $400; plumbing, T. Raiche, $500; wiring, A. L. Franks & Co., $235. This institution was found to be without a vegetable cellar and without any suitable accommodations for refrigeration, so that supplies had to be received by it almost daily, no safe margin of perishable supplies being on hand at any time to guard against the constant danger of interruption of freight service in the winter time, a situation which the board decided could not be allowed to continue. A transfer was made to this item of the appropriation and a power refrigerating plant installed in an addition to the dining room building, and a vegetable cellar constructed beneath. Contract for the addition, Cummings Construction Company, $527; cork insulation, New England Refrigerating Company, Boston, Mass.,

$797; refrigerating machinery, Bay State Construction & Supply Company, Boston, $1,222; excavating and building vegetable cellar, Cummings Construction Company, $1,000.

Furnishings for female infirmary. As stated heretofore, the infirmary was not built, so nothing was expended under this appropriation.

To install electric apparatus. This item was included in the appropriation for the purpose of installing an auxilliary electric plant in the power house to supplement the hydro-electric plant and to be ready for service in case of failure of the hydro-electric plant. A Ball engine, a fifty k. w. Western Electric generator, synchronizing apparatus, transformers, and other electrical machinery, have been installed. Contract for material and labor was let to A. L. Franks & Co., for $3,035.

Coal pocket. A concrete coal pocket of one hundred twenty-five tons capacity has been constructed with direct entrance to the boiler room of the heating plant, and so located that teams drive on to a flat top and dump over manholes into the pocket. The contract for this work was let to the Cummings Construction Company for the sum of $1,887.

Boiler. A Dillon boiler of one hundred fifty-horse power was purchased on a contract for $898 f.o.b. Glencliff, and a contract made with T. Raiche for $1,600 to do the piping and setting. When the amount of this item of the appropriation was determined, it was not understood that the installation of the proper type of boiler would necessitate the building of a brick extension to the boiler house, which is being done by Raiche as a part of his contract.

The work under this item is in process and the boiler will be ready to go into commission in December.

Repair of dam. The height of the dam and of the spillway has been increased three feet, and a wing a hundred feet in length with a cement core has been extended from the dam. This has doubled the capacity and is all that could be done within the appropriation, but more yet is required as is ex-

plained under the head of recommendations. Contract for this work was let to Cummings Construction Company for $1,925.

Sewerage and hydrants. Several sewer lines of two hundred feet in length have been laid from the central basin to land below; 700 feet of four-inch cast iron pipe water line have been laid from the main water line to the cow barn and one hydrant installed near the barn. On account of the uncertainty of the conditions to be met in trenching for the water line, a contract was made with Cummings Construction Company to do this work at actual cost plus $75, under the inspection of Mr. Guay. It is estimated that the expense will be about $1,100. The other work under this item, including the erection of a silo, has been done under the supervision of Mr. Guay and laborers employed by him.

Live stock. There is more live stock at Glencliff than the productive lands will supply with hay and pasturage; in fact the institution is obliged to purchase a part of its hay, so this item has not been expended.

Kitchen furnishings. Morandi-Proctor Company apparatus has been purchased consisting of a range, urn, hot table and piping. Contract, A. H. Britton & Co., Concord, $547.21; expended for kettles, pans, freight and apparatus, $52.83.

Repairs. Work done under this item has consisted of a large amount of replumbing in the male ward, repairs to the ice house and many minor items throughout the plant.

All the work under the different items of this appropriation has been done under the inspection of Mr. Guay.

PLYMOUTH NORMAL SCHOOL.

The act making an appropriation for the construction of a dormitory at the Plymouth Normal School provided that the work should be done under the direction of the governor and council, who accepted plans and specifications, and together with the trustees of the institution, made the contracts for the construction. The act was passed subsequent to the

Board of Control Act, which provides that all construction shall be under the direction of the board. Acting under a request made by the governor and council, the board supervised the construction of this building, Mr. Guay, the inspector, being used on this work, together with Mr. King, of the school staff.

Recommendations.

GENERAL.

The board recommends that an act be passed under which the income of each institution shall stand appropriated to its use.

At the last session of the legislature an act was passed for the present period, but the new act should be general and not limited to a biennial period.

All state moneys must by law pass into the state treasury, and unless each institution shall have to its use its own income and earnings, an injustice will be done, because the cost of supplies for the industrial departments is charged to the institution, and so it should have to its own credit the proceeds of these departments. Also the institutions which have inmates who pay the whole or a part of their board have to pay the cost of maintenance of these inmates, and should have to their own use the board so paid.

We also recommend the enactment of a law under which the board shall have authority to buy, sell or exchange institutional lands provided each exercise of authority under the act shall be by the advice and consent of the governor and council. This act should also contaain authority for the board to institute proceedings for the condemnation of land for institutional purposes by and with the consent of the governor and council, the taking to be in the manner prescribed for the taking of lands in the laying out of highways.

Additional lands for those institutions in which it is desirable that certain of the inmates should work, will be found to have economic as well as remedial value.

The matter of obtaining suitable lands for the institutions is highly important and extremely difficult. A special appropriation for land for a specific institution immediately enhances the land values in the specified vicinity.

We believe that the legislature should provide, by appropriation, a suitable amount for the purchase of land, to be expended by the board under the advice and direction of the governor and council, or by the governor and council upon recommendation of the board.

We believe that the board should have an emergency fund appropriation of reasonable amount, to be included in the budget bills, which could be used, when necessary, for the benefit of any of the institutions, and for the purpose of making economies which could not be taken advantage of without such a fund.

APPROPRIATIONS.

The board has asked each superintendent to include in his report his recommendations as to the things which need to be done at his institution, the expense of which would necessitate a special appropriation, and to give to the board his estimates as to maintenance requirements for the next biennial period.

The budget item for maintenance should always be figured with an allowance to take care of any unanticipated rise in maintenance costs resulting either from the necessity of taking in more inmates than expected or from unexpected increase in the cost of supplies.

It should be figured so that there will be a reasonable margin to cover unforeseen things and to provide for minor repairs to be done from time to time as the necessity for them occurs.

The Hospital item, $225,000 (see footnote to table below), is sufficient for these things and is not increased from the prior period.

No material increase in population is to be anticipated at the Industrial School or the Sanatorium, and the repair items

at these two institutions are of such a nature that they are recommended for special appropriations, so that maintenance is not recommended to be changed from the prior period.

The maintenance for the School for Feeble Minded Children for the year 1914-15 is $46,800, and if the Felker Building is in operation for six months of the year, there is grave doubt if this will be sufficient. We recommend that the maintenance for this institution for the next period should be $57,000, which ought to provide for the usual maintenance items and give some leeway for such minor repairs as should be made when the necessity therefor appears, instead of letting such repairs go unattended to.

If an act providing that the income of each institution shall stand appropriated to its use should fail of passage, these maintenance items will have to be increased as indicated in the table below.

The maintenance required for the Board of Control is recommended to be $3,000 to cover per diem, traveling expenses and any other legitimate item of expense which might appear.

The amount required for maintenance of the purchasing agent's department to cover salary, clerk hire and expense of keeping the books and records is estimated at $6,000.

Reference to the table below will show that these maintenance figures are for each of the two years of the biennial period.

As to special appropriations, the board has canvassed the situation at all the institutions and determined upon those items of construction and repair which necessity requires should be done during the next biennial period, and has reserved the remaining recommendations of the superintendents for future consideration.

The necessities at the Hospital require the expenditure of the largest amount. In the superintendent's report will be found a tabulation showing the present overcrowding of those wards which are suitable for taking care of violent female patients. Plans and specifications for a violent female dormitory have been prepared and submitted to contractors for

estimates as to cost. The plans for this building have been so drawn as to easily provide for the inevitable extension thereof in the future.

This addition to the plant will necessitate the installation of one boiler. The board has decided, under the advice of the architect, that an extension to the boiler house should be made of sufficient size to provide space for a battery of five boilers, which shall face the battery of five already installed, and the new boiler would be the first of the new battery.

The estimated cost of the building and furnishings together with connections with the central heating plant and for the boiler and boiler house addition is $185,000, and we recommend the appropriation of that amount for this purpose.

At the School for Feeble Minded Children there is no suitable place to house the employees and the conditions there in regard to this are such that we recommend the erection of an employees' dormitory, plans and specifications for which have been accepted and submitted to contractors for estimates.

We have gone carefully into the matter of the condition of the horse barn and have decided that it would be inadvisable to expend the amount of money thereon which would be necessary in order to put it into suitable condition.

We believe that it would be an economy for the institution to very substantially increase its hen business.

We recommend an appropriation of $45,000 with which to build an employees' dormitory, to furnish the same and connect it with the central heating plant by a conduit which would also carry the sewer and water lines, to build a horse barn and to use so much of any balance of said sum as may be required to construct a hennery.

No new construction is absolutely necessary at this time at the Industrial School, but the conditions in the main building, as to the kitchen and dining room, are such that they should not be allowed to continue. We have had estimates made of the cost of making changes which would take care of the matter for a considerable length of time and recommend an appropriation of $2,500 for this purpose.

The board's examination of the cost of maintenance at the Sanatorium leads to the belief that the matter should be carefully investigated before any plans are definitely decided upon to provide for an extension of the capacity at this institution. There are two things, however, which we think should be done during the next period. A retaining wall and an overhead approach to the second story of the barn should be constructed and the dam should be faced on the inside with concrete, the pond should be grubbed out and an excavation made which would increase the storage capacity in an amount sufficient for all probable future growth of the institution and provide ample water for fire purposes.

The following is a tabulation of the maintenance and special appropriations which we recommend.

APPROPRIATIONS RECOMMENDED.

Department and Purpose.	Year Ending August 31, 1916.		Year Ending August 31, 1917.	
Board of Control				
Per diem and expense		$3,000.00		$3,000.00
Purchasing Agent				
Salary and expense...		6,000.00		6,000.00
State Hospital				
Maintenance	$285,000.00		$285,000.00	
Violent female building furnishing, boiler house addition, boiler	185,000.00		.....	
		470,000.00		285,000.00
School for Feeble Minded Children				
Maintenance	$59,000.00		$59,000.00	
Employees' dormitory, furnishing, heat, sewer and water line; horse barn: hennery	45,000.00		.....	
		104,000.00		59,000.00
Industrial School				
Maintenance	$46,000.00		$46,000.00	
Improvements to kitchen and dining-room, main building.....	2,500.00		.....	
		48,500.00		46,000.00
Sanatorium				
Maintenance	$35,000.00		35,000.00	
Barn approach and dam	2,000.00		.....	
		37,000.00		35,000.00
		$668,500.00		$434,000.00

N. B. The maintenance items for the first three institutions are here given without reference to the income of each institution. If the law is changed so that the income of each institution shall stand appropriated to its use, these maintenance items should be reduced as follows:

State Hospital, from.....	$285,000 to $225,000
School for Feeble Minded Children, from.....	59,000 to 57,000
Industrial School, from.....	46,000 to 45,000

Expense of Operating the Board.

Two departments, Board of Control and Purchasing Agent, were created in one act. The auditor has carried both under one detail. Nearly all the incidental expense is properly chargeable to the Purchasing Agent.

The following statement of the per diem, travel, and incidental expense includes items to the amount of $1,143.54, expense incurred in equipping the office and opening a full set of books.

BOARD OF CONTROL EXPENSE FOR THE PERIOD FROM

June 1, 1913 to August 31, 1914.

PERSONAL EXPENSE.

Per diem	$1,968.00
Transportation	142.54
Subsistence	134.98
Miscellaneous	10.13

INCIDENTALS

Clerks (See Auditor's Report)	585.00
Original Office Equipment	846.39
A. K. Paul, expert accountant, opening set of books	297.15
Surety Bonds	304.10
Miscellaneous	552.30
Total	$4,840.59

Respectfully submitted,

SAMUEL D. FELKER,
WILLIAM J. AHERN,
GEORGE W. FOWLER,
GEORGE W. McGREGOR,
BENJAMIN W. COUCH,
Board of Control.

PURCHASING AGENT'S REPORT.

To His Excellency the Governor, and the Honorable Council:

The portion of the Act of 1913 requiring the purchase of supplies for certain state institutions and departments by a purchasing agent took effect September 1, 1913. This report therefore relates to the fiscal year ending August 31, 1914, only, although designated by the act a biennial report.

In addition to giving a summarized account of the purchases made during the fiscal year and certain classified financial statements, the act provides the report shall contain "a general statement of the work of the department and the observation of the agent as to the systems in force in the various institutions, and his recommendations thereunto pertaining, with such suggestions as to legislation as may in his judgment be needed for the more complete performance of the duties of his office."

IN GENERAL.

To bring the purchasing on account of a state into one department was pioneer work in this section of the country. There was therefore no worked-out system as a guide and no opportunity to profit by the experience of others. Some more remote states had adopted the policy, but conditions were so different that it was conceded little aid could be obtained from them.

Each of the seven state institutions and the more than a score of state departments, for which the purchasing of the things they needed was put upon the purchasing agent, had hitherto purchased independently. The advantage of uniting purchases had been recognized in single instances

however. Previous to the passage of this act, provision had been made so that book paper stock and envelopes for the use of the several departments and institutions were purchased in quantity through the Printing Commission. Three institutions had united voluntarily in a steam coal contract; a different group had joined in a butter contract and a butterine contract, and two were supplied with storage eggs under one contract. Those were the chief exceptions to the independent buying. Such practice was being extended each year.

As the persons who did the purchasing for each institution or department had other duties, it was to be expected the greater number of wants had not been long anticipated. To make formal requisition for supplies upon one central department and physically apart from the institution itself, and long enough in advance of the actual need to give ample time for purchase to the best advantage, and their delivery, was a most radical change.

Recognizing this, it was regarded as impracticable to lay down any hard and fast rules in putting into effect the new state policy. Everything savoring of "red tape" was avoided, further than an attempt to faithfully meet the requirements of the act. The determination was to coöperate with and to the fullest extent possible to be helpful to the institutions and departments in a constant endeavor to get for them and the state the fullest value for the money expended for such of their maintenance as fell to this department.

An idea that such result could be accomplished by furnishing articles of a cheaper quality and so at a smaller money outlay has never been entertained. The constant effort has been to so assemble requisitions from different sources and anticipated needs, and by stimulating competition, to get the grade of article required at the lowest possible cost.

To illustrate: None of the institutions were large enough to use a carload of pea beans in a year, but it was ascertained from a canvas that combined institutions consume about such total. A car of No. 1 New York hand-picked beans was purchased, brought to Concord and distributed

from there. Thus all were supplied at as low a cost as could be obtained for any quantity, however large, at such date.

Among other articles purchased in similar way are molasses and syrup, vinegar and sugar. On articles of general institution or department use of whatever character, but of less than carload quantity, the policy has been to so arrange the order that the lowest price for which such supplies could be purchased in quantity could be obtained. With the exception of such supplies as to which no competition could be secured, what is known as retail price has not been paid, and as to such exceptions, the state has made the purchase at as low a cost as could have been made by even a much larger consumer.

The result was possible through the certainty of the seller that in supplying the state, he was sure of his pay in full; that, if a manufacturer or exclusive agent, there was a trade advantage in numbering the state among its customers, and that the expense of soliciting the business was minimum because of one purchaser for all the institutions and departments.

At the outset, those charged with checking up supplies received at each institution were notified, that in no instance would a purchase be made of provisions of any sort that were not in first-class order and in every way wholesome; that if any arrived which they suspected were not in such condition, they were to know that such had not been purchased; and they were positively instructed either to return them to the shipper at once at his expense, or to set them aside, and notify this office in either case. I believe they have faithfully followed those instructions.

As purchasing agent, I have not construed the law as putting upon me the duty of passing upon the need of a requisition as made. Whenever from information at hand as to the cost of different grades or makes of articles for which requisition was made, it was believed better value could be obtained than from following the specifications of the requisition, such information has been given the party making the requisition. The purchase when made was in accord with

his final decision as to what should be secured. As to the institutions under the Board of Control, this practice has been varied merely to conform to a vote of the board that all requisitions for other than the ordinary staple supplies should first be submitted to the board for authorization.

METHOD OF OPERATING.

To carry into the fullest effect the purposes for which the department was created, it was agreed that prompt payment for purchases made would be an important factor. Business concerns were generally profiting by the cash payment and discount policy, and with abundant cash in the treasury, it was desirable that the state should exercise a similar advantage. The constitutional provision that no money shall be issued from the state treasury but by warrant of the governor, by and with the advice and consent of the council, and the fact that the governor and council were not constantly in session, made it impracticable to make prompt payment of each invoice through the state treasurer. To consider this problem and the matter of accounting with a view that there be no more duplication of clerical work than could be avoided, a conference of the governor and council, the state auditor, state treasurer, and Board of Control was held, to which an expert accountant was summoned.

On August 29, 1913, following that conference, the governor and council passed the following resolution, setting forth the method of operation:

Resolved by the Governor and Council, That the Method of Doing Business by the Board of Control Be as Follows:

1. At the beginning of each fiscal year, the governor shall draw his warrant on the treasurer for an advance of a sum sufficient to provide a working capital for the purchasing agent, which sum shall be deposited to the credit of the purchasing agent, who shall use the same in payment of obligations contracted by him under the powers and duties of his office.

2. Upon requisition from the various departments and institutions, the purchasing agent shall make his purchases, and the seller shall make bills therefor in triplicate, and deliver the same to the purchasing agent. The purchasing agent shall immediately deliver one such bill to the head of the institution or department consuming such articles so purchased; one to the state auditor, and shall retain one for his office. The auditor shall give notice to the purchasing agent of any errors discovered by him. The institution or department shall report to the purchasing agent the delivery of the articles so purchased, and as to whether they comply with the specifications and are otherwise satisfactory.

After receipt of this information, the purchasing agent shall pay the bill so contracted and charge the amount against the consuming department or institution.

The departments and institutions shall keep records of accounts and as heretofore submit classified schedules of the same at the end of each month to the auditor. At the beginning of the succeeding months the governor shall draw warrants, based upon a report of the auditor to him, in sums equal to bills so paid, and the sums so obtained on warrant shall be deposited to the account of the purchasing agent to reimburse his working capital account.

WORKING CAPITAL.

The working capital at first provided was $25,000. Such sum was soon increased to $45,000, and the purchasing agent "further instructed to advance the managers of the several institutions the following sums for the purpose of meeting valid emergency bills as they arise against such institutions respectively, and for paying employes, such as cannot be carried upon the regular payrolls: State Hospital, $700; School for Feeble Minded, $200; State Sanatorium, $200; State Prison, $100; Industrial School, $100."

It was stipulated that the managers should account to the purchasing agent for the money so advanced. They were to be reimbursed for the amount expended, whenever such

funds ran low, at the discretion of the agent. This has been done. The bond of the agent was increased because of such additional responsibility. Further, the agent was instructed to furnish from such working capital money to meet the monthly and bi-weekly payrolls of such institutions as presented, after being certified by the superintendent and the auditor. This was done that state employes might not fail to receive their wages on the day they became due, as was not always feasible through warrant upon the state treasurer. Under similar instructions, advances have been made to the Forestry and the Liquor License Departments for the prompt payment of some of their obligations, and for some work under special appropriations at the Laconia and Glencliff institutions. The total of such advances during the year is $144,873.14, for which reimbursements have been made the purchasing agent, through the treasurer's office, in the same manner as payments for supplies have been reimbursed. The interest received upon daily balances has been $231.57, which has been paid the state treasurer. During the year there were paid for supplies $302,486.40. By advice of the auditor, the invoices for the highway department have for the most part not been paid by the purchasing agent, although all contracts and purchases have been made by him. The exception has been the bills upon which discount could be obtained for cash payment. The reason for making that department an exception was that the cost was finally shared by the state and towns in varying percentage. The invoices on account of the adjutant general's office have also been paid direct.

The number of checks drawn for the year is 5,202; of these, 5,031 were for supplies, and 171 for advances.

WORK OF THE DEPARTMENT.

Previous to beginning operations, the following notice was caused to be published in newspapers in various parts of the state:

To Manufacturers, Jobbers, Merchants and Other Wholesale Dealers:

"Notice is hereby given that the purchasing agent for the State of New Hampshire invites and will receive proposals for furnishing fuel, furnishings, supplies, materials equipment or other things in use in the several institutions and state departments, the purchase of which is required of him by law after September 1, 1913. Lists of supplies as needed from time to time will be furnished inquirers on receipt of requests, stating the line in which interested.

"Contracts will be awarded the lowest bidders, quality considered, each bidder in any competition being given an equal opportunity under such regulations as will protect the interests of the state. Other conditions being equal, New Hampshire dealers will be given preference."

A card index of names and addresses thus obtained was made, to which have been added those of all other applicants however received.

Requisition blanks in triplicate were furnished all departments and institutions specified in the law. The "original" was for the purchasing agent, the "duplicate" for the institution or department, and the "triplicate" for the auditor. These blanks called for a statement of the article needed, quantity required, when needed, quantity on hand, annual consumption, last purchase, dealer, quantity and price.

An additional blank was issued, termed "Emergency Purchase" and the heads of each institution and department were made the agent of the department to purchase such articles in any emergency for which there was not time to make a requisition upon this office, the report of a transaction thus made to be rendered at once upon such emergency blank. Comparatively few of the latter have been used. In an endeavor to keep in the closest touch with the work, the agent has been at the office practically every business day of the year and some holidays. The office hours have been from 8 A. M. to 6 P. M., six days of the week.

The number of requisitions for the year has been large, particularly from the institutions, because of the conditions

and practice generally prevailing previous to the change to a central department. A few weeks after the department began operation, a conference of the superintendents and the Board of Control was held. The possible advantage of simultaneous requisitions with a longer anticipation of needs was pointed out, and by agreement a certain day of each week was named as "requisition day"; that is, such requisitions as were certain to be made within a given week were to be made out and timed to reach this office on Tuesdays. This was not to prohibit a requisition, overlooked when such list was made out, from coming at other times. It was then hoped to gradually extend the time between requisition days as the business became better organized, but no further steps in that direction have been taken. Some of the institutions have been able to comform to the plan most fully; others have gone farther and made their general requisitions cover practically a three-months period.

It was readily to be seen that from simultaneous requisitions, articles of the same class could be assembled and the agent could go to market with a larger order in each than from individual requisitions, get the price advantage of the larger quantity besides saving the time for other work that the placing of several orders in succession would require. It will be noted from the summary which follows that 2,207 requisitions are on file in this office covering the first year period. They contain 14,286 different items. These totals do not take into account requests for supplies that have been given orally, in person or by telephone, by letter, or the standing orders under annual contract, or supplies furnished in anticipation of needs. The number of invoices paid is 8,334. By request of the managers of the Soldiers' Home and of the State Library, requisitions for supplies for them have been treated as if they had been enumerated in the Act.

Requisition forms regularly contain articles of the widest variety. One taken at random for one of the smaller institutions has: meats, groceries, dry goods, hardware, shoes, clothing and steam fittings, with a total of eleven items. That is not an extreme sample.

From the outset, a distinction has been made between actual buying and ordering. Before a purchase has been made, as a rule (to which the exceptions have been few), prices have been obtained from at least two reputable dealers, and the order invariably given to him whose offer was lowest, quality considered. Where requisitions could be combined to amount to a considerable quantity of a class of goods, or aggregating a considerable total, requests for written proposals have been made to as large a list of prospective sellers as was at hand. As to such regular supplies as groceries and dry goods, the practice has been to place subsequent orders to fill small requisitions at the same figure with those sellers who were given the order on their proposals, provided there had been meantime no change in the general market, until a new order could be assembled large enough to warrant a new inquiry. If a better offer had come in the interim, the successful previous bidder was still given a chance in competition.

Examination of the invoices on file will show that all purchases have been made on a surprisingly small margin for handling.

Contract purchases have been made for supplying the needs for a year, as ordered: For institutions, of coal, both anthracite and steam; butter, butterine, tobacco, eggs, tea, coffee, (except for officers), baking powder, cream of tartar, evaporated milk, lemon and vanilla extracts; for institutions and departments, electric lamps, drinking cups, carbon paper, typewriter ribbons, pens; for secretary of state, automobile plates and chauffeurs' badges; for highway department metal culverts, road oil, road drags, and paints; for forestry department, fire fighting implements.

Supplies in car lots have been bought: of sugar, potatoes, flour, glucose, soap, boards, brick, Portland cement, pea beans and land tile.

Purchases of estimated annual consumption quantity have been bought: of molasses, syrup, blankets, seeds, fertilizers, cheese, school supplies, periodicals, paper for official reports, steamboat license plates, self-sealing preserve jars.

Proposals on the above were called for with specifications and the awards were made from samples submitted with the bids. In practically every case, in determining the award, the agent was given the helpful assistance of the stewards of the Concord institutions, or the heads of the department from which the requisition came.

Scores of other written proposals have been asked for and received for definite requisitions, such as groceries of all kinds, including canned goods, shoes, rubbers and leggings, clothing of all kinds, furnishings, dry goods of extensive variety, leather and shoe findings, beds and bedding, carpets, rugs, crockery, furniture, kitchen furnishings, windows, electrical supplies, cow stable equipment, hardware, laundry and shop machinery, motors, auto trucks, paints, glass, disinfectants, plumbing supplies, pipe and steam fittings, lumber, roofing, wagons, grain, harnesses, books, medicines and hospital supplies, stationery, bookcases, filing cases, ballot boxes, badges, engineer's apparatus, poultry, developing negatives, elevators, farm machinery, fire works, etc.

Next to fuel, the item of meats is the largest in the list of supplies as to cost. The average cost has been about $500 a week. In frequency of delivery it is the largest. Its purchase has required more attention than any other class, and I am satisfied that in no other class have purchases been made at a better advantage. There has been no opportunity to organize a plan for annual contract and specifications to deliver as ordered at a fixed price, and I am by no means certain that there would be a net advantage from such method. The cold storage plant at the State Hospital has made it possible to meet the needs there more easily than elsewhere. A similar equipment is being put in at Glencliff and there should be a similar equipment at the prison and School for Feeble Minded under its increased population. During the early part of the year, some use was made of the hospital facilities for cold storage in advance purchases for other institutions. A considerable quantity of meat would be bought from commission markets at less than

market price in advance of requisition, and be cared for at the hospital storage plant, and drawn from as wanted by the hospital steward. Small requisitions from other institutions would be filled therefrom in the form of purchase, being billed at the quantity cost. In this way, meats to the amount of about $800 were resold to other institutions from the hospital at a large percentage of saving to the state. Criticism and objection was made to this by the auditor as complicating the bookkeeping if a correct exhibit was to be made, since which, there has been less of it. When market conditions have forced a large percentage of saving in so doing, there has been no hesitancy however, in purchasing from the stock of one institution to meet the needs of another. For instance, in such way flour at car price has been bought for smaller institutions from the Hospital, School for Feeble Minded, and the Industrial School. Practically all the brooms and brushes purchased by this department to fill requisitions have been bought from the hospital.

To secure the quantity price on office supplies as well as afford convenience to this department, a stock of such articles as ink, pens, penholders, pencils, erasers, paper clips, and fasteners, paste, blotters, carbon paper, writing papers for several uses, etc., has been carried in this office. The invoices have been made to the purchasing agent and paid to obtain the cash discount. They have been billed out as called for and reimbursement obtained as with other charges. This practice has made the item of "office supplies" in the auditor's report for this department improperly large, but the cost saving alone has been in many cases 50 per cent. The charges for telephone and to a considerable extent for express and freight might properly be charged to the department in whose direct behalf the service was rendered, but the trouble of making such adjustment was regarded excessive.

If it should be deemed wise to make a special appropriation for office supplies as a single item, the articles to be furnished as needed and accounted for by departments in a detail by itself, much clerical work throughout would be saved.

It is my conviction that the accounting system of the state should be revised. Certain it is that for the business it does, if the state were to establish accounting without reference to the past, it would not be done as at present. For comparative purposes, there should be some consideration to the past, but I believe an expert accountant could readily work out a new system that would effect not only a great saving in cost, but prove more satisfactory in results.

Because of the detailed analysis of expenses given in the annual report of the state auditor, little of that nature has been deemed desirable in this report. Such tabulated statements have been prepared by the advice of the auditor as would seem to make a complete showing in connection with other reports and without duplication.

In furnishing supplies, the line has not been drawn with reference to the fiscal year, when it seemed to the advantage of the state to act otherwise. At the School for Feeble Minded, coal enough was put in in the spring of 1914 to meet the needs for at least four months of the next fiscal year, to take advantage of the better teaming conditions, with the consequence that the annual maintenance appropriation fell a little short of present needs. At the State Hospital, about 2,000 tons of steam coal more than usual was put in during the summer months to enable the freight truck purchased for its transfer to be utilized to the best advantage. The constant effort has been to purchase those things which the state must needs buy in such quantities and at such times as would require the least outlay of money.

The variety of supplies required through this department has been extensive. It has comprised all those things needed for the sustenance, care and comfort of a combined inmate population of nearly 2,000; a portion at least of the living expenses of more than 350 officials and employees; the things necessary for the upkeep of the state buildings; the purchases required for the operation of four institution farms; the school supplies for two normal institutions, besides the articles used in 25 main state departments. In view of the radical departure in state policy comprised in establishing

this new department, the separated locations of those dependent upon it and such a variety of needs, remarkable patience and consideration has been given it, for which grateful appreciation is hereby acknowledged.

INVENTORIES.

The following gives the totals of the inventories furnished by the institutions and departments, "of all supplies and materials on hand as of August 31." They do not include lands and buildings. A study of the detailed inventories warrants the inference that different interpretations have been put upon the law in that some have allowed for depreciation from one year to the next, while others have continued the same value upon the same articles on both dates. They are given as filed.

Departments.	1914.	1913.
Hospital	$165,260.21	$146,300.39
Industrial School	26,440.16	27,074.53
State Prison	14,991.40	14,830.37
School for Feeble Minded	26,440.71	25,734.71
Sanatorium	9,234.97	8,556.57
Keene Normal School	6,844.89	4,205.44
Plymouth Normal School	16,497.82	16,731.72
Adjutant-General	1,001.97	1,139.48
Department of Agriculture	726.81	737.00
Attorney-General	1,700.41	686.00
Auditor	1,424.98	.....
Bank Commission	2,035.09	2,071.88
Charities and Corrections	512.50	346.83
Board of Control	734.37	.....
Fish and Game Department	343.45	221.20
Forestry Department	9,249.74	8,081.04
Board of Health	6,343.23	6,053.05
Highway Department	2,804.16	2,002.00
State Historian	369.70	239.25
Department of Pub. Instruction	1,684.02	1,512.95
Insurance Department	1,406.28	1,309.85
Bureau of Labor	404.84	346.50
Legacy Tax Department	554.30	602.00
License Commission	1,456.90	1,505.67
Pharmacy Commission	236.05	.....
Public Service Commission	3,122.16	3,482.64
Printing Commission	30.00	1,255.93
Secretary of State	2,322.15	1,433.45
State House	31.00	.....
Tax Commission	762.08	939.98
Treasury Department	1,225.75	1,204.13

REQUISITIONS.

The following is the total number of requisitions filed from the institutions and departments named from September 1, 1913, to August 31, 1914, inclusive.

DEPARTMENTS.	No. of Requisitions.	No. of Items.
State Hospital	474	6,208
State Prison	254	1,425
Industrial School	94	1,153
Sanatorium	146	970
Plymouth Normal School	53	477
Keene Normal School	62	394
School for Feeble Minded	91	896
Soldiers' Home	34	183
Highway Department	300	682
Forestry Department	148	356
Public Service	84	290
Secretary of State	80	171
Board of Agriculture	45	97
Board of Health	71	194
Public Instruction	42	100
License Commission	18	57
Labor Commission	10	21
Fish and Game Commission	20	43
Legacy Tax Commission	11	17
Pharmacy Commission	10	204
Insurance Commission	32	65
Printing Commission	2	2
Tax Commission	7	10
Charities and Corrections	16	84
State Historian	26	37
Auditor	15	23
Bank Commission	13	30
Adjutant-General	18	27
Attorney-General	5	19
Children's Commission	8	24
State House	3	12
Treasurer	15	15
Total	2,207	14,286

SUPPLIES.

The following gives the total amount paid for supplies for the institutions and departments named from September 1, 1913, to August 31, 1914:

State Hospital	$160,026.68
Industrial School	26,354.44
State Sanatorium	23,016.10
School for Feeble Minded	22,169.97
State Prison	19,997.78
Plymouth Normal School	7,242.80
Keene Normal School	4,858.27
Soldiers' Home	3,116.44
Adjutant General	2.10
Department of Agriculture	691.79
Attorney General	28.72
Auditor's Department	65.69
Bank Commission	181.75
Board of Charities and Corrections	499.02
Children's Commission	105.94
Fish and Game Department	3,261.30
Forestry Department	3,938.27
State Board of Health	1,476.76
Highway Department	7,037.14
State Historian	276.52
Department of Public Instruction	1,923.31
Insurance Department	845.23
Bureau of Labor	124.85
Legacy Tax Commission	24.47
State Library	374.81
License Commission	259.24
Pharmacy Commission	113.33
Public Service Commission	1,540.26
Public Printing Commission	129.26
Board of Control	1,120.49
Purchasing Agent	334.85
Secretary of State	7,297.75

State House	$3,543.09
Tax Commission	167.30
Treasury Department	340.68
Total	$302,486.40

CASH STATEMENT.

Cash Receipts.

Working capital	$45,000.00
Reimbursements from State Treasurer:	
October, 1913	20,573.27
November, 1913	28,310.40
December, 1913	44,041.02
January, 1914	40,303.19
February, 1914	28,499.57
March, 1914	51,974.23
April, 1914	39,711.38
May, 1914	17,575.01
June, 1914	41,735.64
July, 1914	29,231.49
August, 1914	97,070.83
Interest	231.57
Received from other sources	435.31
	$484,692.91

Cash Disbursements.

Paid for advances	$144,873.14
Paid for supplies	302,486.40
Interest paid to State Treasurer	231.57
Cash in bank August 31, 1914	37,101.80
	$484,692.91

Respectfully submitted.

GEORGE W. FOWLER.

Purchasing Agent.

BIENNIAL REPORT

OF THE

SUPERINTENDENT, TREASURER

AND

FINANCIAL AGENT

OF THE

N. H. STATE HOSPITAL

For the Period Ending August 31, 1914

MANCHESTER, N. H.
PRINTED BY JOHN B. CLARKE CO.
1915

OFFICERS.

C. P. Bancroft, M. D.....*Superintendent and Treasurer*

C. H. Doloff, M. D.....*Assistant Superintendent*

A. B. Howard, M. D.....*Assistant Physician*

H. E. Herrin, M. D.....*Assistant Physician*

E. H. Robbins, M. D.....*Assistant Physician*

A. J. Nugent, M. D.....*Assistant Physician*

A. F. Tandy.....*Steward*

Mrs. Marcia A. Dresser.....*Housekeeper*

Bertha M. Cornwall.....*Superintendent Dining Hall*

M. P. Ryan.....*Supervisor*

William M. Moore.....*Engineer*

REPORT OF THE SUPERINTENDENT.

To the Board of Control:

The superintendent presents to the Board of Control the seventy-first and seventy-second annual reports of the State Hospital for the years ending August 31, 1913, and August 31, 1914.

The year beginning September 1, 1912 commenced with 957 patients—500 men and 457 women. The number of patients remaining September 1, 1913, was 1,058—525 men and 533 women. The daily average for this year was 986.25 —505.36 men and 480.89 women. The death rate for this period was 10 per cent. The recovery rate for the year based on the number of different persons admitted was 20.94 per cent.

The year beginning September 1, 1913, commenced with 1,058 patients—525 men and 533 women. The number of patients remaining Sept. 1, 1914, was 1,110—555 men and 555 women. The daily average for this year was 1,085.7 —543.1 men and 542.6 women—an increase of practically 130 patients over those in the hospital at the close of the previous biennial period ending August 31, 1912. The death rate for this year was 8.8 per cent. The recovery rate for the year based on the number of different persons admitted was 21.82 per cent.

The Walker Building was opened for patients May 24, 1913. This building was intended for patients of the industrial class, those cases that are quiet and can be employed in various capacities both in and outside the wards. The capacity is at present 212, but when completed the Walker Building will care for 424 patients. Men are at present located on the first floor, and women on the second

floor. This arrangement, while disadvantageous in some respects, by careful management of entrances and exits, has caused little inconvenience. In the third floor of the wing all the male night watches of the hospital are domiciled, as well as the married employees of the Walker Building. In the third floor of the administration portion are placed all the women night nurses. Altogether this new building has housed 270 persons.

The Walker Building is a complete unit in itself and has proved easy of administration and economical in its operation. All the patients have some practical and useful occupation. Some work in the kitchen and congregate dining rooms, others perform some sort of housework; the women do all the sewing and mending of the hospital, besides engaging in rug making, knitting stockings, basketry and other useful and diversional employment. Several patients have been encouraged to cultivate small plots of ground raising flowers and garden vegetables. Dr. and Mrs. Herrin were placed in charge of this new unit, and have administered their trust most faithfully.

The biennial period has been free from any serious epidemic or other illness. There was a death from typhoid fever in October, 1912. This was one of the cases that appeared during the summer of 1912, since which time there has been no typhoid in the hospital. In 1913 there were two cases of diphtheria, both of which recovered. During the last year there has been an epidemic of scarlet fever, in which three employees and two patients were affected. There were no fatalities. In the case of all these infectious diseases one of the annex wards in the hospital building was vacated and permanently shut off from the other wards, making a most efficient isolation hospital for the care of these infectious cases.

Pellagra has appeared in the hospital. Between 1908 and the present time there have occurred eight cases, two of which are living, although in critical condition. This disease, which apparently made its first appearance in Italy and later became prevalent in the southern states in this coun-

try, has been slowly making its advance into the northern states. Definite scientific information concerning its causation and exact pathology is lacking. Various theories have been advanced—diseased maize and cereals, poor sanitary and hygienic conditions, hook worm—but none have satisfactorily accounted for its increasing prevalence and apparently steady advancement in northern latitudes. The cases in this hospital, with the exception of two living at the present time, have all proved fatal, and have occurred in widely separated portions of the institution. The disease has apparently occurred as a terminal feature in profound nervous and physical exhaustion among dementing psychoses. The progress after the appearance of positive diagnostic symptoms has been rapid. Treatment has been of no avail. The following table shows sex, date of admission and death of all the cases that have occurred at this hospital.

Woman admitted February 14, 1908. Died September 4, 1911.
Woman admitted June 29, 1910. Died July 24, 1913.
Man admitted November 8, 1913. Died July 1, 1914.
Woman admitted April 27, 1914. Died July 23, 1914.
Man admitted May 20, 1914. Died August 19, 1914.
Man admitted May 15, 1913. Died August 29, 1914.
Woman admitted June 17, 1910. Still at State Hospital.
Woman admitted May 31, 1913. Still at State Hospital.

Much has been accomplished the last two years in diversional occupation. In the men's work shop nearly all the hospital printing has been done, besides the manufacture of brooms, brushes, slippers and men's hose. With enlarged facilities and suitable equipment there is no reason why the hospital should not manufacture all its hose, men's shoes, slippers and outing shirts. At the present time the men's work shop has supplied its own brooms and brushes and in addition has provided these articles for many other institutions. It is extremely important that a new carpenter shop should be erected near the boiler house, and the present shop fire-proofed and converted into an industrial shop for various diversional occupations. Not only would such additional construction and equipment be of benefit to men patients, but would prove of distinct economic value to the

state. Moreover, the present carpenter shop and adjacent wooden building is a fire menace.

During the last two years the exteriors of the Bancroft Building, Twitchell House and Nurses' Home have been painted and repaired throughout. The lower ward in the Bancroft Building has been repainted and an entire new birch floor laid. New plumbing has been installed in wards 5 and 8. Extensive repairs have been made in the head farmer's house and the lodge at the main entrance. All the old and unsafe wiring has been renewed with the exception of Peaslee I, which will soon be completed. The new cow barn, for which the last legislature made an appropriation, will be completed by December 1. The verandas of the hospital and Walker buildings have been fly screened, as well as the entire Walker Building. As a result the fly nuisance has been perceptibly improved and the prevention of infection greatly enhanced.

Additional accommodations are imperatively needed at the present time for the disturbed women patients. Further crowding of the wards of the Kent Building is not only unsanitary, but throws out of balance proper classification of all the patients. The following statement discloses the situation as it exists at about the close of the present year:

STATEMENT OF NUMBER OF PATIENTS AT STATE HOSPITAL.

WARDS.	Total No. of Patients.	Capacity.	Excess of Capacity.	Beds Available.
Kent Building	75	63	12	....
Kent Annex	81	81	....	....
Fiske & Rumford	136	111	25	....
South Pavilion	55	40	15	....
Bancroft Building	37	44	....	7
Walker Building	198	212	....	14
Kimball & Chandler	70	87	....	17
North Pavilion	146	100	46	....
Twitchell House	28	30	....	2
Peaslee Building	89	24	65	....
Peaslee Annex	40	45	....	5
Hospital Building	147	156	....	9
	1,102	993	163	54

Excess of patients over capacity		163
Available beds at present time occur in quiet wards only		54
On Women's side at present time only vacant beds are as follows:		
Hospital Building	0	
Walker Building	9	
Bancroft Building	7	
Kent Building	0	
	—	16
Net shortage of beds in entire Hospital at present time		109
Kent Building (disturbed female) has normal capacity of		156
This capacity is exceeded by 12 patients in Kent Building and by 25 now in Fiske and Rumford, and 15 in South Pavilion that ought to be classified in Kent Building, making a total excess of Kent Building patients of		52
Entire Peaslee Building (disturbed male) has a normal capacity of		69
This capacity is exceeded by an excess of Peaslee Building patients of		60

While this statement shows that both the Kent and Peaslee Buildings for disturbed patients are crowed far beyond their capacity, I would suggest that the enlargement for women patients be undertaken at once and that an appropriation for this purpose be asked.

The work of the training school for nurses has progressed most satisfactorily under Miss Bertha Cornwall's able management. Through her efforts many desirable affiliations with New York General hospitals have been made, thereby greatly enriching the efficiency of the school.

The following changes have occurred in the medical staff. Dr. P. T. Haskell resigned to accept the position of assistant superintendent at the Eastern Maine Insane Hospital, and Dr. S. G. Davis resigned to enter upon the practice of general medicine in Nashua. These vacancies have been filled by Drs. Edmund H. Robbins and Dr. Arthur J. Nugent. During the summer months the position of interne has been filled most acceptably by Dr. Rolf C. Norris, who shortly returns to Hanover to assume the position of house officer at the Mary Hitchcock Hospital. The staff have been most faithful to their trust, for which the superintendent wishes to express his appreciation.

CHARLES P. BANCROFT,
Superintendent.

CONCORD, N. H., Nov. 6, 1914.

STATISTICAL TABLES FOR THE YEAR ENDING AUGUST 31, 1913.

TABLE NO. 1.

	Men.	Women.	Total.
Patients in hospital Sept. 1, 1912..	500	457	957
Cases admitted during the year...	203	209	412
Discharged within the year, including deaths	178	133	311
Discharged recovered from first attack	37	23	60
Discharged recovered from other than first attack.....	8	17	25
Discharged much improved.....	13	10	23
Discharged improved	15	11	26
Discharged not improved.....	10	13	23
Discharged not insane.....	3	0	3
Eloped, not returned.....	7	0	7
Deaths	85	59	144
Patients remaining Sept. 1, 1913...	525	533	1,058
Number of different persons under treatment during year.....	698	664	1,362
Number of different persons admitted during year.....	199	206	405
Number of different persons recovered during year.....	45	40	85
Daily average number of patients..	505.36	480.89	986.25

TABLE II.

SHOWING RESULTS IN ALL UNDER TREATMENT DURING THE YEAR.

	Of those in the hospital at the beginning of the year.			Of those admitted during year.			Total of both classes.		
	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
Discharged recovered	8	19	27	37	21	58	45	40	85
Discharged much improved	9	4	13	4	6	10	13	10	23
Discharged improved	7	2	9	8	9	17	15	11	26
Discharged not improved..	4	5	9	6	8	14	10	13	23
Discharged not insane.....	1	0	1	2	0	2	3	0	3
Discharged absconded	6	0	6	1	0	1	7	0	7
Deaths	44	35	79	41	24	65	85	59	144
Remaining improved	106	53	159	40	36	76	146	89	235
Remaining not improved..	321	348	669	57	97	154	378	445	823

TABLE III.

SHOWING NUMBER OF ADMISSIONS TO THIS HOSPITAL IN THOSE ADMITTED DURING THE YEAR.

	Men.	Women.	Total.
Admitted the first time	176	164	340
Admitted the second time	19	36	55
Admitted the third time	4	6	10
Admitted the fourth time	2	1	3
Admitted the fifth time	1	0	1
Admitted the sixth time	1	0	1
Admitted the seventh time	0	1	1
Admitted the thirteenth time	0	1	1
Total	203	209	412

TABLE IV.

SHOWING AGES OF THOSE ADMITTED DURING THE YEAR.

	Men.	Women.	Total.
Under fifteen	0	1	1
Fifteen to twenty	9	6	15
Twenty to twenty-five	18	10	28
Twenty-five to thirty	28	12	40
Thirty to thirty-five	19	23	42
Thirty-five to forty	24	14	38
Forty to forty-five	20	25	45
Forty-five to fifty	11	28	39
Fifty to sixty	29	38	67
Sixty to seventy	19	30	49
Seventy to eighty	20	17	37
Over eighty	5	5	10
Unknown	1	0	1
Total	203	209	412

TABLE V.

Showing Form of Disease in Those Admitted During the Year.

	Men.	Women.	Total.
Manic depressive	15	48	63
Dementia præcox	31	20	51
Acute alcoholism	38	5	43
Chronic alcoholism	12	3	15
Organic dementia	11	4	15
Secondary dementia (transfer from County Farms)	6	52	58
Senile dementia	25	23	48
Epileptic dementia	5	6	11
Alcoholic hallucinosis	3	0	3
Congenital imbecility	16	4	20
Epileptic imbecility	4	0	4
Epileptic insanity	1	0	1
Choreic insanity	1	0	1
Traumatic insanity	1	0	1
Presenile insanity	1	2	3
Paresis	14	8	22
Paranoia and allied states	3	10	13
Acute confusional insanity	3	3	6
Involutional melancholia	3	15	18
Epilepsy	3	0	3
Uremic delirium	1	2	3
Narcomania	1	1	2
Amentia	0	1	1
Hysteria	0	2	2
Psychasthenia	1	0	1
Idiocy	1	0	1
Not insane	3	0	3
Total	203	209	412

TABLE VI.

Showing Possible Causes or Predisposing Factors in Cases Admitted During Year.

	Men.	Women.	Total.
Alcohol	50	4	54
Heredity	20	38	58
Alcohol and heredity	2	0	2
Old age	8	11	19
Ill health	4	12	16
Overwork and worry	3	8	11
Grief and worry	3	6	9
Epilepsy	6	3	9
Apoplexy	4	0	4
Syphilis	3	1	4
Trauma	2	1	3
Psychic trauma	2	3	5
Sunstroke	4	0	4
Morphine	2	1	3
Menopause	0	5	5
Puerperal	0	1	1
Surgical operation	0	1	1
Overstudy	1	0	1
Loss of property	0	1	1
Previous attack	1	1	2
No possible cause shown	88	112	200
Total	203	209	412

TABLE VII.

Showing Civil Condition of Those Admitted During the Year.

	Men.	Women.	Total.
Married	84	83	167
Single	96	74	170
Widowed	21	41	62
Divorced	2	7	9
Unknown	0	4	4
Total	203	209	412

TABLE VIII.

SHOWING OCCUPATION OF THOSE ADMITTED DURING THE YEAR.

	Men.	Women.	Total.
Housework	0	109	109
No occupation	0	54	54
Mill operative	17	23	40
Shoemaker	12	1	13
Paper maker	1	1	2
Peddler	0	1	1
Canvasser	0	1	1
Cook	2	1	3
Matron	0	1	1
Bank clerk	0	1	1
Bookkeeper	0	1	1
Office clerk	0	1	1
Nurse	0	1	1
Nurse maid	0	1	1
Tailoress	0	2	2
Seamstress	0	2	2
Dressmaker	0	2	2
Pianist	0	1	1
Teacher	0	2	2
Laundress	1	1	2
Laborer	57	2	59
Currier	1	0	1
Carriage trimmer	1	0	1
Coal bearer	1	0	1
Baker	1	0	1
Electrician	1	0	1
Bartender	1	0	1
Elevator man	1	0	1
Stenographer	1	0	1
Hostler	1	0	1
Conductor	1	0	1
Signal man on a derrick	1	0	1
Watchman	1	0	1
Cooper	1	0	1
Shoe dealer	1	0	1
Printer	1	0	1
Barber	1	0	1
Gardener	1	0	1
Proprietor of garage	1	0	1
Newspaper reporter	1	0	1
Clothing dealer	1	0	1
Minister	1	0	1
Confectioner	1	0	1
Wood chopper	1	0	1
Farmer	27	0	27

TABLE VIII.—*Concluded.*

	Men.	Women.	Total.
Blacksmith	4	0	4
Wood dealer	2	0	2
Merchant	2	0	2
Railroad man	2	0	2
Teamster	3	0	3
Druggist	2	0	2
Carpenter	4	0	4
Machinist	4	0	4
Clerk	5	0	5
Pattern maker	2	0	2
Painter	3	0	3
Stone cutter	4	0	4
Undertaker	2	0	2
Mason	6	0	6
Brick maker	1	0	1
Not known	17	0	17
Total	203	209	412

TABLE IX.

Showing Nativity of Those Admitted During the Year.

	Men.	Women.	Total.
Ireland	7	26	33
Canada	41	25	66
New Hampshire	85	91	176
United States (state unknown)	16	17	33
Vermont	9	6	15
Maine	4	5	9
New York	2	4	6
Nova Scotia	1	5	6
Massachusetts	7	6	13
Scotland	0	3	3
Greece	0	2	2
Venezuela	0	1	1
Connecticut	1	1	2
Germany	0	1	1
Italy	3	1	4
Syria	0	1	1
Nebraska	0	1	1
Finland	3	1	4
Russia	1	1	2
Sweden	2	1	3
New Brunswick	0	2	2
Not known	7	5	12
England	6	3	9
China	1	0	1
Rhode Island	1	0	1
Poland	1	0	1
Ohio	1	0	1
Mississippi	1	0	1
Prince Edward Island	1	0	1
British Columbia	1	0	1
Portugal	1	0	1
Total	203	209	412

TABLE X.

SHOWING RESIDENCE OF THOSE ADMITTED DURING THE YEAR.

	Men.	Women.	Total.
Belknap County	6	1	7
Carroll County	5	7	12
Cheshire County	8	15	23
Coös County	14	8	22
Grafton County	15	14	29
Hillsborough County	71	78	149
Merrimack County	42	25	67
Rockingham County	21	37	58
Strafford County	13	18	31
Sullivan County	7	6	13
Not known (prison transfer)	1	0	1
Total	203	209	412

TABLE XI.

SHOWING BY WHOM SUPPORTED.

	Men.	Women.	Total.
Private	37	36	73
Private with aid	26	42	68
State	139	129	268
County	1	1	2
Town or city	0	1	1
Total	203	209	412

TABLE XII.

SHOWING DEATHS DURING YEAR, AND THEIR CAUSES.

	Men.	Women.	Total.
Arterio sclerosis	3	3	6
Entercolitis	4	8	12
Gastritis and enteritis	0	2	2
Amentia	1	1	2
Exhaustion in melancholia	1	5	6
Cardiac embolism	0	1	1
Infective diarrhœa	0	1	1
Exhaustion in senile dementia	10	8	18
Fracture of femur	0	3	3
Valvular disease of the heart	0	5	5
Exhaustion in dementia præcox	3	2	5
Epilepsy	4	6	10
Pellagra	0	1	1
Oedema of the lungs	0	1	1
Hemorrhage of the bowels	0	1	1
Chronic interstitial nephritis	8	3	11
Cerebral hemorrhage	12	1	13
Tuberculosis	3	1	4
Anæmia	0	1	1
Broncho pneumonia	4	1	5
Exhaustion in secondary dementia	1	1	2
Acute mania	1	3	4
Exhaustion in choreic insanity	1	0	1
Uræmic convulsion	1	0	1
Exhaustion in organic dementia	1	0	1
Cystitis	1	0	1
Peritonitis	1	0	1
Typhoid fever	2	0	2
Huntington's chorea	1	0	1
Suicide	2	0	2
Oedema of brain	1	0	1
Paresis	6	0	6
Lobar pneumonia	1	0	1
Surgical operation	1	0	1
Erysipelas	3	0	3
Septicemia	1	0	1
Acute alcoholism	2	0	2
Chronic diffuse nephritis	5	0	5
Total	85	59	144

TABLE XIII.

Showing Ages at Time of Death.

	Men.	Women.	Total.
Under twenty years	0	1	1
Twenty to thirty years	4	4	8
Thirty to forty years	15	12	27
Forty to fifty years	10	10	20
Fifty to sixty years	17	8	25
Sixty to seventy years	17	7	24
Seventy to eighty years	17	12	29
Eighty to ninety years	3	4	7
Ninety to one hundred years	1	1	2
Not known	1	0	1
Total	85	59	144

STATISTICAL TABLES FOR YEAR ENDING AUGUST 31, 1914.

TABLE I.

	Men.	Women.	Total.
Patients in hospital September 1, 1913	525	533	1,058
Cases admitted during the year	207	159	366
Discharged within the year, including deaths	177	137	314
Discharged recovered from first attack	30	24	54
Discharged recovered from other than first attack	14	11	25
Discharged much improved	14	15	29
Discharged improved	22	22	44
Discharged not improved	9	13	22
Discharged not insane	5	1	6
Discharged eloped	4	0	4
Deaths	79	51	130
Patients remaining September 1, 1914	555	555	1,110
Number of different persons under treatment during the year	727	682	1,409
Number of different persons admitted during the year	203	154	357
Number of different persons recovered during the year	44	34	78
Daily average number of patients	543.1	542.6	1,085.7

TABLE II.

SHOWING RESULTS IN ALL UNDER TREATMENT DURING THE YEAR.

	Of those in hospital at beginning of year.			Of those admitted during year.			Total of both classes.		
	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
Discharged recovered	16	19	35	28	16	44	44	35	79
Discharged much improved	5	10	15	9	5	14	14	15	29
Discharged improved	7	13	20	15	9	24	22	22	44
Discharged not improved	5	5	10	4	8	12	9	13	22
Discharged not insane	0	0	0	5	1	6	5	1	6
Discharged eloped	1	0	1	3	0	3	4	0	4
Died	43	35	78	36	16	52	79	51	130
Remaining improved	33	47	80	34	35	69	67	82	149
Remaining not improved	415	404	819	73	69	142	488	473	961

TABLE III.

ADMISSIONS AND DISCHARGES FROM THE BEGINNING OF THE HOSPITAL.

	Men.	Women.	Total.
Admitted	5,958	5,401	11,359
Discharged	5,403	4,846	10,249
Discharged recovered	1,632	1,537	3,169
Discharged improved	1,162	1,145	2,307
Discharged not improved	920	922	1,842
Discharged not insane	57	31	88
Discharged unknown	49	39	88
Discharged eloped	94	4	98
Died	1,489	1,168	2,657

TABLE IV.

SHOWING NUMBER OF ADMISSIONS IN THOSE ADMITTED DURING THE YEAR.

	Men.	Women.	Total.
First admission	178	125	303
Second admission	23	24	47
Third admission	3	4	7
Fourth admission	1	2	3
Fifth admission	2	1	3
Eighth admission	0	1	1
Ninth admission	0	1	1
Fourteenth admission	0	1	1
Totals	207	159	366

TABLE V.

Showing Ages of Those Admitted During the Year.

	Men.	Women.	Total.
From ten to fifteen years.....	2	1	3
fifteen to twenty years....	11	6	17
twenty to twenty-five years	15	12	27
twenty-five to thirty years	23	14	37
thirty to thirty-five years	20	24	44
thirty-five to forty years	25	18	43
forty to forty-five years..	19	16	35
forty-five to fifty years...	13	14	27
fifty to sixty years.....	30	24	54
sixty to seventy years....	29	18	47
seventy to eighty years	15	10	25
Over eighty years.....	5	2	7
Total	207	159	366

TABLE VI.

SHOWING FORM OF DISEASE IN THOSE ADMITTED DURING THE YEAR.

	Men.	Women.	Total.
Manic depressive	26	37	63
Dementia præcox	30	20	50
Senile dementia	26	17	43
Paresis	23	9	32
Involutional melancholia	11	13	24
Congenital imbecility	9	13	22
Acute alcoholism	12	4	16
Paranoia and allied states	3	11	14
Alcoholic hallucinosis	14	0	14
Organic dementia	8	3	11
Presenile insanity	2	8	10
Alcoholic dementia	7	2	9
Acute confusional	1	8	9
Chronic alcoholism	6	2	8
Epileptic insanity	5	2	7
Epileptic dementia	3	3	6
Morphinomania	4	1	5
Constitutional psychopath	2	0	2
Pellagrous insanity	1	1	2
Cerebral arterio sclerosis	1	1	2
Epileptic imbecility	1	1	2
Hysterical insanity	0	2	2
Alzhiemers disease	1	0	1
Traumatic insanity	1	0	1
Cerebral syphilis	1	0	1
Idiocy	1	0	1
Psychic epilepsy	1	0	1
Prison psychosis	1	0	1
Hypochondriasis	1	0	1
Thyroid psychosis	1	0	1
Not insane	4	1	5
Total	207	159	366

TABLE VII.

Showing Probable Causes or Predisposing Factors in Those Admitted During Year.

	Men.	Women.	Total.
Heredity	36	44	80
Alcohol	42	12	54
Age	23	14	37
Syphilis	24	5	29
Overwork and worry	10	17	27
Epilepsy	9	7	16
Previous attacks	2	5	7
Injury	6	1	7
Morphine	4	2	6
Childbirth	0	6	6
Prison life	5	0	5
Ill health	3	2	5
Menopause	0	3	3
Fright	0	3	3
Arterio selerosis	2	0	2
No possible cause shown	41	38	79
Total	207	159	366

TABLE VIII.

Showing Civil Condition of Those Admitted During the Year.

	Men.	Women.	Total.
Married	86	76	162
Single	93	51	144
Widowed	25	25	50
Divoreed	3	7	10
Total	207	159	366

TABLE IX.

SHOWING OCCUPATIONS OF THOSE ADMITTED DURING THE YEAR.

	Men.	Women.	Total.
Actor	1	0	1
Awning maker	1	0	1
Business man	7	0	7
Baker	1	0	1
Barber	2	0	2
Blacksmith	1	0	1
Bookkeeper	1	2	3
Brickmason	1	0	1
Carpenter	12	0	12
Catholic Sister	0	1	1
Chauffeur	2	0	2
Call boy	1	0	1
Cooper	1	0	1
Chairseater	1	0	1
Clerk	4	0	4
Cook	2	0	2
Dressmaker	0	2	2
Druggist	2	0	2
Electric engineer	1	0	1
Fireman, stationary	2	0	2
Freight handler	1	0	1
Farmer	26	0	26
Grocer	1	0	1
Housework	0	101	101
Laborer	39	0	39
Lumberman	2	0	2
Loom fixer	1	0	1
Mill operative	29	18	47
Mate, U. S Navy	1	0	1
Musician	2	0	2
Machinist	3	0	3
Nurse	0	2	2
No occupation	18	27	45
Night watchman	1	0	1
Overseer in shop	1	0	1
Painter	6	0	6
Peddler	1	0	1
Plasterer	1	0	1
Physician	2	0	2
Railroad man	2	0	2
Shoe worker	14	1	15
Soldier	1	0	1
Stone cutter	2	0	2
Salesman	1	0	1
School teacher	0	1	1
School girl	0	1	1

	Men.	Women.	Total.
Seamstress	0	1	1
Trance medium	1	0	1
Tailor	1	0	1
Teamster	2	0	2
Telegraph operative	1	0	1
Waiter	1	1	2
Wood turner	1	0	1
Not known	2	1	3
Total	207	159	366

TABLE X.

Showing Nativity of Those Admitted During the Year.

	Men.	Women.	Total.
New Hampshire	92	80	172
Canada	34	21	55
Massachusetts	16	12	28
Maine	19	5	24
Ireland	9	13	22
Vermont	9	10	19
England	4	3	7
Russia	3	2	5
Poland	4	0	4
Pennsylvania	2	2	4
Germany	3	1	4
Scotland	1	2	3
Finland	1	2	3
New York	2	1	3
Italy	2	0	2
Syria	2	0	2
Rhode Island	1	1	2
Illinois	1	1	2
Austria	1	0	1
Sweden	1	0	1
Switzerland	0	1	1
Egypt	0	1	1
Connecticut	0	1	1
Total	207	159	366

TABLE XI.

Showing Residence of Those Admitted During the Year.

	Men.	Women.	Total.
Belknap County	9	9	18
Carroll County	8	5	13
Cheshire County	13	7	20
Coös County	10	2	12
Grafton County	17	12	29
Hillsborough County	73	59	132
Merrimack County	27	28	55
Rockingham County	22	20	42
Strafford County	13	9	22
Sullivan County	10	8	18
Prison transfers	5	0	5
Total	207	159	366

TABLE XII.

Showing by Whom Supported.

	Men.	Women.	Total.
State	141	94	235
Private	41	33	74
Private with aid	22	31	53
Town or city	3	0	3
County	0	1	1
Total	207	159	366

TABLE XIII.

Showing Deaths and Their Causes.

	Men.	Women.	Total.
Cerebral hemorrhage	16	5	21
Arterio sclerosis	8	5	13
Paresis	10	4	14
Chronic interstitial nephritis	9	2	11
Chronic diffuse nephritis	0	3	3
Valvular disease of heart	5	3	8
Myocarditis	0	1	1
Endocarditis	1	0	1
Pericarditis	1	0	1
Cardiac embolism	1	0	1
Acute dilatation of heart	0	1	1
Lobar pneumonia	3	2	5
Broncho pneumonia	1	0	1
Hypostatic pneumonia	0	1	1
Gastro-enteritis	3	4	7
Acute indigestion	1	0	1
Intestinal obstruction	0	3	3
Exhaustion in senile dementia	3	4	7
Exhaustion in acute mania	0	1	1
Exhaustion in melancholia	0	1	1
Exhaustive psychosis	3	2	5
Pellagra	3	1	4
Tuberculosis of lungs	2	1	3
Tuberculous pleurisy	0	1	1
General tuberculosis	1	0	1
Organic brain disease	2	1	3
Cancer of colon	0	1	1
Gastric ulcer	1	0	1
Septic meningitis	0	1	1
Epilepsy	1	0	1
Uræmic convulsions	0	1	1
Diabetes	1	0	1
Suicide	1	0	1
Erysipelas	1	0	1
Pyonephrosis	1	0	1
Tonsilitis	0	1	1
Heat exhaustion	0	1	1
Total	79	51	130

TABLE XIV.

Showing Ages at Time of Death.

	Men.	Women.	Total.
Between twenty and thirty years	1	3	4
thirty and forty years..	13	6	19
forty and fifty years...	8	7	15
fifty and sixty years...	16	7	23
sixty and seventy years	23	11	34
seventy and eighty years	13	9	22
eighty and ninety years	5	7	12
Over ninety years.....	0	1	1
Total	79	51	130

TABLE XV.

STATISTICS OF ADMISSIONS, DISCHARGES, AND DEATHS FROM THE OPENING OF THE HOSPITAL.

Year.	Admitted.	Discharged and died.	Recovered.	Improved.	Unimproved.	Died.	Whole number under treatment.	Remaining at end of hospital year.	Daily Averages of the Hospital.		
									Men.	Wom.	Total.
1843	76	29	12	10	6	1	76	47	....	....	.....
1844	104	81	37	20	19	5	151	70	....	....	.....
1845	88	82	37	17	22	6	158	76	....	....	.....
1846	98	76	26	23	16	11	174	98	....	....	.....
1847	89	87	38	17	23	9	187	100	....	....	.....
1848	92	83	29	20	26	8	192	109	....	....	.....
1849	81	76	36	15	11	14	190	114	....	....	.....
1850	103	90	45	18	20	7	217	127	....	....	.....
1851	88	98	45	25	16	12	215	117	....	....	.....
1852	107	106	66	13	16	11	224	118	....	....	.....
1853	132	107	65	25	11	8	250	143	....	....	.....
1854	141	123	63	24	22	14	284	161	....	....	.....
1855	95	91	50	20	9	12	246	155	....	....	.....
1856	85	96	66	13	7	10	250	154	....	....	.....
1857	97	81	47	15	7	12	251	170	....	....	.....
1858	76	77	34	20	5	18	246	169	....	....	.....
1859	98	85	31	22	18	14	267	182	....	....	.....
1860	85	83	38	16	12	17	267	184	94.0	88.0	182.0
1861	106	94	34	34	10	16	290	196	90.0	100.0	190.0
1862	86	94	42	32	7	13	282	188	88.7	105.7	101.4
1863	101	85	30	32	17	16	289	204	87.4	105.9	103.3
1864	105	92	36	16	17	23	309	217	99.4	107.4	206.8
1865	107	102	42	23	14	22	324	223	102.5	125.9	218.4
1866	104	91	26	28	16	21	327	236	106.3	122.6	228.9
1867	117	107	39	24	27	17	353	246	119.3	122.6	241.9
1868	118	129	51	39	18	21	364	235	118.5	121.27	239.77
1869	95	93	42	20	9	22	330	237	113.7	129.9	243.6
1870	130	114	37	34	20	23	367	253	123.1	125.9	249.0
1871	135	163	65	37	29	32	388	225	119.8	123.44	242.82
1872	152	123	55	31	16	21	377	254	109.36	125.19	234.55
1873	194	172	61	51	27	33	448	273	127.8	139.5	267.3
1874	140	137	42	44	27	22	416	281	140.4	127.5	267.9
1875	120	140	53	37	30	20	401	261	136.6	138.1	274.7
1876	140	122	35	34	27	26	401	279	121.4	139.1	260.5
1877	119	118	36	38	27	17	398	280	124.2	150.3	274.5
1878	114	128	35	36	30	17	394	276	128.9	143.8	272.7
1879	73	81	27	23	8	23	349	268	126.3	143.8	290.1
1880	111	94	28	27	22	17	379	285	127.4	147.6	275.0
1881	134	117	33	39	23	22	419	302	133.3	158.6	291.9
1882	104	121	38	26	27	30	406	285	131.0	159.1	290.1
1883	133	123	41	23	34	25	418	295	120.3	164.1	284.4
1884	141	127	18	41	44	24	436	309	124.3	169.5	293.8
1885	138	122	30	20	36	36	447	322	128.3	181.9	310.2
1886	138	143	43	30	34	34	460	317	139.82	182.37	322.19
1887	143	128	32	28	28	33	460	328	137.22	184.12	321.34
1888	137	125	33	26	35	28	465	339	150.49	183.59	334.08
1889	155	158	41	38	34	36	494	337	161.06	175.80	336.86
1890	276	223	79	28	63	53	602	364	166.52	184.57	351.09
1891	173	165	42	40	37	38	527	372	175.62	184.99	360.61
1892	169	181	51	39	40	42	531	359	181.40	182.38	363.78
1893	166	154	47	35	34	37	508	368	183.72	193.63	369.02
1894	187	152	52	33	27	35	542	402	190.14	193.35	383.49
1895	175	165	55	45	27	36	566	414	199.57	204.79	404.36

TABLE XV.—*Concluded.*

Year.	Admitted.	Discharged and died.	Recovered.	Improved.	Unimproved.	Died.	Whole number under treatment.	Remaining at end of hospital year.	Daily Averages of the Hospital.		
									Men.	Wom.	Total.
1896	181	171	42	44	34	40	586	422	201.31	210.65	411.96
1897	147	147	38	30	30	36	561	422	210.26	214.60	424.86
1898	150	163	46	40	34	33	567	409	201.93	210.71	412.64
1899	179	161	48	26	34	39	577	427	202.38	220.88	423.26
1900	149	151	37	37	26	49	568	425	198.42	221.71	420.13
1901	202	193	52	56	31	49	617	434	203.12	222.53	425.65
1902	247	217	76	53	25	56	670	464	223.86	242.49	466.35
1903	240	215	52	41	66	50	702	490	232.21	242.75	475.16
1904	303	213	57	46	32	69	782	580	260.26	257.63	517.89
1905	290	227	61	46	26	77	852	643	321.60	294.09	615.69
1906	234	209	58	29	34	73	864	668	343.75	308.27	652.02
1907	278	238	63	52	18	91	970	708	361.68	327.49	689.17
1908	299	176	56	28	12	68	1,010	831	390.17	326.74	716.91
1909	292	248	65	43	19	112	1,114	875	465.17	399.16	864.33
1910	293	259	66	33	23	131	1,168	909	467.08	421.15	888.23
1911	301	272	69	45	18	133	1,203	938	482.94	438.57	921.51
1912	327	308	97	35	20	139	1,517	957	496.4	459.5	955.9
1913	412	311	85	49	23	144	1,362	1,058	505.36	480.89	986.25
1914	366	314	79	73	22	136	1,409	1,110	543.1	542.6	1085.7

PRODUCTS OF THE FARM, 1913.

623	bunches	asparagus,	$0.22	$137.06
7,325	pounds	rhubarb,	.01	73.25
11,425	heads	lettuce,	.04	457.00
1,500	dozen	cucumbers,	.24	360.00
173	bushels	cucumbers (pickling),	1.30	224.90
628	bushels	turnips,	1.00	628.00
31	tons	winter squash,	23.00	713.00
425	bushels	summer squash,	.30	127.50
93	bushels	peas,	1.25	116.25
437	bushels	spinach,	.50	218.50
625	bushels	string beans,	2.00	1,250.00
323	bushels	shell beans,	2.25	726.75
237	bushels	ripe tomatoes,	.60	142.20
200	bushels	green tomatoes,	1.35	270.00
4,725	dozen	sweet corn,	.15	708.75
22	tons	sweet corn fodder,	8.00	176.00
1,800	heads	early cabbage,	.08	144.00
400	heads	red cabbage,	.12	48.00
435	heads	cauliflower,	.16	69.60
327	bushels	beets,	.85	277.95
248	bushels	beet greens,	.15	37.20
1,250	heads	celery (early),	.15	187.50
5,000	heads	celery (late),	.21	1,050.00
467	bushels	onions,	1.00	467.00

390 bushels	parsnips,	1.25	487.50
6 bushels	peppers,	1.25	7.50
420 bushels	carrots,	.75	315.00
10 bushels	parsley,	.40	4.00
4,500 cakes	ice,	.15	675.00
40 tons	hay,	18.00	720.00
10 tons	bedding,	10.00	100.00
	cows sold,	....	175.00
	empty barrels sold,	....	82.25
	hides sold,	....	18.00
	harness sold,	....	13.00
	pigs sold,	....	50.00
1,201 pounds	beef consumed,	.09	108.09
22,565 pounds	pork consumed,	.14½	3,271.93
48,980 quarts	milk,	.06	2,938.80
2,100 bushels	potatoes,	.70	1,470.00
			$19,046.48
Total products of Sunnyside Farm,			8,918.19
Total products of Sunnyside and Main Farms,			$27,964.67

PRODUCTS OF THE FARM AT SUNNYSIDE, 1913.

4	pigs,	$0.08	$82.40
2,696 pounds	chickens (271),	.16	431.36
150 gallons	maple syrup,	1.00	150.00
912 quarts	strawberries,	.10	91.20
2,720 quarts	raspberries,	.18	489.60
240 quarts	blackberries,	.10	24.00
176 quarts	currants,	.10	17.00
60 barrels	apples,	2.50	150.00
40 bushels	cider apples,	.20	8.00
3,146 bushels	potatoes,	.60	1,887.60
20 bushels	beets,	.85	17.00
18 bushels	carrots,	.75	13.50
14 bushels	parsnips,	1.25	17.50
12 bushels	cucumbers,	4.50	54.00
10 bushels	peas,	1.25	12.50
8 bushels	tomatoes,	.60	4.80
8 bushels	string beans,	2.00	16.00
12 bushels	shell beans,	2.25	27.00
30 bushels	turnips,	1.00	30.00
50 bushels	lettuce,	.65	32.50
600 dozen	sweet corn,	.15	90.00
1,000 pounds	rhubarb,	.01	10.00
50 bunches	radishes,	.05	2.50
14,000 heads	cabbage,	.08	1,120.00
45 tons	hay,	18.00	810.00
2 tons	corn fodder,	8.00	16.00
6,000 quarts	milk,	.06	360.00
358 cakes	ice,	.15	53.70
7,275½ dozen	eggs,	.35	2,546.43
1½ bushels	Japanese plums,	2.00	3.00
10 tons	bedding meadow hay,	10.00	100.00
50 cords	wood (cut),	5.00	250.00
			$8,918.19

PRODUCTS OF THE FARM, 1914.

670	bunches	asparagus,	0.20	$134.00
8,000	pounds	rhubarb,	.02½	200.00
13,000	heads	lettuce,	.04	520.00
1,625	dozen	cucumbers,	.22	357.50
180	bushels	pickling cucumbers,	1.25	225.00
560	bushels	white turnips,	1.35	756.00
137	bushels	rutabagas,	1.40	191.80
32	tons	winter squash,	25.00	800.00
390	bushels	summer squash,	.30	117.00
85	bushels	peas,	1.00	85.00
370	bushels	spinach,	.50	185.00
365	bushels	string beans,	.85	310.25
230	bushels	shell beans,	1.60	368.00
150	bushels	ripe tomatoes,	1.50	225.00
315	bushels	green tomatoes,	1.35	425.25
5,000	dozen	ears corn,	.15	750.00
2,000	heads	early cabbage,	.08	160.00
8,000	heads	late cabbage,	.09	720.00
400	heads	red cabbage,	.12	48.00
375	heads	cauliflower,	.16	60.00
632	bushels	beets,	.50	316.00
340	bushels	beet greens,	.15	51.00
1,500	heads	early celery,	.14	210.00
5,250	heads	late celery,	.22	1,155.00
730	bushels	onions,	1.00	730.00
380	bushels	parsnips,	1.00	380.00
22	bushels	peppers,	1.25	27.50
347	bushels	carrots,	.70	242.90
10	bushels	parsley,	.50	5.00
4,550	cakes	ice,	.15	682.50
75	tons	hay,	18.00	1,350.00
8	tons	bedding,	9.00	72.00
260	tons	ensilage,	8.00	2,080.00
50,472	quarts	milk,	.05	2,523.60
		cows sold,	....	280.00
		barrels sold,	....	45.00
		pigs sold,	....	18.40
1,453	pounds	beef consumed,	.09	130.77
26,437	pounds	pork consumed,	.15½	4,097.74
1	pair	oxen sold,	....	175.00
1		wagon sold,	....	20.00
		part of old harness sold,	....	1.00
		evaporator sold,	....	35.00
				$21,266.21
		Products of the farm at Sunnyside,		10,032.74
		Products of Sunnyside and Main Farms,		$31,298.95

PRODUCTS OF THE FARM AT SUNNYSIDE, 1914.

448	pounds	chickens,	$0.20	$89.60
211	gallons	maple syrup,	1.10	232.10
6,976	quarts	strawberries,	.19	1,325.44
2,240	quarts	raspberries,	.18	403.20
224	quarts	currants,	.10	22.40
91	barrels	apples,	1.00	91.00
110	bushels	cider apples,	.10	11.00
4,513	bushels	potatoes,	.70	3,159.10
34½	bushels	beets,	.50	17.25
17½	bushels	carrots,	.70	12.25
16	bushels	parsnips,	1.00	16.00
15	bushels	cucumbers,	1.80	27.00
21	bushels	peas,	1.00	21.00
6	bushels	tomatoes,	1.50	9.00
23	bushels	string beans,	.85	19.55
18	bushels	shell beans,	1.60	28.80
41	bushels	turnips,	1.25	51.25
300	heads	lettuce,	.04	12.00
720	dozen	sweet corn,	.15	108.00
800	pounds	rhubarb,	.02½	20.00
100	bunches	radishes,	.04	4.00
5,000	heads	cabbage,	.09	450.00
38	tons	hay,	18.00	684.00
15	tons	oat fodder,	8.00	120.00
2	tons	corn fodder,	8.00	16.00
8,500	quarts	milk,	.05	425.00
370	cakes	ice,	.15	55.50
7,028	dozen	eggs,	.35	2,459.80
42	bushels	plums,	1.25	52.50
18	cords	wood (cut),	5.00	90.00
				$10,032.74

FINANCIAL STATEMENT FOR THE BIENNIAL PERIOD ENDING AUGUST 31, 1914.

Receipts.	1913.	1914.
Board of private patients	$50,520.08	$50,758.31
Board of town patients	634.84	905.01
Board of county patients	15.99	36.57
Income from John Conant Fund	256.00	256.00
Income from Isaac Adams Fund	162.00	162.00
From Fund for Aid of Indigent Insane	8,000.00	8,000.00
From Fund for Improvement of Grounds	500.00	500.00
For articles sold	4,962.62	3,373.92
For articles from Industrial Department	449.42	1,153.83
For articles sold other institutions:		
Cheese	36.98	27.88
Flour	47.00	137.40
Sugar	28.29	39.86
Meat	.....	809.66
Sundries	.....	54.22
Horses	.....	425.00
From Industrial Department	.....	222.30
From Corey Hill Hospital, services of nurses	607.18	.....
From other sources	287.07	342.13
From refund board of Henry Rich	.....	643.66
From maintenance appropriation	172,922.14	197,635.63
Total receipts for year	$239,429.91	$265,483.38
Total expenditures	$239,429.91	$265,483.38

GENERAL STATEMENT.

	1913.	1914.
Average number of patients	986.25	1,086.00
Gross expenditures	$239,429.91	$265,483.38
Weekly per capita cost	4.66	4.70
Receipts from sales	5,524.31	6,244.07
A weekly per capita of	.107	.11
All other institution receipts	60,983.16	61,603.68
A weekly per capita of	1.189	1.091
Average weekly per capita cost to state for support of patients and maintenance of property after crediting all income for year	3.364	3.50

ANALYSIS OF EXPENSES.

Salaries, Wages and Labor:	1913	1914
Medical Services	$9,422.90	$9,679.02
Ward Services (Male)	15,872.27	18,398.93
(Female)	20,611.74	21,445.06
General Administration	34,907.94	37,209.07
Repairs and Improvements	7,181.56	10,114.48
Farm, Stable and Grounds	6,388.04	6,857.21
	$94,384.45	$103,703.77

Food:		
Butter	$7,256.14	$9,081.56
Butterine	3,179.10	2,402.50
Beans	1,868.40	714.73
Bread and Crackers	1,017.58	631.31
Broma and Cocoa	160.29	65.47
Coffee	1,206.64	1,495.48
Cereals, Rice and Meal	1,482.58	1,007.12
Cheese	943.74	1,399.13
Eggs	1,678.94	1,558.56
Flour	5,584.15	4,416.79
Fish	3,115.62	2,235.52
Fruit (dried and fresh)	2,038.98	426.27
Lard	1,317.87	1,506.25
Meat	12,730.01	16,045.81
Milk	3,807.13	5,891.05
Molasses and Syrup	604.22	300.93
Potatoes	1,716.33	758.35
Sugar	3,341.45	5,199.05
Tea	987.29	1,068.18
Vegetables	51.57	16.00
Groceries (sundries)	6,960.17	8,161.21
	$61,048.20	$64,381.27

Clothing and Clothing Material:		
Boots, Shoes and Rubbers....	$1,431.15	$1,509.28
Clothing	2,297.09	5,139.42
Dry Goods for Clothing and Small Wares.....	1,512.44	4,399.79
Hats and Caps.....	18.25	.....
Sundries	31.43	.....
	$5,490.36	$11,348.49
Furnishings:		
Beds, Bedding, Table Linen..	$2,399.66	$4,135.95
Brushes, Brooms, etc.....	178.25	.....
Carpets, Rugs, etc.....	271.92	97.30
Crockery, Glassware, Cutlery..	936.81	739.84
Furniture and Upholstery....	363.81	165.20
Kitchen Furnishings.....	3,176.52	810.48
Sundries	1,887.44	2,082.36
	$9,214.41	$8,031.13
Heat, Light and Power:		
Coal	$15,268.25	$22,978.86
Freight on Coal.....	3,414.71	12,256.10
Gas	547.44	266.40
Lamps (electric).....	581.99	554.25
Oil (illuminating).....	93.42	173.01
Oil (lubricating).....	235.67	255.89
Refrigeration	27.55	.....
Sundries	8.00	86.59
	$20,177.03	$36,571.10
Repairs and Improvements:		
Brick	$30.25	$10.25
Cement, Lime and Plaster....	264.22	121.01
Doors, Sashes, etc.....	79.81	.....
Electrical Work and supplies..	1,629.43	898.03

Hardware, Iron, Steel, etc....	$964.10	$569.95
Lumber	2,293.57	608.25
Machinery, etc.....	288.93	.....
Mechanics and Laborers not on Payroll	5,164.68	1,749.18
Paints, Oils, Glass, etc.....	2,014.22	1,914.88
Plumbing, Steam Fitting and Supplies	2,272.96	1,789.85
Roofing and Materials.....	172.29	654.54
Sundries	555.42	1,001.88
	$15,729.91	$9,317.85
Farm, Stable and Grounds:		
Blacksmith and Supplies.....	493.79	290.05
Carriages, Wagons, etc., and Repairs	127.45	975.00
Cows	468.00	125.00
Hens	.....	483.65
Fertilizers, Vines, Seeds, etc..	2,465.19	1,171.61
Gasoline	149.71	487.87
Hay, Grain, etc.....	6,425.49	3,731.45
Harnesses and Repairs.....	111.73	27.61
Mechanics and Laborers not on Payroll	242.33	103.50
Other Live Stock.....	117.00	35.00
Motor Truck and Supplies....	337.13	4,266.47
Tools, Farm Machines, etc....	444.76	139.25
Veterinary Services and Medicines	261.99	106.04
Sundries	1,589.98	580.33
	$13,234.55	$12,522.83
Miscellaneous:		
Articles Furnished and Charged	$1,662.93	$1,596.38
Books, Periodicals, etc.....	211.95	176.55

Chapel Services and entertainments	$1,356.68	$1,168.49
Deportation of Patients	24.21	5.36
Freight, Expressage and Transportation	988.39	1,048.39
Funeral Expenses	449.00	216.00
Laundry Supplies	957.93	979.96
Laundry Soap	469.31	173.20
Medical Attendance (extra)	102.56	155.00
Medicines and Hospital Supplies	2,281.71	2,515.38
Postage	717.07	335.90
Printing and Binding Annual Report	251.96	.....
Patients' Work Shop	2,073.43	3,967.85
Return of Runaways	50.44	14.20
Rental of Coal Shed	600.01	500.00
Soap	236.31	913.47
Stationery and Office supplies	1,643.52	372.34
Training School Instructions, extra	65.10	269.77
Travel and Expense (officials)	234.03	10.30
Telephone and Telegraph	355.48	310.14
Tobacco	872.35	787.75
Water	3,482.70	3,873.05
Sundries	455.12	157.46
Special Legislative Appropriation Account of Joseph Burke	473.35	.....
Medical Research Work	135.46	.....
	$20,151.00	$19,606.94
Gross Expenditures	$239,429.91	$265,483.38

REPORT OF THE FINANCIAL AGENT OF THE STATE HOSPITAL.

From September 1, 1912, to August 31, 1913.

Receipts.

Balance on hand Aug. 31, 1912		$10,607.63
Received from Matured Bonds:		
Boston & Maine	$5,000.00	
Iowa Loan & Trust Co.	1,000.00	
Chicago, Burlington & Quincy Railroad	5,000.00	
Received from sale 75 shares State National Bank, Boston, $200	15,000.00	
Received from Interest and Dividends	13,634.03	
Withdrawn Union Trust Co., French legacy	181.84	
Received Interest from Union Trust Co., French legacy	31.97	
		$39,847.84
		$50,455.47

Expenditures.

Cash paid Treasurer toward Support Indigent Patients	$8,000.00
Paid Treasurer for Improvement of Grounds	500.00
Treasurer for Income Conant fund	256.00
Treasurer for Income Adams fund	162.00

Treasurer for Income Warren K. French.....	$181.84	
Premium on surety bond..	62.50	
Appropriations by vote trustees	306.05	
For 25 Shares Merchants National Bank, Boston..	7,506.25	
For 60 Shares Chicago & Northwestern Railroad..	8,272.50	
For 10,000 City of Nashua, N. H. bonds.....	10,000.00	
For Insurance.....	130.00	
William F. Thayer, Financial Agent.....	200.00	
Deposited Union Trust Co. Interest J. P. French legacy.....	31.97	
		$35,609.11
Balance Aug. 31, 1913.....		14,846.36
		$50,455.47

REPORT OF THE CUSTODIAN OF THE FUNDS OF THE STATE HOSPITAL.

From September 1, 1913, to August 31, 1914.

Receipts.

Balance on hand Aug. 31, 1913..		$14,846.36
Received from matured bonds:		
Minneapolis Bonds.....	$3,000.00	
First dividends in liquidation 50 shares Fitchburg National Bank Stock at 160, exchanged for equal number shares Fitchburg Bank & Trust Co..	8,000.00	
Rawson Trust Fund.....	1,000.00	
Interest and dividends.....	15,813.39	
Withdrawn Union Trust Co., French legacy	162.02	
Interest received on French legacy	27.84	
		$28,003.25
		$42,849.61

Expenditures.

Cash paid Treasurer toward support of indigent patients..	$8,000.00
Cash paid Treasurer for improvement of grounds.....	500.00
Cash paid Treasurer income Conant fund.....	256.00
Cash paid Treasurer income Adams fund.....	162.00

Cash paid Treasurer account Warren K. French	$162.02	
Fifty shares Fitchburg Bank & Trust Co., first dividend in liquidation	8,000.00	
Deposited Union Trust Co. interest French legacy	27.84	
Three Port of Seattle Bonds and accrued interest	2,906.55	
H. Kern, mortgage loan	992.83	
		$21,007.24
Balance Aug. 31, 1914		21,842.37
		$42,849.61

Permanent Funds.

The following were the several permanent funds of the hospital on the first day of September, 1914, accompanied by a list of the securities in which they are invested.

ADAMS FUND.

(Gift of Isaac Adams, of Sandwich.)

New York, New Haven & Hartford Railroad, Harlem River & Port Chester Div. bond	$400.00
City of Concord (N. H.) bonds	600.00
Ten shares Pittsburg, Fort Wayne & Chicago Railroad	1,000.00
Ten shares Chicago & Northwestern Railroad	1,000.00
	$3,000.00

BURROUGHS FUND.

(Legacy of Rev. Charles Burroughs, D. D., of Portsmouth.)

Northern Pacific-Great Northern Railroad bond (Chicago, Burlington & Quincy Railroad, Joint 4s)	$1,000.00

CHANDLER FUND.

(Legacy of Abiel Chandler, of Walpole.)

Chicago & Northwestern Railroad bond (Milwaukee, Lake Shore & Western)	$1,000.00
New York, New Haven & Hartford Railroad bonds	2,000.00
Old Colony Railroad bond	1,000.00
Boston & Lowell Railroad bond	5,000.00
Concord & Montreal Railroad bonds	2,000.00
Boston & Maine Railroad bonds	8,000.00
Sixty-two shares Concord & Montreal Railroad	6,200.00
Ten shares Michigan Central Railroad	1,000.00
Ten shares Pittsburg, Fort Wayne & Chicago Railroad	1,000.00
One share Merchants National Bank, Boston, Mass.	100.00
Twenty-five shares Northern (N. H.) Railroad	2,500.00
Two shares Chicago & Northwestern Railroad	200.00
	$30,000.00

CONANT FUND.

(Legacy of John Conant, of Jaffrey.)

State of New Hampshire bonds	$4,000.00
Concord & Montreal Railroad bonds	2,000.00
Two shares Boston & Providence Railroad	200.00
Three shares Concord & Montreal Railroad	300.00
	$6,500.00

CREIGHTON FUND.

(Legacy of Mrs. S. E. W. Creighton, of Newmarket.)

Boston & Providence Railroad bonds	$1,000.00
Boston & Maine Railroad bonds	2,000.00
	$3,000.00

DANFORTH FUND.

(Legacy of Mary Danforth, of Boscawen.)

City of Concord (N. H.) bonds	$400.00

FISK FUND.

(Legacy of Miss Catherine Fisk, of Keene.)

Fisk fund held in trust by the state	$26,378.43

FULLER FUND.

(Legacy of Mrs. Peggy Fuller, of Francestown.)

Twenty shares Concord & Montreal Railroad	$2,000.00

KENT FUND.

(Legacy of Moody Kent, of Pittsfield.)

Boston & Maine Railroad bonds	$12,000.00
City of Concord (N. H.) bonds	200.00
Oregon Short Line Railroad bonds	5,000.00
New York, New Haven & Hartford Railroad bonds	6,000.00
Chicago, Burlington & Quincy Railroad bonds	5,000.00
Chicago & Northwestern Railroad bonds	9,000.00
Boston & Lowell Railroad bonds	10,000.00
Concord & Montreal Railroad bonds	8,000.00
City of Duluth (Minn.) bonds	7,000.00
Northern Pacific Railway bonds	5,000.00
St. Joseph & Grand Island Railroad bonds	5,000.00
Old Colony Railroad bonds	12,000.00
Northern Pacific-Great Northern Railroad bonds (Chicago, Burlington & Quincy Railroad, joint 4s)	13,000.00
Union Pacific Railroad bonds	1,000.00
Port of Seattle, Washington, Water Front Improvement bonds	3,000.00
City of Nashua (N. H.) bonds	10,000.00

Fifty shares Pittsburg, Ft. Wayne & Chicago Railroad	$5,000.00
Seven shares Union National Bank, Lowell, Mass.	700.00
Sixteen shares Merchants National Bank, Boston, Mass.	1,600.00
One hundred shares Michigan Central Railroad	10,000.00
Seventy shares St. Joseph & Grand Island Railroad, first preferred	7,000.00
Twenty-five shares St. Joseph & Grand Island Railroad, second preferred	2,500.00
Forty-two shares Northern (N. H.) Railroad	4,200.00
Two shares Boston & Providence Railroad	200.00
Fifty shares Fitchburg (Mass.) Bank and Trust Co.	5,000.00
Thirty-one shares Chicago & Northwestern Railroad	3,100.00
	$50,500.00

KIMBALL FUND.

(Legacy of Jacob Kimball, of Hampstead.)

Kimball fund held in trust by the state treasurer	$6,753.49

LOW FUND.

(Legacy of Abiel A. Low, of Brooklyn, N. Y.)

City of Columbus (Ohio) bonds	$3,000.00
City of Chicago (Ill.) bonds	2,000.00
	$5,000.00

PENHALLOW FUND.

(Legacy of H. Louise Penhallow, of Portsmouth.)

Concord & Montreal Railroad bond	$1,000.00

PIPER FUND.

(Legacy of Rhoda C. Piper, of Hanover.)

One share Union National Bank, Lowell, Mass..	$100.00

PLUMMER FUND.

(Legacy of William Plummer, of Londonderry.)

New York, New Haven & Hartford Railroad, Harlem River & Port Chester Div. bond....	$500.00

RICE FUND.

(Legacy of Arabella Rice, of Portsmouth.)

Oregon Short Line Railroad bonds.....	$5,000.00
Old Colony Railroad bonds.....	3,000.00
Chicago & Northwestern Railroad bond.....	1,000.00
Old Colony Railroad registered bond.....	3,000.00
Concord & Montreal Railroad bond.....	1,000.00
Boston & Providence Railroad bond.....	1,000.00
City of Cleveland (Ohio) bonds.....	2,000.00
Union Pacific Railroad bonds.....	5,000.00
	$21,000.00

RUMFORD FUND.

(Legacy of the Countess of Rumford, of Concord.)

Boston & Maine Railroad bonds.....	$5,000.00
Concord & Montreal Railroad bonds.....	5,000.00
Thirty shares Pittsburg, Fort Wayne & Chicago Railroad.....	3,000.00
Twenty shares Boston & Providence Railroad..	2,000.00
	$15,000.00

SHERMAN FUND.

(Legacy of Mrs. Fanny Sherman, of Exeter.)

Old Colony Railroad bond	$1,000.00
City of Cleveland (Ohio) bonds	3,000.00
Northern Pacific-Great Northern Railroad bond (Chicago, Burlington & Quincy Railroad, joint 4s)	1,000.00
	$5,000.00

SMITH FUND.

(Legacy of Betsey Smith, of Hanover.)

New York, New Haven & Hartford Railroad, Harlem River & Port Chester Div. bond	$500.00

SPALDING FUND.

(Legacy of Isaac Spalding, of Nashua.)

Concord & Montreal Railroad bonds	$6,000.00
Boston & Providence Railroad bonds	2,000.00
New York, New Haven & Hartford Railroad bond	1,000.00
Old Colony Railroad bond	1,000.00
	$10,000.00

SPRING FUND.

(Received from sale of spring.)

New York, New Haven & Hartford Railroad, Harlem River & Port Chester Div. bond	$100.00
One share Northern (N. H.) Railroad	100.00
	$200.00

WALKER FUND.

(Legacy of Abigail B. Walker, of Concord.)

New York, New Haven & Hartford Railroad, Harlem River & Port Chester Div. bond....	$1,500.00
Boston & Maine Railroad bonds.....	5,000.00
City of Concord (N. H.) bond.....	1,000.00
Old Colony Railroad bonds.....	4,000.00
Eight shares Merchants National Bank, Boston, Mass.	800.00
Ten shares Northern (N. H.) Railroad.....	1,000.00
Seventeen shares Chicago & Northwestern Railroad	1,700.00
	$15,000.00

WILLIAMS FUND.

(Gift of John Williams, of Hanover.)

Two shares Union National Bank of Lowell, Mass.	$200.00

RAWSON FUND.

(Legacy of Charles W. Rawson, of Gilsum.)

Mortgage Loan H. Kern, Graham County, Kansas	$1,000.00
Total amount permanent funds.....	$304,031.92

JOHN P. FRENCH LEGACY.

(Benefit Warren K. French.)

Union Guaranty Savings Bank, as er last reort	$669.40
Received interest	27.84
	$697.24
Paid treasurer for board of Warren K. French	162.02
Balance	$535.22

GEORGE E. FARRAND,
Custodian.

TENTH BIENNIAL REPORT

OF THE

SUPERINTENDENT AND TREASURER

OF THE

INDUSTRIAL SCHOOL

OF THE

STATE OF NEW HAMPSHIRE

For the Period Ending August 31, 1914

MANCHESTER, N. H.
PRINTED BY JOHN B. CLARKE CO.
1915

OFFICERS.

W. C. Morton.....*Superintendent*

Thomas Fox.....*Assistant Superintendent*

Mrs. W. C. Morton.....*Matron*

Noel E. Guillet, M. D.....*Physician*

John Sargent.....*Farmer*

Eva B. Stevens.....*Bookkeeper and Stenographer*

Mary E. Twombly.....*Clerk*

SUPERINTENDENT'S REPORT.

To the Board of Control:

The tenth biennial report of the Industrial School for the two years ending August 31, 1914, is respectfully submitted.

The period covered by this report has been an eventful one in many ways and it would be a neglect of duty on my part if some of the more important changes which have taken place were not recorded here, that they may go down in the history of the school. Among the most important of these may be mentioned: Removing the girls from the main building, favorable changes in the laws concerning the school, the closing of the Riverside Hosiery Mills, a wood-working shop opened, a poultry plant established and a boy's band organized. A few words concerning each of these will follow.

The new building for girls (provided by an act of the 1911 legislature), which was well under way at the time of my last report, was opened and occupied May 16, 1913, and named by the trustees, Wilkins Home for Girls (erected on land purchased by the James McKean Wilkins Fund). This certainly marks a new era in the Industrial School.

When we stop to consider that ever since the school was established (1857) both boys and girls have been cared for under one roof, making conditions such that the work of giving children proper training was extremely complex and the results very unsatisfactory, our state may well be proud of the beautiful, substantial, well arranged and equipped building it now has for her unfortunate girls in the Wilkins Home.

This building is located one-third of a mile north of the main building and is situated on a high elevation facing

the Merrimack river, entirely surrounded by beautiful rural scenery. It is really an institution by itself, having but little to do with the boys' school except under the same supervision. Different departments are arranged, giving the girls an opportunity for special training of such duties as will naturally come into their lives in after years.

It is hardly necessary to mention that under the condition the girls now live they, as a whole, are very contented and happy, and it is interesting to note the astonishment a "new girl" shows on entering the home and her happy disappointment in not finding bars and grills.

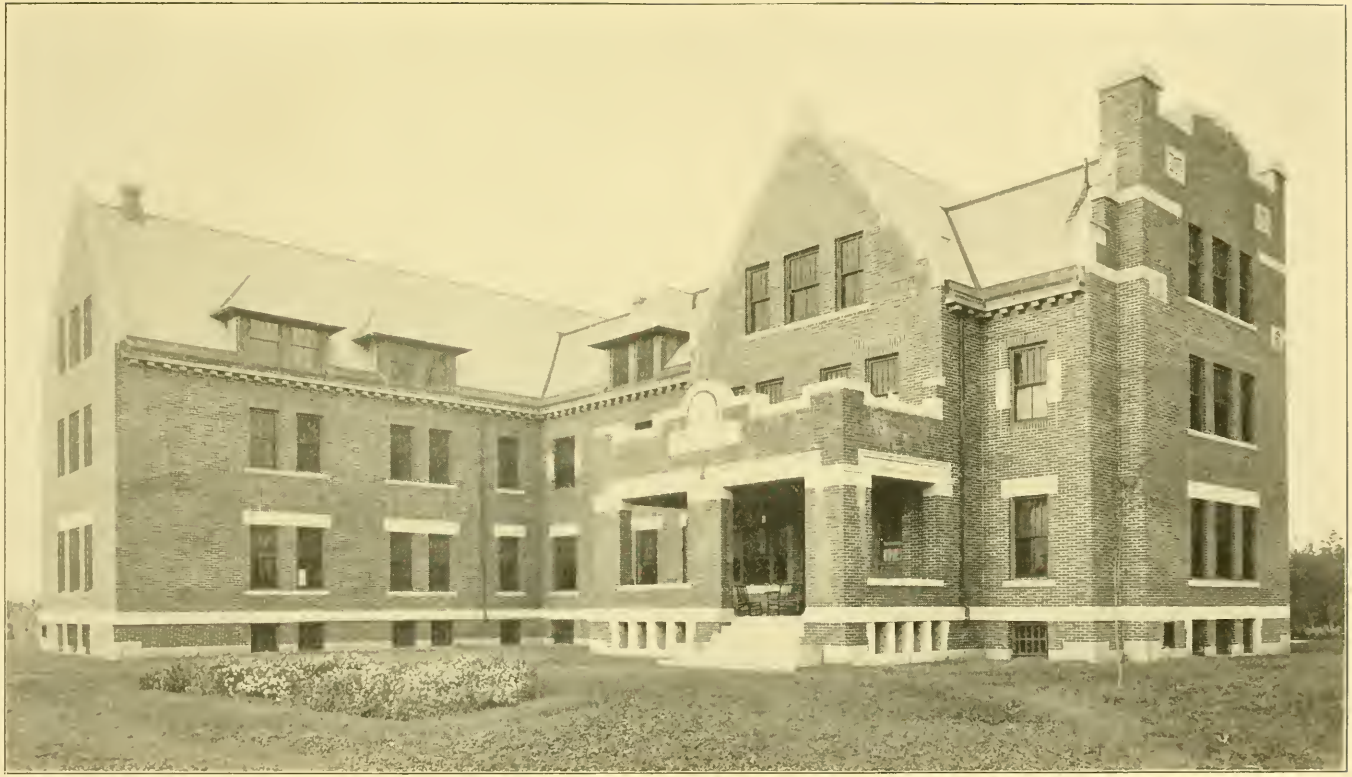
The attics which were finished in the early part of the present year under your direction, provide additional room should the population of the girls require it.

Soon after the law was passed by the legislature of 1913 providing for a parole officer, it was the desire of the trustees that I should accept that position together with the duties of superintendent.

What degree of success this department has attained can best be judged by those who have so kindly taken these children into their homes as well as those who live in the immediate vicinity where these probationers have been placed. Our records show that over eighty out of the total of ninety-two on probation September 1, 1914, are doing well.

For the most part, children sixteen years of age and over have been paroled, most of whom are earning wages. No child has been released unless provided with work or given an opportunity to attend school. The age and school grade of each individual usually determines which it shall be.

Since all children are committed here until they are twenty-one years of age, the question is often asked, "How long are they to stay in the school and what determines the time that they may be released on probation?" This is answered in no better way than by the following extract taken from the letter which is sent to the parents or guardian of each child soon after their commitment:



Wilkins Building for Girls—*Industrial School.*

"We have received your son who was committed to the Industrial School at Manchester, N. H., on the —— day of ——— 191— in accordance with the law of the state. By order of the court he will remain in the care and subject to the control of the school until he is twenty-one years of age. The length of detention in the school depends upon conduct. When such time shall have elapsed that the teachers and officers of the school have had opportunity to study the child and good reports as to conduct and character are forthcoming, his name will be submitted to the Board of Control for their consideration for release on probation. If the home is a proper one and it seems probable that the parents can control him, he will be allowed to go home. On the other hand if on investigation it is found that the home is not a proper one, he will be placed in some home which the school will select. In either case, he will under the law remain in the control of the school until 21 years of age and until then can at any time be recalled to the school."

A very careful daily record of the deportment of each child is kept from the day of commitment and they are fully informed and given to understand that a record of good conduct is much to be desired and in their favor. The average time spent in the school of those placed on probation during the past two years was 2 years and 7 months.

The homes of parents and families in which children have been placed have in all cases been carefully investigated. This has been done by myself personally except in a few cases, where I have had the assistance of some volunteer coworker whose judgment in such cases is dependable.

It has been my purpose to visit paroled children as often as I felt it necessary. No stated number of visits have been arranged for, some requiring very little supervision, while others may be visited frequently with excellent results. In several cases visiting the child just at the proper time has saved him from leaving his place or having him returned to the school.

The following-up system is very important and should not be neglected or overlooked. In general, all children are expected to report by letter or in person once a month for a continued time until excused. This necessitates additional office work as a reply is made to each letter received.

TABLE SHOWING WHEREABOUTS OF CHILDREN ON PROBATION SEPTEMBER 1, 1913.

	Boys.	Girls.	Total.
On probation with relatives or friends attending school	14	1	15
On probation with families, earning wages	6	5	11
On probation with relatives, earning wages	17	4	21
On probation with relatives, to live in other states not visited	2	0	2
On probation elsewhere earning wages and finding own board	2	0	2
Left home or place and whereabouts unknown	0	3	3
In other correctional institutions	2	0	2
In United States Army	1	0	1
	44	13	57

TABLE SHOWING WHEREABOUTS OF CHILDREN ON PROBATION SEPTEMBER 1, 1914.

	Boys.	Girls.	Total.
On probation with relatives or friends attending school	14	4	18
On probation with families, earning wages	9	12	21
On probation with relatives, earning wages	31	7	38
On probation with relatives, to live in other states not visited	2	1	3
On probation elsewhere earning wages and finding own board	2	2	4
Left home or place and whereabouts unknown	3	0	3
In other correctional institutions	1	0	1
In United States Army	1	0	1
On probation in hospital for treatment	2	1	3
	65	27	92

The Boys' Brass Band—*Industrial School.*

The equipment here does not provide for a semi-prison where these incorrigibles could be segregated, and I would in no way recommend the construction of any such arrangement, for the most good can result in keeping this a school for juvenile offenders and treating them as such and not as prisoners.

I believe that the law passed at the last legislature concerning incorrigibles in the Industrial School will in time prove very effective and raise the standard of the school, so that it will be looked upon as an institution for juveniles without the sting of the old time Reform School of half a century ago, where all inmates were classed as BAD.

The Riverside Hosiery Mill, which for many years was a special feature along industrial lines here, has been abolished and the ten-horse power motor which furnished power to run the knitting machines, etc., now runs the three wood-working machines which occupy the eastern end of the shop.

In a meagre way a carpenter shop has been started in which several boys may be instructed and taught to do things that will be very much to their advantage in future life. The equipment at present consists of one 36-inch band saw, one tipping table saw, one 24-inch pony planer and a few bench tools. More tools and benches are needed to make the outfit complete. When this room is properly equipped, valuable training for the boys will result.

In the spring of 1913, poultry raising was started. This year three hundred and fifty chickens were hatched. A house 16 ft. wide by 100 ft. long, to be built on plans approved by the poultry department of the state college, is under construction by the carpentry class.

A boys' band was organized February, 1913, under the leadership of William F. Hart of Manchester, with the following instruments: 1 Eb cornet, 6 Bb cornets, 4 altos, 2 Bb baritones, 2 Bb basses, 2 tubas, 3 trombones, 1 bass drum, 2 snare drums, and 1 pair of cymbals. Such boys were selected who gave evidence of some musical ability or idea of music, *i. e.*, they could beat time, whistle some fa-

miliar tunes and some could sing. The average age of the lads was 14 years and 5 months.

They have learned to play well, and have appeared in public several times with a great deal of credit to themselves and to the institution.

The good influence which the band has had has been of inestimable value not only to its members but to the entire school.

SCHOOL OF LETTERS.

Work along these lines has been continued as during the previous two years. With about one hundred boys, ranging in age from 8 to 20 years, registered under three teachers and with 30 to 35 girls in the care of one teacher, conditions are not unlike those found in an ungraded school. It seldom happens that a child committed to the Industrial School is up to his grade, but is found backward to an alarming extent, and not a few cases are feeble-minded.

With these conditions rapid progress cannot be made, but with tried and true teachers, experienced in handling just this type of child, good results are obtained and many children who have left the school testify that it was at the Industrial School they received such instructions as inspired them to get a better education than they otherwise would have obtained had they never been sent here.

At the closing-day exercises actual work done in the different rooms throughout the year was shown, giving the public and the parents, and especially the parents, an opportunity to judge what progress their children were making.

Should the number of pupils materially increase, it would seem advisable to employ more teachers.

SLOYD.

The work done in this room has been carried on somewhat differently than heretofore. A special class for the backward children has been organized giving them such work as seems best suited to their ability. This gives the

THE CABBAGE PATCH—*Industrial School.*

child an opportunity to get a start and awakens his ideas, at the same time building a foundation for the advanced work which he will take later, while a regular class has been held each day for boys who are up to their grade. The interest and advancement shown in both classes has been very pronounced, and to note the effort each individual puts into his work to make the most of his opportunity, is most gratifying.

While no attempt is made here to teach a trade, yet to observe the ability of a boy who has taken a course in sloyd in comparison with one who has not is very marked. He has been taught the different kinds of wood, different kinds of tools and their uses and to make various models from his own drawings.

MASONRY.

The class in masonry has manifested the same interest as usual and the subway into the boiler room and the well-layed cement service yard in the rear, and the broad walk at the north of the Wilkins Home for Girls, together with many other workmanlike jobs about the school, are all excellent specimens of their thoroughness of work, making permanent improvements to the property here and at the same time giving the boys excellent training.

THE FARM.

The training the boys receive on the farm is by far the most important of all. No other industry can be made of so much value to so great a number of our boys as that of farming. Everything pertaining to this line of work appeals to the heart of every boy and it is very interesting to note with what zeal and enthusiasm they enter into it. Our herd of cows is not satisfactory and should be improved. I recommend the purchase of some thoroughbred animals that we may begin at once to build up a herd which will be profitable to own.

The field and garden crops for the past two seasons have been abundant. The fruit trees have been pruned and sprayed by a class of boys under the direction of an experienced man, using such methods as recommended by the New Hampshire State College. They are now in a good growing condition and the harvest will be satisfactorily large and of good quality.

East of the Wilkins Home for Girls an orchard was set this spring consisting of 170 apple, 20 plum, 100 peach, 20 cherry and 30 pear trees. West of Riverview cottage in a well-arranged plot has been planted strawberries, currants, gooseberries, blackberries, raspberries and grapes. The cultivation and picking of berries and early vegetables has furnished excellent employment for the smaller boys. The work of clearing and stumping the new land on the Wilkins lot is being carried on as time will allow.

COTTAGE SYSTEM VS. CONGREGATE PLAN.

The picture on the opposite page shows a group of twenty-eight small boys assembled in front of Riverview cottage (originally built for a hospital) which is now their home. The boys are by themselves and share one another's sports and pleasures to a marked degree. The parental advice, kind words and precepts of home discipline given them by their master and matron, who are really their foster parents while here, sink deeply into the hearts of these lads, for the true family spirit exists and they, being segregated from the older and larger boys, the bad influence of whom in a majority of cases are sure to be exerted, is eliminated.

There is another equally large group of little fellows who are fully as worthy of being placed under as good conditions and demand the same consideration, but under the present arrangement they are obliged to mingle and associate with boys who are nearly twice their age and remain in the main building on the congregate plan.

Repeating what I recommended in my report two years ago that the cottage or family plan should be extended, and

Cottage Home for Boys—*Industrial School.*

trusting the work already demonstrated by this method has met with your approval, I urge you to ask the legislature of 1915 for an appropriation for at least one cottage for boys.

IMPROVEMENTS.

Such improvements and repairs have been made from time to time as seemed most necessary.

Both barns, all the outside woodwork of the main building, annex and hosiery mill have been painted. All the upper rooms except the sleeping hall formerly occupied by the girls have been thoroughly renovated for the occupany of teachers and officers. These rooms were much needed, but were not available for these purposes until the new building for girls was opened.

Scrub floors in the front part of the main building have been dressed and filled, adding very much to the appearance of the offices, rooms and halls.

The two rooms formerly used for laundry purposes by the girls have been remodeled; one made into a store room and the other into a milk room.

Convenient sorting boxes have been placed in the girls' dining hall, which is now used for mending, sorting and marking boys' clothing.

A six-inch drain pipe has been laid to the refrigerator room, so that the drip from the ice box is properly taken care of instead of settling into the ground as heretofore.

Steam from the main line has been put into the harness room.

Modern self-flushing stools have been installed in the place of the old style flush troughs in the toilets off the boys' yard.

The old line of electric light poles has been removed from the front driveway and a new line has been set down the back road.

The Prince house, so called, has been wired for electric lights.

HEALTH.

The general health of the children has been excellent. There were several cases of measles during the summer of 1913, but by having plenty of room in the hospital ward an epidemic was avoided. Such minor operations as were recommended by the school physician were performed, most numerous of which have been the removal of adenoids and tonsils. One case of tuberculosis was diagnosed and the patient was transferred to Notre Dame Hospital.

Dr. C. H. MacRury of Manchester still continues to look after the dental work, which is very essential.

There are many children who come to us having defective eyesight: they are taken to an optician for examination and treatment. It would be an excellent idea if arrangements were made to have a regular oculist employed that all children may receive such direct attention as may be necessary.

AMUSEMENTS.

Entertainments of various kinds have been arranged, and the interest shown by those taking part in amateur performances has been very commendable. All our "home shows" have met with much favor by the audience.

Rides, walks and picnics have been a source of enjoyment for the girls, while games of baseball and football with teams from the city on Saturday afternoons have been a favorite pastime for the boys.

Holidays have been celebrated in much the same manner as by children living in any community.

NEEDS OF THE SCHOOL.

A cottage for boys.
Boys' and officers' kitchens remodeled.
New ceiling in large schoolroom.
A printing plant for boys.
A buzz planer and more bench tools for the carpenter shop.
A thoroughbred herd of cows.
A coal pocket for steam coal.

STATISTICS CONCERNING INMATES.

TABLE I.

	Boys.	Girls.	Total.
Number committed to institution since its commencement	...	...	2,845.
Number of inmates in school August 31, 1912	108	30	138
Received.			
Number committed during year ending August 31, 1913	71	16	87
Number returned from probation	8	1	9
Number runaways recaptured	53	0	53
Released.			
On probation	35	11	46
Transferred to Hillsborough County jail	1	0	1
Runaways	61	0	61
Discharged at expiration of sentence	5	1	6
Discharged honorably	1	0	1
Discharged by order of Court (held for trial)	14	2	16
Average number in school for past year	109.2	30.3	139.5
Number of inmates in school August 31, 1913	123	33	156
Received.			
Number committed during year ending August 31, 1914	62	27	89
Number returned from probation	10	9	19
Number runaways recaptured	13	2	15
Number returned from Sacred Heart Hospital	0	1	1
Number returned from Hillsborough County jail	1	0	1
Released.			
On probation	43	27	70
Transferred to Hillsborough County Farm	0	2	2
Transferred to Sacred Heart Hospital	0	1	1
Transferred to Notre Dame Hospital	2	0	2
Runaways	13	2	15
Discharged at expiration of sentence	6	1	7
Discharged by order of court (held for trial)	28	7	35
Average number in school for past year	113.5	33	146.5
Number of inmates in school August 31, 1914	117	32	149

TABLE II.

Showing Ages When Committed During Past Two Years.

	Boys.	Girls.	Total.
Seven years	2	0	2
Eight years	3	0	3
Nine years	3	0	3
Ten years	10	0	10
Eleven years	11	1	12
Twelve years	12	0	12
Thirteen years	19	11	30
Fourteen years	26	12	38
Fifteen years	19	10	29
Sixteen years	28	9	37
	133	43	176

TABLE III.

Showing Term of Commitment for Past Two Years.*

	Boys.	Girls.	Total.
Six years	0	1	1
Five years	3	0	3
Four years, six months	0	1	1
Four years	4	2	6
Three years	5	1	6
Two years	6	1	7
One year	2	0	2
Six months	1	0	1
Trial	47	10	57
Until seventeen	1	0	1
Until eighteen	2	0	2
Until nineteen	6	0	6
Until twenty-one	56	27	83
	133	43	176

*Since April 24, 1913, all sentences are for minority (Public Acts and Joint Resolutions 1913).

TABLE IV.

SHOWING TECHNICAL CAUSES OF COMMITMENTS DURING PAST TWO YEARS.

	Boys.	Girls.	Total.
Stubborness	24	25	49
Larceny	58	7	65
Truancy	9	1	10
Breaking and entering	14	0	14
Street walker	0	3	3
Fornication	0	6	6
Obstructing railroad	2	0	2
Breaking, entering and larceny	18	0	18
Taking and using horse without consent of owner	1	0	1
Assault	1	0	1
Incorrigible	0	1	1
Delinquent	2	0	2
Wilfully and maliciously shooting heifer	1	0	1
Interfering with railroad switch	1	0	1
Growing up in crime	1	0	1
Forging check	1	0	1
	133	43	176

TABLE V.

SHOWING COUNTIES FROM WHICH COMMITMENTS WERE MADE PAST TWO YEARS.

	Boys.	Girls.	Total.
Rockingham	18	3	21
Strafford	15	2	17
Belknap	1	3	4
Carroll	1	1	2
Merrimack	14	4	18
Hillsborough	56	23	79
Cheshire	11	2	13
Sullivan	6	3	9
Grafton	3	1	4
Coös	8	1	9
	133	43	176

TABLE VI.

Showing Nativity of Parents of Children Admitted to Industrial School During Past Two Years.

	Boys.	Girls.	Total.
Both parents born in United States	43	14	57
Both parents foreign born	40	14	54
Father foreign born and mother native born	16	4	20
Mother foreign born and father native born	7	2	9
Father native born and mother unknown	2	0	2
Mother native born and father unknown	6	1	7
Mother foreign born and father unknown	6	1	7
Father foreign born and mother unknown	1	1	2
Both parents unknown	12	6	18
	133	43	176

TABLE VII.

Showing Nativity of Children Committed During Past Two Years.

	Boys.	Girls.	Total.
Born in United States	119	38	157
Foreign born	12	5	17
Unknown	2	0	2
	133	43	176

TABLE VIII.

SHOWING DOMESTIC CONDITIONS OF THE 176 CHILDREN COMMITTED TO THE INDUSTRIAL SCHOOL DURING THE TWO YEARS ENDING AUGUST 31, 1914.

	Boys.	Girls.
Had parents	92	27
Had no parents	3	1
Had father	104	32
Had mother	118	36
Had stepfather	17	5
Had stepmother	2	2
Had an intemperate father	64	19
Had an intemperate mother	22	2
Had both parents intemperate	16	1
Had parents separated	25	9
Had attended church	123	42
Had never attended church	10	1
Had not attended school within 1 year	33	11
Had not attended school within 2 years	21	8
Had been arrested before	82	22
Had been inmates of other institutions	28	10
Had used liquor	21	6
Had used tobacco	82	4
Was employed when arrested	17	13
Was idle when arrested	103	28
Was attending school when arrested	13	2
One or both parents had been arrested	30	12

The school has been very fortunate in having Miss Ethel L. Kingsley of the W. C. T. U., Sisters Angela and Mercedes of the Convent of the Sisters of Mercy, Rev. Bros. Henry and Paulin of the Cathedral Parish and Mr. J. E. Sutherland of the Y. M. C. A., regularly Sunday mornings to give the girls and boys instructions in their religious creeds.

Daughters of Veterans, Mary J. Buncher Tent, No. 2, of Manchester, on May 30, 1913, presented Wilkins Home for Girls a beautiful silk flag, and again on May 30, 1914, a like gift was given by the same organization to Riverview Cottage. These emblems were presented on days most fitting, giving such lessons of patriotism to our children that will long be remembered.

The Y. M. C. A. of Manchester has kindly remembered the school at each week-end by furnishing an abundance of current literature. This feature alone is looked forward to by all the boys and is a big asset to the reading room.

Mrs. Armenia White of Concord has continued her usual Christmas remembrance to the children by sending a generous amount of candy and oranges.

Father Brophy of Penacook donated framed pictures for the girls' room, and G. H. Warren of Manchester a portrait of himself for the office at Wilkins Home for Girls.

W. C. Landis, State Missionary, of Lakeport, has furnished several boxes of magazines, etc., as well as music sheets for eventful days of the year.

Generous boxes of Christmas candy have been contributed by Dr. C. H. MacRury of Manchester.

The girls have the pleasure of enjoying reading "Modern Priscilla" as a gift from Mary E. Twombly, while Dr. G. M. Davis has given them a two years' subscription to the "Magnificat."

A large picture of Sir Galahad was presented to the boys of Riverview Cottage by Miss Anna Wilcox and Miss Emma F. Newton of Westboro, Mass.

Free tickets furnished by Col. Arthur E. Clarke, President of the Young Men's Club of the Franklin-street Church, and Mrs. George H. Warren, President of the Federation of Women's Clubs, to several lectures and concerts in the city were much enjoyed by the boys.

The musical concert given the boys by Alcide St. Pierre's orchestra was greatly enjoyed as well as the evening's entertainment for the girls given by Mrs. Hazel Chandler Parks.

Mrs. Mabel Daley, assisted by several friends from Manchester, furnished entertainment for both boys and girls, which was very pleasing.

By the generosity of the publishers the following periodicals have been received:

The Christian Science Monitor.

New Hampshire Gazette.

Our Dumb Animals.
Cheshire Patriot and Keene Free Press.
The New Hampshire Patriot.
Benziger's Catholic Sentinel.

For all these acts of kindness from our friends, sincere thanks are extended.

To the Board of Control, I desire to express my appreciation and thanks for your words of counsel, and record the many kind considerations tendered me.

W. C. MORTON,
Superintendent.

TREASURER'S REPORT.

FINANCIAL STATEMENT.

(For the biennial period ending August 31, 1914.)

Receipts.

	1913.	1914.
Balance in superintendent's hands	$1,739.38	$1,755.19
For maintenance	27,635.49	28,031.17
salaries	14,185.94	16,180.34
clerical	281.18	777.00
new building for girls.....	52,202.17	5,971.87
farm sales, etc.....	1,685.66	811.61
From Manchester Stocking Co.....	220.60	.....
Amoskeag Savings Bank (Penhallow Fund)	110.80	.....
Mechanics Savings Bank (Moody Kent Fund).....	.....	45.00
Total	$98,061.22	$53,572.18

Disbursements.

Salaries	$14,185.94	$16,180.34
Maintenance	29,321.15	28,031.17
Clerical	281.18	777.00
New building for girls.....	52,202.17	5,971.87
Repairs, needles, etc., in hosiery.....	204.79	.....
Books	110.80	.....
State Treasurer	.....	2,566.80
Bryant & Stratton Business College..	.....	45.00
Total	$96,306.03	$53,572.18
Balance	$1,755.19	.....

ANALYSIS OF EXPENSES FOR THE BIENNIAL PERIOD ENDING AUGUST 31, 1914.

	1913.		1914.	
Food:				
Bread and crackers	$185.31		$244.14	
Butter	18.60		.....	
Butterine	.....		295.20	
Beans	422.08		294.27	
Cereals, meal	184.26		140.27	
Cheese	40.76		68.38	
Eggs	574.65		567.11	
Flour	1,324.15		945.00	
Fish	394.40		204.04	
Fruit, fresh and dried	191.63		137.37	
Lard	96.67		205.85	
Meats	2,393.58		1,731.27	
Molasses and syrup	103.78		98.47	
Sugar	399.53		922.87	
Soda	22.29		.....	
Tea	323.58		237.16	
Vegetables	438.49		369.56	
Spices	72.59		46.44	
Yeast	40.95		75.60	
Sundries	589.35		368.88	
		$7,816.65		$6,951.88
Clothing and material:				
Shoes and rubbers	$863.91		$844.72	
Clothing	838.69		2,020.26	
Dry Goods and small wares	974.76		1,389.62	
Furnishings	115.48		36.48	
Hats and caps	79.67		87.45	
Leather and shoe findings	60.44		33.30	
Sundries	72.68		111.18	
		3,005.63		4,523.01
Furnishings:				
Bedding, linen, etc	$159.96		$18.00	
Brushes, brooms	109.21		84.13	
Carpets, rugs	46.21		.....	
Furniture and upholstery	124.18		23.10	
Crockery, cutlery	34.79		98.86	
Furnishings	76.24		194.38	
Wooden ware	5.31		5.71	
Sundries	66.80		12.80	
		622.70		436.98
Heat, light and power:				
Coal	$3,758.14		$4,146.55	
Electricity	1,141.39		$1,127.78	
Oil	8.10		13.60	
Sundries	.....		120.75	
		$4,907.63		$5,408.68

Repairs and improvements:				
Cement, lime	$505.68		$240.76	
Doors, sashes	6.87		5.20	
Electrical work and supplies	277.52		68.89	
Hardware	942.51		951.82	
Lumber	353.50		293.27	
Machinery	375.00		27.26	
Paints, oils, glass	440.19		212.13	
Plumbing, steam fitting and supplies	869.63		444.76	
Roofing and material	.....		14.41	
Sundries	370.66		253.79	
		$4,141.56		$2,512.29
Farm, stable and grounds:				
Blacksmith and supplies	$173.45		$117.10	
Carriages and repairs	262.62		309.95	
Fertilizers, seeds	882.51		688.21	
Hay and grain	1,263.85		1,804.00	
Harnesses and repairs	107.90		52.58	
Horses	675.00		225.00	
Other livestock	420.90		267.90	
Tools	58.43		134.22	
Sundries	136.84		53.24	
		3,981.50		3,652.20
Miscellaneous:				
Books, etc	$28.15		$23.81	
Chapel entertainment	121.00		15.00	
Freight and transportation	240.66		347.47	
Medicines and supplies	229.63		335.98	
Medical attendance	323.27		113.50	
Manual training	45.11		49.74	
Postage	120.48		160.20	
Printing and supplies	135.48		21.17	
Return of runaways	148.62		66.50	
Soap and laundry supplies	372.37		328.81	
Stationery and office supplies	74.98		45.84	
School books and supplies	192.64		151.68	
Travel and expenses	254.51		238.27	
Telephone and telegraph	144.72		155.88	
Secretarial work	64.00		.....	
Water	657.65		819.40	
Dental work	26.00		.....	
Ice	166.33		96.22	
Sundries	1,506.24		606.66	
		4,851.84		3,576.13
Girls' Dormitory, plumbing, etc			$530.00	
Boys' Dormitory, plumbing, etc			440.00	
				$970.00
		$29,327.51		$28,031.17
Paid from income at institutions		1,685.66		1,031.17
Paid from appropriation		$27,641.85		$27,000.00
Average daily number of inmates		139.58		146.05

BILLS PAID FROM APPROPRIATION FOR NEW BUILDING FOR GIRLS.

Appropriation (Legislature 1911)	$80,000.00
Bills paid as previously reported	21,680.92
Unexpended September 1, 1912	

Expended as follows:

Jones, Warren, Manning & Wilson, legal services	$10.00
Kennedy & Peterson Cons. Co., contract work	41,482.00
John Stevens, plumbing	1,457.56
Wm. C. Woolner, architect	200.00
E. E. Hoyt, grading	900.00
Manchester Water Works, hydrant	37.50
Wm. Butterfield Co., architects	1,215.45
Watson Manfg. Co., screens and grills	2,364.00
C. A. Hoitt Co., furnishings	2,142.87
Rhoades & Fillman, linen	54.60
The Barton Company, dry goods	283.69
Walter Roper, masonry	3.25
A. L. Franks, electrical work	624.29
Jas. A. Scully, furnishings	527.00
L. M. Folsom, dry goods	106.54
West Side Lumber Co., lumber	80.94
John B. Varick Co., sundries	321.59
Kenny Bros. & Walkins, school desks	156.50
Bunton & Bernard, contract work	4,476.10
Hadley & Burgess, turf	97.44
Singer Sewing Mch. Co., sewing machines	66.24
Wm. L. Nutting, piano	225.00
Hale & Whittemore, pictures	59.87
A. P. Horne, trees	47.25
George H. Brown, labor	293.92
Farrell Brothers, electrical work	95.00
Man. T. L. & P. Co., motor	13.85
Boston & Maine R. R., freight	72.35
Gift Shop, picture	7.50
Manchester Supply Co., cement	146.61

N. E. Tel. & Tel. Co., bolts, etc....	$0.55	
C. R. Whitcher, architect.....	337.95	
C. H. Buck & Co., tablet.....	190.00	
Pike & Heald, plumbing.....	76.63	
Total		$58,174.04
Unexpended September 1, 1914.....		$145.04

APPROPRIATIONS BY THE LEGISLATURE OF 1913.

For the fiscal year ending August 31, 1914..... as follows:		$45,000.00
Salaries	$17,000.00	
Maintenance	27,000.00	
Clerical	1,000.00	
For the fiscal year ending August 31, 1915..... as follows:		$45,000.00
Salaries	$17,000.00	
Maintenance	27,000.00	
Clerical	1,000.00	

STATEMENT SHOWING AMOUNT OF SPECIAL FUND BEQUESTS AUGUST 31, 1914.

Name.		How Invested.	Amount.
Frederick Smyth Fund	Book No. 29772,	Merrimack River Savings Bank	$2,339.68
	Book No. 17400,	Merrimack River Savings Bank	467.89
Moody Kent Fund	Book No. 77427,	Amoskeag Savings Bank	1,223.11
	Book No. 22086,	Manchester Savings Bank	1,407.91
	Book No. 192,	Hillsborough County Savings Bank	289.66
	Book No. 3364,	Mechanics Savings Bank	764.24
Emily E. Smith Fund	Book No. 103891,	Amoskeag Savings Bank	1,162.39
Louise Penhallow Fund	Book No. 70965,	Amoskeag Savings Bank	1,111.85
James McKean Wilkins Fund	Book No. 1113,	Hillsborough County Savings Bank	124.03
	Book No. 17423,	Merrimack River Savings Bank	161.76
		Total	$9,052.52

SEVENTH BIENNIAL REPORT

OF

THE SUPERINTENDENT

OF THE

NEW HAMPSHIRE SCHOOL FOR FEEBLE MINDED

AT LACONIA

FOR THE BIENNIAL PERIOD ENDING

AUGUST 31, 1914

MANCHESTER, N. H.
PRINTED BY JOHN B. CLARKE CO.
1915

OFFICERS.

BENJAMIN WARD BAKER, M. D.....*Superintendent*

HARRIETTE M. BINGHAM.....*Office Assistant*

MATTIE O. THOMPSON.....*Matron*

ALICE B. RICHARDS.....*Teacher*

HARRIETTE W. PATTERSON.....*Teacher*

WILL O. LANE.....*Teacher of Manual Training*

JAMES A. YOUNGMAN.....*Farm Foreman*

REPORT OF THE SUPERINTENDENT.

LACONIA, N. H., September 17, 1914.

To the Board of Control:

I hereby submit the biennial report of the New Hampshire School for Feeble Minded for the two years preceding August 31, 1914:

	Male.	Female.	Total.
Number present September 1, 1912	92	90	182
Admitted during two years	19	7	26
Readmitted during two years	1	0	1
Discharged during two years	19	5	24
Died during two years	1	1	2
Number present August 31, 1914	92	91	183
Largest number on books at any time	96	93	189
Average number present during two years	93	91	184
School cases admitted	9	6	15
Custodial cases admitted	11	1	12
Part private cases admitted	6	1	7
Part private cases discharged and died	5	0	5
Private and part private cases now present	6	4	10
Epileptics admitted during two years	10	3	13
Epileptics now present	21	8	29

Of the twenty-seven cases admitted during the two years, the average age was twelve years, the admissions being as follows:

By court commitment	2
From private homes	24
From Merrimack County Farm	1

Of those discharged, two boys ran away and were not returned to the school; three boys were committed to the State Hospital; one boy was discharged to the Franklin Orphans' Home as not feeble minded; nine boys and four

girls were discharged to relatives; three boys and two girls were placed out in homes, making a total of twenty-six for the period covered by this report, and a total of ninety discharges and deaths since the school opened. As the capacity of the school has at no time been above one hundred and eighty children, the number of discharges seems larger than should be expected under the most favorable conditions. Parents seeing their child employed at the school under trained supervision seek his discharge with the expectation that he will be able to do profitable work at home during the busy season. Removal from this school is sometimes requested that the child may accompany the family, who claim that they are to move out of the state. Relatives, guided by their affection and emotions rather than by good judgment, permit the assistance of those anxious to demonstrate influence and power in removing a child from the school. Too often the insistent, urgent demands for admission of most needy cases, and the desire to make just one more vacancy in a small, overcrowded school have been the most potent reasons for granting these requests. For the same reason a few of our brightest children have been placed in good homes. The results have been as satisfactory as expected. They indicate, however, that a feeble minded person is no more competent in a private home than in a public institution; also that the real good home, in which the strange child receives parental affection, consideration and guidance without a desire for selfish returns, is hard to find.

For the first time in five years the school is offering more room for the care of the feeble minded. The dormitory about to be opened should, at extreme capacity, accommodate one hundred persons. There are on file at the school applications for double that number. The most urgent demand is for the admission of the unprotected, feeble minded girl of child-bearing age, the helpless idiot who must be a burden to someone as long as life lasts, and the epileptic young man who has become unmanageable at

THE FELKER BUILDING (DORMITORY)—*School for Feeble Minded.*

home. These three classes present themselves, not for instruction, but for custody and maintenance. The discharge of those belonging to the two classes last mentioned is seldom sought, and their proportion in the school is steadily growing, thereby increasing our per capita cost.

I do not wish to convey the idea that the feeble minded are increasing more rapidly in numbers than they have been for the last fifty years. There are frequent inquiries for literature and printed reports from states establishing schools for their feeble minded. Educators are interested and eager for information on this subject. The feeble minded are being recognized in our public schools, singled out in our courts, acknowledged in our county farms, orphanages and insane hospitals. I feel that a classification of defectives is being slowly brought about. As the many town farms have been merged into the county farm, and as the insane have been taken from the county farms to the State Hospital, so must all the needy feeble minded persons eventually be cared for apart from other classes.

Permit me at this time to bring to your attention the needs of the school which seem the greatest. We are still buying standing grass and are in need of more land, both field and pasture.

Should any accident happen to either of our boilers in midwinter, the other would not meet our present demands, to say nothing of heating additional new buildings. A new boiler should be supplied.

Good, intelligent employees are none too plentiful. They are happier and more efficient if properly housed, yet institutions are built for inmates, with little provision for the employees, on whom their successful management depends. I most earnestly recommend that provision be made for an employees' home.

We are at present buying approximately 1,100 dozen cold storage eggs per year. If provided with suitable henhouses, yards and equipment, I see no reason why we cannot raise all the fresh eggs and poultry we might need.

Platform scales would be of frequent use and promote accuracy in farm accounts. I accordingly recommend them for your consideration.

There are on the place twelve wooden buildings, all in need of painting. As this item of expense could not be easily borne by our allowance for maintenance, it should be otherwise provided for.

The horse barn is in need of repairs; was originally made from an old barn and will not now accommodate all our horses. I would suggest that it be enlarged and repaired, or rebuilt.

There is at present no sanitary room in which to strain and care for the milk of our herd. An evident want might be supplied by a small, one-story sanitary cement building, connected with the barn by a walk-way and properly equipped to care for the milk, according to approved and modern methods.

Previous to the retirement of the Board of Trustees, June 1, 1913 by legislative act, they voted that the bequests held by them be expended for playground apparatus. These bequests, from James Cleaves of Candia and Mary A. Taply of Farmington, with interest, amounting to $161.27, were expended for the following:

Giant Stride, Children's Slide, Teeter Ladder, Flying Rings, Trapeze, Horizontal Bar, Steel Swing, complete with fittings, etc.

This apparatus is set in cement on the grounds in front of the dormitories, where it can be enjoyed by all the children. It not only furnishes wholesome outdoor exercise but adds to the social enjoyment of the school.

There is perhaps no more important side of life than the social side, especially in an institution. With an increasingly large adult population, it is less easy to preserve social unity, but we seek to stimulate the spirit of play and of good fellowship that there may be the greatest happiness for all.

As in previous years, the boys and girls have been re-

CHARLES SHERMAN LITTLE HALL—*School for Feeble Minded.*

membered by many generous gifts, and to these friends of the school we wish to express our gratitude.

I am also grateful for the faithful assistance of those with whom I am associated.

Respectfully submitted,

BENJAMIN WARD BAKER, M. D.,
Superintendent.

ANALYSIS OF EXPENSES FOR THE BIENNIAL PERIOD ENDING AUGUST 31, 1915.

	1913.		1914.	
Payroll	.....	$16,184.77	.....	$16,681.19
Food:				
Butter	$521.80		$522.17	
Butterine	156.72		159.23	
Beans	113.08		252.97	
Bread and crackers	355.62		379.50	
Cereals, etc.	148.63		244.45	
Cheese	26.14		68.53	
Eggs	280.20		259.54	
Flour	1,442.25		1,085.73	
Fish	352.67		345.79	
Fruits	211.28		215.06	
Meats	1,503.57		1,598.67	
Molasses, etc.	198.41		121.37	
Sugar	435.32		439.40	
Tea, coffee, etc.	244.36		188.23	
Vegetables	52.27		33.13	
Sundries	425.50		439.93	
		$6,467.82		$6,353.70
Clothing and Clothing Material:				
Shoes and rubbers	$778.33		$214.05	
Clothing	326.47		1.50	
Dry goods, etc.	560.33		492.07	
Hats and caps	7.50		16.80	
Leather, etc.	179.79		132.11	
		1,852.42		856.53
Furnishings:				
Beds and linen	$552.79		$149.20	
Brushes, etc.	69.02		73.82	
Carpets, etc.	17.45		23.75	
Crockery	63.73		77.11	
Furniture	196.30		58.83	
Kitchen furnishings	138.05		251.89	
Toilet supplies	17.64		.....	
Woodenware	74.72		55.46	
Sundries	13.30		121.26	
		1,143.00		811.32
Heat, light and power:				
Coal	$2,335.48		$3,202.95	
Freight on coal	538.34		684.43	
Oil	4.95		14.58	
Gasoline	24.00		27.75	
Electricity	1,155.20		1,146.65	
Matches, sundries	1.10		2.50	
		4,059.07		5,078.86
Repairs and improvements:				
Cement	$94.43		$224.38	
Doors, sashes, etc.	30.64		33.87	
Electrical work, etc.	151.30		129.74	
Hardware	212.38		189.47	
Lumber	191.25		133.09	
Machinery	42.73		4.77	

	1913.		1914.	
Paints, glass, etc.	176.72		195.89	
Plumbing, etc.	250.89		376.98	
Stone work	199.04		.....	
Roofing and materials	113.79		17.57	
Pipe	52.84		38.64	
Sundries	.....		6.00	
		1,516.01		1,350.40
Farm, stable and grounds:				
Blacksmith and supplies	$333.74		$182.19	
Carriages and repairs	223.91		177.76	
Fertilizers, etc.	506.46		421.93	
Hay and grain	2,395.87		2,589.09	
Harness and repairs	46.93		145.48	
Evaporator	116.31		.....	
Live stock	24.75		169.57	
Tools	126.78		208.68	
Livery	27.25		*212.50	
Rent	110.00		.....	
Veterinary services	22.00		.....	
Sundries	5.90		104.67	
		3,939.90		4,211.87
Miscellaneous:				
Books and periodicals	$57.20		$28.16	
Chapel service, etc.	93.42		69.62	
Medicines, etc.	125.77		148.57	
Manual training	84.96		40.81	
Postage	94.30		101.25	
Return of runaways	17.64		20.91	
Soap	358.60		212.34	
Stationery and office supplies	109.04		94.80	
School books	247.36		34.72	
Travel and expense (official)	238.17		121.09	
Telephone and telegraph	125.24		122.53	
Medical attendance	99.71		36.63	
Sewing room	64.84		31.84	
Toilet supplies	18.00		.....	
Gratuities	7.00		†164.25	
Freight	124.48		186.24	
Sundries	28.03		63.69	
		1,893.76		1,477.45
Total cash payments		$37,056.75		‡$36,821.32
Paid from income at institution		1,960.99		1,717.79
Paid from appropriation		$35,095.76		$35,103.53
Unexpended balance		4.24		.....
Refund on freight		.....		3.53
		$35,100.00		$35,100.00

*Horses. †Hose.

‡Bills to the amount of $470.68, chargeable to maintenance, for the year ending August 31, 1914, and paid by the Purchasing Agent, were not approved and allowed by the Auditor to prevent overdraft.

Estimates of Products of the Farm.

Beets, bushels	200
Carrots, bushels	275
Parsnips, bushels	150
Potatoes, bushels	2,600
Onions, bushels	278
Turnips, bushels	600
Cucumbers, bushels	125
Tomatoes, bushels	200
Sweet corn, bushels	714
Green peas, bushels	111
Dry beans, bushels	17
Shell beans, bushels	45
String beans, bushels	290
Beet greens, bushels	66
Turnip greens, bushels	120
Squash, tons	7
Pumpkins, tons	5
Cabbage, heads	8,000
Lettuce, heads	6,000
Celery plants	2,000
Spinach, bushels	45
Cress, bushels	10
Mangles, bushels	490
Cauliflower, heads	30
Radishes, bushels	24
Dandelion greens, bushels	256
Hay, tons	150
Hugarian, tons	2
Oats for fodder, tons	12
Ensilage, tons	220
Egg plant, bushels	10
Peppers, bushels	2
Milk, pounds	233,554
Pigs	120
Calves	43

Musk melons, bushels	6
Watermelons, bushels	25
Cultivated blackberries, quarts	75
Wild raspberries, quarts	36
Cultivated blackberries	75
Apples, barrels	38
Blueberries picked on neighboring land, quarts	2,700

PRESERVES, JELLIES, ETC.

Peaches, quarts	45
Blueberries, quarts	223
Blackberries, quarts	41
Raspberries, quarts	15
Plums, quarts	155
Pears, quarts	127
Grape jelly, glasses	78
Peach marmalade, quarts	3½
Crab apple jelly, glasses	25
Maple syrup, gallons	185
Currant jelly, glasses	187
Strawberries, quarts	38
Cherries, quarts	37
Apple jelly, quarts	4
Plum butter, quarts	4½
Blueberry jelly, glasses	34
Blueberry and currant, glasses	18

PICKLES.

Tomato soy, gallons	25
Pear pickle, quarts	12
Spiced cucumber pickle, gallons	9
Sweet cucumber pickle, gallons	18
Cucumbers salted, barrels	2
Cucumber pickles, gallons	40
Chili sauce, quarts	26

English pickle, quarts	19
Dutch pickle, quarts	15
Picalilli, gallons	6

VEGETABLES CANNED.

Shell beans, quarts	30
Dandelions, bushels	60
Corn, quarts	170
String beans, quarts	300
Peas, quarts	158
Tomatoes, quarts	286

ARTICLES MADE IN THE SEWING ROOM.

Aprons, ticking, 5; aprons, 428; bread cloths, 12; boys' sailor suits, 4; boys' blouses, 21; bibs, 32; brassiere waists, 5; bureau scarfs, 27; collars, 2; candy bags, 473; corset covers, 24; dish cloths, 145; drawers, pairs, 97; dresses, 195; dust caps, 11; extractor cloths, 8; guimpe, 1; holders, 11; jumpers, 132; laundry bags, 20; mittens, pairs, 76; mail bags, 2; nightshirts, 243; nightgowns, 211; overalls, pairs, 352; overshirts, 159; pants, pair, 1; pillow slips, 372; petticoats, 68; romper suits, 41; rugs, woven, 52; rugs, hooked, 1; restraint waists, 13; slippers, pair, 1; stand covers, 2; suspenders, pairs, 45; shirtwaists, 51; sash curtains, pair, 25; sanitary napkins, 201; sanitary belts, 81; sheets, 310; towels, miscellaneous, 1,059; table napkins, 237; tablecloths, 7; underwaists, 166; window curtains, hemstitched, pairs, 28; waitress' cuffs, pairs, 8; white duck coats, 28.

FANCY WORK, ETC., MADE IN SEWING ROOM.

Aprons, 5; center pieces, 4; dolls, 3; dolls' mattresses, 4; dolls' pillows, 4; dolls' sheets, 10; dolls' pillow slips, 4; dolls' spreads, 4; dolls dressed, 3; doilies, 9; handkerchief

case, 1; jabots, embroidered, 28; jabots, crocheted, 5; May pole streamers, 14; penwipers, 2; pin and needle case, 1; Pied Piper's coat, 1; rubber cases, 2; sofa pillow cover, woven, silk, 6; sofa pillow cover, woven, D, 1; sofa pillow, embroidered, 2; shoe bags, 2; Scotch caps, girdles and sashes, 4; sponge bag, 1; spool case, 1; tray cloths, 23; towels, 4; ties, hemstitched, 3 ;work bag, 1.

ARTICLES MENDED IN SEWING ROOM.

Aprons, 528; bath robe, 1; bibs, 17; blouses, 431; dress, 1; drawers, pairs, 654; gymnasium suits, 23; horse blanket, 1; jumpers, 697; laundry bags, 39; nightshirts, 1,552; overalls, 1,967; pants, 489; overshirts, 958; pillow slips, 20; restraint jackets, 59; romper suits, 692; roller towels, 3; sheets, 11; spread, 1; school bags, 3; undershirts, 515; underwaists, 11; union suits, 22; white duck coats, 51; waitress aprons, 14.

ALTERED IN SEWING ROOM.

Coats, 12; dresses, 12; petticoats, 3; pants, pairs, 3; shirtwaist, 1; skirts, dress, 2; tablecloths, 4.

PRODUCTS OF SCHOOL ROOMS.

Baskets, reed, 508; baskets, raffia, 98; broom cases, 25; raffia pillow, 1; table mats, 37; napkin rings, 11; milkweed coasters, 19; caps, knit, 117; dolls' caps, 4; mittens, pairs, 6; helmets, 8; purses, 8; sachets, 4; dolls' blankets, 4; afghan, 1; shawls, 18; yarn dolls, 4; sweaters, 4; scarf, 1; slippers, pairs, 16; baby blanket, 1; wash cloths, 21; fascinator, 1; dolls' jackets, 3; set of dolls' bells, 1; basketball markers, 9; bathing tights, pair, 1; bath mitts, 2; balls, 4; hood, 1; bean bags, 2; pincushions, 7; reins, 29; bed shoes, pair, 1; laundry bags, 1; dolls' hammocks, 14; netted laundry bags, 2; shaving pads, 3; tatting, yards, 1½.

CROCHETED.

Shawl, 1; lace, yards, 33; caps, 9; helmet, 1; hot water bag cover, 1; doilies, 34; purses, 3; sachets, 8; bags, 5; pincushion tops, 2; collar, 1; jabots, 11; lingerie cord, 1.

ARTICLES MADE IN MANUAL TRAINING SHOP.

Knife boxes, 17; plant stands, 44; coat hangers, 21; broom holders, 14; book racks and cases, 35; candlesticks, 21; blotters, 2; dolls' bedsteads, 8; polishers, 10; boxes, 29; checker boards, 8; garden markers, 4; table, 16; necktie racks, 16; inkstands, 3; clothing pegs, 1; paper knives, 10; hammock stands, 2; sleds, 10; bench hooks, 5; trousers hangers, 21; pencil holders, 2; milking stool, 1; plant tubs, 2; guns, 3; towel rollers, 2; darning balls, 3; picture frames, 11; taborets, 12; ruler, 1; footstools, 2; wind boys, 6; box traps, 4; bean bag board, 1; magazine stands, 6; closets, 6; work bench, 1; bathroom racks, 2; towel racks, 4; double runners, 5; toys, 4; umbrella racks, 2; chair, 1; hat rack, 1; goad stick, 1; ladder, 1; sleeve boards, 6; peggy sticks, 7; kites, 3; stilts, pairs, 2; pen trays, 3; brackets, 4; mirror frame, 1; puzzles, 3; drawing boards, 3; T square, 3; waste basket, 1; comb case, 1; bird house, 1; plate shelf, 1; turning saw frame, 1; forms for training class, 14; brush holders, 8; inkstands, 2; lacing form, 1; baskets, 5; knife scouring board, 1; chair bottoms, 6; moccasins, pairs, 175; basket bottoms, blocks, etc., miscellaneous lot; tool handles, 54.

REPAIRED IN MANUAL TRAINING SHOP.

Step ladders, 3; polishers, 13; bookcases, 4; sleds, 10; doll's bed, 1; wheelbarrow, 1.

THIRD BIENNIAL REPORT

OF THE

SUPERINTENDENT AND TREASURER

OF THE

NEW HAMPSHIRE STATE SANATORIUM

FOR THE

BIENNIAL PERIOD ENDING AUGUST 31, 1914

PRINTED BY JOHN B. CLARKE CO.
MANCHESTER, N. H.
1915

OFFICERS.

JOHN M. WISE, M. D. ..... *Superintendent*
WILLIAM A. DOMEY ..... *Steward*
GERTRUDE I. WISE ..... *Head Nurse*
JAMES HOUSE ..... *Farmer*
CALEB S. BURLEIGH ..... *Engineer*

Railroad Station and Postoffice, GLENCLIFF, N. H.

LOCATION.

The New Hampshire State Sanatorium is located at Glencliff, seventy-six miles north of Concord, on the White Mountain Division of the Boston and Maine Railroad, two miles from the station, on the southern slope of Mount Moosilauke, at an elevation of 1,650 feet. It averages about 170 perfectly clear days in the year. Its extremes of temperature are less than those of the surrounding places. It has an unlimited supply of pure water, and all modern conveniences.

SUPERINTENDENT'S REPORT.

To the Board of Control:

Herewith is submitted the superintendent's third biennial report of the New Hampshire State Sanatorium for the period ending August 31, 1914.

This period has witnessed no increase in the patient capacity of the sanatorium. The demand for admission has at times, especially in the winter months, greatly exceeded the capacity; in the summer months, the demand has been somewhat less. This condition is parallel with that of former years. The daily average for the first year of this report was 55.27; for the second year, 53.95. There were three hundred thirty-three applicants examined for admission; of this number, fifty-two were rejected as being hopelessly far advanced, eight were considered non-tuberculous, two hundred one were admitted, and seventy-two were not admitted for various reasons.

Types of Cases Admitted.

Of the two hundred two cases discharged during the two years, forty-one or 20.3% were incipient, eighty-eight or 43.56% were moderately advanced, and seventy-three or 36.14% were far advanced. This classification again forcibly demonstrates that if we are to treat tuberculosis as a curable disease we are, for some reason, obtaining far too few favorable cases; that if we are to treat the disease from the standpoint of prophylaxis, we are still working with an inadequate number of infectious cases, the proportion of which increases with an increasing ratio as the stage of the disease advances. Favorable cases, even when diagnosed, often hesitate to come to an institution. Patients do not always consider that the staff of an institu-

tion, or its examiners, are impartially advocating the advantages of sanatorium treatment. They quite often presume such advice to be partial. It rests with the family physician not only to find the tuberculous, but also to prepare them mentally to seek the advantages of the sanatorium before it is too late.

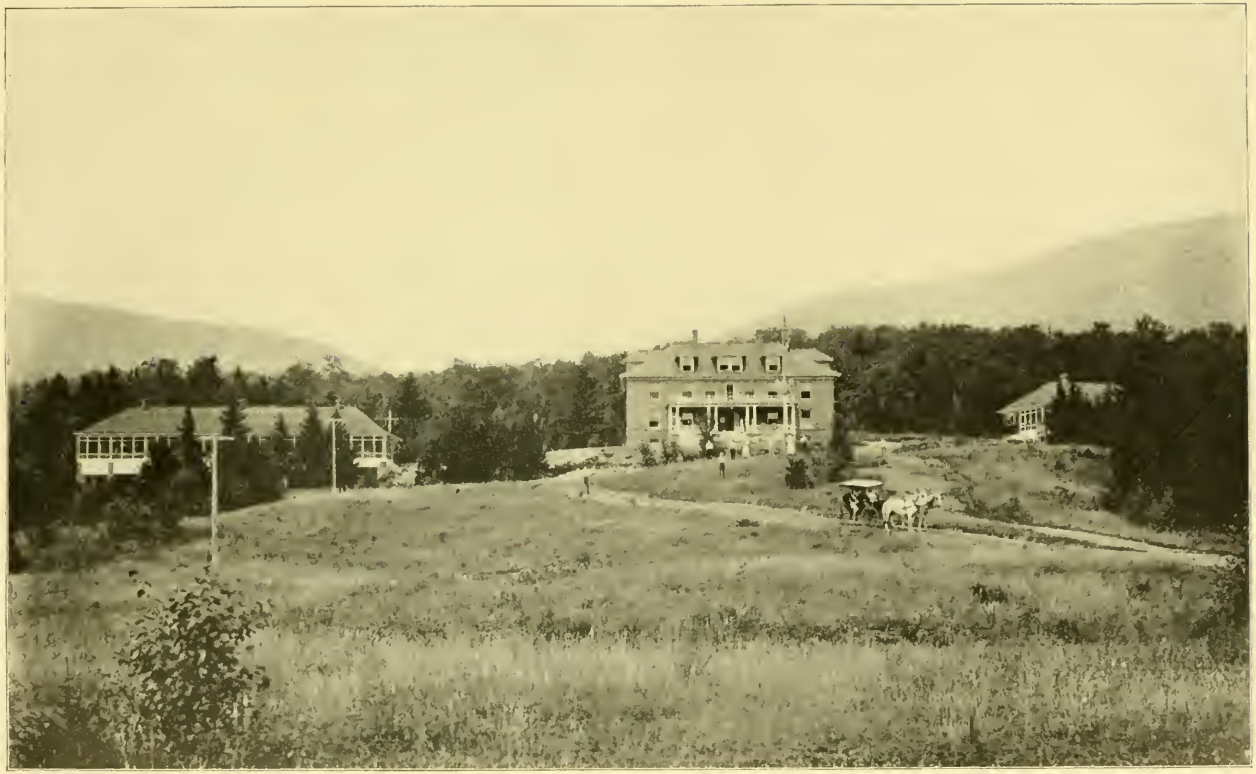
The Habit of Delay.

We receive applications from patients who have been taking treatment at home anywhere from six months to two or three years. During all this time there has been a steady decline. They have then reached a point where cure is impossible, and arrest of the disease improbable. Many of these patients have had no physician in regular attendance. Where they have had such attendance, to the attending physicians would seem to fall the responsibility of framing the minds of patients to earlier seek an institution. Those who have relied upon themselves, we are still seeking a means of reaching. Up to the present time, our most effective solicitor is the ex-patient. Aside from the discipline he receives for his own benefit, his influence as a teacher and as a disciple of the outdoor life is one of our greatest assets.

Since we are dependent upon the family physicians both for the kind and quantity of cases for our work, it seems proper that more responsibility should be placed upon their shoulders; that they should be made to feel that in their hands, quite as much as in our own, is the power to make of the anti-tuberculosis cause a success.

Change of System Advocated.

By having regular examiners for the sanatorium, the responsibility for diagnosis is unconsciously and improperly shifted to their shoulders. I believe we ought to openly place the responsibility where it belongs—upon the



From Left to Right—Female Ward, Infirmary, Administration Building, End of Male Ward *State Sanatorium.*

physicians in general practice. This would surely produce a fluctuation in the classification of cases, with a decided tendency to an increase of the more advanced. But, like the experience in other states, this fluctuation would be temporary, and would, in the course of about a year, return to its accustomed level. The experience has also shown that this method has stimulated the making of better diagnoses, has prompted better treatment, and has broken down the dangerous barrier of delay between diagnosis and admission.

I believe that the less formality necessary for application and admission to an institution, the better will be the results. It does not matter so much that we have treated so many cases of such a class with such results as that we have recognized the actual need in our state and supplied it. I would respectfully recommend that the present plan of having regularly appointed examiners be discontinued and that every registered physician be allowed to make out an application for his own patient and forward it directly to the superintendent, who shall, as heretofore, determine the admissibility of applicants. By this I do not intend to recommend the admission of hopelessly far advanced cases, but that the least degree of favorability shall continue to be that the case present a reasonable prospect of improvement.

Results of Treatment.

The results of treatment have been consistent with the types of cases furnished. The classification of results has been made in accordance with the new schema recently adopted by the American Sanatorium Association. For the percentages of results, you are respectfully referred to statistical table No. 4, and for the interpretation of this table to the schema for classification of results which appears on a subsequent page of this report. To those who are unfamiliar with the new classification this will appear

to be a less favorable result, but a comparison of the new terms and definitions with the old ones will show the results to be quite parallel with those of former years. Your attention is also called especially to Table No. 17, which contains a record of the present condition of the ex-patients of this sanatorium, as far as we are able to trace them.

After History of Patients.

The fact that so many patients who leave the sanatorium in satisfactory condition fail to keep well after they return to their homes is not a proof of the failure of the sanatorium treatment to produce permanent results, but is rather an evidence that the home life of the patients needs supervision and correction. We find that relapses are due not so much to unsuitable occupation as to the misuse of the hours between the day's regular employment. The ex-patient who fails to avail himself of these hours for rest, open-air life, and open-air sleeping, or in other words, fails to adapt his mode of living to his infirmity, is the person who is certain to be readmitted to the sanatorium. Occupation is not the greater influence in this respect; remuneration and high cost of living are more determining factors; a lesson imperfectly learned makes up the total which spells failure. The point, however, to be made is that our duty does not cease when we have discharged the patient in good condition. His subsequent history and the influence of his association with other people are quite as important as his sanatorium treatment.

This work of subsequent encouragement and supervision could not be done without the employment of a social worker, preferably an experienced nurse, to work in cooperation with and under the direction of the superintendent of the sanatorium. The salary and expenses of such a person would need to be especially provided for. We now have no systematic way of keeping in touch with our ex-patients. I submit this question for consideration,

Ward for Males—*State Sanatorium.*

as I believe it to be a valuable adjunct to our work and a branch the possibilities of which I should very much like to see realized.

Method of Admission.

For general information, the method of admission is as follows:

1. Every prospective patient must be examined by one of the regularly appointed examiners, and an application made out by the examiner and forwarded to the superintendent.

2. The superintendent decides upon the admissibility of applicants.

3. The regular rate for board and treatment is $10 per week. Those who can pay this rate are admitted at once. All others to be eligible must fill out an application for state aid and forward it to the Secretary of the State Board of Charities at Concord, stating the amount they can pay, if anything. The Secretary then determines the amount to be paid, and forwards a card to that effect to the superintendent. Those unable to pay anything are admitted free, the state assuming the expense. When vacancies occur, the superintendent notifies eligible patients when to come.

Regular Examiners.

Dr. S. R. Upham, Claremont, N. H.
Dr. M. B. Sullivan, Dover, N. H.
Dr. J. D. Proctor, Keene, N. H.
Dr. A. H. Harriman, Laconia, N. H.
Dr. A. Lavallee, Berlin, N. H., and the
Superintendent at Glencliff, N. H., except on the First and Third Tuesdays of each month, when he examines at the office of Dr. A. F. Wheat, 967 Elm Street, Manchester, N. H., from 11.00 A. M. to 12.30 P. M.

Acceptable cases are those which present a reasonable prospect of improvement or cure. Cases less favorable are rejected.

Improvements.

A complete refrigerating plant has been added to the equipment of the kitchen, and is about ready for occupancy. It will supply a long-felt want, and will enable us to buy in safety perishable provisions in larger quantities and obviate the necessity of living from hand to mouth, with occasionally an empty larder, because of poor transportation facilities. It will also save considerable expense by reducing transportation charges.

The kitchen was further equipped by the purchase of a new range, a steam table, a broiler, and tea and coffee urns. Under the refrigerating plant a vegetable cellar was built, supplying another of our various needs.

The third floor of the dining-room building has been finished and made into nine pleasant rooms, and two bathrooms for the use of employees, who had hitherto been improperly accommodated.

A new boiler of greater capacity, an engine and electric generator complete and a coal pocket have been added to the equipment of this department. This supplies a dual system for use in case one unit fails.

The enlargement of the dam is under construction. When completed this will furnish sufficient water to maintain pressure in case of fire. The installing of two hydrants with outside hose, for which an appropriation was received, has not yet been done.

The erection of a new barn for horses and cows meets a need that had been steadfastly denied until the present biennial period. Up to this time we have been compelled to hire some very poorly equipped buildings.

Acknowledgments.

Grateful appreciation is expressed to the following:

New Hampshire Branch of the Red Cross for financial aid to patients.

Ward for Females—*State Sanatorium.*

W. C. T. U. of Littleton for magazines.

W. C. T. U. of Concord for books.

Camp No. 26, S. O. V., of Claremont for a large American flag.

Federation of Women's Clubs of New Hampshire for a phonograph and records, and many books.

Mrs. Lorin Webster of Holderness for books, magazines and many kind offices.

Rev. W. A. Loyne of Warren for extensive reading material, visitations, conducting services and furnishing musical entertainments. Also to the orchestra boys of Tilton Seminary and the other good people of Warren who assisted in furnishing music.

Rev. Fr. Redden, Rev. Fr. Griffin, Rev. Fr. Walsh and Rev. Fr. Quirk of Woodsville for their willingness to respond to every call.

Rev. John Knox Tibbits of Concord for visitations, lectures and conducting services.

Respectfully submitted,

JOHN M. WISE, M. D.,

Superintendent.

STATISTICAL TABLES.

TABLE I.

ADMISSIONS AND DISCHARGES, 1912–1913.

	Men.	Women.	Total.
Number patients in sanatorium Sept. 1, 1912.....	29	23	52
Number admitted Sept. 1, 1912, to Aug. 31, 1913...	45	52	97
Number discharged Sept. 1, 1912, to Aug. 31, 1913.	44	49	93
Number deaths (included in preceding item).....	3	4	7
Number patients in sanatorium August 31, 1913..	30	26	56

Daily average for year	55.27
Total number hospital days	20,175.97
Average number weeks residence	24.78

TABLE II.

ADMISSIONS AND DISCHARGES, 1913–1914.

	Men.	Women.	Total.
Number patients in sanatorium Sept. 1, 1913.....	30	26	56
Number admitted Sept. 1, 1913, to Aug. 31, 1914...	59	45	104
Number discharged Sept. 1, 1913, to Aug. 31, 1914.	62	47	109
Number deaths (included in preceding item).....	3	2	5
Number in sanatorium August 31, 1914.....	27	24	51

Daily average for year	53.95
Total number hospital days	19,691.06
Average number weeks residence	25.81

TABLE III.

Classification of Results (National Association Classification).

	Incipient.				Mod. Adv.				Far Adv.				Total.			
	M.	W.	T.	P. C.	M.	W.	T.	P. C.	M.	W.	T.	P. C.	M.	W.	T.	P. C.
Arrested	2	0	2	5.71	2	0	2	2.50	0	0	0	.....	4	0	4	2.25
App. arrested	5	6	11	31.43	5	4	9	11.25	0	0	0	.....	10	10	20	11.24
Quiescent	5	9	14	40.00	12	7	19	23.75	4	1	5	7.94	21	17	38	21.35
Improved	3	5	8	22.86	19	18	37	46.25	10	14	24	38.09	32	37	69	38.76
Unimproved	0	0	0	.....	3	9	12	15.00	13	10	23	36.51	16	19	35	19.66
Died	0	0	0	.....	0	1	1	1.25	6	5	11	17.46	6	6	12	6.74
Considered	15	20	35	100.00	41	39	80	100.00	33	30	63	100.00	89	89	178	100.00
Not considered	5	1	6	.....	5	3	8	.....	6	4	10	.....	16	8	24	.....
Discharged	20	21	41	.....	46	42	88	.....	39	34	73	.....	105	97	202	.....

TABLE IV.

NUTRITIONAL CHANGES OF CASES DISCHARGED.

	Men.	Women.	Total.
Number who gained weight.....	82	73	155
Number who lost weight.....	16	19	35
No change in.....	8	4	12
Average gain, pounds	12.34	10.46	
Average loss, pounds	7.66	12.27	
Greatest gain, pounds.....	35	35	

TABLE V.

STAGE ON ADMISSION OF DISCHARGED CASES.

	Men.	Women.	Total	Per Cent.
Incipient	20	21	4'	20.3
Moderately advanced.....	46	42	8'	43.56
Far advanced.....	40	33	7	36.14
	106	96	2'	100.00

TABLE VI.

NUMBER DISCHARGED PAYING FULL RATE, PARTIAL RATE, AND NOTHING.

	Men.	Women.	Total.
Full rate	10	6	16
Partial rate	41	38	79
Nothing	55	52	107
	106	96	202

TABLE VII.

CIVIL CONDITION OF PATIENTS DISCHARGED.

	Men.	Women.	Total.
Married	44	34	78
Single	58	51	109
Widowed	1	10	11
Divorced	0	1	1
Separated	3	0	3
	106	96	202

TABLE VIII.

AGE OF PATIENTS DISCHARGED.

	Men.	Women.	Total.
Under fourteen years	1	1	2
Fourteen to twenty years	13	10	23
Twenty to thirty years	46	46	92
Thirty to forty years	33	27	60
Forty to fifty years	12	11	23
Over fifty years	1	1	2
	106	96	202

TABLE IX.

COUNTY OF RESIDENCE OF PATIENTS DISCHARGED.

	Men.	Women.	Total.
Belknap	3	6	9
Carroll	1	3	4
Cheshire	9	9	18
Coös	4	2	6
Grafton	11	9	20
Hillsborough	39	44	83
Merrimack	12	7	19
Rockingham	7	6	13
Strafford	12	5	17
Sullivan	4	2	6
Outside New Hampshire	4	3	7
	106	96	202

TABLE X.

Nativity of Patients Discharged.

	Men.	Women.	Total.
United States	79	54	133
Canada	11	22	33
England	2	3	5
Ireland	5	9	14
Scotland	0	3	3
Sweden	2	2	4
Russia	2	1	3
Austria	1	1	2
Greece	2	0	2
Syria	1	1	2
Italy	1	0	1
	106	96	202

TABLE XI.

Place of Examination of Applicants.

	Men.	Women.	Total.
Berlin	7	7	14
Claremont	3	5	8
Dover	16	18	34
Glencliff	47	39	86
Keene	11	8	19
Laconia	1	2	3
Manchester	100	69	169
	185	148	333

TABLE XII.

Sputum Record of Patients Discharged.

	Positive.	Negative.	Total.
Incipient	4	37	41
Moderately advanced	63	25	88
Far advanced	70	3	73
	137	65	202

TABLE XIII.

FREQUENCY OF COMPLICATIONS RECORDED.

Abscess, ischiorectal	3	Insufficiency, mitral	1
Adenitis (scrofula)	5	Lupus of mouth	1
Asthma	3	Laryngitis, tubercular	18
Cavity	40	Laryngitis, catarrhal	2
Cystitis	1	Otitis media	7
Enteritis, tubercular	8	Orchitis, tubercular	1
Epididymitis, tubercular	1	Peritonitis, tubercular	1
Haemoptyses	127	Pleurisy with effusion	2
Heart, displacement	1	Erythema vesiculosum	1
Heart, intermittent	1		

TABLE XIV.

PREVIOUS OCCUPATIONS OF THOSE DISCHARGED.

Agent	2	Factory, Machinist	4
Baker	1	Metal worker	3
Bartender	1	Paper	2
Bookkeeper	4	Housework	16
Bricklayer	1	Housewife	33
Bootblack	1	Laborer	5
Carpenter	7	Merchant	1
Cigarmaker	1	Motorman	2
Clerk, postoffice	1	Milliner	1
R. R. mail	1	Policeman	1
Store	9	Printer	1
Conductor, Street R. R.	3	Nurse	4
Cabinet-maker	1	R. R. Car Inspector	1
Dressmaker	1	Stonecutter	3
Engineer, stationary	3	Student	16
Farmer	6	Stenographer	2
Factory, Box	1	Seamstress	2
Dye	1	Telegrapher	1
Textile	28	Teacher	3
Shoe	26	Teamster	1
Foreman	1	Total	202

TABLE XV.

DEATHS IN SANATORIUM.

Duration of Disease on Admission, Length of Residence, and Cause of Death.

Case No.	Duration	Residence.	Cause of Death.
62	45 months	99 weeks, 1 day	Pulmonary Tuberculosis.
186	5 months	166 weeks, 2 days	Pulm. Tuberc. and Pulm. Haem.
194	11 months	37 weeks, 2 days	Pulm. and Laryng. Tuberculosis.
218	12 months	48 weeks, 6 days	Pulmonary Tuberculosis.
222	12 months	22 weeks, 6 days	Pulm. Tuberc. and Pulm. Haem.
274	12 months	4 weeks, 1 day	Pulmonary Tuberculosis.
306	18 months	4 weeks, 1 day	Pulmonary Tuberculosis.
321	14 months	3 weeks, 2 days	Pulmonary Tuberculosis.
364	10 months	22 weeks, 1 day	Pulm. Tuberc. and Pulm. Haem.
406	12 months	22 weeks, 3 days	Pulm. Tuberc. and Pulm. Oedema.
441	10 months	2 weeks	Pulmonary Tuberculosis.
446	14 months	7 weeks	Pulm. and Laryng. Tuberculosis.

TABLE XVI.

PRESENT CONDITION OF PATIENTS DISCHARGED.

Classified According to Condition on Admission and Discharge.

Present Condition.	Discharged. 1909. Stage.				Discharged. 1910. Stage.			
	1	2	3	Total.	1	2	3	Total.
Alive	0	1	0	1	11	19	0	30
Dead	0	1	1	2	1	11	11	23
Untraced	0	0	0	0	0	4	0	4
Working	0	1	0	1	9	14	0	23
Not working	0	0	0	0	2	5	0	7
	0	2	1	3	12	34	11	57

Present Condition.	Discharged. 1911. Stage.				Discharged. 1912. Stage.			
	1	2	3	Total.	1	2	3	Total
Alive	8	28	4	40	19	35	4	58
Dead	0	10	19	29	1	6	20	27
Untraced	3	2	2	7	2	0	1	3
Working	8	26	0	34	17	26	1	44
Not working	0	2	4	6	2	9	3	14
	11	40	25	76	22	41	25	88

Present Condition.	Discharged. 1913. Stage.				Discharged. Totals. Stage.			
	1	2	3	Total.	1	2	3	Total.
Alive	19	37	14	70	57	120	22	199
Dead	0	5	21	26	2	33	72	107
Untraced	1	1	0	2	6	7	3	16
Working	19	20	4	43	53	87	5	145
Not working	0	17	10	27	4	33	17	54
	20	43	35	98	65	160	97	322

SCHEMA FOR CLASSIFICATION OF PATIENTS ON EXAMINATION.

The following definitions indicate the furthest extent of disease and the greatest severity of symptoms that a patient can present and still belong to the stage defined. All patients beyond the incipient stage fall under the moderately advanced stage unless the physical signs and the symptoms exceed those of the moderately advanced stage, when they should be classified as far advanced.

INCIPIENT.—Slight or no constitutional symptoms (including particularly gastric or intestinal disturbances, or rapid loss of weight); slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours.

Expectoration usually small in amount or absent. Tubercle bacilli may be present or absent.

Slight infiltration limited to the apex of one or both lungs, or a small part of one lobe.

No tuberculous complications.

MODERATELY ADVANCED.—No marked impairment of function, either local or constitutional.

Marked infiltration more extensive than under incipient, with little or no evidence of cavity formation.

No serious tuberculous complications.

FAR ADVANCED.—Marked impairment of function, local and constitutional.

Extensive localized infiltration or consolidation in one or more lobes.

Or disseminated areas of cavity formation.

Or serious tuberculous complications.

ACUTE MILIARY TUBERCULOSIS.

SCHEMA FOR CLASSIFICATION OF SUBSEQUENT OBSERVATIONS.

APPARENTLY CURED.—All constitutional symptoms and expectoration with bacilli absent for a period of two years under ordinary conditions of life.

ARRESTED.—All constitutional symptoms and expectoration with bacilli absent for a period of six months; the physical signs to be those of a healed lesion.

APPARENTLY ARRESTED.—All constitutional symptoms and expectoration with bacilli absent for a period of three months; the physical signs to be those of a healed lesion.

QUIESCENT.—Absence of all constitutional symptoms; expectoration and bacilli may or may not be present; physical signs stationary or retrogressive; the foregoing conditions to have existed for at least two months.

IMPROVED.—Constitutional symptoms lessened or entirely absent; physical signs improved or unchanged; cough or expectoration with bacilli usually present.

UNIMPROVED.—All essential symptoms and signs unabated or increased.

DIED.

FINANCIAL STATEMENT.

Receipts.	1913.	1914.
Appropriations for maintenance....	$26,515.40	$30,000.00
Board of patients.....	5,660.28	2,938.29
Sale of supplies.....	245.54	231.04
Miscellaneous	203.82	107.22
Sale of farm products.....	505.12	533.07
	$33,130.16	$33,809.62
Total expenditures	33,128.63	33,632.75
Balance unexpended	$1.53	$176.87

ANALYSIS OF EXPENSES.

	1913.		1914.	
Salaries, wages and labor:				
Pay-roll		$10,846.24		$11,705.73
Food:				
Butter	$1,289.88		$1,434.27	
Beans	43.56		59.53	
Bread and crackers.....	82.13		95.51	
Cereals, rice, meal, etc.....	111.73		112.30	
Cheese	27.73		58.21	
Eggs	2,646.29		2,988.83	
Flour	245.80		273.76	
Fish	408.90		264.38	
Fruit (dried and fresh).....	932.36		565.05	
Meats	4,053.86		4,050.04	
Milk	514.58		978.75	
Molasses and syrup.....	12.91		.....	
Sugar	300.42		351.50	
Tea, coffee, broma and cocoa	290.44		327.47	
Vegetables	541.79		653.29	
Sundries	380.46		284.88	
		11,883.84		12,497.77
Furnishings:				
Beds, bedding table linen, etc.	$206.44		$289.98	
Brushes, brooms, etc.....	30.35		23.53	
Carpets, rugs, etc.....	11.75		.....	
Crockery, glassware, etc.....	194.76		125.49	
Furniture and upholstery....	73.96		47.89	
Kitchen furnishings	115.94		81.85	
Wooden ware, buckets, pails,	2.23		10.38	
Sundries	.....		18.17	
		635.43		597.29

Heat, Light and power:				
Coal	$1,888.81		$2,867.18	
Wood	256.10		179.40	
Oil	24.34		65.16	
Sundries	171.25		236.77	
		2,340.50		3,348.51
Repairs and improvements:				
Cement, lime and plaster	$15.25		.....	
Doors, sashes, etc.	4.00		.....	
Electrical work and supplies	86.98		$11.76	
Hardware	29.24		26.35	
Lumber	124.05		.....	
Machinery	4.36		.....	
Paints, oil, glass, etc.	25.59		50.71	
Plumbing, steam fitting and supplies	49.54		44.62	
Sundries	310.93		20.73	
		649.94		154.17
Farm, stable and grounds:				
Blackmith and supplies	$143.93		$64.13	
Carriages, wagons, etc., and repairs	2.46		235.40	
Fertilizers, vines, seeds, etc.	231.54		167.00	
Hay, grain, etc	1,499.12		1,206.65	
Harnesses and repairs	90.56		37.45	
Horses	450.00		221.00	
Cattle	170.00		.....	
Other live stock	28.50		239.16	
Labor (not on pay-roll)	890.49		37.50	
Rent	300.00		487.19	
Tools, farm machines, etc.	62.55		40.02	
Sundries	84.93		37.50	
		3,954.08		2,771.20
Miscellaneous:				
Labor (not on payroll)	.....		$246.84	
Books, periodicals, etc.	$12.66		.....	
Freight, expressage and transportation	558.90		497.85	
Medicines and hospital supplies	694.67		306.67	
Medical attendance, nurses, etc. (extra)	118.00		179.00	
Postage	96.44		39.39	
Printing and printing supplies	194.88		64.09	
Soap and laundry supplies	322.57		251.13	
Stationery and office supplies	39.10		41.55	
Travel and expenses (officials)	361.56		182.23	
Telephone and telegraph	93.10		86.55	
Sundries	326.72		662.78	
		2,818.60		2,558.08
Total expense		$33,128.63		$33,632.75

WEEKLY PER CAPITA COST.

Payroll	3.76	$4.161
Food	4.123	4.443
Furnishings	.221	.213
Heat, light and power	.813	1.19
Repairs and improvements	.226	.055
Farm, stable and grounds	1.372	.985
Miscellaneous	.978	.909
Total expense	$11.493	$11.956
Supplies sold at cost and bought from maintenance and Road Fund	.156	.156
Net per capita per week	$11.337	$11.80

THIRTY-SECOND REPORT

OF THE

BOARD OF TRUSTEES

OF THE

NEW HAMPSHIRE COLLEGE OF AGRICULTURE

AND

THE MECHANIC ARTS

FOR THE

Two Years Ending August 31, 1914

CONCORD:
PRINTED BY IRA C. EVANS CO.
1914

STATE OF NEW HAMPSHIRE.

DURHAM, N. H., September 1, 1914.

To His Excellency the Governor and the Honorable Senate and House of Representatives of New Hampshire:

I have the honor of transmitting herewith the report of the New Hampshire College of Agriculture and the Mechanic Arts for the two years ending August 31, 1914.

Yours respectfully,

HARVEY L. BOUTWELL,

President of the Board of Trustees.

FINANCIAL REPORT, 1912-13.

TREASURER'S REPORT.

July 5, 1912—July 12, 1913.

Cash on hand July 5, 1912,	$314.07
Income, Conant Fund,	2,881.86
Interest, state bonds,	4,800.00
State appropriation,	16,432.52
Government appropriation—Morrill Fund,	50,000.00
Government appropriation—Experiment Station,	30,000.00
W. D. Gibbs and E. T. Fairchild, presidents,	57,348.95
Income, Pillsbury Fund,	7.00
Income, Benjamin Thompson Fund,	31,887.27
Income, Hamilton Smith Fund,	400.00
Notes,	18,500.00
Income, Smythe Fund,	86.00
Income, Erskine Mason Fund,	4.12
	$212,661.79

Schedules,	$187,665.77
Notes,	22,500.00
Interest on notes,	277.39
Cash on hand July 12, 1913,	2,218.63
	$212,661.79

REPORT OF C. H. PETTEE, AUDITOR.

Fund Statement and Net Expense Summary.

July 12, 1913.

Fund Statement.

BENJAMIN THOMPSON FUND.

Receipts,		$31,887.27
Expenditures:		
Agronomy Department,	$24.70	
Animal Husbandry Department,	306.80	
Dairy Department,	205.06	
Drawing Department,	24.79	
Economic Science Department,	1,728.88	
Electrical Engineering Department,	296.92	
English Language Department,	20.99	
Farm Department,	1,206.88	
Horticultural Department,	2,742.30	
Library Department,	1,805.88	
Mathematical Science Department,	13.68	
Mechanical Engineering Department,	164.58	
Military Science Department,	467.10	
Modern Language Department,	52.05	
Physical Science Department,	76.83	
Power and Service Department,	9,304.60	
Advertising,	587.43	
Contingent expenses,	1,784.40	
Freight and express,	635.43	
Furniture and fixtures,	855.22	
One-week course,	388.98	
Office supplies,	82.00	
Postage, stationery and printing,	1,154.19	
Administrative salaries,	7,486.99	
Traveling expenses,	470.59	
		$31,887.27

CONANT FUND.

Receipts,		$2,881.86
Expenditures,		$2,881.86

ERSKINE MASON FUND.

Cash on hand July 5, 1912,	$0.24	
Receipts,	4.12	
		$4.36
Expenditures,		4.00
Balance,		$0.36

FREDERICK SMYTHE FUND.

Receipts,	$86.00
Expenditures,	70.00
Balance,	$16.00

HAMILTON SMITH FUND.

Receipts,	$400.00
Expenditures,	$400.00

LAND GRANT.

Receipts,		$4,800.00
Expenditures:		
Modern Languages—instruction,	$3,705.88	
Administrative salaries,	1,094.12	
		$4,800.00

MORRILL FUND.

Receipts,	$50,000.00

Expenditures:		
Agronomy Department,	$3,530.71	
Animal Husbandry Department,	2,839.91	
Botanical and Bacteriological Department,	1,680.34	
Chemical Department,	6,623.98	
Dairy Department,	3,743.63	
Drawing Department,	3,219.48	
Economic Science Department,	2,033.32	
Electrical Engineering Department,	4,295.49	
English Language Department,	2,037.28	
Horticultural Department,	3,362.49	
Mathematical Science Department,	4,060.18	
Mechanical Engineering Department,	6,829.81	
Physical Science Department,	2,717.17	
Zoölogical Department,	3,026.21	
		$50,000.00

ROSECRANS W. PILLSBURY FUND.

Cash on hand July 5, 1912,	$61.25
Receipts,	7.00
Balance,	$68.25

STATE APPROPRIATION (ORDINARY).

Receipts,		$8,000.00
Expenditures:		
Power and Service Department,	$6,450.27	
Curator Department,	1,437.37	
*Paper for catalogue,	112.36	
		$8,000.00

* The actual amount received by the college treasurer from the state was $7,887.64; $112.36 having been paid directly to the state printer by the state treasurer.

STATE APPROPRIATION (SPECIAL).

Receipts,		$8,544.88
Expenditures:		
Forestry,	$4,221.51	
Agricultural extension,	2,500.00	
Publication of special bulletins,	750.00	
Livestock,	1,073.37	
		$8,544.88

STUDENT LOAN FUND.

Cash on hand July 5, 1912,		$10.49
Receipts:		
Pearson estate,	$450.00	
Student loans,	350.00	
Interest on loans,	17.42	
		817.42
		$827.91
Expenditures:		
Loans,		$827.91

GENERAL FUND.

Cash on hand July 5, 1912,		—$164.44
*W. D. Gibbs, C. H. Pettee and E. T. Fairchild, presidents,		48,949.38
Amount borrowed for payment of railroad land,		1,000.00
		$49,784.94
General expenditures,	$43,880.51	
Payment on old debt and interest,	5,277.39	
		49,157.90
Balance,		$627.04

* The amount reported by treasurer as received from presidents includes in addition to this amount the cash receipts from Student Loan Fund and Sales Fund and Miscellaneous Income of Experiment Station.

HATCH FUND—EXPERIMENT STATION.

Receipts,	$15,000.00
Expenditures,	$15,000.00

ADAMS FUND—EXPERIMENT STATION.

Receipts,	$15,000.00
Expenditures,	$15,000.00

SALES FUND—EXPERIMENT STATION.

Receipts:		
Cash,	$1,640.98	
Transfers,	240.39	
		$1,881.37
Expenditures,		$1,881.37

MISCELLANEOUS INCOME—EXPERIMENT STATION.

Cash on hand July 5, 1912,		$406.53
Receipts:		
Cash,	$5,941.17	
Transfers,	89.26	
		6,030.43
		$6,436.96
Expenditures,		4,929.98
Balance,		$1,506.98

SUMMARY FUND BALANCES.

Erskine Mason Fund,	$0.36
Frederick Smythe Fund,	16.00
Rosecrans W. Pillsbury Fund,	68.25
General,	627.04
Miscellaneous income—Experiment Station,	1,506.98
Cash on hand as per treasurer's report,	$2,218.63

PARTIAL SUMMARY OF COLLEGE AND EXPERIMENT STATION PERSONAL PROPERTY.

Resources:		
Cash on hand July 12, 1913,	$2,218.63	
Accounts receivable July 1, 1913,	3,588.60	
Note receivable and interest,	945.00	
		$6,752.23
Liabilities:		
*Amount due creamery department,	$1,493.83	
Amount due Erskine Mason Fund,	.36	
Amount due Rosecrans W. Pillsbury Fund,	68.25	
Amount due Frederick Smythe Fund,	16.00	
Amount due miscellaneous income—Experiment Station,	1,506.98	
Amount due Forestry Department,	757.83	
Amount due on account old debt,	5,000.00	
Amount due on account purchase Hoitt property,	12,500.00	
Amount due on account purchase Boston & Maine Railroad land,	1,000.00	
		22,343.25
Net liabilities,		$15,591.02

* This liability is the amount owed by the Creamery Department for June milk and cream due to be paid farmers July 15.

*NET CASH INCOME.

Measuring Cost of Running College.

July 5, 1912—July 12, 1913.

(Exclusive of the Experiment Station.)

Cash on hand July 5, 1912, less cash on hand July 12, 1913,	— $804.11
Accounts receivable July 5, 1912, less accounts receivable July 12, 1913,	— 1,088.00
Conant Fund,	2,881.86
Land Grant Fund,	4,800.00
State appropriation—special,	8,544.88
State appropriation—ordinary,	8,000.00
United States Government appropriation,	50,000.00
Benjamin Thompson Fund,	31,887.27
Tuition and fees (cash),	7,918.00
Hamilton Smith Fund,	400.00
Rents,	845.46
Frederick Smythe Fund,	86.00
Rosecrans W. Pillsbury Fund,	7.00
Erskine Mason Fund,	4.12
Sewer account, rentals,	70.00
	$113,552.48
Less amount paid on old debt and interest,	5,277.39
	$108,275.09

* Not including a large number of balanced transactions in farm, dairy, and other accounts.

PRESIDENT'S REPORT.

W. D. Gibbs and E. T. Fairchild, Presidents.

C. H. Pettee, Acting President.

July 1, 1912—July 1, 1913.

INCOME.

Receipts from tuition, fees, farm, creamery, book sales, student loan fund and other gifts, greenhouse, Smith Hall, rents, general sales, and sales fund and miscellaneous income of Experiment Station, deposited with treasurer,	$57,348.95

EXPENDITURES BY SCHEDULES.

1912.		
July 15.	Schedule No. 1,	$1,735.57
July 31.	2,	12,369.28
Aug. 15.	3,	1,536.37
Aug. 31.	4,	13,146.29
Sept. 14.	5,	1,456.32
Sept. 30.	6,	14,662.27
Oct. 15.	7,	1,443.39
Oct. 31.	8,	13,321.93
Nov. 15.	9,	1,340.39
Nov. 30.	10,	13,791.28
Dec. 14.	11,	1,304.99
Dec. 31.	12,	12,239.99
1913.		
Jan. 15.	13,	1,254.40
Jan. 31.	14,	13,542.83
Feb. 15.	15,	1,432.80
Feb. 28.	16,	13,996.12
Mar. 15.	17,	1,347.68

Mar. 31.	18,	$12,121.88
Apr. 15.	19,	1,403.33
Apr. 30.	20,	15,077.47
May 15.	21,	1,564.52
May 31.	22,	14,872.97
June 14.	23,	2,742.88
June 24.	24,	7,265.09
June 30.	25,	12,695.73
		$187,665.77

DEPARTMENT TRANSACTIONS.

(Principal Departments.)

July 1, 1912—June 30, 1913.

	Receipts.	Expenditures.
Agronomy,	.....	$3,555.41
Animal husbandry.	.....	3,146.71
Botany and bacteriology,	$97.75	1,724.68
Buildings and repairs,	.....	1,412.92
Chemistry,	727.15	6,811.07
*Creamery,	22,498.54	21,004.71
Curator.	19.04	3,523.62
Dairy.	8.10	3,956.79
Drawing,	2.33	3,246.60
Economics,	.....	3,762.20
Electrical engineering.	14.50	4,606.91
English,	.....	2,058.27
Farm.	7,519.76	8,726.64
Forestry.	868.16	4,331.84
Greenhouse,	770.08	1,141.39
Horticulture,	.....	3,465.94
Library,	142.00	1,947.88
Mathematics,	.....	4,073.86

* A considerable balance is necessarily on hand at the beginning of each month to meet payments due milk patrons two weeks later.

Mechanical engineering,	$154.49	$7,148.88
Military science,	2.63	469.73
Modern language,	.....	3,757.93
Physics,	43.90	3,837.90
Power and service,	2,225.19	14,499.93
Psychology,	.....	2,356.68
Roads and grounds,	.....	2,267.54
Smith Hall,	7,433.62	7,457.80
Zoölogy,	40.10	3,048.66
Extension, including printing of bulletins,	.....	3,250.00

SALARIES OF OFFICERS OF INSTRUCTION AND AGRICULTURAL EXPERIMENT STATION STAFF.

July 1, 1912—July 1, 1913.

President of the College,	$4,049.94
Dean and professor of mathematics,	2,500.00
Director of Experiment Station,	2,966.66
Professor of history and political economy,	2,200.00
Professor of agronomy and agronomist to Experiment Station,	2,283.26
Professor of modern languages,	2,216.62
Professor of drawing and design,	2,000.00
Professor of electrical engineering,	2,300.00
Professor of psychology and sociology,	2,200.00
Professor of mechanical engineering,	2,166.62
Professor of dairying and dairyman to Experiment Station,	2,400.00
Chemist of the Experiment Station,	2,283.26
Professor of zoölogy and entomology,	1,800.00
Professor of economic entomology and entomologist to Experiment Station,	1,600.00
Professor of forestry and forester to Experiment Station,	2,300.00

Professor of physics,	$2,033.27
Professor of English,	1,800.00
Professor of botany and botanist to Experiment Station,	2,066.60
Professor of military science and tactics (salary paid by U. S. government),	.....
Professor of horticulture and horticulturist to Experiment Station,	2,033.20
Professor of chemistry,	2,200.00
Professor of animal husbandry and assistant animal husbandman to Experiment Station,	1,500.00
Associate professor of mathematics,	1,600.00
Librarian and secretary of the faculty,	1,000.00
Associate professor of economics,	1,483.32
Assistant professor of pomology and assistant horticulturist to Experiment Station,	1,583.30
Assistant professor of mechanical engineering,	1,200.00
Assistant professor of physical chemistry,	1,500.00
Assistant professor of agronomy and assistant agronomist to Experiment Station,	1,533.30
Assistant professor of electrical engineering,	1,000.00
Assistant professor of modern languages,	1,333.26
Assistant professor of mathematics,	1,366.60
Instructor in drawing,	1,000.00
Instructor in agronomy, college farmer, and vice-director of Experiment Station,	2,000.00
Instructor in chemistry,	1,100.00
Instructor in botany and assistant botanist to Experiment Station,	1,400.00
Instructor in floriculture and landscape gardening and assistant in floriculture to Experiment Station,	1,300.00
Assistant chemist of Experiment Station,	1,300.00
Instructor in dairying,	833.30
Instructor in woodworking and foundry work,	833.32
Instructor in machine work and forging,	1,183.32

Instructor in olericulture and assistant in olericulture to Experiment Station (2 mos.),	$233.32
Instructor in animal husbandry and animal husbandman to Experiment Station,	1,391.66
Assistant in dairying,	180.00
Assistant in zoölogy and assistant entomologist to Experiment Station,	900.00
Assistant in chemistry,	640.00
Assistant in botany (2 mos.),	66.66

FINANCIAL REPORT, 1913-14.

TREASURER'S REPORT.

July 12, 1913—July 7, 1914.

Cash on hand July 12, 1913,	$2,218.63
Income, Conant Fund,	2,945.90
Interest, state bonds,	4,800.00
State appropriation,	77,675.89
Government appropriation, Morrill Fund,	50,000.00
Government appropriation, Hatch and Adams Funds,	30,000.00
E. T. Fairchild, president,	64,364.76
Income, Pillsbury Fund,	3.50
Income, Benjamin Thompson Fund,	31,887.26
Income, Hamilton Smith Fund,	400.00
Gift, Mr. Pillsbury,	58.83
Interest, daily bank balance (November, 1913—July 1, 1914),	247.23
Income, Smythe legacy,	232.00
Income, Erskine Mason Fund,	4.12
Notes,	18,500.00
	$283,338.12

Notes,	$18,500.00
Interest on notes,	59.29
Dividend on Pillsbury Fund—transfer to savings-bank,	71.75
Gift, Pillsbury—transfer to savings-bank,	58.83
Schedules,	262,789.53
Balance July 7, 1914,	1,858.72
	$283,338.12

Notes outstanding July 12, 1913,	$18,500.00
Paid,	18,500.00
Notes outstanding July 7, 1914,	18,500.00

REPORT OF C. H. PETTEE, AUDITOR.

Fund Statement and Net Expense Summary.

July 1, 1913—June 30, 1914.

	Receipts.	Expenditures.	Balance.
Conant Fund,	$2,945.90	$2,945.90	.....
Erskine Mason Fund,	4.48	4.00	$0.48
Smythe Fund,	248.00	133.33	114.67
Hamilton Smith Fund,	400.00	400.00	.....
Pillsbury Fund,	130.58	130.58	.....
Morrill Fund,	50,000.00	50,000.00	.....
Hatch Fund,	15,000.00	15,000.00	.....
Adams Fund,	15,000.00	15,000.00	.....
Sales,	1,199.59	1,199.59	.....
Miscellaneous,	8,491.09	7,813.49	677.60
Land Grant Fund,	4,800.00	4,800.00	.....
State Appn. Fund,	77,675.89	77,675.89	.....
Thompson Fund,	31,887.26	31,887.26	.....
General Fund,	56,808.10	55,930.07	878.03
Notes and interest,	18,747.23	18,559.29	187.94
	$283,338.12	$281,479.40	$1,858.72

GENERAL FUND.

Cash on hand July 1, 1913,	$627.04	
Receipts (Pres. E. T. Fairchild),	56,181.06	
		$56,808.10
Expenditures,		55,930.07
		$878.03

INTEREST FUND (DAILY BALANCES).

Receipts,	$247.23
Expenditures,	59.29
	$187.94

CONANT FUND.

Receipts,	$2,945.90
Expenditures,	$2,945.90

ERSKINE MASON FUND.

Cash on hand July 1, 1913,	$0.36	
Receipts,	4.12	
Total,		$4.48
Expenditures,		4.00
		$0.48

FREDERICK SMYTHE FUND.

Cash on hand July 1, 1913,	$16.00	
Receipts,	232.00	
Total,		$248.00
Expenditures,		133.33
		$114.67

HAMILTON SMITH FUND.

Receipts,	$400.00
Expenditures,	$400.00

ROSECRANS W. PILLSBURY FUND.

Cash on hand July 1, 1913,	$68.25	
Receipts,	62.33	
		$130.58
Expenditures (transferred to savings-bank),		$130.58

MORRILL FUND.

Receipts,		$50,000.00
Expenditures:		
Agronomy Department,	$2,547.42	
Animal Husbandry Department,	2,056.00	
Botanical and Bacteriological Department,	1,796.60	
Chemical Department,	6,663.68	
Dairy Department,	3,663.26	
Drawing Department,	3,000.00	
Economic Science Department,	3,316.60	
Electrical Engineering Department,	3,583.81	
English Language Department,	2,799.98	
Forestry Department,	2,300.00	
Horticultural Department,	2,915.55	
Mathematical Science Department,	3,916.62	
Mechanical Engineering Department,	5,591.54	
Physical Science Department,	2,805.52	
Zoölogical Department,	3,043.42	
		$50,000.00

HATCH FUND—EXPERIMENT STATION.

Receipts,	$15,000.00
Expenditures,	$15,000.00

ADAMS FUND—EXPERIMENT STATION.

Receipts,		$15,000.00
Expenditures,		$15,000.00

SALES FUND—EXPERIMENT STATION.

Receipts:		
Cash,	$1,199.59	
Transfers,	245.94	
		$1,445.53
Expenditures,		$1,445.53

MISCELLANEOUS INCOME—EXPERIMENT STATION.

Cash on hand July 1, 1913,		$1,506.98
Receipts:		
Cash,	$6,984.11	
Transfers,	871.96	
		7,856.07
		$9,363.05
Expenditures,		8,685.45
Balance,		$677.60

LAND GRANT.

Receipts,		$4,800.00
Expenditures:		
Modern language instruction,	$3,756.00	
Administrative salaries,	1,044.00	
		$4,800.00

*STATE APPROPRIATIONS.

Receipts,		$77,685.89
Expenditures:		
Poultry,	$4,000.00	
Power and service,	7,843.62	
Tuition,	3,000.00	
Gymnasium (fire loss),	1,647.14	
†Engineering building,	53,038.75	
Curator,	2,373.07	
Administrative salaries,	2,390.63	
Postage, stationery and printing,	1,212.17	
Roads and grounds,	588.18	
‡Agricultural extension,	1,086.57	
Furniture and fixtures,	416.50	
One-week course,	79.26	
Mileage,	10.00	
		$77,685.89

BENJAMIN THOMPSON FUND.

Receipts,		$31,887.26
Expenditures:		
Agronomy Department,	$231.07	
Animal Husbandry Department,	349.13	
Botany Department,	447.70	
Dairy Department,	428.18	
Drawing Department,	73.26	
Electrical Engineering Department,	522.63	
Economic Science Department,	99.06	
English Language Department,	32.50	

* Statement includes $10 in mileage paid directly by state treasurer.

† Amount received up to July 1, 1914. $5,737.37 additional was received in the two months ending August 31, 1914, as reported by the State Treasurer whose financial year closes two months later than that of the U. S. Government and the college.

‡During the year, $1,513.43 was expended from other funds for Agricultural Extension.

Farm Department,	$1,766.66	
Greenhouse,	618.55	
History Department,	2,287.75	
Horticultural Department,	421.90	
Home Economics Department,	1,652.52	
Library Department,	2,136.76	
Mathematical Science Department,	95.37	
Mechanical Engineering Department,	1,029.64	
Military Science Department,	215.90	
Modern Language Department,	41.63	
Physical Science Department,	572.20	
Administrative salaries,	6,812.69	
Building and repairs (gen.),	92.16	
Contingent expenses,	871.46	
Curator,	1,013.11	
Freight and express,	601.37	
Furniture and fixtures,	239.81	
Office supplies,	218.23	
One-week course,	186.46	
Postage, stationery and printing,	477.07	
Power and service,	7,467.83	
Publicity,	194.68	
Publicity salary,	225.00	
Traveling expenses,	464.98	
		$31,887.26

SUMMARY—FUND BALANCES.

Erskine Mason Fund,	$0.48
Frederick Smythe Fund,	114.67
Miscellaneous income—Experiment Station,	677.60
Interest,	187.94
General,	878.03
Cash on hand as per treasurer's statement,	$1,858.72

PARTIAL SUMMARY OF COLLEGE AND EXPERIMENT STATION PERSONAL PROPERTY.

Resources:		
Cash on hand July 12, 1914,	$1,858.72	
Accounts receivable.	3,820.71	
		$5,679.43
Liabilities:		
Amount due creamery,	$2,126.43	
Amount due Mason Fund.	.48	
Amount due Smythe Fund,	114.67	
Amount due misc. income—Experiment Station.	677.60	
Amount due on notes,	18,500.00	
Amount due Forestry Department,	684.96	
Amount due Smith Hall.	836.91	
		22,941.05
Net liabilities.		$17,261.62

*NET CASH INCOME.

Measuring Cost of Running College.

July, 1913—July, 1914.

(Exclusive of the Experiment Station.)

**Cash on hand July, 1913, less cash on hand July, 1914.	—$469.47
Accounts receivable July, 1913, less accounts receivable July, 1914,	712.89
Conant Fund.	2,945.90
Land Grant Fund.	4,800.00
State appropriation, special poultry,	4,000.00
State appropriation, tuition.	3,000.00

* Not including a large number of balanced transactions in farm, dairy, and other accounts.
** Experiment Station balance not included.

State appropriation,	$16,000.00
Government appropriation,	50,000.00
Benjamin Thompson Fund,	31,887.26
Tuition and fees (cash),	9,346.50
Hamilton Smith Fund,	400.00
Rents,	599.95
Frederick Smythe Fund,	248.00
Erskine Mason Fund,	4.48
Sewer rentals,	50.00
Smith Hall,	836.91
	$124,362.42
Less amount paid on sewer account, Ballard Hall and for poultry associations, etc.,	6,509.23
	$117,853.19

REPORT OF THE PRESIDENT.

E. T. Fairchild.

July 1, 1913, to June 30, 1914.

INCOME.

Receipts from tuition, fees, farm, creamery, bookstore, gifts, greenhouse, Smith Hall, rents, general sales, sales fund and miscellaneous income of Experiment Station, deposited with the treasurer,	$64,364.76

EXPENDITURES BY SCHEDULES.

1913.		
July 15.	Schedule No. 1,	$2,291.89
July 31.	2,	11,707.44
Aug. 15.	3,	1,964.64

Aug. 30.	4,	$12,144.50
Sept. 15.	5,	1,669.95
Sept. 30.	6,	9,852.58
Sept. 30.	7,	8,581.93
Oct. 15.	8,	1,691.71
Oct. 31.	9,	17,431.47
Nov. 15.	10,	1,873.02
Nov. 29.	11,	19,567.44
Dec. 15.	12,	1,720.05
Dec. 15.	13,	3,116.26
Dec. 31.	14,	14,722.57
1914.		
Jan. 15.	15,	1,819.39
Jan. 15.	16,	8,505.01
Jan. 31.	17,	13,956.20
Feb. 14.	18,	1,787.36
Feb. 16.	19,	11,948.69
Feb. 28.	20,	15,989.21
Mar. 14.	21,	1,593.86
Mar. 31.	22,	17,140.37
Apr. 15.	23,	1,746.85
Apr. 30.	24,	22,149.75
May 12.	25,	6,648.52
May 15.	26,	1,757.43
May 29.	27,	14,511.44
June 15.	28,	2,107.04
June 16.	29,	5,266.18
June 25.	30,	8,432.57
June 30.	31,	19,094.21
Total,		$262,789.53

DEPARTMENT TRANSACTIONS.

(Principal Departments.)

July 1, 1913—June 30, 1914.

	Receipts.	Expenditures.
Agronomy,	.....	$2,778.49
Animal husbandry,	.....	2,405.13
Botany and bacteriology,	$194.56	2,438.86
Buildings and repairs,	.....	1,747.43
Chemistry,	716.55	7,891.27
*Creamery,	27,441.10	25,484.46
Curator,	.....	2,186.18
Dairy,	.....	3,091.44
Drawing,	9.73	3,082.99
Economics,	.....	1,765.66
Electrical engineering,	.21	4,106.65
English,	.....	2,832.48
Entomology,	.....	586.60
Farm,	7,567.57	9,334.23
Forestry,	1,639.22	3,254.26
Greenhouse,	651.66	1,270.21
Home economics,	99.85	3,538.13
Horticulture,	36.10	3,373.55
History,	.....	2,287.75
Library,	150.00	3,241.87
Mathematics,	.....	4,011.99
Mechanical engineering,	59.46	6,680.64
Military science,	.....	215.90
Modern language,	.....	3,797.63
Physics,	94.00	3,471.72
Poultry, including extension,	85.14	3,785.14
Poultry associations,	.....	900.00
Power and service,	1,922.46	17,232.91
Psychology,	.....	2,359.40

* A considerable balance is necessarily on hand at the beginning of each month to meet payments due milk patrons two weeks later.

Roads and grounds,	.....	$1,512.19
Smith Hall,	8,367.51	7,530.60
Zoölogy,	182.55	2,911.17
Extension,	.....	2,600.00

SALARIES OF OFFICERS OF INSTRUCTION AND AGRICULTURAL EXPERIMENT STATION STAFF.

July 1, 1913—June 30, 1914.

President of the College,	$5,000.00
Dean and professor of mathematics,	2,500.00
Director of Experiment Station,	3,000.00
Professor of history,	2,200.00
Professor of agronomy and agronomist to Experiment Station,	2,466.00
Professor of modern languages,	2,200.00
Professor of drawing and design,	2,000.00
Professor of electrical engineering,	2,300.00
Professor of psychology and sociology,	2,200.00
Professor of mechanical engineering,	2,200.00
Professor of dairying and dairyman to Experiment Station,	2,400.00
Professor of zoölogy and entomology,	1,883.30
Professor of economic entomology and entomologist to Experiment Station,	1,600.00
Professor of forestry and forester to Experiment Station,	2,300.00
Professor of physics,	2,000.00
Professor of English,	1,966.60
Professor of botany and botanist to Experiment Station,	2,000.00
Professor of horticulture and horticulturist to Experiment Station,	2,000.00
Professor of chemistry,	2,500.00
Professor of animal husbandry and assistant animal husbandman to Experiment Station,	1,750.00

Professor of home economics and dean of women,	$1,650.00
Professor of economics,	1,666.60
Professor of military science and tactics (salary paid by the government),	.....
Associate professor of mathematics,	1,600.00
Assistant professor of pomology and assistant horticulturist to Experiment Station,	1,600.00
Assistant professor of mechanical engineering,	1,200.00
Assistant professor of physical chemistry,	1,583.30
Assistant professor of agronomy and assistant agronomist to Experiment Station,	1,024.94
Assistant professor of electrical engineering,	1,249.96
Assistant professor of modern languages,	1,400.00
Assistant professor of mathematics,	1,566.62
Assistant professor of botany,	980.00
Assistant professor of animal husbandry in charge of poultry,	1,250.00
Instructor in drawing,	1,000.00
Instructor in agronomy, college farmer and vice-director of Experiment Station,	1,333.32
Instructor in chemistry,	1,100.00
Instructor in floriculture and landscape gardening and assistant in floriculture to Experiment Station,	1,106.64
Instructor in dairying,	1,083.26
Instructor in woodworking and foundry work,	1,066.60
Instructor in machine work and forging,	1,024.94
Instructor in animal husbandry and animal husbandman to Experiment Station,	1,500.00
Instructor in English,	1,083.30
Instructor in physics,	805.52
Assistant in dairying,	180.00
Assistant in chemistry,	700.00
Assistant in economic entomology,	1,066.66
Assistant in zoölogy,	500.00
Assistant in botany,	416.60
Assistant in modern languages,	200.00

NEW HAMPSHIRE AGRICULTURE

REPORT

OF THE

BOARD OF AGRICULTURE

FROM

SEPTEMBER 1, 1912, TO SEPTEMBER 1, 1913

By NAHUM J. BACHELDER, Secretary,

AND OF THE

DEPARTMENT OF AGRICULTURE

FROM

SEPTEMBER 1, 1913, TO SEPTEMBER 1, 1914

By ANDREW L. FELKER, Commissioner.

Printed by Ira C. Evans Co., Concord.
Bound by George G. Neal, Dover.

STATE OF NEW HAMPSHIRE.

CONCORD, September 1, 1913.

To His Excellency the Governor and the Honorable Council:

I take pleasure in submitting the following, being the report of Hon. Nahum J. Bachelder, Secretary of the Board of Agriculture, for the year ending September 1, 1913, and respectfully ask that it be printed and made a part of this record.

ANDREW L. FELKER,
Commissioner.

BOARD OF AGRICULTURE.

ORGANIZED AUGUST 23, 1870.

MEMBERS 1912, 1913.

HIS EXCELLENCY SAMUEL D. FELKER.

HERBERT O. HADLEY, Chairman, . .	Peterborough.
JOSEPH D. ROBERTS, ...	Rollinsford.
WILLIAM H. NEAL, ...	Meredith.
ALDEN F. SANBORN, ...	Fremont.
THADDEUS W. BARKER, ...	Nelson.
HARRY MORRISON, ...	Orford.
CHARLES T. ROSSITER, ...	Claremont.
GEORGE M. PUTNAM, ...	Hopkinton.
MILES W. GRAY, ...	Columbia.
JOHN E. POTTER, ...	Conway.

NAHUM J. BACHELDER, Secretary.

GENERAL REPORT.

STATE OF NEW HAMPSHIRE.

BOARD OF AGRICULTURE,

CONCORD, September 1, 1913.

To His Excellency the Governor and the Honorable Council:

The report of the State Board of Agriculture from September 1, 1912, to September 1, 1913, is herewith submitted:

PUBLIC MEETINGS AND INSTITUTES.

PUBLIC MEETINGS.

1913.

January 16 and 17.—Colebrook.
July 30.—Hampton Beach.

INSTITUTES.

1912.

December 3.—Charlestown.
December 4.—Claremont.
December 5.—Marlborough.
December 6.—Walpole.
December 10.—Centre Harbor.
December 12.—Mason.
December 13.—Bedford.

1913.

January 7.—Freedom.
January 8.—Belmont.
January 9.—Warner.
January 14.—Rollinsford.
January 18.—Bethlehem.
January 19.—Lebanon.
January 20.—Dunbarton.
March 19.—Troy and Fitzwilliam.

Cost of Public Meetings and Institutes, $1,183.53.

Feeding Stuffs Inspection.

An agent of the State Board of Agriculture drew samples of feeding stuffs offered for sale, to the number of 354. Of these, 41 represented duplicates and samples which did not require a license, or analysis. The remaining 313 samples were analyzed by the New Hampshire Agricultural Experiment Station and the results published, as required by law, in a bulletin issued by the Station, to the number of 17,000 copies. The results also appear in this report, as provided by law.

The amount received for license fees and paid into the state treasury was $4,080.

The expenses for feeding stuffs inspection have been as follows:

Services and expenses of agent, collecting samples	$378.15
Printing 17,000 bulletins	211.78
Printing cards and blanks	11.46
New Hampshire Agricultural Experiment Station for analysis	1,655.00
	$2,256.39

Fertilizer Inspection.

An agent of the State Board of Agriculture drew samples of fertilizers offered for sale in the state to the number of 187. These were submitted to the New Hampshire Agricultural Experiment Station for analysis. The result of the analysis will be found in this report, and will be issued in bulletin form.

The amount received in license fees and paid into the state treasury was $2,655.

The expenses of fertilizer inspection have been as follows:

Services and expenses of agent collecting samples	$576.06
New Hampshire Agricultural Experiment Station for analysis	1,920.00
	$2,496.06

Seed Inspection.

The agent of the State Board of Agriculture collecting samples of fertilizers for analysis, collected 73 samples of seeds offered for sale in the state. These, with 34 samples voluntarily sent in, making 107 samples, were analyzed by the New Hampshire Agricultural Experiment Station, the results of which will be published in bulletin form and will be found in this report.

The expenses for seed inspection were as follows:

Services of agent in charge of the 1913 inspection	$35.00
Printing of 17,000 bulletins, 1912 inspection	143.78
Services of agent in charge of the 1913 inspection	21.00
	$199.78

Preparing and Issuing Publications.

Under the statute providing for collecting and publishing information relative to the agricultural resources of the state, 6,000 copies of the eleventh edition of "New Hampshire Farms for Summer Homes" have been published and distributed. There has also been published and distributed 1,000 copies of a list of farms available for use as summer homes, or for farming purposes. Printed matter furnished by the New Hampshire Old Home Week Association has also been sent on request, and to a list of persons making inquiry, on file in the office. An extensive correspondence has been conducted in regard to agricultural conditions and resources in rural New Hampshire.

The expense of this work has been as follows:

Printing	$1,487.76
Postage	270.00
Clerical work	32.50
Editorial	425.00
Transportation	30.00
	$2,245.26

Nursery Inspection.

The nursery inspection work has been under the direction of Charles W. Stone, of Durham, as in previous years. The commercial nurseries of the state have been inspected and certificates issued as provided by law. Many shipments of nursery stock from foreign countries have been inspected at the request of the Federal Horticultural Board, although not required by the law. The nursery inspector has served without compensation and the necessary expenses of the inspection made was $181.05.

Contagious Diseases of Animals.

The secretary of the State Board of Agriculture has acted as executive officer of the State Board of Cattle Commissioners, as in former years. The same policy, as to inspections and permits for animals to be brought into the state, has been continued. The former has been based upon application reporting symptoms of a contagious disease, when a qualified veterinarian was ordered to make physical inspection and after appraisal destroy such animals as were found infected. Permits have been issued for cattle to enter the state upon the certificate of a qualified veterinarian that the animals were free from a contagious disease, based upon the result of the tuberculin test applied to all cattle over six months old. Cattle for pasturage, to be returned at the end of the pasturage season, have been admitted upon the certificate of a qualified veterinarian based upon a physical examination. In accordance with a law enacted in 1911, New Hampshire cattle ordered killed by the cattle commission of another state have been paid for on a basis of one-half the health value, less the amount received as salvage.

The expenditures, under the head of Cattle Commission, have been as follows:

286 tuberculous cattle destroyed in New Hampshire (one-half health value)	$6,149.25
65 tuberculous cattle destroyed in Massachusetts (one-half health value)	1,428.45
8 glandered horses destroyed (diseased value)	40.00
Services of veterinarians	1,511.50
Expenses of veterinarians	853.50
Services and expenses of appraisers	525.54
Services and expenses of executive officer and members of board	1,128.62
	$11,636.86

Other Expenditures.

Other expenditures for the year have been as follows:

Expenses members Board of Agriculture	$264.15
Printing blanks	8.00
Incidentals	237.30
Printing report	461.70
Salary of secretary	1,500.00
Salary of clerk	1,000.00
	$3,471.15

Respectfully submitted,

N. J. BACHELDER,
Secretary.

ABSTRACT OF ADDRESSES

AT

FARMERS' INSTITUTES.

ABSTRACT OF ADDRESSES AT FARMERS' INSTITUTES.

INSTITUTE AT MR. CHARLES ROSSITER'S FARM AT CLAREMONT.

BY DR. GEORGE M. TWITCHELL.

It has been my good fortune to attend many farmers' institutes in New Hampshire, but never one like the impromptu gathering following the canceled meeting at Cornish, because of smallpox. The member of the State Board from that county, Mr. Rossiter, of Claremont, is a live wire, and when he got word of the quarantine he did not propose to leave the speakers in idleness, but rushed to the telephone to invite his farmer neighbors and friends to his home, and notified the speakers that regular work awaited them. Such enterprise would soon revolutionize the sentiment of any community. Mr. Rossiter is a live farmer. Everything about his attractive home and buildings tells of business. His farm, a grand one, two miles from Claremont village, is well adapted to the work he is doing, and the evidence of good farming was to be seen on every hand. The twenty registered Jerseys, with a record the past year of 400 pounds of butter per head, want no bolstering, yet it is but fair to state that a number of these are two-year-olds of grand promise. At the head stands a St. Lambert cow giving 11,000 pounds of milk the past year, testing better than five per cent.

Especially attractive were his heifers, mostly Flying Fox—attractive in conformation, rich in evidence of large production.

In another barn we found fifteen yokes hanging on the walls, and in the long tie-up six or eight pairs of grade

Shorthorn steers. "Here are my pets," said Mr. Rossiter, as he opened the door; and, from yearlings up, they were good ones. Here is a farmer who knows he can make dairying pay with a dairy cow, steers yield a profit if of beef blood, and sheep return a sure income. One fact was at once impressed, that this farmer knows where he is and what he is doing. When comment was made on the bright condition of the haymows, the explanation came quickly, "I want my hay in the barn by the 8th of July, so as to get the greatest feeding value, in form best liked by the cows."

A delightful dinner presided over by a wife who is a helpmeet indeed, and the chairs were moved into the large sitting-room, and the farmers came until more than forty, many bringing their wives, were crowded in. Prof. Gourley discussed the apple tree, especially the lessons of pruning, and the writer the corn and potato problem. It was a delightful afternoon, wholly informal, where questions were promptly asked and points freely discussed. The farmers were there to get the viewpoint of the speakers. The last hour of the long afternoon was spent in the barn with the beef and dairy type of animal side by side. Here the lesson of structure was discussed, and the necessity of studying individuals impressed. It was a hearty vote of thanks extended by the visitors to Mr. and Mrs. Rossiter, and many were heard to say, "We like this sort of an institute and the way it has been conducted."

While more elaborate institutes will be held, and more carefully prepared addresses delivered, it may be questioned whether there will come a closer or more direct touch with the workers than was realized that afternoon. The very atmosphere was charged with interest, and the informal character of the session added greatly to the success of the gathering. Every man present was a farmer, and all were there in one place with a single thought. The conviction grows that Mr. Rossiter has

given here an object lesson of great value, and that in the future like informal gatherings will multiply to the good of the industry. It is this, and this alone, that secretary and member and speaker are laboring for, and year by year one realizes the steadily increasing influence of the board and the growing recognition of its service by the farmers of the state.

ORCHARD MANAGEMENT.

BY PROF. W. H. WOLFF, OF DURHAM.

This is indeed a big subject, involving not only technical knowledge of orchard management but also first-class executive ability, in order to get the various operations done in good season. Let us assume that a suitable location has been selected, insuring both air and soil drainage. The first problem will be to maintain or to increase soil fertility. The modern business tree needs to grow freely, to make rapid and large growth, especially during its early years. Later on it needs to be handled with special reference to crop production.

In order to make the greatest profit it will be necessary to supply the requisite plant food and soil fertility as economically as possible. We should plan to make available and to use what is already stored up in the soil. For example, the chemists tell us that many of our New Hampshire soils, notably the boulder clay soils, contain as much as two per cent. of actual potash. This will amount to many thousands of pounds of potash per acre. We should, then, aim to make use of some small part of this immense quantity of plant food.

The liberating of plant food in the soil can best be done through cultivation. In no other way can rapid growth be so surely or so economically secured. Cultivation also conserves moisture, and since it is an established fact that

nearly every year our plants suffer more or less from an inadequate supply of soil moisture the importance of its conservation can readily be seen. Plants can only take their food in solution, and consequently, even though immense quantities of plant food might be present in the soil, without sufficient moisture they are absolutely useless.

Many orchards are, however, on such rough lands that cultivation is impossible, and under such conditions the sod mulch system should be resorted to. This consists in mowing the grass several times during the season and piling it to the depth of several inches about the tree in a circle extending from the trunk several feet beyond the spread of the branches. The use of cheap hay, straw or weeds, in addition to the grass mowings, will help considerably. If this system is used, the liberal use of fertilizers is in order. It is true that Baldwins in highly cultivated orchards do not color up as well as might be desired; hence, since high-colored fruit is always desirable for top market prices, there is undoubtedly a point beyond which cultivation should not be carried. Indeed, where Baldwins are being grown for the fancy market, the cultivation of a portion of the orchard surface with sod mulch about the trees, may give the best results.

If it is, however, the greatest number of bushels or barrels of apples that is desired, let it be distinctly understood that practical experience and the results of thorough experiments point conclusively to clean culture as the method to pursue. If our orchard is to be given clean culture, it will need to be plowed each spring, harrowed frequently until midsummer, when some cover crop should be sown, preferably a leguminous crop. About July 15 to August 1 is usually the best time for sowing the above crop.

Crimson clover makes a splendid cover crop on account of its rapid fall growth and its ability to store up large

quantities of nitrogen in the soil. The cover crop will help in many ways. It will hasten the ripening of the wood and fruit buds in the fall by taking up moisture and available and soluble plant food. It will act as a winter protector for the roots of the trees. Again, if we are securing a good catch year after year of crimson clover or winter vetch, in the mature orchard, no nitrogen will need be supplied. This, however, would not apply in the case of the young orchard not yet having arrived at bearing age.

In our orchard management the fertilizer problem calls for serious study. The experiment station at Geneva, N. Y., has reported that on their type of soils applications of fertilizers to apple orchards did not pay sufficiently to warrant their use. In experiments at the Pennsylvania station, at the Massachusetts station and in our own experiments in New Hampshire, we have found that fertilizers usually paid well, when intelligently used. This coincides also with the experience of our best practical growers. Basic slag is coming into use more and more as a source of supply for phosphoric acid and we feel that we can recommend its use at the rate of about 600 to 1,000 pounds per acre. The potash required may be supplied by wood ashes at the rate of about 50 to 75 bushels per acre, or by muriate or sulphate of potash at the rate of 200 to 250 pounds per acre each spring. Potash has been supposed to be instrumental in securing color and finish to our fruits. While doubt has been cast upon this, from our observations, notably in the case of apples, we are led to believe that it is true.

Another problem in orchard management is that of the control of insects and plant diseases. In both apple and peach orchards, especially where San José scale is present, the first spraying should be while the trees are dormant, from March 1 to April 15, preferably when the buds

are swelling, using commercial lime-sulphur one part to ten of water. This will act as a general cleaning-up spraying for the orchard, and if thoroughly done will rid the trees of San José scale for the season, and prevent the work of the blister mite on the under side of apple leaves, and on peach trees will act as a specific in the prevention of leaf curl.

The second spraying is applied when the pink of the blossoms begins to show. It is meant especially to prevent or kill apple scab, canker worms, tent caterpillars, the apple curculio and young gypsy moths. The spray consists of lead arsenate, three pounds to 50 gallons of water, combined with lime-sulphur one to 40, or Bordeaux mixture 3-3-50. The third spraying of the season which we would recommend is applied just after the blossoms fall. The formula is the same as the last. This spraying should be repeated three weeks later, comprising a fourth spraying.

The last, and usually a very important spraying of the season, should be given during the first week in August, again using the lead arsenate and Bordeaux mixture as above. This is to prevent the late outbreak of apple scab and to take care of the hatching brown-tail and other fall caterpillars. There will be many other problems arising in regard to the control of special insects and diseases, and these may be answered by referring them in particular to the experiment station at Durham.

The subject of packing, grading and marketing has been assigned to my colleague, the practical, noted orchardist, Mr. C. E. Hardy, of Hollis, and so I will leave that subject entirely to him.

Orchard management requires a technical knowledge of all the factors that go to make up growth of trees, productiveness and perfection in fruits. It is an immense subject, on which we are gaining fresh stores of information every year. He who would become proficient must

be intensely interested, and must be willing to devote years of study to both the work of the scientist and also to that of the most successful commercial growers.

CARE OF THE OLD APPLE ORCHARDS.

BY CHARLES E. HARDY, OF HOLLIS.

This is a part of the farm management that needs a great deal of care and attention; if you wish for success in your orchards, it will not do to get at it in a haphazard way. The average New England farmer has been accustomed in years past to set out his trees and let them take care of themselves, and as time went on, if there were a few apples they were harvested and sold, and the farmer was so much in. But in these days of bugs and pests, and the competition that we are up against with the western apple in our eastern markets, we cannot afford to do business in this way. In fact, if we let our trees go in this way without care now, the fruit is not worth trying to market. As we travel up and down our state, and in fact all over New England, we see a great many orchards that look very bad, look as if they were past redemption.

Most of the trees, with proper treatment, can be made to produce good crops of good apples for a good many years yet, and thus keep our apple supply good until our young orchards, that are being planted every year, come into bearing. Then we can surely compete with any of the western apples.

First, these old trees should be thoroughly pruned, cutting out all the dead wood, opening up the centre of the tree for more sunlight and thinning out the rest of the wood, so that the sun and air can get at all the fruit.

When the trees are very high, as is the case with the majority of our old orchards, cut them back so that the

apples can all be picked with a twenty-foot ladder. In many cases where the top of the tree is about all dead, but the body is fairly healthy, they can be cut back, so that a new top will start out and in four years begin to bear fruit that will be even better than the tree originally bore. We have been doing this kind of work on our old trees for the past six years with very good success.

Then the trees ought to be sprayed thoroughly in March or April, if they are infested with San José scale, with the lime-sulphur wash, using 15 pounds of lime, 15 pounds of sulphur to 50 gallons of water, boiling this mixture for about one hour; or the commercial lime sulphur can be used if more convenient.

Of course the trees ought to be sprayed with Bordeaux mixture and lead arsenate for fungus, codling moth and other insects several times through the summer, according to formulas which we are all familiar with and have heard so much about.

The trees need to be fertilized with chemicals each year according to condition of trees and the land.

We believe in cultivation of old orchards to some extent. Our experience has been that continual cultivation, the same as is recommended for a young orchard, will cause a heavy foliage and consequently very green apples, which do not bring a very good price in our markets, as the trade now is looking for good colored apples as well as good size. So I think it best to plow shallow and not work near the body of the trees, especially if the orchard has been in sod for several years.

When we took hold of this work on our place the trees were in a very bad way, but we followed up the work about as I have told you, with very good success. We have been able to grow many fine apples, and some prize apples, and I see no reason why three-fourths of the old orchards in our state cannot be handled in the same way, with just as good results.

PRUNING.

BY CHARLES E. HARDY, OF HOLLIS.

The first step in renovating the orchard should be the pruning. No system of pruning can be described that will apply to all old neglected trees, for the reason that each tree presents a separate problem. Many of these trees are so tall that they cannot be successfully sprayed, even with the use of the tower and extension poles. In such cases the tops must be cut back so that all of the tree may be readily accessible.

The dead wood should first be removed, then where the branches are too thick they may be thinned. The very long limbs which droop when loaded with fruit may well be shortened, and the taller ones cut back to a reasonable length. One rule should always be observed in cutting limbs, and that is to make the cut just above a side or lateral branch, for if this is not done, a so-called stub cut results, the end of which never heals satisfactorily. Good, sharp tools are the essential equipment for doing the work. The ax is never permissible in the orchard. We prefer not to remove large limbs when it can be avoided, but when this is necessary it is well to saw part way through the branch from the under side first; this will prevent the splitting down of the limb. All cuts over 1½ inches in diameter should be painted with white lead paint to prevent decay. It will not injure the tissue or prevent healing. Linseed oil and lampblack make a very good dressing for tree wounds.

With some varieties water sprouts become quite a problem, and with any variety they are likely to appear after severe pruning. These should be removed, especially where a new branch is desired. The mild weather of late fall and early winter can often be used to advantage in pruning the orchard. Oftentimes the winter hangs on so long

in the spring that we are not able to get over the orchard as thoroughly as we would like.

Don'ts.

Don't cut off the lower limbs—encourage them to come clear to the ground.

Don't cut off the fruit spurs. These bear fruit.

Don't leave a stub, as it will decay back into the body of the tree and prevent the healing of the wound.

PICKING AND MARKETING APPLES.

BY CHARLES E. HARDY, OF HOLLIS.

After renovating our old orchards so that we can grow good apples, they must be picked and packed ready for the market. They should be picked and handled as carefully as possible, for bruises will soon show. We do not want to pick them, as I remember, when a little boy, of seeing one of our neighbors do. He placed blankets and canvas under the trees and shook the apples off. And then, later on, I remember that pickers would use meal bags fastened to the hoop of a picking basket, and with this be able to pick as many as fifty barrels per day. The apples should be carefully picked and placed, not thrown, into the basket, and then carefully emptied into the barrels.

Many farmers pack their apples in the field because they have not room in the barn or other buildings to do this. I do not think we can get as satisfactory returns for them when packed in this way. After the apples are picked, what are you going to do with them? Most farmers are anxious to sell, and will sell to the first apple buyer that comes along, even if he does not offer more than $1.50 per barrel. The buyer will have a good story to tell about a large crop all over the country, and the

average farmer, not being posted, will let the crop go at that price. The buyer will tell him to put his apples up mixed; that is, No. 1's and 2's together, to face the barrel with the very best, then a basket full of No. 1's, then put them in as they run, topping off with a basket of good ones. Most of these apples go to market and are sold for No. 1's, and when the consumer gets hold of them he finds fault about the farmer putting up such poor apples.

I think the best thing for the apple growers is to form fruit growers' associations in each apple-growing town or section, with one man at the head whose business it shall be to look after the packing of each member's apples. Then the packages will be the same, and with a good salesman to look after selling the crop, better prices will be received.

Only the best apples should be sent to market. The associations could establish evaporating and canning factories to use up all the poorer grade of apples, realizing a better price for them, and thus prevent the low price which we often get because the market is filled with windfalls and poorer grades.

If western fruit growers can send their apples to our eastern markets, and pay $1 per box freight, as they do, and make any money, then we, being so much nearer the markets, ought to make a good thing growing apples. When our young orchards come into bearing, and we have more fruit fit for box packing, and the consumer learns that our eastern apple has a much better flavor than the western fruit, we will be able to drive the western apple from our markets.

We often hear the question, "Will there be an overproduction of apples because of so many trees being set?" I say no. Why? Because so many of our old orchards are going by for want of care, and lots of the young trees, in these days of bugs and pests, will die for want of care;

and our population is constantly increasing so that there is a constant increase in the demand for good apples.

If we cannot induce our neighbors to go in with us to form associations, then put our best fruit in cold storage until we can get better prices. If the buyer can afford to do this, we certainly can. Or, better still, arrange cool storage places in your cellars for some of the best apples, and then try and get in touch with the consumers in our large cities and sell direct to them, and get some of the profits that the middleman is now getting. When the consumers find they can get good apples direct from the farm, they much prefer them.

ANNUAL WINTER MEETING

AT

COLEBROOK, 1913.

ANNUAL WINTER MEETING AT COLEBROOK, 1913.

The annual winter meeting of the State Board of Agriculture, in connection with the winter meeting and dairy exhibit of the State Dairymen's Association, has become the leading event of the state in agricultural gatherings during the winter. The forty-second annual meeting of the former and the twenty-eighth of the latter were held at Colebrook, January 16 and 17, with an excellent attendance and good interest. The session opened with an invocation by the Rev. C. L. Skinner, followed with an address of welcome by the Rev. William Thompson, of Colebrook. Chairman Herbert O. Hadley, of the State Board of Agriculture, responded and delivered the annual address.

The speakers upon the first day were Prof. J. C. Kendall, director of the Experiment Station; E. A. Rogers, of Maine; Prof. Alva Agee, of New Jersey; Mr. H. A. Brown, of Colebrook; Dr. E. T. Fairchild, president of the New Hampshire College; and Prof. James E. Rice, of New York. On the second day's program were such well-known speakers as Prof. F. W. Taylor and Prof. Fred Rasmussen, of the Agricultural College; Prof. J. W. Sanborn, of Gilmanton; Mr. W. D. Hayden, of Dover; Prof. C. W. Fryhofer, of New Jersey; Superintendent E. L. Child, of Pembroke; and President George H. Yeaton, of the Granite State Dairymen's Association. Music was interspersed by local talent, and interesting discussions followed the presentation of the various addresses.

ADDRESS OF WELCOME.

BY THE REV. WILLIAM THOMPSON.

It affords us great pleasure to have this association represented in our midst. It is very gratifying to us that you have decided to hold your annual winter meeting in our beautiful town.

You have come to a town whose fertile hills extend in every direction, a town whose hillsides in a brief period of time will flow with the sweet maple syrup of New Hampshire. You have come to a town with hilltops bare, on their sides forests of spruce and fir. You have come to a town that literally flows with milk, honey and butter, a town abounding with pulp, hay and potatoes. You have come to a town of agricultural paradise of New England, and it gives me great pleasure to extend to you the words of welcome. We welcome you to our broad boulevards. We welcome you to our hospitable hotels and congenial landlords. We welcome you to the shops and stores of our merchants, whose supply of goods excels any at the "Hub" of New England. We welcome you to our educational work, the fame of which extends from Maine to Florida and from the Atlantic to the Pacific.

We invite you to visit these halls, recitation rooms, its agricultural and dairy department, its machine and carpenter shops.

If you feel that you can remain over the Sabbath, we invite you to our public buildings of worship that are not excelled by any outside of this in New Hampshire. In behalf of the citizens of fraternal, religious and social organizations, I extend to you the hospitable arm of welcome.

SOME PROBLEMS IN NEW HAMPSHIRE AGRICULTURE.

BY PROF. J. C. KENDALL, OF DURHAM.

One of the agencies that is inclined to handicap the New Hampshire farmer in realizing his greatest success is the tendency to continue the same agricultural practices which were in vogue during the middle of the last century. Then each farm was self-centered and self-sustaining, or nearly so, when the real problem of the farmer was to store up sufficient food for his family and stock during the growing season to last them throughout the winter months, his requirements and those of his family were limited. His business dealings were confined to his immediate neighborhood and consisted largely in the exchange of labor with his neighbors or the exchange of surplus crops. There was little money in circulation and little need for it.

Many changes have taken place along all lines of human endeavor during the last half century, and while these changes have affected agriculture in a way, there has not been made the same progress or changes in agriculture that has characterized many of the other industries.

When the great trunk lines were constructed through the West, opening up those large areas of cheap fertile lands, it brought the New England farmer in direct competition with the western farmer who had access to fertility that had been stored in these plain soils for hundreds of years. When the pioneer farmer of the West began to mine this fertility and receive the benefit of comparatively low transportation rates, for a time it made New England agriculture less remunerative. The small areas of the East that had been continually cropped for years were not adapted to growing grain crops as cheaply as they could be grown in the West, and shipped

to the seaport. This resulted in the growing of less wheat, oats, barley and corn than formerly in New England. This decrease in the amount of crops grown has also had its effect upon the number and kinds of live stock kept upon New England farms. Partly as a result of this set-back to New England agriculture, even the number of acres of improved land has shown a continuous decrease since 1860. The acreage of corn grown has decreased practically one half during the last thirty years, oats almost two thirds, and wheat has all but been abandoned as a crop. The acreage devoted to the growing of barley has decreased more than three-fourths of what it was thirty years ago, and buckwheat four-fifths. The acreage devoted to hay and forage has decreased over 21 per cent. during the thirty years ending in 1910. In fact, there seems to have been a decrease in the acreage of practically all of the leading crops grown in the state during the last three decades except in the acreage devoted to the growing of beans and potatoes.

In spite of the increase in value of certain kinds of farm stock, there has been a steady decrease in the numbers of practically all classes of live stock kept upon New Hampshire farms since 1860. Cattle show a decrease in total value, even though individual values have materially increased, of more than three hundred thousand dollars, or 5.5 per cent., during the ten years ending in 1910. Horses are reported as being kept upon 77.5 per cent. of the farms of the state, but only 3.4 per cent. report colts; a fact that is worthy of attention by the New Hampshire farmer. The value of horses has increased more than the total value of all live stock in the state, amounting to 37.1 per cent. during the ten years ending in 1910; while the total increase in all live stock has been but 12.8 per cent. during the same time. The indications would seem to be that the farmer as well as people in general continue to appreciate the value of a good horse even in the present

day of automobile popularity. It would certainly appear that the New Hampshire farmer would do well to give more attention to the raising of colts instead of continuing to pay such high prices for western horses.

In spite of the high prices which have prevailed during recent years for pork, only two-fifths of the New Hampshire farmers report swine as a part of their live stock. Only 8.2 per cent. of the farmers of the state report sheep, even though the high price of meat has brought mutton into such prominence as a food. Mutton is cheaper than beef, it is a superior food, and yet there is not enough being produced to supply the demand of even our local markets. Aside from the potato interests of the state, the improved methods of orcharding, and increased interest in poultry husbandry, there does not seem to be much within the annals of New Hampshire agriculture about which we can boast.

Speaking in general terms, it seems as if the agricultural interests of the state had been upon the decline along nearly every line during the past thirty years. The larger number of New Hampshire farms have been and are being operated to-day not as a business but more as a place of residence and a means of partial support. It would appear that the New Hampshire farmer had failed to recognize and fully appreciate the effect made upon New Hampshire agriculture by the many and extensive changes which have taken place along all lines of human endeavor during the last half century which should call for a complete readjustment in methods of farming.

In one respect the farmer has changed his methods in accordance with the times quite as much as any other class of people, and that is in respect to his methods of living. This is as it should be, and we all glory in the fact that to-day, as a class, the farmer is as well educated, as well read and posted on political questions and current events, as his city cousin. His home is fitted with modern con-

veniences, his library contains valuable books, he subscribes for magazines and reads the daily paper. He is well traveled; he feels at his ease in any company; he is not conspicuous by peculiarities in dress or in mannerisms of speech. He has also entered into, with apparent relish, the extravagant methods of living which characterize the present day, and accounts in part, at least, for the so-called high cost of living. The farmer and his family are no longer content with the products afforded by the farm to supply their table, so they liberally patronize the grocery store for canned vegetables of all kinds; the bulk crackers will no longer suffice, they must be purchased in fancy packages for which they pay well, and, in fact, in nearly every other way is the present day farmer keeping pace with the times in his methods of living.

It is different with New Hampshire agriculture; it has never fully recovered from the results of the unequal contest with the West in the production of grains, live stock, and, more especially, in the luring of our brightest sons to the West and into the industries. Agriculture has been as a calling less popular, farm values for a time decreased, and we began to hear for the first time about the abandoned farm.

One of the greatest handicaps to the most rapid progress in agriculture in New England at the present time is the lack of confidence and faith which the farmer has in the calling of agriculture. This not only applies to the farmer himself, but it is being instilled into the minds of the younger generations. The farmer has not seen during his life time farming in any too prosperous a condition, and the young man has not seen or experienced much in farming aside from long hours and hard work, and his life has been devoid of many of the pleasures and comforts which he sees being enjoyed by his schoolmates in the city.

Under such circumstances it is not at all strange that

agriculture should be distasteful to the young people. Yet there never has been a time when there was a better opportunity for attaining success in agriculture than at the present time. All prices are high and likely to remain so and the readjustments which have taken place in the industrial world have changed the balance with respect to numbers between producers and consumers.

Where, in 1820, five-sixths of the people were engaged in agriculture, in 1870 for each 1,000 engaged in agriculture there were 1,112 engaged in business, manufacturing and other means of livlihood. In 1900 for each 1,000 engaged in agriculture there were 1,806 engaged in other gainful pursuits.

Population is increasing more rapidly than production is increasing. The amount of new land that can be brought into cultivation easily is becoming rapidly reduced. In New Hampshire the area of farm land has decreased ten per cent. from 1900 to 1910. From 1890 to 1900 the increase in the acreage of improved land in the United States was only 16 per cent.; the increase in the population during that same period was 21 per cent. This difference between the rate of increase in production and the increase in population seems bound to continue because the average rate of increased production per acre is small, and is bound to continue to be small for many years. This would indicate that the prices for all agricultural produce must remain high.

This is just cause for encouragement on the part of the farmer, especially the New England farmer, and there is no better location for intensive methods of farming and desirable home life and environment than right here in New Hampshire. We have some of the best markets in the country right at our doors and exceptionally low land values. The last census reports the average value of farm land and buildings per acre at $26.44. There are few better investments to be made than in New Hampshire

farms at present prices. The amount of good tillable land in New Hampshire is small, and since it is located so near to such unexcelled markets there is no alternative but that higher land values must prevail. There is only 56.2 per cent of the area of the state included in farms and only 28.6 per cent. of the farm area that is improved land. Or, in other words, only 16.1 per cent. of the total land area of the state is improved and tillable land. This would indicate that New Hampshire agriculture must be confined largely to intensive methods; such as dairying, orcharding, poultry husbandry, small fruits and market gardening. There should also be a place for more sheep on New Hampshire farms. Conditions are favorable and markets are excellent. There is also a good field for scientific forestry management.

As was stated above, we consider an investment in agriculture to be one of the best investments that could be made. We believe so because of the fact that improved land has increased in value 40 per cent. in New Hampshire during the ten years ending in 1910, while the value of money which has been put away at interest has been decreasing almost as rapidly in purchasing value as the interest which has been received for it. If we had placed our money on interest a dozen years ago, to-day it would have scarcely four-fifths of the purchasing value it possessed when it was placed on interest. Farms make one of the surest and safest long time investments that we have, and yet one of the large problems that the New Hampshire farmers are confronted with to-day is this inability to secure long time loans from the banks upon reasonable terms. Here is where the western farmer has a decided advantage over the eastern farmer. Banks of the west consider farm loans to be safe and desirable loans. In the east, owing to past experiences which they have had, and the unsatisfactory conditions which have prevailed in past years upon our New England farms, the

business men and bankers do not look with favor upon and are not inclined to help finance agricultural projects.

In the west the farmer is making his money in much the same way that the business man accumulates wealth, through the use of labor and capital. The beef business may serve as an illustration of this. The western farmer will take a few hundred dollars, go to the bank, and on the strength of the small capital which he has in hand, and the prospects which he has to make more money, is enabled to borrow large sums and buy "stockers." He will feed these cattle for a few months and dispose of them at perhaps a small margin of profit per head, but owing to the fact that he is engaged in the business on a comparatively large scale, having several hundred head, the total receipts are large, and he has made his profits largely as a result of handling money which was borrowed. The New England farmer tries to make his living and carry on his business entirely, or nearly so, by hard work rather than by developing his farm operations on a sufficiently large scale, so that he can employ labor and capital profitably. It is a physical impossibility for the average farmer upon an average New Hampshire farm to accumulate much property as a result of his own labors. He must do as is being done in the business and industrial world, employ labor and capital and see that his labor and capital is profitably employed, if he would make the most out of his farm operations. The old general farm practices carried on in a small way, of a few cows, a few chickens, a few hogs, a few fruit trees, half an acre of potatoes, four or five acres of corn, and thirty or forty acres of mowing land, cannot be expected to yield more than a living for the farmer and his family.

It is only that farmer who is willing to make a study of market conditions and the adaptability of his farm for producing certain crops and who will go into the raising of those crops or that particular line of agriculture on

a sufficiently large scale so that he can employ labor and capital, that is going to make any marked success in agriculture in the future.

The remarkable thing about New Hampshire agriculture is the returns which are received from the amount of business which is carried on upon the farm. Statistics show that the average farmer is to-day receiving a larger income and is situated so that that income is of much greater value than any of the other laboring classes. Even in the professional world, returns are surprisingly small. President Pritchard, of the Massachusetts Institute of Technology, is authority for the statement that the average salary of the graduates of that Institution is $650 a year. The average salary of the teachers in Massachusetts is about $600 a year. It is a generally accepted fact that 93 per cent. of the people of the United States live on an average income of less than $400 a year. This is for a family and must support three persons. A farm survey of four townships in southern New Hampshire shows that after allowing 5 per cent. on the investment, 5 per cent. for insurance and taxes on buildings, 10 per cent. for depreciation on live stock and tools, that the owners of the farms included in this survey received, in addition to the above, $337 a year. This is not a large sum, but when we consider the many advantages that are connected with farm life and the fact that this amount of money will go nearly as far again upon the farm as it would in the city, and the fact that there are practically no failures in farm life, it means more than would be apparent on first thought.

It has been stated that about 90 per cent. of the mercantile ventures turn out failures, and about 15 per cent. of the manufacturing enterprises prove failures. Dr. Grinnell, Dean of the Medical Department of the University of Vermont, is authority for the statement that 80 per cent. of the men living at the age of 45 are prosperous,

but that at the age of 65 years only 3 per cent. are self-supporting. In other words, 97 per cent. out of every 100 at the age of 65 are dependent upon relatives and friends. One very strong factor in connection with farm life is the fact that the farm does not desert one in times of need and old age. When the farmer has become inactive, if he owns his farm, it will continue to support him and his family.

The farm also offers much better opportunities for home life. It furnishes wholesome, healthy employment for the entire family, it is an independent calling, and when properly managed the farm will under average management supply sufficient income for meeting the needs of a simple and yet comfortable home life.

To summarize some of the problems that confront the New Hampshire farmer, I would say that:

The farmer should more nearly readjust his farm practices to meet the demands of the changed conditions in the industrial world. He should have a stronger faith and belief in his calling. Agriculture has not in the past and is certainly not likely in the immediate future to play the farmer false.

Some way should be devised by which the farmer can secure the loan of money more readily, and upon easier terms. The bankers and business men should be made to see that there are no better investments, when properly made, than in New Hampshire land. Acre land in New Hampshire has increased in value 40 per cent. during the ten years ending in 1910. During the same period the purchasing value of the dollar has rapidly diminished.

In order to meet the scarcity of labor, and particularly of efficient labor, it is necessary that we develop our agricultural enterprises to such an extent and in such a way that we can afford to meet competition in the industrial world. Under present farm conditions it is a very difficult problem for the average farmer to meet the hours and pay

the prices which are paid in the manufacturing and business world. But that this can be done on the farm by proper and efficient management of farm work is certain. It calls for specialization and intensive methods of farming which is not at present in general practice in New Hampshire. The location of our land, the comparatively small area of improved land, amounting to only 16.1 per cent. of the land area of the state, and the demands of our markets are such that they call for putting into practice more extensive and intensive methods of farming.

While the farmer is inclined to look upon his calling as one that fails to provide proper remuneration, when we consider the amount of real farming which is being carried on we are impressed not so much with how little but how much is returned from the land, and we wonder how it is possible for the average farmer to rear and educate and maintain his family when his farm operations are conducted upon such a small scale. We are inclined to believe that it is only through the remarkable thrifty enterprise and ability of the farmer's wife that such things are possible.

The low value of New Hampshire farms, in comparison with the high prices which now prevail for good farm land in the West, has changed conditions from what they were thirty years ago. The cheap and desirable lands to-day within easy reach of the best markets are to be found in the East. While the West is able and will continue to command general farming as it relates to grain raising and general stock raising, where success must depend upon the use of machinery, large areas of land and the employment of much labor, the East still has its own field, and can and should maintain without difficulty its position through its intensive and progressive agriculture.

The annual returns from farm operations, while not generally accepted by the farmer himself as being commensurate with that of other callings, is shown by sta-

tisties to compare quite favorably with that to be found in other walks of life. Coupled with the financial returns are many advantages which are unknown to the business and industrial world.

In spite of the many and difficult problems that confront the New Hampshire farmer, he is in a better position to-day than ever before to make a success of his business. There is practically no line of agriculture that will not return an excellent profit upon the investment when properly managed. To be sure, the present time calls for an educated and scientifically trained man to manage a farm, as competition has become more keen and market demands more exacting, but there is no calling that offers our young men of to-day a better investment for adequate returns in the things of life which are most valuable and worth while than that of agriculture, and there is no part of the country that presents brighter prospects for success in farming, coupled with the development of the best type of home life, than New Hampshire.

The writer has no desire to be pessimistic or in any way to depreciate New Hampshire agriculture. We have full faith in the ultimate triumph of the agricultural interests of the East. On the other hand, we believe the time has come when we must recognize the true status of farm conditions. There is nothing to be gained by trying to flatter ourselves into believing farm conditions are ideal as yet, or different from what they actually are. Neither do we believe that it is a wise policy to devote all of our time and attention to the ethical and social side of the question, to the neglect of the real important subject upon which practically all of the others are dependent; that is, the business or financial interests of the farm. If the farmer and his family are prosperous, the other rural problems affecting the farm home will largely solve themselves. The farmers in this respect are not unlike other classes of people. That New Hampshire agriculture can and will

be made much more profitable in the future than it has been in the past is certain. We have many excellent examples of what can be done along agricultural lines in every branch of farming in the state, and it is only necessary for the average farmer to take a new grip and attack some of the problems which have been mentioned, with judgment, confidence, determination and a strong faith in the calling of agriculture to win a worthy victory and ample reward.

UPLIFT OF RURAL SCHOOLS.

BY H. A. BROWN, OF COLEBROOK.

Our greatest problem is not an economic or social or political problem, but an educational problem. The most important part of the present educational problem is that which pertains to the rural schools. There are twelve million boys and girls in this country who attend rural schools, and 95 per cent. of these never go beyond the rural schools. There are several factors which make the rural school problem a very complex one. In the first place, the rural school has ceased to be a country center. In the olden times the farmers all turned out and built the schoolhouse themselves. The teacher was usually a native of the community. The schoolhouse was the common meeting place for social events, debating clubs, etc. I wish to emphasize the fact that the efficiency of the old-time rural school was not due to the superior instruction of the three r's, but in the hold which it had upon the community. It has now lost that hold, and with that loss has gone a corresponding loss of efficiency. The little, remote, one-room rural school to-day is inefficient, unsanitary and poorly adapted to community needs.

Another factor entering into the problem is that of the conservatism of the rural population. I knew recently of

a community in which a meeting was called of the voters to consider school improvements. One influential man arose and said that what was good enough for him fifty years ago is good enough for his children to-day. Until this spirit of conservatism on the part of the rural population can be overcome, the rural school problem cannot be solved.

The financial support given the rural school is grossly inadequate. This town may be taken as an example. A dividing line is drawn across the town, on the one side of which are trained teachers, a modern steam-heated building, slate blackboards, adequate ventilators and all that makes for efficient education; but, on the other side, teachers, some of whom receive $4 per week and board, have unsanitary buildings and a lack of everything which goes to make efficiency. Of course, scattered here and there throughout the state, are many centers of progress in the rural schools, like Errol, in which there is a complete system of consolidation and transportation, so that school barges are drawn by a pair of horses, with curtains, robes and everything to make the children comfortable, and they are taken to a central school where there are trained teachers and the same chances which can be found in the villages and cities. The town of Wolfeboro is another example of a town in which manual training and domestic arts are taught in all of the one-room rural schools.

The fourth factor is the disintegration of the rural population and the steady influx into cities. City life is tremendously devitalizing and weakening to the human organism, thus the effects are bad. We may now state, from these particulars, the rural school problem is to bring back under modern conditions the same efficiency that the school had in the olden times under pioneer conditions, to secure anew that same hold upon the community which the school formerly had, and to provide a course of study adapted to rural life.

Finally, New Hampshire proposes to further solve this problem by the extension of supervision in the rural districts. A bill providing for universal supervision of rural schools is to be introduced at the present session of the legislature. Another bill will provide the state superintendent with three experts to assist the towns in the introduction of agriculture, domestic arts, mechanic arts and other vocational subjects. The continuance of the present policy of state aid is contemplated.

THE USE OF LIME ON LAND.

BY ALVA AGEE.

When a soil expert visits an unproductive farm to determine its needs, he gives his chief attention to four possible factors in his problem; lack of drainage, of lime, of organic matter, and of available plant food. The subject for discussion this afternoon is the right use of lime on land, but in order that the liming of land may not obtain a position of undue importance in our thought when considering the great soil fertility problem in any of its phases, I ask your permission that we give a few minutes' consideration to the other highly important factors.

Productive soils are in a condition to admit air freely. The presence of air in the soil is as necessary to the changes producing availability of plant food as it is to the changes essential to life in the human body. A waterlogged soil is a worthless one in respect to the production of most valuable plants. The well-being of soil and plants requires that the level of dead water be a considerable distance below the surface. As land becomes older, losing natural means of drainage and the excellent physical condition due to vegetable matter in it, the need of drainage grows greater. The prompt removal of ex-

cessive moisture by drains, and preferably by underdrains, is essential to profitable farming in the case of most wet lands.

Organic matter is the life of a soil. Nature is resourceful and is constantly alert to repair the mistakes of men. We may get fundamental truth about soil fertility through our observance of her methods in restoring land to a fertile condition. Our best success comes only when we work with her. When a soil has been robbed by man, and has been abandoned on account of inability to produce a profitable crop, the first thing nature does is to produce a growth of weeds, bushes, brier or aught else of which the soil chances to have the seeds. It is nature's effort to restore some organic matter—some humus-making material—to the nearly helpless land. This material unlocks a bit of the great stock of mineral plant food during its growth and its decay. It is a solvent. The mulch it provides favors the holding of moisture in the soil and it promotes friendly bacterial action. The productive power of most farming land is proportionate to the amount of organic matter in it.

Successful farming involves such assistance of nature that the percentage of vegetable matter in the soil shall be made high and kept high. There must be such selection of plants for this purpose that the organic matter will be rich in fertility, and at the same time their growth must fit into a scheme of crop production that can yield profit to the farmer. Profitable farming is based upon the great factor that we have one class of plants which can use bacteria to work over the nitrogen of the air into a form available for their use, and the stock of nitrogen thus gained can be added to the soil's supply for future crops. These plants, known as legumes, embrace the clovers, alfalfa, the vetches, peas, beans and many others of less value. They not only provide the organic matter so much needed by all thin soils, but at the same

time are the means of adding to the soil large amounts of the one element of plant food that is most costly, most unstable and most deficient in poor soils.

Stable manure is one of the most important sources of rich organic matter. The farm supply is a carrier of plant food, returning to the soil four-fifths of all the fertility removed in the crops fed, but it is much more than this. No small share of the value of a ton of manure is due to its organic matter, which helps to maintain the physical condition of the soil and to retain moisture and to promote the necessary bacterial life in the soil.

The possibilities of income from cultivated land are limited when an abundant supply of available plant food is not at hand. The soil may contain a large amount of inert strength, but it is necessary that plant food be present in available form when expense is incurred for the seed and cultivation of a crop. Commercial fertilizers are a true source of supply, and the nitrogen, phosphoric acid and potash contained in them are just as truly plant food as the same materials in stable manure or a rotted clover sod. When a soil is poor, it is necessary that the supply of available fertility in a fertilizer should be large. The needed organic matter cannot be produced quickly without such fertilization, and even when the supplies of organic matter are large it rarely is possible to produce the maximum crop without an application of available mineral plant food. The wise use of commercial fertilizers is one of the greatest factors in a profitable agriculture.

Having emphasized the necessity of good drainage, large supplies of organic matter and the wise use of commercial fertilizers, we come now to the consideration of one of the most important factors in the soil fertility problem. It is not possible to produce heavy sods or to obtain maximum yields of most staple crops without the presence of an abundant lime supply in the soil. We cannot get

right bacterial action or full returns from the use of commercial fertilizers without the presence of this material. Experience teaches that some soils do not contain enough lime to permit the maximum production of crops. The area of these soils grows greater year by year. This is due in part to leaching. A deficiency in lime is not confined to soils outside of limestone belts, but may be found in soils originally rich in lime.

Crop yields are limited by any lack of lime. When this is the case, good farming requires that the lack be supplied. Some crops are affected by a low content of lime in the soil more quickly than others. Clover demands an abundance of lime. The tendency of soils to lose their lime results finally in clover failure, and gives opportunity to sorrel, plantain and other worthless plants that can thrive with a lower percentage of lime in the soil.

The liming of land is expensive and the expense should not be incurred unless there is actual need. Some stiff, heavy soils should receive applications of lime for improvement of physical condition regardless of their actual lime content, but I am concerned with the use of lime to correct soil acidity, as that should be its chief use. The farmer may determine in various ways whether his land has a lime deficiency or not. The litmus paper test is reasonably accurate. Blue litmus paper, which may be purchased at any drug store, will turn pink when brought into contact with an acid soil when it is moist. A handful of the soil, made wet with rain water, will serve for the test. Samples of the soil may be sent to a chemist for a determination of soil acidity. The practical farmer, however, learns to detect a deficiency in lime by the character of the vegetation. Whenever alsike clover thrives far better than red clover, red top supplants timothy and sorrel and plantain takes the ground that should be occupied by a good sod, there is such strong probability of a lime deficiency that the farmer does well to make an application of lime.

Limestone is our chief source of lime. When pure, it contains 56 per cent. of actual lime. If limestone could be made absolutely fine, 1,120 pounds out of every ton would be effective in making up the deficiency of lime in a soil. There are manufacturing plants equipped for pulverizing raw limestone. Some can supply material which will pass through a 60-mesh screen. Such material is so fine that the actual lime in it—the 1,120 pounds in each ton—is very effective.

When pure limestone is burned and the 44 per cent. which is not actual lime is driven off into the air, the 1,120 pounds remaining is called stone lime. This is the ordinary lime on the market. When the farmer buys 1,120 pounds of stone lime, he has the same amount of actual lime as he would have obtained in the ton of raw limestone.

When stone lime is perfectly slaked with water, the weight is increased 32 per cent. This increased weight adds nothing to the actual lime, but makes even distribution over the ground possible. Slaked lime is sometimes called hydrated lime, and is put on the market by some manufacturers as "patent process" lime.

When stone lime or water-slaked lime stands exposed to the air, it finally takes from the air the material that was driven off by burning the limestone. It thus increases in weight until the 1,120 pounds of stone lime, which resulted from burning a ton of limestone, becomes 2,000 pounds, and the material has the same composition as that of raw limestone.

When stone lime is prepared for market, the lumps are forked out of the pile, and a remnant is left that may be about as pure as the stone lime, though usually some impurities are in it. This is called "agricultural lime," and its value depends upon its original purity and its freedom from any airslaking which would add to its weight. The buyer must depend upon the statements of the seller respecting its quality.

The amount of lime that should be applied to land varies much. If a soil is tenacious clay, and physical improvement is desired, an application of two or three tons of stone lime may be profitable. Ordinarily, lime is applied to make a soil friendly to clover and other plants and the equivalent of one to one and one-half tons of stone lime per acre, applied once in each crop rotation, is usually a maximum amount. In many instances 1,000 pounds per acre will accomplish the desired result, and smaller amounts may be sufficient. The equivalent of 1,000 pounds of stone lime is between 1,300 and 1,350 pounds of slaked (hydrated) lime, or a little less than one ton of raw limestone reduced to a powder.

An application of lime usually should pave the way for clover. It is well to apply lime a year or more before the seeding to clover. If this has not been done, it may be put on the land when the seedbed is being made for the wheat, oats or other crop with which clover is to be seeded.

Do not plow lime down, because this is wasteful. Apply with a lime spreader after the ground has been plowed. Mix it with the soil by use of harrow. Do not drill lime in with seeds, nor mix it with commercial fertilizer, nor use it in place of fertilizer. Apply lime to meet the lime requirement of a soil, and when this has been done, use manure and commercial fertilizers in the ways that have been found profitable for the crops which are to be grown, regardless of the fact that lime has been applied.

Just as the original supply of lime in much of the land of our eastern states has become exhausted, so will the lime in an application made by the farmer become exhausted. When the application is so light that it barely meets the lime deficiency for the time being, careful tests show that some deficiency will be found within a year subsequent to the application. A sufficient amount of lime should be applied at one time to last throughout

one crop rotation at least. It is our present belief that an application of 30 or 40 bushels of stone lime per acre, or its equivalent, will carry much land through two usual crop rotations, but all depends upon the nature of the soil and the actual deficiency when the application was made. When lime is high in price, it is profitable to make a light lime application and to plan for further applications once in every crop rotation of five or six years.

METHODS OF INCREASING PRODUCTION AND IMPROVING THE QUALITY OF EGGS.

BY JAMES E. RICE, PROFESSOR OF POULTRY HUSBANDRY, CORNELL UNIVERSITY.

Profitable egg production is a question having to do with the quality as well as the quantity of eggs that hens lay. It implies getting maximum returns from the sale of eggs, less the cost of food, labor and fixed charges, or in other words, the *net* profit. *Net profit* can only be determined by *final* results, which in turn can only be known after a term of years. The only profitable poultry husbandry is the kind that endures. The only enduring poultry farming is where the fowls after giving us maximum returns for at least two years are salable. In order to endure we must practice methods of breeding, feeding and care that will secure vigorous, virile stock capable of high production, and that will produce chickens as strong or stronger than the parents. We must so hatch and rear the young that they will have constitutional vigor and the inherited tendency to lay. This we can secure only by proper methods of breeding, feeding and care. The whole problem of profitable production, therefore, hinges on a number of exceedingly important factors, as yield, quality and cost.

The true test of a method of handling poultry must always be the net results that we can secure with large

numbers of fowls, not by pointing to the highest producer. We must base our calculations upon the high general average of the flock.

We must produce hens having a strong constitution, large capacity to eat, a natural tendency to lay and possessing the power to transmit to future generations these same qualities. The domestic fowl unquestionably is developing toward larger and larger production.

How an Egg is Made.

We must realize that in the production of eggs we are dealing with the combined functions of reproduction and food secretion. The hen, in effect, reproduces nearly every day or whenever she lays an egg. This, however, is not wholly comparable to reproduction in other domestic animals. Nevertheless, within the egg which has been properly fertilized, there has been developed life and a secretion deposited to support that life after it has left the body of the hen in the form of the egg. We must so breed and so handle the hen that she will be born with a disposition to lay, and then we must so feed her that she will function normally, that is to say, so that she will develop the ovum, the yolk of the egg, secrete the white of the egg (the albumen to nourish the embryo), and secrete mineral matter to make the shell to protect it. The reason why special attention is called to the ovarian development of hens and the formation of the egg proper is that it has been discovered that every normal hen has within her body at birth from 1,500 to 3,000 ova[1]. Hens differ very largely in their ability to develop these ova, some having a natural inherited tendency to develop the ova rather than to use their food to grow muscle and fat, while other hens naturally grow muscle and fat instead of eggs.

[1] Dr. Raymond Pearl and others.

Apparently there are a number of principles involved in the development of the ova, which have to do with (1) environment, (2) nourishment, (3) inheritance. A hen must be congenial and happy to function properly. She must have the available nourishment right on hand and stored up as surplus in her body to lay many eggs, and she must have an inherited tendency to develop the ova in order to become a high producer. The experiments that I am going to speak of will have to do with these three factors, the environment, the food supply and the method of breeding, in order to get the maximum results in egg production.

Environment Frequently a Deciding Factor in Production.

The hen is probably even more susceptible to climatic changes, to fright, to unfavorable changes in diet, etc., than is the dairy cow. If the hen is functioning properly and is laying an egg every day or every other day continuously, and if something should be wrong in her environmental conditions or her food supply, she does not simply stop laying and wait for the unfavorable conditions to disappear; but if her body needs nourishment, because of lack of proper food, or if she suffers from excessive heat or cold, or because of fright or suffering or for some other reason, the ova may be reabsorbed into the body, and thus the hen, who would have gone on laying an egg every day or every other day when they are selling for fifty or sixty cents a dozen, will not only stop laying, but will draw back into her body and use the stored-up nourishment in the ova as so much food, using for body maintenance what otherwise might have become valuable eggs. We must realize that if we are to secure high performance with hens, it must be as a result of the application of the same skill in feeding and breeding, as in the case of the wonderful performance of great dairy cows or trotting horses.

A Well-Balanced Ration Properly Fed is Essential.

For laying hens at Cornell the following whole grain mixture is fed morning and afternoon in a straw litter:

BY WEIGHT		BY MEASURE	
Winter		Winter	
Wheat	60 lbs.	Wheat	32 qts.
Corn	60 lbs.	Corn	36 qts.
Oats	30 lbs.	Oats	30 qts.
Buckwheat	30 lbs.	Buckwheat	20 qts.
BY WEIGHT		BY MEASURE	
Summer		Summer	
Wheat	60 lbs.	Wheat	32 qts.
Corn	60 lbs.	Corn	36 qts.
Oats	30 lbs.	Oats	30 qts.

The following mash is fed dry in a hopper kept open during the *afternoon only:*

BY WEIGHT		BY MEASURE	
Winter and Summer		Winter and Summer	
Corn-meal	60 lbs.	Corn-meal	57 qts.
Wheat middlings	60 lbs.	Wheat middlings	71 qts.
Wheat bran	30 lbs.	Wheat bran	57 qts.
Alfalfa meal	10 lbs.	Alfalfa meal	20 qts.
Oil meal	10 lbs.	Oil meal	8 qts.
Beef scrap	50 lbs.	Beef scrap	43 qts.
Salt	1 lb.	Salt	½ qt.

The fowls should eat about one-half as much mash by weight as whole grain. Regulate the proportion of grain and ground feed by giving a light feeding of grain at the morning and about all they will consume at the afternoon feeding (in time to find grain before dark). In the case of pullets or fowls in heavy laying, restrict both night and morning feeding to induce heavy eating of dry mash, especially in the case of hens. This ration should be supplemented with beets, cabbage, sprouted oats, green clover or other succulent food, unless running on a grass-covered range. Grit, cracked oyster shell, bone and charcoal should

be accessible at all times. Green food should not be fed in a frozen condition. All feed and litter used should be strictly sweet, clean and free from mustiness, mold or decay. Serious losses frequently occur from disease, due to the fowls taking into their bodies, through the intestinal tract or lungs, the spores of the fungus causing molds.

What Constitutes a Well-Balanced Ration.

A few principles in the feeding of fowls must always be taken into consideration. One of these is the importance of feeding a balanced ration. While it is true that we do not know the digestible coefficients of foods for poultry, they having never been worked out for fowls as they have been for other kinds of live stock, we assume for sake of comparison that the digestibility for poultry foods is approximately the same as we have them for other kinds of animals. We must do this, even though it is at best only an approximation, if we are to compare foods and attempt to balance the ration. We find that the Cornell ration has a nutritive ratio of 1 to 4.6, which is a little narrower than that for the modern dairy cow.

The Proportion of Grain to Ground Feed is Important.

There is one important point, almost completely ignored by persons who feed fowls, in connection with the feeding of this ration or any other, that always must be taken into consideration if we are to balance a ration properly. The point is, that in order to balance properly any ration, the fowls should consume a proper proportion of the grain and the ground feed. You will notice that the ration is made up of two groups or mixtures of feeds, one of grain and the other of ground food. The ground food is fed in the hopper dry, where the fowls can get it whenever they want it during the afternoon. The grain is fed night and morning in a litter and is so fed and the hens' appetites are kept in such a condition of hunger that they will ordinarily eat about two pounds of grain a day to each pound

of ground food; that is to say, about two-thirds grain to one-third ground food which should contain a liberal allowance of meat.

Assuming that we figure the Cornell formula on a basis of two-thirds grain and one-third ground food, we have a nutritive ratio of 1 to 4.7; figuring half ground food and half grain, we have a nutritive ratio of 1 to 3.7; figuring the nutritive ratio again of one-third grain and two-thirds ground feed, it is 1 to 3. The ground feed, because it contains a large amount of beef scrap is very narrow; the grain mixture is wide. Grains of all kinds are wide in their nutritive ratio with the exception of peas; therefore, a person who is to feed this or any other ration, where both the ground feed, the grain and the meat are fed, must take into consideration the proportions of the two mixtures. The hens must be encouraged by restricting the grain so that they will eat at least one-third ground feed containing meat in the ration.

How Much to Feed.

Another important point to emphasize in feeding is that there should be a supply of food available up to the limit of a hen's capacity to eat, so that the high-producing hen shall not suffer for lack of something to eat. The method of dry feeding in a hopper makes it possible for the hen to do what she wants to do, that is, "to eat between meals" so to speak. Formerly in wet mash feeding, the amount hens could eat depended upon the good or bad judgment of the person who fed. For the person who will watch his hens and feed each day just what grain they need to keep the appetite right and the hens happy and busy, the dry feed hopper not only insures against underfeeding but also saves time. It allows the hens to go to the "pantry" and get something to eat whenever they wish to do so; that is, whenever the demand for food to make eggs requires it. The hen knows what she needs and she must have it.

Hens Must Have Fat in Their Bodies to Lay Well.

The proper physical condition of the hen is an important point that needs to be taken into consideration. We must give a hen all she will eat of the right kinds of food so that she may have surplus energy in the form of fat. Years of experience prove this to be true. More people underfeed than overfeed their hens. The hen must be fed, not only a ration having the correct nutritive ratio, but must be fed the right quantity, so that she will carry some surplus fat in her body. The "dry matter" of the ova (yolk of the egg) is sixty-four per cent. fat and is practically the only fat within the egg. Apparently a hen cannot function properly unless she has surplus fat in her body to put into the ova. A large number of hens which we have examined bear out the accuracy of this statement. Our figures show that the weight of a hen in the fall frequently is the same as the weight that she started with the year before, and generally is not more than ¼ to ½ pound heavier, if at all. The same is true of the pullets. If they are early hatched and well cared for, they will weigh, after one year's heavy laying, only 15 to 20 per cent. more than they did when they started. Apparently they make their growth mostly during their periods of rest.

Mineral Matter is as Important as Protein or Carbohydrates.

We would emphasize the fact that we must feed lime in the form of oyster shells and also in the form of bone meal, granulated bone or green cut bone, so that the fowls will have an available supply of mineral nutrients as well as the protein and carbohydrates that in the past we emphasized as being of chief importance. We cannot get our best result in any event, unless the fowls have the mineral nutrients in abundance.

Breeding to Improve the Quality of Eggs by Selecting Eggs for Hatching.

The greatest improvement and quickest results may be secured by breeding to improve the quality of eggs. Mr. Benjamin, instructor in the poultry department, has started a three years' experiment to develop nine strains of Leghorns each laying a different kind of egg, that is, eggs of three different sizes, little, medium and big eggs; heavily tinted, slightly tinted, white eggs, and eggs of three different shapes, long, round and perfect. We have found that the size of the chick and the fowl is determined within a breed by the size of the egg from which it was hatched.

WEIGHT OF EGG TO WEIGHT OF CHICKEN

Eggs	Average weight of eggs	Per cent. weight	Average weight chickens 20 weeks old	Per cent. weight
Small	1.66 oz.	100	1.87 lb.	100
Medium	1.90 oz.	114	2.29 lb.	122
Large	2.35 oz.	141	2.65 lb.	142

It will be seen that the small, medium and the large eggs bear the proportion of 100 for the small, 114 for the medium and 141 for the large. The eggs were incubated, the chickens hatched, leg-banded and weighed at frequent intervals during the summer. The data here covers the weight when they were twenty weeks old. You will see in the table the proportionate weight of the chickens hatched from eggs of the different sizes. The smaller eggs produced chickens that weighed when they were twenty weeks old 1.87 pounds, the medium eggs produced chickens weighing 2.29 pounds, and the large eggs produced chickens weighing 2.65 pounds, or in the proportion of 100 to 122 to 142. Not only did the size of the egg determine the weight of the chicken when hatched, but the same general relationship in the weights of the chickens at five months maintained as on the day when hatched, the proportions being almost identical. From these figures, it is apparent that if we are to produce eggs that bring a high price and

continue to keep them of good size from year to year, we must expect to do so with a good-sized hen and if we expect to get a good-sized hen, we must use good-sized eggs to make the start.

Hens Better Than Pullets for Breeders.

We advise people to breed from their hens rather than from their pullets. First, because hens lay bigger eggs than pullets; second, they do not lay as many eggs in the fall and winter as do the pullets, therefore, if they are properly handled, hens should be in better physical condition in the spring than pullets to give strong, vigorous, good-sized chickens.

Breed for Longevity.

By breeding from hens in good physical condition, two or even three years old, we will have one or two years' opportunity to eliminate hens that inherit a tendency to short life. We are then breeding from the hens that have an inherited tendency to live long, and it is worth much for a chicken to be born from a line of long-lived ancestry. In this way we can wonderfully affect the inherited tendency to live in the future generations. Too many times in the past, the breeders, in their desire to get the largest net income from their stock, have bred continuously from pullets and thus have not had the benefit of the winnowing effect of time in eliminating individuals which died the following season. When you breed from a pullet, you do so before she has had an opportunity to prove herself. This is because she began to lay in the fall and early winter and has laid only five or six months when the hatching season arrives. The critical time in the life of a hen comes when she has laid for twelve months and then undertakes to molt and lay at pretty nearly the same time. Longevity is a point that must be emphasized. Therefore, do not kill

the finest hens, those that have gone through a year or two of heavy laying and are still strong and vigorous.

At least one-quarter to one-third of the fowls on a poultry farm ought to be hens, one, two or three years old rather than pullets, and the same is true of the males. It is both a crime and poor business to sacrifice a male at the end of the year on the principle that a cockerel is younger and more active. Occasionally an exceptionally good male may be kept for several years, at least two or three. The very fact that he has the "staying qualities" that we desire to secure and perpetuate, is the best qualification he can possess. I have known of one male nine years old that was vigorous and strong and a good reliable breeder. He had two sons, it is reported by the owner, that lived to the same age as the father. This is a very unusual and surprising record. The pullets are better fall and winter layers than hens and should be kept for that purpose and not for breeding.

How to Select the High-Producing Hens.

Manifestly, the trap nest is not feasible for farmers nor for poultrymen generally, although it must be used by the experiment stations and a few breeders. Therefore, we must find some physical indication that will help us to recognize and select our highest producers. We have discovered in our investigations at Cornell three or four principles that we can with perfect safety recommend to the farmers as guides in the selection of their most prolific stock, without resorting to trap nests, or at least for not more than two or three months in the fall and the winter, and even this is not necessary.

The highest producers molt late. The first physical character and the most valuable of all in selecting hens for breeders that are high producers is lateness in molting. The hen that is born to lay a large number of eggs and is well fed and handled will generally follow the line of least

resistance and continue to lay and thus fail to perform the natural process of molting. This is because she has so much reserve power that she continues to lay, and as a result her feathers do not die and loosen. Although the comparison is not perfect, the same principle really maintains, if we compare a late-molting hen to a strong, vigorous apple tree that has been well sprayed. The leaves, like the feathers, continue to grow past their usual season and hang on the tree up to the winter time. We find that the hens that have laid only twenty-five, fifty or seventy-five eggs have, in almost every instance, molted during the summer, in July, August or September. They do not necessarily start laying again in the fall or winter simply because they molted early. The hen that molt late take the shorter vacations and begin to lay early again.

High producers have pale shanks at the end of the laying season. Another important factor in selecting high producers is the color of the shanks of the yellow-skinned breeds. If you were to examine the high-producing hens in the early fall, you would see that their shanks are "laid out," that is, pale in color. The hens that have had little to do during the summer except to loaf around and eat, usually have the finest kind of colored shanks and skin, whereas, the high-producing hens have laid out most of the color. After they have rested a month or two, the color will come back.

High producers are heavy eaters. Watch the hens and see them eat and observe how they act; it will help you to pick out the laying hens in the fall and winter. The hen that is the largest layer is generally the one that is eating the most food. She goes to roost late and gets up early.

We are not yet ready to go on record as to just how important the shape, size of body and internal organs are in distinguishing egg-laying qualities of hens, but there seem to be facts to indicate that the best layers do differ some-

what in type from the poorest layers, and that there are differences in the sizes of certain internal organs. It is doubtful, however, if the shape of the body alone will be found to be a safe or infallible character indicating production.

Importance of Environment in Egg Production.

One of the problems on which breeding and feeding hinges is the question of how we shall handle and care for the hens. Here is a case like a great many others where the practice of the farmer, who did not pretend to know the theories of production, was ahead of the investigators. We all understand how the scientific men for years said that plants could not utilize the free nitrogen of the air, and yet farmers knew that clover made land richer. For centuries farmers and poultrymen, because of habit and convenience, let the hens run out of doors the year round. It was the natural and the easiest thing for them to do. But when they undertook to keep hens scientifically, men reasoned that the great difference between winter when hens did not lay and spring and summer when they laid best, was simply a difference in temperature. Therefore, they put their hens into close houses to try to keep in the heat and to keep out the cold, and in so doing they forget a more important factor than temperature and that is the importance of God-given fresh air. They also failed to realize a well-known principle in physiology, that hens do not keep warm primarily by the clothes they wear—their feathers—but that they are warmed by the consumption of food and by the combustion of fresh air within their bodies; the feathers keeping the heat in and protecting them from the elements. Our experiments for two years past, with four flocks a year ago and six flocks this year, give us results absolutely confirmatory and conclusive of the fact that it pays better to let the hens run out of doors the year round, whether on ice or snow, in sleet or rain or

sunshine or shade, theorizing, I suspect, that the good results are due to a number of factors, one of which is psychological. That is to say, the hen will lay better when she is *happy,* and she will be happy when she has her freedom.

Part of the value of the hen having an opportunity to go out of doors every day, is the fact that she *can* and *knows that she can* go out if she wants to. Many a time a hen will go out, look around, and if it is cold and the wind blows the feathers up her back, she will run back in the pen and will be *happy now* where she was unhappy before she went out. She had her own way. When hens can run out daily, they have a chance to range on pasture late into the fall before snow comes and perhaps after the ground is frozen, and they can get to the ground again in the spring as soon as the snow begins to disappear in spots. This gives them their liberty and something to do. It is easier to take care of them, because the houses remain clean longer, and they are more healthy and eat better, because of the exercise in the sunshine and the fresh air, and we get better results. That is the evidence that counts. Experiments in letting the hens run out of doors as compared to keeping them shut up was tried with both pullets and hens. The experiments the first two years have two factors combined. One is that the hens that were running out in the winter were on range the year round, while those that were shut up in the winter have bare yards in the summer. It is a combination experiment to compare (1) close confinement versus freedom in winter, and also (2) grass range versus bare yards in summer. But the experiments are valuable as regards the close confinement in winter, because, when we put the pullets in the houses in the fall of the year and let one flock run out and kept the other shut up, we found that the pullets that ran out did better than the pullets that were shut up, and that the hens also that ran out did better than those kept in confinement. The gains are made principally in the

winter season when the grass-range conditions could not affect the results. The pullets used in one experiment were reared together in the same cornfield and were similar in every respect. Our results were due, therefore, primarily to a question of liberty versus close confinement.

The *profits* show up more favorably for the hens and pullets that are on range than does their egg *production*. This is because the increase in the egg yield, due to their freedom, occurs when eggs are high in price. Let us consider the first year's experiments. The number of eggs laid by the pullets on the range was 164, while those in close confinement laid 147. In the case of the hens, those on range laid 105 and those in confinement laid 90. Taking the profit, including only feed, not the labor, interest on investment, etc., the pullets on the range made $3.25 profit and those in confinement $2.50; a difference of 75 cents per fowl more in the case of the pullets allowed to run out all winter. In the case of the hens, they paid a profit of $1.40 on the range and 83 cents in confinement; a difference of 57 cents.

As regards the fertility of eggs, we do not seem to gain anything in this particular experiment in the matter of fertility, either on range or close confinement. This leads me to say that fertility is a very unreliable criterion by which to judge the hatching value of eggs. An egg may be fertile; that is to say, it may show life and be called a fertile egg, that never could hatch, and frequently we get high fertility and very poor hatching power in the same eggs and vice versa. We hatched 97 per cent. of the fertile eggs set from the pullets that were on the range and 50 per cent. from those on the bare yards; 92 per cent. from the hens on range and 85 per cent. from the hens on bare yards. The same general proportion applies to the chickens that were reared.

The number of eggs laid the first year by the progeny of hens on range was 117 eggs as compared to 115 eggs

from the progeny of hens confined. With all six flocks combined, we find the following results covering two years with three flocks of thirty to thirty-five hens and pullets on range, as compared to three flocks of thirty to thirty-five hens and pullets in confinement, that the number of eggs laid, on the average, was 134 for the range and 107 for those confined and not on range; a difference, therefore, of 24 eggs, just two dozen, which would average in the state of New York probably thirty cents a dozen for the season. In other words, there is a total average profit over feed of $2.21 as against $1.49, which is a difference of 72 cents in favor of winter and summer range. Nothing has been published on this subject, because we do not want to mislead anyone by drawing false conclusions from a few experiments. It seems to me, however, that these experiments are pretty conclusive that it will pay to let the hens run out the year round.

Does It Pay To Cross-breed?

There is another problem which we ought to mention in connection with increasing egg production. There is a general impression that it pays better to cross fowls than it does to keep pure breeds. I am perfectly certain that we cannot give more helpful advice to poultrymen than to urge them to keep pure-bred poultry and not to cross pure-bred fowls, but to keep one breed and to seek to make it better. I do not mean that pure-bred poultry should be kept for exhibition purposes necessarily, but it should, however, be of good quality.

Does Artificial Incubation Lower Vitality and Production?

For three years we have been conducting experiments in which we have been comparing the results of continuous incubator hatching and continuous hen hatching. Each

year we pick out for breeders representative types of females and males from flocks of pullets and cockerels that have been hen-hatched and incubator-hatched. These are kept until they are two years old to see whether or not they break down any more quickly by virtue of the method by which they were hatched.

At the end of the first year of the experiment it was found that the pullets that were hatched by hens laid 162 eggs; pullets artificially hatched 142. The profits paid by hen-hatched pullets was $2.97, as against $2.52 for the artificially hatched.

The results of the second year were for the hen-hatched 123, artificially hatched 121. Profit, hen hatched $1.60, incubator-hatched $1.65.

The difference in the eggs was slightly in favor of the hen-hatched and the profits slightly in favor of the incubator-hatched because they happened to lay a few more when they were high priced.

The chickens that were reared from the hen-hatched and incubator-hatched stock is as follows: The progeny from hen-hatched laid us 130.9; while those from the incubator-hatched 136.2. The incubator-hatched stock carried through for the third generation have given us thus far five more eggs on an average per hen than those that were hen-hatched. Certainly the little difference here would not warrant a conclusion one way or the other. This experiment will be continued for many years, or at least until we are convinced that there is or that there is not a vitalizing influence due to artificial hatching.

Generally, the machines have hatched us more eggs than the hens. It is not proved, however, that the hen-hatched chickens are any better than those hatched in machines. We have not yet seen the disastrous results from artificial hatching that I think people generally believe exist. If chickens are hatched by inexperienced people, in improper places and with poor machines, I should expect that there

would be deterioration and loss of vitality in the stock by continuous artificial hatching. On the other hand, where the machines are of the best type and reasonably well handled in proper places, and particular care is emphasized in selecting eggs and stock, and if approved methods of feeding and housing are practiced, if then there is a tendency to deterioration due to artificial incubation, as there may be, it is not serious enough to be noticeable. In fact, the large poultry farms must hatch artificially. There are many men in this state, who have 1,000 hens or more, all of whom have been artificially hatched for many years.

The man who "wins out" in the poultry business commercially must plan each year to rear a few more chickens than he has hens in his flock. That is easy to remember. This will enable one to weed out freely, keep only the best and still carry over at least half as many pullets as hens. He can sell the surplus pullets easily and at a good profit.

I desire to emphasize that high egg production is both a question of breeding and care, and that there is great room for improvement in both these respects.

ANNUAL FIELD MEETING

AT

HAMPTON, 1913.

FIELD MEETING AT HAMPTON.

The twenty-eighth annual field meeting was held at Hampton Beach, Wednesday, July 30, with the usual large attendance.

CHAIRMAN HADLEY'S ADDRESS.

In taking the chair Chairman Hadley said:

Ladies and Gentlemen, Brother and Sister Farmers: In behalf of the State Board of Agriculture I bid you all a most cordial and hearty welcome to this our twenty-eighth annual field-day. We are glad to see you here at this beautiful summer resort by the sea, and we hope your stay will be both profitable and pleasant. Until recent years the farmer and his wife never thought of such a thing as a vacation, but now they have come to understand that they can accomplish more in the course of a year, both in the home and upon the farm, if they take a day off now and then, especially after the hot, hard work of securing the hay crop for the season, and go away to some pleasant summer resort or to some quiet nook in the mountains near one of the many beautiful lakes, and there rest for a few days and enjoy themselves, as do the toilers in the cities.

Our state is fast becoming the pleasure ground of a large proportion of the people of the United States, and each year sees more and more farms taken up for both summer residences and for permanent homes. It is also surprising to see the vast number of cottages that are being built around the many beautiful lakes in our state each year. According to carefully prepared statistics

there is more than fifty million dollars invested in summer hotels, boarding houses and cottages, and when we think that all this has taken place practically within the last ten years, we can but wonder what the next ten or twenty years have in store for us along these lines.

These people come to us for rest, health and pleasure. They make a market for all kinds of produce the farmers can raise, and even then a large part of the fruit, vegetables, meat, eggs and poultry consumed by these guests of ours has to be shipped back to the country from the large wholesale markets in our cities.

Our state is also doing some actual farming, as the following figures will show, the statistics having been carefully prepared by the secretary of our board, whose language as well as figures I quote as follows:

"The total value of farm property in New Hampshire, including land, buildings, machinery and farm animals, was $83,297,469 in 1860 and $103,704,196 in 1910, showing about 21 per cent. gain. The total value of farm property in the state increased from 1900 to 1910 by $17,862,000, or about 21 per cent., which represents the total increase for the 50-year period and is three times the gain made in the decade from 1890 to 1900. In the decade from 1880 to 1890 there was a decrease in value.

"The average size of the New Hampshire farm during the 50-year period has changed but little, there being a four-acre increase. The number of farms reported in New Hampshire in 1910 was 27,053, a slight decrease in the number from 1900, due to the fact that certain areas classed as farms in 1900 have been given over to the growth of wood and timber, taking them out of the classification as farms. Of the 27,053 farms 25,174 are operated by owners and managers and only 1,879 by tenants.

"The total value of all crops grown in the state in 1909 was $31,952,350, cereals constituting 51 per cent., and hay and forage crops 49 per cent. of the total crop value.

The total number of animals kept upon the farms of the state in 1910 is as follows: Cattle, 167,831; horses, 46,229; mules, 195; swine, 45,237; sheep, 48,772; goats, 495; number poultry, 924,859; colonies of bees, 4,644. These figures do not include the number of each in the state not upon farms.

"There are in the state, including those not on farms, 104,931 dairy cows, yielding a product valued at $5,589,711, more than 60 per cent. of which is sold as milk, the balance finding a market in the form of cream, butter and cheese. Milk finds its chief market at creameries and in Boston, although large quantities are sold by local farmers to supply the demand in manufacturing cities and villages. Statistics sufficiently accurate are not at hand to make comparisons upon which to base a conclusion as to the increase or decrease in the milk production of the state during the past decade. It may be stated with certainty, however, that the sale of milk outside of supplying local demands has developed almost entirely during the past fifty years through the establishment of creameries and of milk cars running daily to Boston.

"In 1909 the following acreage was devoted to growing the crops named: Hay, 529,817; corn, 19,814; oats, 10,860; and buckwheat, 1,052. The total acreage of potatoes and other vegetables was 26,225, and their value $2,276,000. Of the orchard fruits produced in 1909 apples constituted over 95 per cent., the total value of orchard fruits being given at $720,000. There has been increased attention given to orcharding in the state since these statistics were compiled, and it is probable that apple growing in the future will constitute one of the leading farm industries of the state. The soil and climate are peculiarily adapted to the production of fine flavored apples of good keeping qualities. Of small fruits, strawberries are by far the most important, the acreage being reported at 618, and $117,000 as the value of the crop. The total value of maple sugar produced was $182,341.

"Forest products are among the leading and among the most profitable crops produced, requiring, of course, a comparatively long period for maturity. In 1909 there were 16,398 farms in New Hampshire which reported forest products to the value of $3,610,178, an increase of 57 per cent. during the decade. These figures do not include forest products not grown upon farms. The profitableness of wood and timber as a crop is more fully recognized than at any time in the past, and large areas formerly devoted to pasturage are now utilized in growing forest products with advantage to the owners."

GOOD ROADS.

BY GEORGE S. LADD, OF MASSACHUSETTS.

The Hon. George S. Ladd, of Massachusetts, put his audience into good humor immediately by assuring them that, while it costs more to live now than it used to, life to-day is a good deal more worth living than it used to be, and adjured them to consider their responsibility to the next generation to make the days that are to come after even better than to-day. We are here primarily not to make a living, but to make a life.

Mr. Ladd advised New England to take a leaf from the experience of the great West and introduce irrigation, not letting the manufacturers have all the benefit of the white coal of this section. He paid a glowing oratorical tribute to the richness and greatness, power and security of our government, and then spoke particularly of the work of the national bureau of good roads, with which he is connected.

He dwelt upon the necessity of maintenance of the roads already constructed, saying that too much money has been wasted in building good roads and then going off and forgetting them. He was inclined, for the sake of the

roads, as well as for the sake of safety for the lives and limbs of the people, to recommend a federal regulation of the power of motor cars. At the same time he was convinced that the automobile has come to stay and that it will be a great instrument for the progress of the future, in lines of business as well as of pleasure, and he urged the farmers to make the most of it and of the good roads which must accompany it, in getting their crops to market quickly and economically.

THE CONSERVATION AND FERTILIZATION OF NEW ENGLAND SOILS.

BY DR. H. J. WHEELER, OF RHODE ISLAND.

Doctor Wheeler sought to incite state pride in his hearers by telling them of crop increases and values in Rhode Island, which is, he said, only a spot on the map when compared in size with New Hampshire. But the value of its crop last year was a million dollars and it has made great increases in the hay production per acre through a reasonable outlay for fertilizers. Feed grass crops and put the manure back on the land, was the chief burden of his advice, coupled with an admonition not to rush after the false prophets who are as plenty in agriculture as in other departments of life and whose poor advice is responsible for an annual waste of millions of dollars.

The speaker regretted the little appreciation of clover by the farmers of New England, while its cultivation cuts down grain bills and permanently improves the farm. He spoke of the recent formation of the New England Alfalfa Association and expressed his belief that it would be an instrument of great good in the future to the New England farmer and especially to the dairy farmer. He told of the things necessary to alfalfa culture, sloping land properly inoculated and fertilized, and showed how this

crop would relieve the farmer of the burden of his grain bills.

Doctor Wheeler spoke also of orchards and their fertilization, their need of sunshine and the fact that in most cases they are underfed, although sometimes the contrary is the case. He answered many questions from his hearers in regard to alfalfa and the other subjects of which he had spoken, and as a closing hint advised that early dug potatoes are much to be preferred for seed because of the larger amount of nitrogen which they contain.

GOOD BUSINESS MANAGEMENT AN IMPORTANT FACTOR IN SUCCESSFUL FARMING.

BY HON. AARON JONES, OF INDIANA.

Agriculture underlies all the true prosperity of the nation, said Past National Master Aaron Jones, of Indiana. It produces 70 per cent. of our annually created wealth and from it all else draws sustenance. Any discussion that will lead to a more productive agriculture will make all industry more successful. Times have changed. The successes of the past would be the failures of the present. The farmer must act upon the same principle as the manufacturer and discard processes and machinery as fast as new and improved ones are discovered.

The farmer should have as careful and complete an inventory of his plant and possessions as the merchant or the manufacturer and he should take an annual account of stock and prepare an annual statement of his business. An account should be opened with every branch of industry on the farm and strict reckoning made of which is operated at a profit and which at a loss. Then enlarge the dividend paying business and eliminate the non-producer.

The farmer needs to take account, also, of the fact that

there has been an absolute change in the form of all business. The corporation has taken the place of the business partnership and these corporations in turn have formed into combinations with such success as to control the markets of the whole world. The farmer on his part must find out what every pound of butter and every ton of hay costs him and must sell it at a profit, not allowing the middleman to set the price and enjoy the profit.

Systematize your business! Know your soil, what it will produce; know your markets, what they will consume. Be economical in purchasing. Strive to produce the largest possible crop at the smallest possible expense. Make your farm more profitable and then see that you and your family and not some other man and his family enjoy the profits. Give your boys and girls as good a chance as the sons and daughters of men engaged in other lines of business.

In erecting your farm buildings look for a healthful location. Health and efficiency go together upon the farm as everywhere else. Get the best machinery, adopt the most modern methods, study the best ways of getting your product to the best market, keep both your family and your stock comfortable and thus make the most of them.

Don't forget that every good farmer must of necessity be a good citizen. See to it that none but men of worth and ability are elected to public office. Rise above partisan prejudices and look to the underlying principles of right and progress, equal rights and opportunities for all. See that your farm pays its share of the taxes and no more; and that for every dollar of taxes paid government makes an equal return to those who support it. Then there are laws that threaten the rights of the farmer. Stand up and be counted against them. Help to protect and preserve the American markets, the best in the world, for the benefit of the products of the American people.

Improved business management on the American farm

would increase that farm's output from 26 to 50 per cent. in a decade. But if this is done see to it that at least half of that increase goes into the breeches pocket of the farmer and does not all stay in the till of the middleman.

THE GOVERNOR.

Gov. Samuel D. Felker expressed his great pleasure at being present, but said he was there as a farmer on Farmers' Day and not as a politician on Politicians' Day, the two having been regarded as in some degree synonymous in the past.

The influence of the grange had long been potent, he said, in the affairs of New Hampshire, and never more so than during the last session of the legislature, when by its conservative action the governor's veto of a million-dollar highway bill was upheld.

It is the duty as well as the privilege of the Grange to so express itself in the future as it has done in the past. The legislature always has its ears to the ground to learn the opinions and desires of the people, and it can learn them in no surer and more reliable way that through the Grange.

The governor congratulated New Hampshire upon having been chosen as the seat of the next session of the National Grange, and the National Grange upon thus having made choice of our state, a state which God has blessed so richly in so many ways, in fertile acres as well as in magnificent scenery.

Governor Felker, like the other speakers, exhorted his hearers to keep up with the progress of the day in their calling, dwelling especially upon the necessity of knowledge as to soil values and needs and crop rotation. Unless you farm your acres on modern lines, he said, you will not have a farm long to manage, but will be working for some other man who does keep up to the times.

The chief executive told of the progress that New Hampshire is making on educational lines, especially in the way of introducing vocational courses, and of the purpose of the administration to bring the state college and the farmer into close and mutually helpful co-operation. The Rockefeller foundation, he said, was much interested in the agricultural situation in New Hampshire and was ready to give its aid in various ways to progress here.

FEEDING-STUFFS INSPECTION, 1913.

FEEDING-STUFFS INSPECTION FOR 1913.

The samples for the 1913 feeding-stuffs inspection were drawn by Mr. H. B. Tuttle for the State Board of Agriculture. In all, 354 samples were received at the Experiment Station. Of these, 41 represented duplicates and samples which did not require a license or analysis. The remaining 313 samples were analyzed.

The state law regulating the sale of commercial feeding-stuffs follows:

AN ACT TO REGULATE THE SALE OF CONCENTRATED COMMERCIAL FEEDING-STUFFS.

SECTION 1. Every manufacturer, company, or person, who shall sell, offer, or expose for sale or for distribution in this state any concentrated commercial feeding-stuff used for feeding farm live stock, shall furnish with each car or other amount shipped in bulk and shall affix to every package of such feeding-stuff, in a conspicuous place on the outside thereof, a plainly printed statement clearly and truly certifying the number of net pounds in the package sold or offered for sale, the name or trademark under which the article is sold, the name of the manufacturer or shipper, the place of manufacture, the place of business, and a chemical analysis stating the percentages it contains of crude protein, allowing one per centum of nitrogen to equal six and one-fourth per centum of protein, of crude fat, and of crude fibre, both constituents to be determined by the methods prescribed by the association of official agricultural chemists. Whenever any feeding-stuff is sold at retail in bulk or in packages belonging to the purchaser, the agent or dealer, upon request of the purchaser, shall furnish to him the certified statement named in this section.

SECT. 2. The term "concentrated commercial feeding-stuffs," as used in this act, shall include linseed meals,

cottonseed meals, pea meals, cocoanut meals, gluten meals, gluten feeds, maize feeds, starch feeds, sugar feeds, dried brewer's grains, malt sprouts, hominy feeds, cerealine feeds, rice meals, oat feeds, corn and oat chops, wheat, rye and buckwheat bran and middlings, ground beef, or fish scraps, mixed feeds and all other materials of similar nature; but shall not include hays and straws, the whole seeds nor the unmixed meals made directly from the entire grains of wheat, rye, barley, oats, Indian corn, buckwheat and broom corn.

SECT. 3. Before any manufacturer, company, or person shall sell, offer, or expose for sale in this state any concentrated commercial feeding-stuffs, he or they shall, for each and every feeding-stuff bearing a distinguishing name or trademark, file annually during the month of December with the secretary of the board of agriculture a certified copy of the statement specified in the preceding section, said certified copy to be accompanied, when the secretary shall so request, by a sealed glass jar or bottle containing at least one pound of the feeding-stuff to be sold or offered for sale, and the company or person furnishing said sample shall thereupon make affidavit that said sample corresponds within reasonable limits to the feeding-stuff which it represents, in the percentage of protein and fat which it contains.

SECT. 4. Each manufacturer, importer, agent, or seller of any concentrated commercial feeding-stuffs, shall pay annually during the month of December to the secretary of the board of agriculture an analysis fee of fifteen dollars, for each brand offered for sale within the state. Whenever a manufacturer, importer, agent, or seller of concentrated commercial feeding-stuff desires at any time to sell such material and has not paid the analysis fee therefor in the preceding month of December, as required by this section, he shall pay the analysis fee prescribed herein before making any such sale. The amount of analysis fees received by said secretary pursuant to the provisions of this section shall be paid by him to the treasurer of the State of New Hampshire. The treasurer of the State of New Hampshire shall pay from such amount when duly approved the moneys required for the expense incurred in making the inspection required by this act and enforcing the provisions thereof. The secretary of

the board of agriculture shall report biennially to the legislature the amount received pursuant to this act, and the expense incurred for salaries, laboratory expenses, chemical supplies, traveling expenses, printing, and other necessary matters. Whenever the manufacturer, importer, or shipper of concentrated commercial feeding-stuff shall have filed the statement required by section 1 of this act and paid the analysis fee as prescribed in this section, no agent or seller of such manufacturer, importer, or shipper shall be required to file such statement or pay such fee.

SECT. 5. The secretary of the board of agriculture shall annually cause to be analyzed at the New Hampshire College Agricultural Experiment Station, at least one sample, to be taken in the manner hereinafter prescribed, of every concentrated commercial feeding-stuff sold or offered for sale under the provisions of this act. Said secretary shall cause a sample to be taken, not exceeding two pounds in weight, for said analysis, from any lot or package of such commercial feeding-stuff which may be in the possession of any manufacturer, importer, agent, or dealer in this state; but said sample shall be drawn in the presence of the parties in interest, or their representatives, and taken from a parcel or a number of packages, which shall not be less than ten per centum of the whole lot sampled, and shall be thoroughly mixed, and then divided into two equal samples, and placed in glass vials and carefully sealed and a label placed on each stating the name of the party from whose stock the sample was drawn and the time and place of drawing, and said label shall also be signed by the person taking the sample, and by the party or parties in interest or their representatives at the drawing and sealing of said samples; one of said duplicate samples shall be retained by the secretary and the other by the party whose stock was sampled, and the sample or samples retained by the secretary shall be for comparison with the certified statement named in section 3 of this act. The result of the analysis of the sample or samples so procured, together with such additional information as circumstances advise, shall be published in reports or bulletins from time to time.

SECT. 6. Any manufacturer, importer, or person who shall sell, offer or expose for sale or for distribution in

this state any concentrated commercial feeding-stuff, without complying with the requirements of this act, or any feeding-stuff which contains substantially a smaller percentage of the constituents than are certified to be contained, shall, on conviction in a court of competent jurisdiction, be fined not more than one hundred dollars for the first offense, and not more than two hundred dollars for each subsequent offense.

SECT. 7. Any person who shall adulterate any kind of meal or ground grain with milling or manufacturing offals, or any other substance whatever, for the purpose of sale, unless the true composition, mixture, or adulteration thereof is plainly marked or indicated upon the package containing the same or in which it is offered for sale; or any person who knowingly sells, or offers for sale, any meal or ground grain which has been so adulterated unless the true composition, mixture, or adulteration is plainly marked or indicated upon the package containing the same, or in which it is offered for sale, shall be fined not less than twenty-five or more than one-hundred dollars for each offense.

SECT. 8. Whenever said secretary becomes cognizant of the violation of any of the provisions of this act he shall prosecute the party or parties thus reported; but it shall be the duty of said secretary, upon thus ascertaining any violation of this act, to forthwith notify the manufacturer, importer, or dealer in writing, and give him not less than thirty days thereafter in which to comply with the requirements of this article; but there shall be no prosecution in relation to the quality of any concentrated commercial feeding-stuff if the same shall be found substantially equivalent to the certified statement named in section 3 of this article.

SECT. 9. This act shall take effect December first, nineteen hundred and one.

The conditions underlying the feeding-stuffs business is improving. More good feeds have been inspected than during any previous year. There is evidence that the consumers of feeding-stuffs are becoming more exacting and are scrutinizing the brands offered for sale more closely than ever before. The consumer and honest man-

ufacturer are entitled to more protection than they now receive under our present law. The manufacturer should be required to guarantee the ingredients from which a feed is made. Not all proteins have the same digestibility or nutritive value. The same may be said of the other feed constituents. If we know the source from which these constituents come, it is a simple matter to find their digestibility from the tables in this report and in text-books on feeds and feeding. With all this information at hand, the dealer and consumer can quickly decide whether a particular feed is or is not suitable for their needs.

We note the feed sold last year under the name of "Sterling Mixed Feed" has reappeared under the abbreviated name of "Sterling Feed." We also note a similar feed sold under the name of "Blue Grass Feed." The first of these is manufactured in Indiana and the other in Kentucky. Among other things, these feeds contain about 30 per cent. of ground corn cobs and are masked largely with wheat by-products. These feeds were offered for about the same price as good wheat bran.

The market value of corn cobs is probably one-third that of wheat bran. Their selling price is greatly enhanced when mixed with other by-products. These feeds are not the only ones which contain very inferior by-products, but they are pointed out because the ingredients may be easily identified with the unaided eye. These brands are within our state law in every respect. They are named properly and meet their respective guarantees. Inferior by-products must carry freight charges and selling commissions which tend to make them relatively still less valuable to the consumer.

The following tables show the average composition and digestibility of the more common feeding-stuffs.

TABLE NO. 1.

Average Composition of Feeding-stuffs—Per Cent.

(Henry's, Jordan's and Lindsay's Compilations.)

	Dry Matter	Water	Ash	Protein	Fat	Carbohydrates Nitrogen Free Ext'ct Fibre	Nitrogen Free Ext'ct
Corn	89.4	10.6	1.5	10.3	5.0	2.2	70.4
Corn Meal	85.0	15.0	1.4	9.2	3.8	1.9	68.7
Corn Bran	90.6	9.4	1.2	11.2	6.2	11.9	60.1
Corn Chops	87.2	12.3	1.5	9.8	4.4	2.0	69.5
Hominy Meal	90.4	9.6	2.7	10.5	8.0	4.9	64.3
Gluten Feed	90.8	9.2	2.0	25.0	3.5	6.8	53.5
Corn and Cob Meal	84.9	15.1	1.5	8.5	3.5	6.6	64.8
Corn Cob	89.3	10.7	1.4	2.4	0.5	30.1	54.9
Oats	89.6	10.4	3.2	11.4	4.8	10.8	59.4
Oat Middlings	91.2	8.8	4.5	16.2	6.9	7.1	56.5
Oat Feed	93.0	7.0	5.3	8.0	2.9	21.5	55.3
Wheat	89.5	10.5	1.8	11.9	2.1	1.8	71.9
Wheat Bran	88.1	11.9	5.8	15.4	4.0	9.0	53.9
Wheat Middlings (shorts)	88.8	11.2	4.4	16.9	5.1	6.2	56.2
Flour Middlings	90.0	10.0	3.2	19.2	4.8	3.2	59.6
Shipstuff	89.1	10.9	5.6	16.3	4.6	7.5	55.1
Barley	89.2	10.8	2.5	12.0	1.8	4.2	68.7
Buckwheat	86.6	13.4	2.0	10.8	2.4	11.7	59.7
Buckwheat Feed	88.4	11.6	3.9	18.3	4.9	19.2	42.1
Brewers' Dried Grains	91.3	8.7	3.7	25.0	6.7	13.6	42.3
Distillers' Dried Grains	92.4	7.6	2.0	31.2	12.2	11.6	35.4
Malt Sprouts	90.5	9.5	6.1	26.3	1.6	11.6	44.9
Flax Seed	90.8	9.2	4.3	22.6	33.7	7.1	23.2
Linseed Meal (O. proc's)	90.2	9.8	5.5	33.9	7.8	7.3	35.7
Linseed Meal (N. proc's)	91.0	9.0	5.5	37.5	2.0	8.9	36.4
Cotton Seed	89.7	10.3	3.5	18.4	19.9	23.2	24.7
Cotton Seed Meal	93.0	7.0	6.6	45.3	10.2	6.3	24.6
Alfalfa Hay	91.6	8.4	7.4	14.3	2.2	25.0	42.7
Dried Beet Pulp	91.6	8.4	4.5	8.1	0.7	17.5	60.8
Meat Scraps	89.3	10.7	4.1	71.2	13.7	...	0.3
Molasses Feed	89.6	10.4	6.5	17.1	2.9	11.9	51.2

TABLE NO. 2.

AVERAGE DIGESTIBLE NUTRIENTS OF FEEDS—PER CENT.

(Henry's, Jordan's and Lindsay's Compilations.)

	Dry Matter	Protein	Fat	Carbohydrates Fibre	Nitrogen Free Ext'ct
Corn	81.35	7.83	4.30	1.28	65.47
Corn Meal	74.8	6.07	3.46	. . .	63.29
Corn Bran	63.42	6.05	4.74	6.78	45.68
Corn Chops	78.0	6.95	3.88	1.25	64.38
Hominy Meal	74.13	6.83	7.36	3.28	57.23
Gluten Feed	79.0	21.25	2.87	5.17	47.62
Corn and Cob Meal	67.07	4.42	2.94	2.97	57.02
Corn Cob	52.67	0.4	0.25	19.57	32.94
Oats	62.72	8.78	4.27	3.35	45.74
Oat Middlings	82.08	13.12	6.49	3.48	54.24
Oat Feed	37.20	5.20	2.61	1.88	23.23
Wheat	. . . .	10.2	1.7	69.2	
Wheat Bran	58.15	11.86	2.5	3.69	38.27
Wheat Middlings (shorts)	. . . .	13.0	4.5	1.86	43.84
Flour Middlings	73.8	16.9	4.1	1.15	52.45
Shipstuff	65.04	12.7	4.0	4.65	42.43
Barley	76.71	8.4	1.6	2.10	63.2
Buckwheat	61.49	8.1	2.4	2.81	45.37
Buckwheat Feed	. . . .	15.6	4.4	38.2	
Brewers' Dried Grains	56.61	20.0	6.0	6.8	25.38
Distillers' Dried Grains	73.00	22.78	11.6	11.02	28.67
Malt Sprouts	70.59	20.3	1.4	9.63	36.37
Flax Seed	69.92	20.6	29.0	4.26	12.76
Linseed Meal (O. proc's)	71.26	30.2	6.9	4.16	27.85
Linseed Meal (N. proc's)	74.62	31.5	2.4	6.59	29.12
Cotton Seed	59.2	12.5	17.3	17.63	12.35
Cotton Seed Meal	71.61	37.6	9.6	2.21	19.19
Alfalfa Hay	. . . .	10.44	0.31	10.0	29.89
Dried Beet Pulp	70.53	4.1	. . . .	12.6	52.29
Meat Scraps	83.05	66.2	13.4	. . . .	. . . .
Molasses Feed	64.51	10.8	2.2	6.55	41.47

THE CONSTITUENTS OF FEEDING-STUFFS.

In the complete chemical analysis of a feeding-stuff the following determinations are made: moisture, ash, protein, fat, fibre, and nitrogen-free extract. The value of a feeding-stuff is generally based on the amount of protein and fat it contains. For that reason these two constituents are often the only ones determined. We are, how-

ever, beginning to realize that while the amount of protein and fat is important, at the same time the carbohydrates are also very important and in many classes of feeding-stuffs form the chief source of value.

MOISTURE.

Water is present to some extent in all classes of feeds. The per cent. in most cases varies between five and fifteen. The amount varies with the nature of the feed, the process of manufacture, and the manner of storage.

ASH.

The ash of a feed is the residue left after burning off the organic matter. It represents the inorganic or mineral constituent of the plant. This part of the feed furnishes the material for the bones of the animal.

CRUDE PROTEIN.

By crude protein is meant that portion of a feeding-stuff which contains nitrogen. Nitrogenous feeds build up muscular tissue and the proteins are of the greatest importance in determining the value of a feed. Most of the crude protein in the plant is found at the point of growth, or in the leaves and seeds.

CRUDE FAT.

The term crude fat is rather arbitrarily used to include all the substances of the feed soluble in dry ether or similar solvents. They are the pure fats, such as cottonseed oil, linseed oil, etc., and the waxes, resins, chlorophyl, etc. These latter substances are generally so small in amount that for practical purposes the ether extract of a feed represents the amount of fat which it contains. The fats are readily digested and rank next to protein in value.

FIBRE.

The crude fibre in a feeding-stuff is that portion which goes to make up the cell-walls and structural material of the plant. It is fairly indigestible and in general a *high* percentage of crude fibre indicates a *low-grade* feed.

NITROGEN-FREE EXTRACT.

The nitrogen-free extract is that portion of the feed readily extracted by water or dilute acids and composed of non-nitrogenous materials. The principal substances included under the term are the starches and sugars.

CARBOHYDRATES.

The term carbohydrates is sometimes used in speaking of feeding-stuffs. It is generally used to include both crude fibre and nitrogen-free extract. A feeding-stuff which contains small amounts of moisture, ash and crude fibre must be classed as high grade, if digestible. When these constituents are present in small amounts the total amount of the valuable constituents—protein, fat and nitrogen-free extract—must be high.

The Value of a Chemical Examination of Commercial Feeding-stuffs.

The chemical analysis of feeding-stuffs is valuable in many ways, chief of which are the following:

1. It shows whether or not the guarantees of the manufacturer are correct.
2. It protects the buyer against the unscrupulous manufacturer or retailer.
3. It aids the buyer in deciding money values in purchasing feed.
4. It affords a clue as to the nature of the constituents of the feed.

5. It furnishes data for making up any desired feeding ration.

6. It enables the consumer to decide whether it is a useful feed for his particular purpose.

The following definitions are given for the use of the consumer and represent the terms used for the particular feeding-stuffs by the general trade.

General Definitions.

COTTON-SEED MEAL.

Cottonseed meal is the meal obtained from the cotton-seed kernel after the extraction of the oil. The following standard classification adopted by the Inter-State Cotton-seed Crushers' Association will interest the buyer of cotton-seed meal:

"*Choice cottonseed meal* must be finely ground, perfectly sound and sweet in odor, yellow, free from excess of lint, and by analysis must contain forty-nine per cent. of combined protein and fat."

"*Prime cottonseed meal* must be finely ground, of sweet odor, reasonably bright in color, yellow, not brown or reddish, free from lint, and contain at least forty-six per cent. of combined protein and fat."

Good cottonseed meal must be finely ground, of sweet odor, reasonably bright in color, and by analysis must contain at least forty-three per cent. of combined protein and fat.

LINSEED MEAL.

Linseed meal, oil meal, or flaxseed meal is the ground residue from the extraction of oil from flaxseed. The oil is extracted by two processes, known as the old process and the new process. In the old process the oil is simply expressed from the seed by hydraulic pressure. In the new process naphtha or a similar solvent is used to extract

the oil. On account of the extraction being more complete when a solvent is used, the new process generally contains less fat than the old process, while they contain about the same per cent. protein.

WHEAT PRODUCTS.

Wheat bran is the coarse outer covering of the wheat berry. It contains much of the fibrous material of the grain, but is rich in protein.

Middlings or shorts. These terms have generally the same meaning in the trade, and are the fine particles of the outer bran as well as considerable starchy matter. They are the intermediate product between bran and flour.

Red dog is a low-grade wheat flour containing the finer particles of bran.*

Wheat mixed feed or shipstuff is a mixture of the by-products from the milling of the wheat berry.*

Mixed feed. The term mixed feed has been so generally used to mean a mixture of wheat products that it is practically a misrepresentation to use the term to mean a mixture of other cereals. A feed carrying less than fifteen per cent. protein and four per cent. fat cannot be a good mixed feed.

CORN PRODUCTS.

Corn bran is the outer coating of the corn kernel.* It has a low feeding value.

Corn and cob meal is the ground whole ear of corn. In this case the cobs are not considered an adulterant.

Gluten meal is a product obtained in the manufacture of starch and glucose from corn. It is the flinty portion of the kernel which lies in its outer circumference just beneath the hull.*

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* Definitions marked (*) are those adopted by the Association of Feed Control Officials of the United States.

Gluten feed is a product obtained in the manufacture of starch and glucose from corn and is a mixture of gluten meal and corn bran to which may be added the residue resulting from the evaporation of the so-called "steep water."*

Corn feed meal is the siftings obtained in the manufacture of cracked corn and table meal made from the whole grain.*

Hominy meal, feed or chop is the bran and germs of the corn kernel and may contain a part of the starchy portion of the kernel.*

DISTILLERY AND BREWERY BY-PRODUCTS.

Distillers' dried grains are the dried residue from cereals obtained in the manufacture of alcohol and distilled liquors.*

Brewers' dried grains are dried barley grains after they have been malted and the soluble sugar and dextrin extracted.

Malt sprouts are the sprouts of the barley grain.*

MISCELLANEOUS PRODUCTS.

Alfalfa meal is the entire alfalfa hay ground and does not contain an admixture of ground alfalfa straw or other materials.*

Meat meal is finely ground beef scraps.*

Buckwheat shorts or middlings are that portion of the buckwheat grain immediately inside of the hull after separation from the flour.*

Molasses feeds are generally a mixture of some filler such as oat hulls, oat clippings, flax bran, or grain screenings with molasses and a concentrated feed, such as cottonseed meal, brewers' grains, or malt sprouts.

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* Definitions marked (*) are those adopted by the Association of Feed Control Officials of the United States.

Filler is a term used to designate certain by-products generally of little feeding value used to give weight and bulk to concentrated feeds in the manufacture of compounded feeds. Among the materials commonly used as fillers are: ground corn cobs, peanut hulls, oat hulls, cotton seed hulls, grain screenings, flax plant stems and pods, rice hulls, etc. These materials are ground so fine that their presence is discovered only by careful examination, sometimes only with the aid of a microscope. Most fillers contain relatively small amounts of crude protein and crude fat and large amounts of crude fibre. The presence of a filler in some cases may actually decrease the value of the concentrates present.

Compounded feeds are those feeds bearing trade names which are not descriptive in any way of the materials which have been used in their manufacture. They may contain any mixture of stock feed materials and therefore cannot be compared with standards of average composition. They often represent various industrial by-products such, for example, as are obtained in the manufacture of breakfast foods.

The writers wish to here acknowledge the assistance rendered by Messrs. D. B. Keyes, G. F. Lane, M. H. Broggini, G. L. Ham and H. M. Eastman in preparing the following analytical data.

Name of Sample.	Manufactured by	Address.	Protein.		Fat.		Crude Fiber.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
WHEAT FEEDS.								
Amco Mixed Feed	Amendt Milling Co	Monroe, Mich	17.34	18.80	4.46	4.40		7.50
Middlings	The Ansted & Burke Co	Springfield, Ohio	16.95	14.50	4.91	4.00		7.50
Mixed Feed	The Ansted & Burke Co	Springfield, Ohio	16.20	14.50	4.31	3.50		11.50
Atlas Bran	Atlas Flour Mills	Milwaukee, Wis	16.25	15.00	5.05	3.50		12.00
Atlas Extra Flour Middlings	Atlas Flour Mills	Milwaukee, Wis	18.52	16.00	5.23	4.50		8.00
Badger Standard Middlings	Badger-Crittenden Mfg. Co	Milwaukee, Wis	17.12	17.00	4.87	4.00		3.50
Fancy Winter Mixed Feed	E. W. Bailey & Co	Montpelier, Vt	16.85	16.00	4 67	3.75		8.50
Ballard's Bran	Ballard & Ballard Co	Louisville, Ky	15.76	14 50	4.32	4 10		9.00
Banner Mixed Feed	Banner Milling Co	Buffalo, N. Y	17.43		5.42		6.80	
Bran Flakes	Barber Milling Co	Minneapolis, Minn	16.87	13.00	5.25	4.00	10.17	10.00
Fancy Low Grade	Barber Milling Co	Minneapolis, Minn	18.00	18.00	5.07	5 00		4.00
Fancy White Middlings	Barber Milling Co	Minneapolis, Minn	18.13	17.00	5.35	5.00		6.00
White Satin Mixed Feed	Barber Milling Co	Minneapolis, Minn	17.08	16.00	5.13	4.50		9.00
Winona Mixed Feed	Bay State Milling Co	Winona, Minn	17.38	17.00	5 44	5 00		10.50
Commander Bran	Commander Mill Co	Minneapolis, Minn	16.81	14.00	5.87	4.00		11 00
Winter Wheat Bran	William A. Coombs Mlg. Co	Coldwater, Mich	14.45	14.00	4.21	3 00		
Winter Wheat Middlings	William A. Coombs Mlg. Co	Coldwater, Mich	16.29	15.00	4 46	3.00		
Winter Wheat Mixed Feed	William A. Coombs Mlg. Co	Coldwater, Mich	16.16	15.00	5.51	3 00		
Bran	(Sold by) Charles M. Cox Co	Boston, Mass	15.72	14.50	4 79	4.00		10.00
Dudley Bran	Charles M. Cox Co	Boston, Mass	15.69	15.50	5.25	4.00	10.08	9.00
Monogram Fancy Bran	Charles M. Cox Co	Boston, Mass	15.95	15 00	5.12	4.00		10.00
Paragon Mixed Feed	Charles M. Cox Co	Boston, Mass	16 03	15.50	4.84	4.00		10.00
Wirthmore Middlings	Charles M. Cox Co	Boston, Mass	17.52	15.00	5.20	4.00		
Wirthmore Wheat Feed	Charles M. Cox Co	Boston, Mass	16.42	16.00	5.29	4.00	7.60	7.00
Pure Wheat Jersey Brand	George C. Christian	Minneapolis, Minn	15.89	13.00	5.05	4.00		11.50
Madelia Roller Mills Flour Middlings	C. S. Christensen Co	Madelia, Minn	19.24	14.25	5.68	3 00		5 35
Coarse Bran	Crookston Milling Co	Crookston, Minn	15.72	14.90	4.80	3.10		11.10
Boston Mixed Feed	Duluth Superior Milling Co	Duluth, Minn	16.95	16 00	6.06	4.50		8.50
Pure Wheat Bran	B. A. Eckhart Milling Co	Chicago, Ill	17.73	14 00	4.67	3.00		
Eaco Winged Horse Bran	Everett, Augenbaugh & Co	Waseco, Minn	15.50	14.00	4.44	3.00		12.00
Eaco Winged Horse Mixed Feed	Everett, Augenbaugh & Co	Waseco, Minn	16.95	15.00	5 90	3.00		12.00
Lucky Flour Middlings	Federal Milling Co	Lockport, N, Y	17.17	15.00	4.89	4.00		10.00

WHEAT FEEDS.—*Continued.*

Lucky Spring Bran	Federal Milling Co	Lockport, N. Y.	17.12	17.00	5.48	4.50	.....	9.00
Lucky Spring Flour Middlings	Federal Milling Co	Lockport, N. Y.	17.64	18.00	5.69	5.00	.....	9.00
Sphinx Fancy Flour Middlings	Federal Milling Co	Lockport, N. Y.	15.77	10.50	4.54	4.00	.....	9.09
Lucky Winter Mixed Feed	Federal Milling Co	Lockport, N. Y.	16.16	14.00	4.76	4.00	8.19	10.00
Snowball White Middlings	The Gardiner Mills	Hastings, Minn.	17.95	15.00	5.23	4.00	.....	7.50
Berlin Mixed Feed	John Goebel & Co	Berlin, N. H.	16.64	.....	4.84	....	.....	.....
Bran	Grafton Roller Mill Co	Grafton, N. D.	14.20	.....	5.01	....	.....	.....
Middlings	Grafton Roller Mill Co	Grafton, N. D.	18.57	.....	5.35	....	.....	.....
Grafton Mixed Feed	Grafton Roller Mill Co	Grafton, N. D.	16.47	15.50	5.54	4.50	.....	11.90
Daisy Dairy Feed	The Great Western Cereal Co	Chicago, Ill.	17.00	15.00	4.47	3.00	15.82	12.00
Xtragood Mixed Feed	Griswold & McKinnon	St. Johnsbury, Vt.	15.24	16.00	5.26	4.00	.....	7.50
Acme Mixed Feed	J. Hale & Sons	Lyons, Mich.	14.06	.....	4.00	....	7.82	.....
Mixed Feed	Hart Milling & Power Co	Flushing, Mich.	15.06	15.00	4.62	4.25	.....	8.67
Purity Mixed Feed	William S. Hills Co	Boston, Mass.	15.85	15.00	4.15	4.00	.....	10.00
Middlings	J. A. Hinds & Co	Rochester, N. Y.	19.26	17.50	7.21	5.30	.....	7.50
White Middlings	J. A. Hinds & Co	Rochester, N. Y.	15.46	.....	3.58	....	.....	.....
Pure Wheat Middlings	John Hoffer Flouring Mill Co	Steelton, Pa.	15.46	.....	4.10	....	.....	.....
Pure Winter Shorts	John Hoffer Flouring Mill Co	Steelton, Pa.	17.99	.....	5.66	....	.....	.....
Standard Fine Middlings	Hubbard Milling Co	Mankato, Minn.	17.64	14.50	5.93	5.10	.....	10.00
Winter Bran	Hunter-Robinson-Wenz Mlg. Co.	St. Louis, Mo.	16.86	14.50	4.48	4.00	.....	9.50
Fine White Middlings	Huron Milling Co	Harbor Beach, Mich	13.62	13.00	3.24	3.50	.....	2.50
Mixed Feed	Huron Milling Co	Harbor Beach, Mich	14.45	12.00	4.68	4.60	.....	5.85
Bran	W. J. Jennison Co	Minneapolis, Minn.	16.81	15.00	5.28	4.00	.....	10.00
Flour Middlings	W. J. Jennison Co	Minneapolis, Minn.	18.92	17.00	4.87	4.50	.....	5.50
Anchor Bran	Kemper Mill & Elevator Co	Kansas City, Mo.	14.79	14.50	4.12	4.00	9.90	10.00
Anchor Mixed Feed	Kemper Mill & Elevator Co	Kansas City, Mo.	19.57	16.00	4.10	4.00	.....	10.00
Carnation Grey Middlings	Kemper Mill & Elevator Co	Kansas City, Mo.	17.91	16.00	4.27	4.30	.....	8.00
Buckwheat Middlings	Larrowe Milling Co	Detroit, Mich.	12.94	.....	3.21	....	24.89	.....
Snowflake Bran	Lawrenceburg Roller Mills Co	Lawrenceburg, Ind	14.93	14.20	3.80	3.80	9.43	9.50
Snowflake Middlings	Lawrenceburg Roller Mills Co	Lawrenceburg, Ind	17.52	16.00	5.13	5.10	.....	6.00
Snowflake Mixed Feed	Lawrenceburg Roller Mills Co	Lawrenceburg, Ind	16.38	15.20	4.67	4.30	.....	8.00
Thoroughbred Feed	Lexington Roller Mills Co	Lexington, Ky.	16.29	16.00	4.45	4.00	.....	9.10
Pure Wheat Bran	Lidgerwood Mills Co	Lidgerwood, N. D.	15.46	15.30	4.60	4.10	.....	13.50
Elmco Wheat Fancy Bran	Listman Mills Co	La Crosse, Wis.	15.98	15.21	5.18	4.12	9.30	12.03
Elmco Wheat Fancy Mixed Feed	Listman Mills Co	La Crosse, Wis.	16.95	15.71	4.74	4.14	.....	6.33
Waseo Bran	Lyon & Greenlief	Wauseo, Ohio	14.93	14.50	4.19	4.00	.....	9.50
Waseo Mixed Feed	Lyon & Greenlief	Wauseo, Ohio	15.77	15.00	4.26	4.00	.....	8.00
Wheat Bran	The J. C. Lysle Milling Co	Leavenworth, Kan.	15.24	15.00	4.20	4.00	.....	10.00
Pure Wheat Bran	Maney Milling Co	Omaha, Neb.	16.99	14.00	5.00	4.00	9.80	11.00
Bran	Maple Leaf Milling Co	Canada	15.02	....	5.28	....	.....	.....
Rex Middlings	Maple Leaf Milling Co	Canada	16.50	.....	4.99	....	.....	.....
Shorts	Marshall Milling Co	Marshall, Minn.	19.09	17.00	6.15	5.04	.....	9.44
Pennant Mixed Feed	National Milling Co	Toledo, Ohio	16.95	16.00	4.86	3.75	.....	8.50

Name of Sample.	Manufactured by	Address.	Protein.		Fat.		Crude Fiber.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
WHEAT FEEDS.—*Continued.*								
Pure Wheat Bran	National Milling Co	Toledo, Ohio	15.72	.....	5.04	....	.....	.....
Osota Mixed Feed	National Milling Co	Toledo, Ohio	17.25	17.00	4.71	4.50	.....	8 00
Powerful Mixed Feed	The New England Flour Co	Boston, Mass	17.69	19.00	5.00	3 00	.....	10.00
Powerful Standard Bran	The New England Flour Co	Boston, Mass	16.68	14.00	4.91	3.00	.....	12.00
Powerful Standard Middlings	The New England Flour Co	Boston, Mass	16.99	16.00	5.62	4.00	.....	10 00
Seal of Minnesota Bran	New Prague Flouring Mill Co	New Prague, Minn.	16.90	13.50	5 24	4.00	.....	12.50
Seal of Minnesota Fancy Flour Middlings	New Prague Flouring Mill Co	New Prague, Minn.	17.60	17.50	4.72	4 70	.....	4.70
Mixed Feed	The Northwestern Con. Mlg. Co	Minneapolis, Minn.	17.43	15.00	5.26	4.50	.....	10 00
Planet Feed	The Northwestern Con. Mlg. Co	Minneapolis, Minn.	18.74	15 00	6.27	4 00	.....	8.00
Pure Wheat Flour Middlings	The Northwestern Con. Mlg. Co	Minneapolis, Minn.	19.44	15.50	5.53	4.50	.....	8.00
Pure Wheat Middlings	The Northwestern Con. Mlg. Co	Minneapolis, Minn.	16.99	15 00	6 19	4 50	.....	10 00
XXX Comet	The Northwestern Con. Mlg. Co	Minneapolis, Minn.	19.72	16 50	5.92	4.00	.....	3.00
Fancy Country Middlings	Northwestern Milling Co	Little Falls, Minn.	17.22	17.00	5 51	4.90	.....	.....
Fancy Mixed Feed	Northwestern Milling Co	Little Falls, Minn.	18.04	14.02	5 31	4.03	.....	8.00
Fancy Spring Bran	Northwestern Milling Co	Little Falls, Minn.	15.45	12.50	4.90	3.70	.....	.....
Pure Wheat Bran	The N. W. Consol. Milling Co.	Minneapolis, Minn.	16.03	14.50	5.63	4.00	11.07	11.00
Pillsbury's Pure and Unadulterated Fancy Mixed Feed	Pillsbury's Milling Co	Minneapolis, Minn.	17.25	16.00	4 96	4.50	.....	8.00
Pillsbury's Pure and Unadulterated Wheat Flour A. Middlings	Pillsbury's Milling Co	Minneapolis, Minn.	17.03	15.00	4.71	4.50	.....	6.00
Pillsbury's Pure and Unadulterated Wheat B. Middlings	Pillsbury's Milling Co	Minneapolis, Minn.	17.17	15.00	5 25	4.00	.....	8 00
Pillsbury's Wheat Bran	Pillsbury's Milling Co	Minneapolis, Minn.	15.55	14 50	4 43	4 00	.....	11.00
Pillsbury's XX Daisy	Pillsbury's Milling Co	Minneapolis, Minn.	19.23	16.00	4.93	4.50	.....	11.00
Bran	Pipestone Milling Co	Pipestone, Minn.	16.54	14.20	5.01	4 00	.....	10.30
Standard Middlings	Pipestone Milling Co	Pipestone, Minn.	17.51	17.00	6.83	5.80	.....	7.00
Porter's Pure and Unadulterated Wheat Bran	Porter Milling Co	Winona, Minn.	16.25	14 50	4.83	4 00	.....	11.00
Porter's Pure and Unadulterated Wheat Middlings	Porter Milling Co	Winona, Minn.	19.83	15.00	6.19	4.50	.....	10 00
Porter's Pure and Unadulterated Wheat Red Dog Flour	Porter Milling Co	Winona, Minn.	19.48	18.50	5.92	4.00	.....	3.00

WHEAT FEEDS.—*Continued.*

Champion Mixed Feed	Portland Milling Co	Portland, Mich	15.76	15.84	4.93	4.15	9.40
Buckeye Mixed Feed	The Quaker Oats Co	Chicago, Ill	16.86	15 50	4.61	4.50	8.00
Choice Bran	Rush City Milling Co	Rush City, Minn	15.16	15.00	4.69	4.00	10.60
Bran	Russel-Miller Milling Co	Minneapolis, Minn	16.33	13.00	5.12	4.60	11.00
Flour Middlings	Russel-Miller Milling Co	Minneapolis, Minn	16.26	16.00	5 21	5.00	6 00
Occident Mixed Feed	Russel-Miller Milling Co	Minneapolis, Minn	17.43	15.00	5.50	4.50	10.00
Occident Wheat Feed	Russel-Miller Milling Co	Minneapolis, Minn	16.85	15.00	5.39	4.50	7.60 10.00
Regular Wheat Feed	Russel-Miller Milling Co	Minneapolis, Minn	18.39	15.00	5.15	4.50	10.00
Standard Middlings	Russel-Miller Milling Co	Minneapolis, Minn	17.52	15 00	5.72	4 00	8.00
Gold Mine Mixed Feed	Sheffield-King Milling Co	Minneapolis, Minn	16.21	15.90	5.47	4.99	7.95 8.00
Shredded Wheat Waste for Poultry	The Shredded Wheat Co	Niagara Falls, N. Y.	12.48	10 00	2.00	1.50	2.00
Flour Middlings	Sleepy Eye Flour Mills Co	Minneapolis, Minn	18.52	17.50	5.92	4 00	7.70
Pure Wheat Middlings	Sleepy Eye Flour Mills Co	Minneapolis, Minn.	17.43	17.20	5 82	4.30	8.40
Try Me Winter Mixed Feed	Sparks Milling Co	Alton, Ill	17.52	16 00	4.16	4.00	8.00
Pure Wheat Product Rich Bran, Mill Run or Mixed Feed	Stonard-Tilton Milling Co	St. Louis, Mo	18.65	14.00	4 77	4 00	
Bran	F. W. Stock & Sons	Hillsdale, Mich	15.72	15.50	4 18	3.00	9.50
Middlings	F. W. Stock & Sons	Hillsdale, Mich	17.01	17.00	5 15	4 50	6.00
Monarch Wheat Feed	F. W. Stock & Sons	Hillsdale, Mich	17 82	17.00	4 86	4 50	9.00
Superior Pure Wheat Feed	F. W. Stock & Sons	Hillsdale, Mich	17.03	18.00	4 97	5.00	7 00
Stott's Fine White Middlings	David Stott	Detroit, Mich	16.65	16.00	4.69	5.00	8.00
Stott's Heavy Pure Mixed Wheat Feed	David Stott	Detroit, Mich	16.32	16.00	5 03	5.00	7.00
Stott's Honest Mixed Feed	David Stott	Detroit, Mich	16 50	16.50	5.30	5.00	7.57 8.00
Stott's Pure Spring Wheat Bran	David Stott	Detroit, Mich	17.25	16.00	5.13	4.50	10.00
Stott's Pennant Pure Winter Middlings	David Stott	Detroit, Mich	16.99	17.00	5.43	5.50	7.00
Stott's Pure Winter Wheat Bran	David Stott	Detroit, Mich	15.67	16.00	4.16	4.00	10.11 10.00
Bran	Stratton & Co	Concord, N. H	17.87		5.31		
Middlings	Stratton & Co	Concord, N. H	14.88		4 30		
Stratton's Fancy Stock Feed	Stratton & Co	Concord, N. H	10 29	10.00	6 63	3.25	9 00
Stratton's Mixed Feed	Stratton & Co	Concord, N. H	14.93	15 78	5 03	4.74	9.00
Pure Wheat Bran	Tennant & Hoyt Co	Lake City, Mich	15.98	13.20	5 30	4.90	13.10
Mixed Wheat Feed	Thornton & Chester	Buffalo, N. Y	17 52	14.00	5.06	3.00	
Wheat Bran	George Urban Milling Co	Buffalo, N. Y	17.00	15.00	5.34	4.00	11.50
Farmers' Favorite Choice Wheat Bran	Valley City Milling Co	Grand Rapids, Mich.	16.07	17.75	4.67	3.43	10.93
Farmers' Favorite Choice Wheat Cow Feed	Valley City Milling Co	Grand Rapids, Mich.	16.42	14.73	5 08	4.25	7.50
Farmers' Favorite Choice Wheat Middlings	Valley City Milling Co	Grand Rapids, Mich.	15.77	16.81	4.95	4 88	8.33
Voigt's Pure Winter Wheat Bran	Voigt Milling Co	Grand Rapids, Mich.	15.54		4.51		

Name of Sample.	Manufactured by	Address.	Protein.		Fat.		Crude Fiber.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
WHEAT FEEDS.—*Continued.*								
Pure Winter Wheat Bran	Voight Milling Co.	Grand Rapids, Mich	16.07	.....	4.55	....	.....	.....
Voight's Pure Middlings	Voight Milling Co	Grand Rapids, Mich	15.46	.....	4 74	....	5.24	.....
Mill Run Bran Mixed Feed	Waggoner-Gates Milling Co.	Independence, Mo.	15.37	15.00	4.30	3.00	.....	9.00
Washburn-Crosby Co's Pure Hard Wheat Coarse Bran	Washburn-Crosby Co	Minneapolis, Minn.	16.03	14.50	5.24	4.00	.....	11.00
Washburn-Crosby Co's Pure Hard Wheat Flour Middlings	Washburn-Crosby Co.	Minneapolis, Minn.	18.08	17.00	5.19	5.00	.....	8.00
Pure Hard Wheat Standard Middlings	Washburn-Crosby Co.	Minneapolis, Minn.	17.09	15.00	5.35	4.00	.....	8.00
Washburn-Crosby Co's Pure Hard Wheat Adrian Red Dog Flour	Washburn-Crosby Co.	Minneapolis, Minn.	18.30	17.00	5.14	5.00	.....	4.00
Washburn-Crosby Co's Pure Hard Wheat Superior Mixed Feed	Washburn-Crosby Co.	Minneapolis, Minn.	16.42	16.00	5.33	4.50	.....	9.00
Bran	Western Canada Flour Mills Co.	Canada	15.83	16.82	4.66	5.50	8.88	10.86
Kent Mixed Feed	The Williams Bros. Co.	Kent, Ohio	16.38	12.00	4.77	2.00	.....	15.00
Bran	Williston Mills Co.	Williston, N. D.	17.00	16.50	4.90	4.00	.....	10.20

Name of Brand.	Manufactured by	Address.	Protein.		Fat.		Crude Fiber.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
COMPOUNDED FEEDS.								
"Ubico" Union Grains	J. W. Biles Co	Cincinnati, Ohio	24.83	24.00	7.89	7.00	9.60	9.00
Bufecco Horse Feed	Buffalo Cereal Co	Buffalo, N. Y	11.30	10.00	4.50	4.00	9.26	8.00
Bufecco Stock Feed	Buffalo Cereal Co	Buffalo, N. Y	9.46	8.00	4.55	4.00	10.11	9 00
Unicorn Dairy Ration	Chapin & Co	Milwaukee, Wis	27.54	26.00	6.27	5.50	9.63	10.00
Wirthmore Balanced Ration Feed	Charles M. Cox Co	Boston, Mass	26.18	26.00	5.73	5.00	9.79	8.75
Wirthmore Balanced Ration for Milch Cows	Charles M. Cox Co	Boston, Mass	26.71	25.50	6.50	5.20	9.34	9.50
Wirthmore Stock Feed	Charles M. Cox Co	Boston, Mass	11.26	9.00	5 99	4.00	7.26	7.00
Grandin's Stock Feed	D. H. Grandin Milling Co	Jamestown, N. Y	10.73	8.50	7.60	3.50	6.22	9.00
Xtragood Stock Feed	Griswold & McKinnon	St. Johnsbury, Vt	11.68	10.00	4.44	3.25	11.09	.....
Gwinn's Dairy Feed	Gwinn Milling Co	Columbus, Ohio	16.35	16.29	4.68	4.50	.....	7.00
Branning Refuse	George S. Ham	Barrington, N. H	13.82	12.00	5.90	5.00	9.00	9.00
Haskell's Stock Feed	W. H. Haskell & Co	Toledo, Ohio	10.38	8.00	7.79	4.00	7.06	8.00
Haywood's Chickalfa	Byron Haywood	Kansas City, Mo	22.02	20.00	3.31	2.00	18.05	20.00
Purity Horse Feed	William S. Hills Co	Boston, Mass	10.95	8.50	4.93	3.00	10.03	8.00
Purity Milk Maker	William S. Hills Co	Boston, Mass	25.79	25.00	8 37	8.00	12.01	10.00
Purity Stock Feed	William S. Hills Co	Boston, Mass	10 03	8.00	5.28	3.00	12.28	7.00
Monarch Chop Feed	Husted Milling Co	Buffalo, N. Y	7.84	7.50	4.41	3.50	6.25	8.00
Husted Stock Feed	Husted Milling Co	Buffalo, N. Y	10.60	8.00	6.11	4.00	8.22	9.00
Husted Yellow Provender	Husted Milling Co	Buffalo, N. Y	9.42	7.00	4.78	4.00	5.45	9.00
Mayflower Stock Feed	Husted Milling Co	Buffalo, N. Y	10.20	7.50	5.33	3.50	5.92	9.00
Zenith Stock Feed	Husted Milling Co	Buffalo, N. Y	11.64	10.00	5 32	4.00	5.33	9.00
Sterling Feed	Indiana Milling Co	Terre Haute, Ind	10.86	9.80	3.10	2.75	15.44	14 00
Larro Feed for Dairy Cows	The Larrowe Milling Co	Detroit, Mich	19.62	19.00	3.75	3.00	13.14	14.00
Brooks' Fancy Corn and Oat Stock Feed	A. H. McLeod Milling Co	St. Johnsbury, Vt	9.90	9.00	3.76	3.00	8.99	8.50
Blue Ribbon Dairy Feed	The Quaker Oats Co	Chicago, Ill	23.72	25.00	4.53	4.00	11 95	9.00
Daisy Dairy Feed	The Quaker Oats Co	Chicago, Ill	16.12	16.00	4.45	3.50	13.10	14.50
Schumacher Special Horse Feed	The Quaker Oats Co	Chicago, Ill	10.07	9.25	3.96	3.25	8.11	8.00
Schumacher Stock Feed	The Quaker Oats Co	Chicago, Ill	11.29	10.00	4.43	3.25	11.88	10 00
Victor Feed	The Quaker Oats Co	Chicago, Ill	8 85	8.00	4.29	3.00	11.76	12.00
White Diamond Feed	The Quaker Oats Co	Chicago, Ill	10.42	8.00	4.94	3.25	8.14	9.00

Name of Brand.	Manufactured by	Address.	Protein.		Fat.		Crude Fiber.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
COMPOUNDED FEEDS.—*Continued.*								
Purina Feed	Ralston Purina Co	St. Louis, Mo	14.29	12 50	4.30	4.00	.....	9.80
Camp's Little Wonder Chop Feed	The Toledo Grain & Milling Co.	Toledo, Ohio	8.45	7.00	3.35	3.00	7.35	9.00
Blue Grass Feed	A. Waller & Co	Henderson, Ky	11.25	9.00	2.47	2.00	.....	17.00
CALF MEALS.								
Blatchford's Calf Meal	The Blatchford Calf Meal Fact'y	Waukegan, Ill	24.42	24.00	5.19	5.00	.....	6.00
Triangle Calf Feed	Chapin & Co	Hammond, Ind	17.52	16.00	10.39	8.00	.....	.....
Gregson Calf Meal	The Great Western Cereal Co.	Chicago, Ill	28.81	25.00	7.29	5.00	.....	5.00
Grofat Calf Meal	International Stock Food Co.	Minneapolis, Minn.	25.92	25.00	6.39	5.00	.....	10.00
Schumacher Calf Meal	The Quaker Oats Co	Chicago, Ill	19.13	19.00	7.94	8.00	.....	3.00
BEET PULPS.								
Dried Beet Pulp	Charles Pope	Chicago, Ill	9.82	8.00	1.27	.05	.....	20.00
Dried Beet Pulp	The Larrowe Milling Co	Detroit, Mich	8.32	8.00	.86	.50	.....	20.00
Bent's Milk Albumen for Poultry	The Bent-Coissont Co	Antwerp, N. Y	42.95	40.00	1.85	1.00	.....	.....
DISTILLERS' GRAINS.								
Ajax Flakes	Ajax Milling & Feed Co	Buffalo & New York	31.44	30.00	12.40	11.00	12.55	14.00
Fourex Grains	J. W. Biles Co	Cincinnati, Ohio	31.09	31.00	13.66	12.00	9.98	13.00
Empire State Dairy Feed	Clark Bros. & Co	Peoria, Ill	33.19	29.00	12.46	12.00	11.20	12 00
Empire State Dairy Feed	Clark Bros. & Co	Peoria, Ill	26.27	28.00	14.70	10.00	7.80	12.50
Dewey's Distillers' Dried Corn Grains	The Dewey Bros. Co	Blanchester, Ohio	24.61	26.00	14.21	9.00	8.14	13.00
Bull Brand Dried Brewers' Grains	Farmers Feed Co.	New York City	28.67	27.20	7.94	6.30	11.57	17.20
Hector Distillers' Dried Grains	Hottelet & Co	Milwaukee, Wis.	34 41	30.00	10.73	10.00	13.31	14.00
Husted's Distillers' Grains	Husted Milling Co	Buffalo, N. Y	28.11	30.00	12.90	8.00	.....	11.00
Jersey Malt Sprouts	M. G. Rankin & Co	Milwaukee, Wis	26.67	25.00	2.49	1.50	11.57	17.00
FLAXSEED MEALS.								
Cleveland Flax Meal	The American Linseed Co	Chicago, Ill	38.61	36.00	1.95	1.00	6.90	7.50
Linseed Oil Meal	The American Linseed Co	Chicago, Ill	34.59	36.00	2.18	1.00	.....	7.50
Old Process Oil Meal	The American Linseed Co	Chicago, Ill	35.99	32.00	6.65	5.00	7.10	7.00

FLAXSEED MEALS.—*Continued.*								
Ground Oil Cake	Archer-Daniels Linseed Co.	Minneapolis, Minn.	36.78	32.00	6.94	6.00	.....	10 00
Pure Oil Meal	Kelloggs & Miller	Amsterdam, N. Y.	35.73	33.00	6.27	5.00	6.50	7.50
Old Process Oil Meal	The Guy G. Major Co.	Toledo, Ohio	35.64	30.00	5.92	5.00	.....	10.00
PureOld Process LinseedOil Meal	The Mann Bros. Co	Buffalo, N. Y.	34.59	34.00	7.59	6 00	8.80	10.00
Old Process Oil Meal	The Metzger Seed & Oil Co.	Toledo, Ohio	34.50	30 00	6.41	5.00	.....	10 00
Old Process Ground Linseed Cake	Midland Linseed Products Co.	Minneapolis, Minn.	34.15	32.00	7.54	6.00	7.95	8.50
Ground Oil Cake	Red Wing Linseed Co.	Red Wing, Minn.	37.21	30.00	8.24	5.00	7.04	9.00
GLUTEN FEEDS								
Cream of Corn Gluten Feed	American Maize Product Co.	New York City	23.11	23.00	3.42	2.50	6.88	8.50
Buffalo Gluten Feed	Corn Products Refining Co.	New York City	26.71	23.00	4.73	2.00	6.89	8.50
Diamond Gluten Meal	Corn Products Refining Co.	New York City	48 69	40.00	3.21	1.50	1.07	.....
Clinton Gluten Feed	Clinton Sugar Refining Co.	Clinton, Iowa	24.57	20.00	4.46	3.00	.....	8.00
Jenk's Gluten Feed	Huron Milling Co.	Harbor Beach, Mich.	25 88	23 00	3.13	3.00	5.58	8.00
Bay State Gluten Feed	J. E. Soper Co	Boston, Mass.	24.13	20 00	2.43	2.00	.....	8.00
Staley's Gluten Feed	A. E. Staley Milling Co.	Decatur, Ill.	24.83	23.00	3 84	2 50	.....	12.00
MEAT AND BONE FEEDS.								
Beef Scraps	The American Agri. Chem. Co.	New York City	42.03	40.00	14.33	5.00	.....	.....
Bone Meal for Cattle	The American Agri. Chem. Co.	New York City	17.60	.....	9.81	....	.....	.....
Bradley's Superior Meat Meal	The American Agri. Chem. Co.	New York City	34.33	30.00	8.83	8 00	.....	.....
Pure Ground Beef Scraps for Poultry and Swine	Beach Soap Co.	Lawrence, Mass.	40.81	40.00	12.48	20.00	.....	.....
Beach's Star Brand Granulated Bone	Beach Soap Co.	Lawrence, Mass.	30 00	25 00	10 63	5 00	.....	.....
Beach's Star Brand Meat and Bone Meal	Beach Soap Co.	Lawrence, Mass.	28.63	30 00	11.11	10.00	.....	.....
Beach's StarBrand PureBoneMeal	Beach Soap Co.	Lawrence, Mass.	9.98	10.00	12.71	8.00	.....	.....
Bowker's Animal Meal for Fowls and Chicks	Bowker Fertilizer Co	Boston, Mass.	40.37	40.00	10.20	5.00	.....	.....
Crushed Bone for Poultry	Bowker Fertilizer Co.	Boston, Mass.	19.53	12.00	4.92	6.00	.....	.....
Bone Meal	Bowker Fertilizer Co	Boston, Mass.	17.78	.....	10 49	.....	.....	.....
Bowker's Fresh Ground Beef Scraps	Bowker Fertilizer Co.	Boston, Mass.	44 04	40.00	11.71	5.00	.....	.....
Breck's Ground Beef Scraps	Joseph Breck & Sons	Boston, Mass.	44.04	43.00	16.01	12.00	.....	.....
Burlington Cooked Meat Scraps for Poultry	Burlington Rendering Co.	Burlington, Vt.	42.64	40.00	13.16	8.00	.....	.....
High Protein Beef Scraps for Poultry	Cypher's Incubator Co.	Buffalo, N. Y.	45.53	45.00	13.48	10 00	.....	.....
Dow's Favorite Poultry Meal	John C. Dow Co.	Boston, Mass.	32.93	32.00	12.42	10 00	.....	.....
Ground Beef Scraps	John C. Dow Co.	Boston, Mass.	44.13	45.00	15 71	12.00	.....	.....
Bone Meal for Cattle	Thomas W. Emerson Co.	Boston, Mass.	13.18	6.00	7.48	12.00	.....	.....
Bone Meal	Essex Fertilizer Co.	Boston, Mass.	19.74	20.00	7.06	5.00	.....	.....
Cracked Bone	Essex Fertilizer Co.	Boston, Mass.	24.09	20.00	6.41	5.00	.....	.....

Name of Brand.	Manufactured by	Address.	Protein.		Fat.		Crude Fiber.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
MEAT AND BONE FEEDS—*Continued.*								
Essex Cooked Meat Scraps for Poultry	Essex Fertilizer Co.	Boston, Mass.	41.94	40.00	13.11	8.00	.....	.....
Greene's Fish Mash for Poultry	Greene Chicken Feed Co.	Marblehead, Mass.	14.49	12.00	4.69	3.00	.....	.....
Greene'sOld-Fashioned Meat Scraps	Greene Chicken Feed Co.	Marblehead, Mass.	37.21	40.00	9.40	5.00	.....	.....
"M" Beef Scraps	W. D. Higgins	S.Framingh'm,Mass	43 08	30.00	11.97	12 00	.....	.....
Hill's Fish Meal	William S. Hills	Jamestown, N. Y.	45.27	45.00	2.97	3.00	.....	.....
Bone and Meat Meal	Hinckley Rendering Co.	Somerville, Mass.	38.61	35.00	8.20	8.00	.....	.....
Hinckley Poultry Food prepared from Cooked Meat Scraps	Hinckley Rendering Co.	Somerville, Mass.	38.10	35.00	9.93	8.00	.....	.....
Red Star Brand Fish Scraps	International Glue Co.	Boston, Mass.	42.82	45.00	2.58	2.00	.....	.....
Beef Scraps	A. Lord & Co.	Chelsea, Mass.	36.69	30.00	16.50	17.00	.....	.....
Lowell Bone Meal for Cattle and Poultry	Lowell Fertilizer Co.	Boston, Mass.	26.66	.....	7.52	.....	.....	.....
Bone and Meat Meal for Poultry	Manchester Rendering Co.	Manchester, N. H.	36.86	35.00	12.26	8.00	.....	.....
Poultry Food prepared from Cooked Meat Scraps	Manchester Rendering Co.	Manchester, N. H.	40.72	40 00	11.89	8.00	.....	.....
Marsh's Pure Ground Beef Scraps	George E. Marsh Co.	Lynn, Mass.	46.84	45.00	11.88	10.00	.....	.....
Ground Scraps	Carroll S. Page	Hyde Park, Vt	47.10	40 00	19.15	20.00	.....	.....
Blue Ribbon Meat Scraps	The Park & Pollard Co.	Boston, Mass.	45.44	45.00	18.91	12.00	.....	.....
Bone Meal for Cattle and Poultry	Portland Rendering Co.	Portland, Me.	24.74	20.00	9.25	5.00	.....	.....
Cracked Bone for Poultry	Portland Rendering Co.	Portland, Me.	27.54	10.00	5.03	5.00	.....	.....
Cooked Meat Scraps for Poultry	Portland Rendering Co.	Portland, Me.	40.11	40.00	10.00	8.00	.....	.....
Sanborn's High Grade Meat and Meal for Poultry	J. W. Sanborn	Pittsfield, N. H.	42 38	40.00	11.47	8.00	.....	.....
Swift's Lowell Bone and Meat Meal	Swift's Lowell Fertilizer Co.	Boston, Mass.	40.63	35.00	13.96	8.00	.....	.....
Swift's Lowell Cracked Bone for Poultry	Swift's Lowell Fertilizer Co.	Boston, Mass.	27.15	20.00	4 02	5.00	.....	.....
Swift's Lowell Cooked Meat Scraps	Swift's Lowell Fertilizer Co.	Boston, Mass.	47.10	40.00	13.05	8.00	.....	.....
Whitman & Pratt's Beef Scraps	Whitman&Pratt RenderingCo	Lowell, Mass.	48.16	45 00	11.55	10 00	.....	.....
Poultry Food prepared fromCooked Meat Scraps	Worcester Rendering Co.	Auburn, Mass.	40.19	40.00	11.99	8.00	.....	.....

COTTON SEED MEALS.							
Cub Brand Prime Cotton Seed Meal	F. W. Brode & Co	Memphis, Tenn	40.81	40.00	7.02	6.00	10.00
Dove Brand Cotton Seed Meal	F. W. Brode & Co	Memphis, Tenn	39.10	38.63	7.47	6.00	10.00
Owl Brand High Grade Cotton Seed Meal	F. W. Brode & Co	Memphis, Tenn	39.93	41.00	8.88	6.00	10.00
Buckeye Prime Cotton Seed Meal	The Buckeye Cotton Oil Co	Cincinnati, Ohio	38.79	38.62	8.39	6.50	12.23 12.00
Acme Brand Pure Cotton Seed Meal	T. H. Bunch Commission Co	Little Rock, Ark	39.41	38.60	8.75	7.00	12.00
Old Gold Brand Pure Cotton Seed Meal	T. H. Bunch Commission Co	Little Rock, Ark	41.02	41.00	7.86	9.00	9.00
Peerless Brand Cotton Seed Meal	Florida Cotton Oil Co	Jacksonville, Fla	40.72	41.00	8.44	7.50	8 00
Dixie Brand Cotton Seed Meal	Humphrey & Godwin Co	Memphis, Tenn	41.00	38.62	8.35	6.00	12.00
Forfat Brand Cotton Seed Meal	Humphrey & Godwin Co	Memphis, Tenn	38.70	38.62	7.31	6.00	12.00
Cremo Brand Cotton Seed Meal	Humphrey & Godwin Co	Memphis, Tenn	21.24	20.00	4.61	5.00	22.00
Imperial Cotto Brand Cotton Seed Meal	Imperial Cotto Milling Co	Memphis, Tenn	41.86	41.00	7.84	8.00	9.00
Peacock Brand Cotton Seed Meal	Keeton-McArthur Co	Atlanta, Ga	39.41	41.00	7.48	6.00	10.00
Bee Brand Cotton Seed Meal Cake	W. C. Northern	Little Rock, Ark	43.37	41.00	9.24	7.00	10.50
Baltimore Brand Cotton Seed Meal	W. Newton Smith	Baltimore, Md	37.65	38.62	13.02	7.00	10.50
Dirigo Brand Cotton Seed Meal	W. Newton Smith	Baltimore, Md	42.21	41.00	7.15	7.00	10.50
Pilgrim Brand Cotton Seed Meal	J. E. Soper Co	Boston, Mass	38.79	38 50	7.57	5.00	10.00
Pioneer Cotton Seed Meal	J. E. Soper Co	Boston, Mass	42.38	41.00	10.45	7.00	10.00
HOMINY FEEDS.							
Romco Feed	American Hominy Co	Indianapolis, Ind	11.79	9.50	8.59	7.00	9.38 7.00
Bufceco Hominy Feed	Buffalo Cereal Co	Buffalo, N. Y	11.34	10.00	8.02	7.00	4.42 4.00
Wirthmore Hominy Feed	Charles M. Cox Co	Boston, Mass	10.12	9.50	8.13	7.50	4.33 5.00
Success Hominy Feed	Deutsch & Sickert Co	Milwaukee, Wis	13.22	11.00	6.73	7.00	5.90 4.00
Badger Hominy Feed	Charles A. Krause	Milwaukee, Wis	12.44	9.00	6.68	6.00	5.76 5.00
Choice Steam-Cooked Hominy Feed	Miner-Hilliard Milling Co	Wilkes-Barre, Pa	10.86	10.00	5.13	5.00	3.88 5 00
Blue Ribbon Hominy Chop	J. E. Soper Co	Boston, Mass	12.09	10.00	7.10	7.00	4.16 5.00
Hominy Feed	The Patent Cereals Co	Geneva, N. Y	11.62	10.00	8.19	7.00	5.00
Logan Hominy Feed	The Standard Cereal Co	Chillicothe, Ohio	11.33	9.00	7.24	7.00	3.79 6.00
MOLASSES FEEDS.							
Sucrene Dairy Feed	American Milling Co	Chicago, Ill	17.22	16.50	4.06	3.50	9.82 12.00
Husted Alfalfa Horse Feed	Husted Milling Co	Buffalo, N. Y	10.90	10.00	3.39	3.00	8.55 15.00
Husted Molasses Feed	Husted Milling Co	Buffalo, N. Y	20.71	18.00	4.53	4.00	7.61 9.00
Husted Oatmolene Horse Feed	Husted Milling Co	Buffalo, N. Y	11.21	9.00	5.11	3.00	7.72 7.00
Molasses Horse Feed	Husted Milling Co	Buffalo, N. Y	9.83	7.00	4.09	3.00	3.97 9.00
Molassine Meal	The Molassine Co., Ltd	England	3.98	7.00	1.87	7.00	6.27
Quaker Molasses Dairy Feed	The Quaker Oats Co	Chicago, Ill	17.12	16.00	4.55	3.50	15.82 14.00
Purina Molasses Feed	Ralston Purina Co	St. Louis, Mo	11.96	9.00	2.78	1.50	12.45 12.00
Hammond Dairy Feed	The Western Grain Products Co	Hammond, Ind	18.62	16.50	4.38	3.50	12.02 11.00
Hammond Horse Feed	The Western Grain Products Co	Hammond, Ind	12.61	12.00	4.02	2.80	7.33 11.00

Name of Brand.	Manufactured by	Address.	Protein.		Fat.		Crude Fiber.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
POULTRY FEEDS.								
Bufceco Poultry Feed	Buffalo Cereal Co.	Buffalo, N. Y.	16.33	15.00	5.15	4.00	5.24	5.00
Wirthmore Growing Feed	Charles M. Cox Co.	Boston, Mass.	11.43	12.00	3 06	4.00	3.44	
Wirthmore Poultry Mash	Charles M. Cox Co.	Boston, Mass.	21.41	20 00	4.67	4.00	5.30	9 50
Queen Poultry Mash	The Albert Dickinson Co.	Chicago, Ill.	11.43	10.00	4.65	2.50	5.85	5.00
Balanced Hen Rations (Maine State Formula)	C. N. Dodge	Hampton Falls, N. H.	22.72		5.36			
Grondin's Poultry Mash	D. H. Grondin Milling Co.	Jamestown, N. Y.	16.33	15.00	4.20	4 00		8.60
Wonder Poultry Feed	Flint Mill Co	Milwaukee, Wis.	19.96	22.00	6 06	4.00		
Greene's Growing Feed for Chickens	Greene Chick Feed Co.	Marblehead, Mass.	12.69	12.00	3.65	3.00		
Green River Grain Co.'s Poultry Food	Green River Grain Co.	Greenfield, Mass.	17.25	16.46	4.39	4.14		
The H. O. Company's Poultry Feed	The H-O Co.	Buffalo, N. Y.	18.87	17.00	4.80	5.50	7 18	9.00
Purity Poultry Mash	William S. Hills Co.	Boston, Mass.	16.73	10.70	5.25	4.00	16.64	16.70
Monadnock Poultry Mash	The Holbrook Grocery Co.	Keene, N. H.	11.10	11.00	3.90	2 50	6 80	10.00
Husted Laying Mash	Husted Milling Co	Buffalo, N. Y.	16 03	15.00	5.00	3.00	5 38	8 00
Laying Mixture	C. F. Kimball & Son	Salem Depot, N. H.	21.56		6 37		7.30	
Laying Mash	William H. Knox	Dover, N. H.	19.40	19.19	5 60	5 23	7.88	
Growing Feed	The Park & Pollard Co.	Boston, Mass.	15.11	14 00	5 44	3.12		10.00
Fattening Feed	The Park & Pollard Co.	Boston, Mass	11.78	10.00	2.64	3 00		8 00
Purina Chicken Chowder Feed	Purina Mills	St. Louis, Mo.	17.78	17.00	3.83	3.00		9.00
Dry Mash Feed	The Park & Pollard Co.	Boston, Mass.	18.04	18.00	3.51	3.50	5.94	12.00
Poultry Mash	W. N. Potter & Sons.	Greenfield, Mass.	17.11	15.00	4.81	4 00		11.00
American Poultry Feed	The Quaker Oats Co.	Chicago, Ill.	14 32	12 00	5.27	3 50		9.00
Bunker Hill Mash	Nathan Tufts & Sons	Charlestown, Mass.	13.75	15.25	4.71	3.50		3 50

FERTILIZER INSPECTION, 1913.

FERTILIZER INSPECTION FOR 1913.

The samples of fertilizer for the 1913 inspection were collected by Messrs. R. E. Skinner and W. A. Cole under the direction of the State Board of Agriculture. Aside from duplicates 187 samples were received by the State Agricultural Experiment Station for analysis.

Not all of the licensed brands of fertilizers were sampled because in some instances the goods were distributed directly from the cars in which shipment was made. In some of these instances, the goods were used very shortly after they were distributed. On this account it was not possible to sample all the brands which came into the state.

The brands which were sampled cover fairly well almost any quality of goods that can be desired for any ordinary purpose. The careful buyer should be able to find in the list a number of brands almost equally satisfactory for his needs. The New Hampshire farmer should use high grade fertilizers which carry relatively large amounts of nitrogen. These will show the largest returns under average conditions.

Messrs. D. B. Keyes, H. Eastman, M. Broggini and J. Bonardi assisted in the preparation of the following data.

COMPOSITION OF COMMERCIAL FERTILIZERS SAMPLED AND ANALYZED IN 1913.

NAME OF MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.							POTASH.	
			Total.				Available.			Total.			
	Inorganic.	Organic.	Found.	Guaranteed.	Soluble.	Reverted.	Found.	Guaranteed.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.
AMERICAN AGRICULTURAL CHEMICAL CO., New York City.													
Complete Manure for Top-Dressing	3.30	1.64	4.91	4.94	2.01	2.64	4.68	4.00	1.70	6.38	5.00	6.12	6.00
Fine Ground Bone	.....	.....	2.32	2.47	.....	.....	.....	.....	.....	25.90	22.88	.....	.....
Grass and Lawn Top-Dressing	3.61	.30	3.91	3.91	2.80	2.98	5.78	5.00	1.06	6.84	6.00	2.53	2.00
Grass and Oats Fertilizer	.....	.....	.....	.....	8.08	3.27	11.35	11.00	.89	12.24	12.00	2.23	2.00
High Grade Fertilizer with 10% Potash	1.62	1.18	2.80	2.47	4.83	1.22	6.05	6.00	2.13	8.18	7.00	10.23	10.00
Muriate of Potash	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50.48	49.00
New Hampshire Special Chemical Mixture	.80	.86	1.66	1.65	7.05	1.61	8.66	8.00	1.33	9.91	9.00	5.12	5.00
Nitrate of Soda	.....	.....	15.25	15.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plain Super-Phosphate 14%	.....	.....	.....	.....	12.23	2.50	14.73	14.00	1.19	15.92	15.00	.....	.....
Pacific Potato Special	.57	1.49	2.06	2.06	4.38	3.87	8.25	8.00	1.94	10.19	9.00	3.13	3.00
14% Plain Super-Phosphate	.....	.....	.....	.....	12.16	2.26	14.42	14.00	2.41	16.83	15.00	.....	.....
Soluble Pacific Guano	1.02	1.05	2.07	2.06	6.25	2.21	8.49	8.00	1.54	10.03	9.00	1.80	1.50
Special Grass and Garden Mixture	7.00	1.47	8.47	8.43	2.69	3.33	6.02	6.25	2.41	8.43	7.25	8.35	8.25
Special Vegetable Guano	2.30	.95	3.25	3.29	4.35	3.87	8.22	8.00	1.78	10.00	9.00	7.73	7.00
10% Vegetable and Potato Manure	1.06	.81	1.87	1.65	5.98	3.07	9.05	8.00	1.25	10.30	9.00	.....	10.00
Bradley's Complete Manure for Corn and Grain	2.10	1.26	3.36	3.29	5.26	3.11	8.37	8.00	2.06	10.43	9.00	7.15	7.00
Bradley's Complete Manure for Potatoes and Vegetables	2.39	.99	3.29	3.29	5.78	3.16	8.94	8.00	1.74	10.68	9.00	7.31	7.00
Bradley's Complete Manure for Top-Dressing Grass and Grain	4.16	.48	4.94	4.94	3.05	.97	4.02	4.00	1.11	5.13	5.00	6.57	6.00
Bradley's Complete Manure with 10% Potash	2.13	1.09	3.22	3.29	3.59	3.05	6.64	6.00	2.26	8.90	7.00	10.32	10.00
Bradley's Corn Phosphate	1.61	.59	2.20	2.06	6.83	2.51	9.34	8.00	1.76	11.10	9.00	1.82	1.50
Bradley's Eclipse Phosphate for all crops	.27	.76	1.03	1.03	6.29	2.50	8.79	8.00	2.49	11.28	9.00	2.07	2.00
Bradley's Potato Fertilizer	1.78	.48	2.26	2.06	6.93	1.39	8.32	8.00	2.28	10.60	9.00	3.15	3.00
Bradley's Potato Manure	1.86	.69	2.55	2.47	4.00	2.64	6.64	6.00	1.76	8.40	7.00	5.49	5.00
Bradley's Seeding Down Manure	.77	1.78	2.55	2.47	7.38	3.03	10.41	9.00	2.08	12.49	10.00	2.41	2.00
Bradley's XL Super-Phosphate of Lime	1.97	.51	2.48	3.25	6.85	3.00	9.85	9.00	1.65	11.50	10.00	2.31	3.00
Cleveland Fertilizer for all crops	.20	.97	1.17	1.03	6.33	2.84	9.17	8.00	1.96	11.13	9.00	2.13	2.00

Cleveland Potato Phosphate	.98	1.08	2.06	2.06	7.45	1.62	9.07	8.00	2.31	11.38	9.00	3.59	3.00
Cleveland Super-Phosphate	.91	1.13	2.07	2.06	6.95	1.26	8.21	8.00	2.80	11.01	9.00	1.71	1.50
Cumberland Potato Fertilizer	1.25	1.46	2.71	2.05	6.25	2.65	8.90	8.00	2.30	11.20	9.00	3.11	3.00
Cumberland Super-Phosphate	.68	1.38	2.06	2.06	6.28	2.72	9.00	8.00	1.96	10.96	9.00	1.66	1.50
Crocker's Ammoniated Corn Phosphate	.98	1.13	2.11	2.06	7.08	1.76	8.84	8.00	2.25	11.09	9.00	1.85	1.50
Crocker's New Rival Ammoniated Super-Phosphate	.25	.78	1.03	1.03	5.18	3.02	8.20	8.00	2.13	10.33	9.00	2.28	2.00
Crocker's Potato, Hop and Tobacco Phosphate	.98	1.06	2.04	2.06	7.91	1.16	9.07	8.00	1.78	10.85	9.00	3.31	3.00
Crocker's Special Potato Manure	2.22	1.20	3.42	3.29	3.70	2.87	6.57	6.00	2.33	8.90	7.00	.....	10.00
Darling's Blood, Bone and Potash	2.14	1.64	5.78	4.11	4.80	3.33	8.13	7.00	1.89	10.02	8.00	7.44	7.00
Darling's Farm Favorite	.71	1.36	2.07	2.06	7.25	1.77	9.02	8.00	2.86	11.88	9.00	3.68	3.00
Darling's General Fertilizer	.44	1.30	1.74	1.23	4.95	1.57	6.52	6.00	2.81	9.36	7.00	3.34	3.00
Darling's Potato Manure	1.62	.70	2.32	2.47	4.91	2.26	7.17	6.00	2.04	9.21	7.00	6.18	5.00
Great Eastern Complete Manure	1.69	.81	2.50	2.47	4.71	1.62	6.33	6.00	2.06	8.39	7.00	.....	10.00
Great Eastern General Fertilizer	.31	.73	1.04	.82	7.50	.85	8.35	8.00	1.71	10.06	9.00	5.47	4.00
Great Eastern Northern Corn Special	1.23	.77	2.00	2.06	7.89	1.30	9.19	8.00	1.89	11.08	9.00	1.60	1.50
Great Eastern Potato Manure	.98	1.04	2.02	2.06	6.80	2.07	8.87	8.00	1.86	10.73	9.00	3.00	3.00
Packer's Union Animal Corn Fertilizer	1.47	1.18	2.65	2.47	8.00	1.53	9.53	9.00	2.66	12.19	10.00	2.18	2.00
Packer's Union Gardeners' Complete Manure	1.87	.99	2.86	2.47	4.63	1.52	6.15	6.00	2.01	8.16	7.00	10.36	10.00
Packer's Union Potato Manure	.79	1.28	2.07	2.06	6.46	2.18	8.91	8.00	1.93	10.87	9.00	6.56	6.00
Packer's Union Universal Fertilizer	.38	.73	1.11	.82	5.53	2.74	8.27	8.00	2.03	10.30	9.00	4.65	4.00
Quinnipiac Corn Manure	.72	1.43	2.15	2.06	6.80	3.26	10.06	8.00	2.14	12.20	9.00	1.80	1.50
Quinnipiac Potato Phosphate	1.30	.78	2.08	2.06	4.89	3.33	8.22	8.00	2.82	11.04	9.00	3.10	3.00
Read's Practical Potato Special	.63	.65	1.28	.82	2.89	1.44	4.33	4.00	2.43	6.76	5.00	.....	8.00
Read's High Grade Farmers' Friend Super-Phosphate	1.82	1.50	3.32	3.29	3.40	3.03	6.43	6.00	2.16	8.59	7.00	10.38	10.00
Read's Farmers' Friend Super-Phosphate	.85	1.17	2.02	2.06	5 81	2.23	8.07	8.00	2.36	10.43	9.00	3.34	3.00
Read's Vegetable and Vine Fertilizer	1.15	1.14	2.29	2.06	5.91	2.71	8.68	8.00	2.42	11.10	9.00	7.13	6.00
Williams & Clark Americus Corn Phosphate	1.19	1.23	2.42	2.06	5.04	3.18	8.22	8.00	2.79	11.01	9.00	2.45	1.50
Williams & Clark Americus Potato Manure	.75	1.38	2.13	2.06	7.13	2.09	9.22	8.00	2.59	11.81	9.00	3.53	3.00
Williams & Clark Prolific Crop Producer	.62	.50	1.12	.82	4.63	2.37	7.00	7.00	3.09	10.09	8.00	1.43	1.00
ARMOUR FERTILIZER WORKS, Chrome, N. J.													
All soluble	1.41	1.75	3.16	2.29	6.33	2.45	8.78	8.00	2.20	10.98	8.50	4.51	4.00
Bone, Blood and Potash	2.75	1.97	1.72	4.11	7.35	1.12	8.47	8.00	2.18	10.65	8.50	7.02	7.00
Complete Potato	1.48	1.84	3.32	3.29	4.24	1.76	6.00	6.00	1.50	7.50	6.50	10.80	10.00
Crop Grower	.21	.97	1.18	.82	5.81	2.55	8.36	8.00	2.05	10.41	8.50	2.53	2.00
Fruit and Root Crop Special	.25	1.48	1.73	1.65	6.70	2.02	8.72	8.00	1.10	9.82	8.50	5.30	5.00
Grain Grower	.24	1.52	1.76	1.65	5.76	2.74	8.50	8.00	1.74	10.24	8.50	2.55	2.00
Armour's High Grade Potato	.16	1.49	1.65	1.65	6.70	1.63	8.33	8.00	1.10	9.43	8.50	10.69	10.00
Armour's Special Corn Manure	1.55	1.39	2.91	3.29	5.30	3.00	8.30	8.00	1.41	9.71	8.50	4.44	4.00

COMPOSITION OF COMMERCIAL FERTILIZERS SAMPLED AND ANALYZED IN 1913.—*Continued.*

NAME OF MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.							POTASH.	
			Total.				Available.			Total.			
	Inorganic.	Organic.	Found.	Guaranteed.	Soluble.	Reverted.	Found.	Guaranteed.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.
BEACH SOAP CO., Lawrence, Mass.													
Beach's Fertilizer Bone	.....	.....	4.60	2.67	.....	.....	.....	.....	.....	21.22	20.00	.....	.....
Beach's Market Garden Brand Fertilizer	2.43	2.35	4.78	4.74	.76	4.60	5.36	7.00	2.93	10.29	8.00	10.15	9.75
Beach's Top-Dressing Brand Fertilizer	4.15	1.45	5.60	5.35	1.78	2.22	4.00	4.00	3.50	7.50	7.00	15.64	15.00
BOWKER FERTILIZER CO., Boston and New York.													
Bowker's 14% Acid Phosphate	.....	.....	.....	.....	11.26	3.72	14.98	14.00	1.85	16.83	15.00	.....	.....
Bowker's Corn Phosphate	.84	.84	1.68	1.65	6.50	2.29	8.79	8.00	2.15	10.94	9.00	2.48	2.00
Bowker's Early Potato Manure	1.74	1.55	3.29	3.29	5.33	3.37	8.70	8.00	2.25	10.95	9.00	7.52	7.00
Bowker's Farm and Garden Phosphate	.56	1.13	1.69	1.65	6.66	2.84	9.50	8.00	2.35	11.85	9.00	2.26	2.00
Bowker's Fresh Ground Bone	.....	.....	2.48	2.47	.....	.....	.....	.....	.....	24.13	22.88	.....	.....
Bowker's Fruit Tree Fertilizer	1.93	.60	2.53	2.47	8.44	2.21	10.65	10.00	2.35	13.00	11.00	8.07	8.00
Bowker's Highly Nitrogenous Formula	6.49	1.74	8.23	8.23	2.18	4.55	7.03	7.00	2.41	8.44	8.00	8.40	8.00
Bowker's Hill and Drill Phosphate	1.25	1.34	2.59	2.47	7.48	2.67	10.15	9.00	1.89	12.04	10.00	2.28	2.00
Bowker's Market Garden Fertilizer	2.00	1.00	3.00	2.47	5.61	1.08	6.69	6.00	1.99	8.68	7.00	.....	10.00
Muriate of Potash	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	49.20	49.00
Nitrate of Soda	.....	.....	15.09	15.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bowker's Potash or Staple Phosphate	.23	.75	.98	.82	5.31	3.01	8.32	8.00	2.14	10.46	9.00	3.28	3.00
Bowker's Potato and Vegetable Fertilizer	1.25	1.25	2.50	2.47	6.09	1.92	8.01	8.00	3.14	11.15	9.00	4.20	4.00
Bowker's Potato and Vegetable Phosphate	.96	.72	1.68	1.65	4.80	3.66	8.46	8.00	1.84	10.30	9.00	2.22	2.00
Pulverized Sheep Manure	.....	.....	2.31	1.25	.....	.....	.....	.....	.....	2.88	1.50	3.63	2.00
Special Mixture	2.13	1.23	3.36	.....	6.00	1.70	7.70	.....	2.15	9.05	.....	10.53	10.00
Bowker's Sure Crop Bone Phosphate	.20	.75	.95	.82	7.00	1.60	8.60	8.00	1.85	10.45	9.00	2.10	2.00

Stockbridge Special Complete Manure for Corn and Grain Crops	2.40	.91	3.31	3.29	7.88	3.20	11.08	10.00	1.60	11.68	11.00	7.19	7.00
Stockbridge Special Complete Manure for Potatoes and Vegetables	2.49	.80	3.29	4.11	1.31	2.23	6.51	6.00	1.71	8.25	7.00	10.22	10.00
Stockbridge Special Complete Manure for Seeding Down, Permanent Dressing and Legumes	1.94	.66	2.60	2.47	8.45	2.99	11.44	10.00	1.54	12.98	11.00	8.04	8.00
Stockbridge Special Complete Manure for Top-Dressing and Forcing	3.28	1.48	4.76	4.91	1.73	1.21	5.94	4.00	.99	6.93	5.00	6.07	6.00
JOSEPH BRECK & SONS CORP., 51 and 52 North Market St., Boston, Mass.													
Rams' Head Brand Pulverized Sheep Manure	.....	.....	2.30	2.25	.....	.....	.....	.....	.....	2.15	1.50	2.47	1.50
THE COE MORTIMER CO., New York.													
E. Frank Coe's Celebrated Special Potato Fertilizer	.72	1.07	1.79	1.65	6.51	1.95	8.46	8.00	1.79	10.25	9.00	.....	4.00
E. Frank Coe's Columbian Corn and Potato Fertilizer	1.01	.65	1.66	1.23	6.81	3.61	9.79	8.50	1.56	11.35	9.50	2.92	2.50
E. Frank Coe's Extra Special Potato Fertilizer and Fruit Grower	1.02	1.07	2.09	1.65	6.34	2.42	8.76	8.60	1.38	10.11	9.00	10.01	10.00
E. Frank Coe's Famous Prize Brand Grain and Grass Fertilizer	.....	.....	.....	.....	3.31	4.71	8.02	10.00	4.23	12.25	11.00	2.12	2.00
E. Frank Coe's High Grade Ammoniated Super-Phosphate	.90	.95	1.85	1.85	6.05	2.26	8.31	8.00	2.75	11.06	9.00	3.43	3.00
E. Frank Coe's New England Corn and Potato Fertilizer	.28	.72	1.00	.82	5.33	3.17	8.50	8.00	1.94	10.11	9.00	3.47	3.00
E. Frank Coe's Special Grass Top-Dressing	3.47	1.46	4.93	4.91	3.91	1.24	5.18	4.00	1.19	6.37	5.00	3.58	3.00
E. Frank Coe's Standard Potato Fertilizer	2.22	1.00	3.22	3.20	4.43	1.71	6.14	6.00	2.32	8.46	7.00	10.02	10.00
E. Frank Coe's XXV Ammoniated Phosphate	.87	.48	1.35	.82	2.19	5.62	7.81	8.00	1.79	9.60	9.00	3.13	2.00
ESSEX FERTILIZER CO., Boston, Mass.													
Basic Slag	.....	.....	.....	.....	.....	.....	.....	.....	.....	18.71	.....	.....	.....
Essex Complete Manure for Corn, Grain and Grass	.31	3.17	3.48	3.28	4.00	1.81	5.81	6.00	2.60	8.41	7.00	.....	10.00
Essex Complete Manure for Potatoes, Roots and Vegetables	.24	3.06	3.30	3.28	4.56	1.85	6.41	6.00	2.03	8.44	7.00	.....	10.00
Dried Blood	.....	.....	9.36	9.84	.....	.....	.....	.....	.....	.....	.....	.....	.....
Essex Dry Ground Fish	.....	.....	7.62	7.50	.....	.....	.....	.....	.....	7.23	11.00	.....	.....
Essex Ground Bone (for Drawback)	.....	.....	2.29	2.45	.....	.....	.....	.....	.....	26.49	23.00	.....	.....
Essex Market Garden and Potato Manure	.14	2.03	2.17	2.00	6.73	1.79	8.52	8.00	2.71	11.23	9.00	5.36	5.00
Essex XXX Fish and Potash for all Crops	.21	2.23	2.44	2.00	6.49	1.58	8.07	8.00	2.36	10.43	9.00	3.31	3.00

COMPOSITION OF COMMERCIAL FERTILIZERS SAMPLED AND ANALYZED IN 1913.—*Continued.*

NAME OF MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.							POTASH.	
			Total.				Available.			Total.			
	Inorganic.	Organic.	Found.	Guaranteed.	Soluble.	Reverted.	Found.	Guaranteed.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.
S. C. HARVES, Hampton Falls, N. H.													
Ground Bone and Tankage	.....	.....	3.50	.....	.....	.....	.....	.....	.....	16.50	.....	.....	.....
INTERNATIONAL AGRICULTURAL CORP., Buffalo, N. Y.													
Bone Meal	.....	.....	2.60	2.40	.....	.....	.....	.....	.....	21.71	22.00	.....	.....
Celery and Potato Special	.39	1.29	1.68	1.60	7.49	1.36	8.85	8.00	1.46	10.31	9.00	10.67	10.00
Extra Phosphate and Potash	.....	.....	.....	.....	8.36	2.18	10.54	10.00	1.66	12.20	11.00	8.19	8.00
Farmers' Choice	.31	.72	1.06	8.00	5.34	3.36	8.70	8.00	1.68	10.38	9.00	5.57	5.00
High Grade Manure	2.01	.99	3.00	3.30	5.50	2.49	7.99	7.00	2.34	10.33	8.00	.....	10.00
New England Special	.54	1.21	1.75	1.60	7.56	1.44	9.00	9.00	3.14	12.14	10.00	5.81	5.00
Top-Dresser	3.99	1.71	5.70	5.70	5.30	1.85	7.15	6.00	1.60	8.75	7.00	5.21	5.00
Vegetable and Potato	1.90	.74	2.64	2.40	6.44	2.62	9.06	8.00	1.74	10.80	9.00	7.59	7.00
GERMAN KALI WORKS, Baltimore, Md.													
German Kainit	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14.18	12.00
LISTER'S AGRICULTURAL CHEMICAL CO., (Manufactured by American Agricultural Chemical Co.), Newark, N. J.													
Lister's Grain and Grass Fertilizer	.....	.....	.....	.....	7.33	3.39	10.72	10.00	1.28	12.00	11.00	2.50	2.00
Lister's High Grade Special for Spring Crops	1.32	.70	2.02	1.65	7.44	1.10	8.54	8.00	1.51	10.05	9.00	.....	10.00

Lister's Potato Manure	2.25	1.04	3.29	3.29	6.41	2.57	8.98	8.00	1.40	10.38	9.00	7.26	7.00
Lister's Special Corn Fertilizer	.64	.59	1.33	1.23	5.81	2.82	8.90	8.00	1.40	10.30	9.00	3.31	3.00
Lister's Special Potato Fertilizer	.87	.91	1.75	1.65	5.42	3.00	8.52	8.00	1.94	10.46	9.00	3.70	3.00
Lister's Success Fertilizer	.87	.46	1.27	1.23	6.01	3.23	9.24	9.00	1.81	11.05	10.00	2.15	2.00
LOWELL FERTILIZER CO., Boston, Mass.													
Lowell's Acid Phosphate	.....	.....	.....	.....	9.25	3.80	13.05	12.00	2.36	15.41	14.00	.....	.....
Lowell's Animal Brand for all Crops	.22	2.48	2.70	3.30	6.40	2.02	8.42	8.00	2.91	11.33	9.00	4.40	4.60
Lowell's Bone Fertilizer for Corn, Grain, Grass and Vegetables	.10	1.59	1.69	1.64	5.93	2.10	8.03	8.00	1.61	9.61	9.00	3.22	3.00
Lowell's Cereal Fertilizer	.18	.88	1.06	.82	5.48	1.76	7.24	7.00	1.30	8.54	8.00	1.68	1.00
Lowell's Corn and Vegetable	.25	3.20	3.45	3.28	6.44	1.66	8.10	8.00	2.76	10.86	9.00	.....	7.00
Lowell's Empress Brand for Corn, Potatoes and Grain	.12	1.28	1.40	1.24	6.80	1.72	8.52	7.00	1.54	10.06	8.00	2.35	2.00
Lowell's Empress Brand for General Use	.13	1.26	1.39	1.25	6.28	1.27	7.55	7.00	1.89	9.44	8.00	2.00	2.00
Lowell's Grass Mixture for Top-Dressing and Lawns	.31	1.03	4.34	4.10	4.91	2.45	7.36	7.00	2.09	9.45	8.00	6.21	6.00
Lowell's Ground Bone	.....	.....	2.52	2.46	.....	.....	.....	.....	.....	25.33	23.00	.....	.....
Ground Tankage	.....	.....	7.71	7.41	2.99	1.58	7.57	.....	4.20	11.77	9.15	.....	.....
Lowell's Potato Grower with 10% Potash	.24	3.30	3.54	3.28	4.18	2.15	6.33	6.00	1.90	8.23	7.00	.....	10.00
Lowell's Potato Manure	.20	1.11	1.61	1.61	5.75	1.39	7.14	7.00	1.86	9.00	8.00	3.75	4.00
Lowell's Potato Phosphate	.28	2.21	2.49	2.46	5.88	3.00	8.88	8.00	1.80	10.68	9.00	.....	6.00
Lowell's Special Potato Fertilizer with 10% Potash	.25	2.30	2.55	2.46	3.36	2.81	7.17	6.00	2.03	9.20	7.00	.....	10.00
Lowell's Superior Fertilizer with 10% Potash	.20	3.51	3.71	3.69	5.04	2.30	7.34	7.00	2.19	9.53	8.00	.....	10.00
Nitrate of Soda	.....	.....	15.02	15.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
Special Mixture	5.56	.79	6.35	.....	1.15	4.53	5.68	.....	6.66	11.74	.....	10.04	10.00
Lowell's Sterling Phosphate	.10	.68	.78	.82	6.09	3.94	10.03	8.00	1.30	11.33	9.00	.....	4.00
Lowell's Sulphate of Potash	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	49.65	18.00
Lowell's Vegetable and Grain Fertilizer	.15	1.62	1.77	1.61	6.23	1.87	8.10	8.00	2.10	10.20	9.00	.....	10.00
THE NATIONAL FERTILIZER CO., New York and Boston.													
Chittenden's Ammoniated Bone Phosphate	1.02	.74	1.76	1.65	2.50	7.90	10.40	8.00	2.03	12.43	9.00	2.19	2.00
Chittenden's Complete Root and Grain Fertilizer	2.19	1.22	3.41	3.29	5.69	2.45	8.14	8.00	2.95	11.19	9.00	6.54	6.00
Chittenden's Eureka Potato Fertilizer	1.70	1.25	2.95	2.47	3.89	2.50	6.39	6.00	2.56	8.95	7.00	.....	10.00
Chittenden's Potato Phosphate	1.33	.88	2.21	2.06	7.21	1.35	8.56	8.00	2.45	11.01	9.00	6.56	6.00
Chittenden's Universal Phosphate	.39	.75	1.14	.82	5.10	3.27	8.37	8.60	2.28	10.65	9.00	5.30	5.00
NEW ENGLAND FERTILIZER CO., Boston, Mass.													
New England Complete Manure with 10% Potash	.18	3.10	3.28	3.28	3.16	3.49	6.65	6.00	2.88	9.53	7.00	10.10	10.00
New England Corn and Grain Fertilizer	.20	1.18	1.38	1.24	6.46	.95	7.41	7.00	1.74	9.15	8.00	2.00	2.00

COMPOSITION OF COMMERCIAL FERTILIZERS SAMPLED AND ANALYZED IN 1913.—*Continued.*

NAME OF MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.							POTASH.	
			Total.				Available.			Total.			
	Inorganic.	Organic.	Found.	Guaran-teed.	Soluble.	Reverted.	Found.	Guaran-teed.	Insoluble.	Found.	Guaran-teed.	Found.	Guaranteed.
NEW ENGLAND FERTILIZER CO.—*Continued.*													
New England Corn Phosphate	.18	1.53	1.71	1.61	7.79	2.21	10.00	8.00	1.63	11.63	9.00	3.00	3.00
New England Ground Bone	.....	.....	2.64	2.46	.....	.....	.....	.....	.....	25.78	23.00	.....	.....
New England High Grade Potato Fertilizer	.18	2.32	2.50	2.46	5.18	3.42	8.60	8.00	1.84	10.44	9.00	6.00	6.00
New England High Grade Special with 10% Potash	.27	3.39	3.66	3.60	5.08	3.32	8.40	7.00	1.90	10.30	8.00	10.40	10.00
New England Market Garden Manure	.31	3.83	4.17	4.10	6.59	1.37	7.96	7.00	2.18	10.14	10.00	7.10	7.00
New England Potato Fertilizer	.11	1.62	1.76	1.61	4.90	2.27	7.17	7.00	1.63	8.80	8.00	5.03	4.00
New England Potato Grower with 10% Potash	.27	2.21	2.48	2.46	5.71	1.64	7.38	6.00	1.63	9.01	7.00	10.78	10.00
New England Super-Phosphate for all Crops	.35	2.13	2.48	2.46	6.99	2.20	9.19	8.00	2.84	12.03	9.00	1.03	4.00
Muriate of Potash	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50.44	50.00
Nitrate of Soda	.....	.....	15.38	15.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
NITRATE AGENCIES CO., Boston, Mass.													
Ground Bone	.....	.....	2.71	2.46	.....	.....	.....	.....	.....	23.98	22.88	.....	.....
Ground Tankage	.....	.....	5.72	5.75	.....	.....	.....	.....	.....	17.30	13.73	.....	.....
Muriate of Potash	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	48.16	50.00
High Grade Acid Phosphate	.....	.....	.....	.....	15.41	1.02	16.13	11.00	1.98	18.41	.....	.....	.....
PAN AMERICAN FERTILIZER CO., Norfolk and New York.													
Pan American Vegetable and Potato Special	2.14	1.10	3.24	3.28	4.28	2.51	6.79	6.00	1.87	8.66	7.00	....	10.00

OLDS & WHIPPLE, 164 State Street, Hartford, Conn.													
Olds & Whipple's Complete Tobacco Fertilizer	1.33	3.79	5.12	4.50	.83	2.45	3.28	3.00	.95	4.23	3.00	5.53	5.50
PARMENTER & POLSEY FERTILIZER CO., Boston, Mass.													
Muriate of Potash	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50.02	50.00
Nitrate of Soda	.....	.....	15.46	15.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
Parmenter & Polsey Aroostook Special	.28	3.65	3.93	3.69	4.30	3.42	7.72	7.00	2.18	9.90	8.00	10.40	10.00
Parmenter & Polsey Plymouth Rock Brand for all Crops	.18	2.30	2.47	2.46	6.48	2.11	8.59	8.00	2.06	10.65	9.00	.....	4.00
Parmenter & Polsey Potato Grower with 10% Potash	.33	2.13	2.46	2.46	4.73	2.40	7.13	6.00	1.63	8.76	7.00	.....	10.00
Parmenter & Polsey Special Potato Fertilizer for Potatoes and Root Crops	.30	3.21	3.51	3.28	5.00	5.02	10.02	8.10	2.16	12.18	8.00	7.05	7.00
ROGERS & HUBBARD CO. Middleton, Conn.													
All Soils—All Crops Phosphate	2.61	.89	3.50	3.30	6.23	2.03	8.26	8.00	3.35	11.61	9.00	8.02	7.00
Complete Phosphate	.80	.78	1.58	1.50	5.20	2.14	7.34	7.00	4.12	11.46	8.00	5.08	5.00
Fruit or Grass and Grain Fertilizer	.43	1.86	2.29	2.20	1.19	9.06	10.25	6.50	7.59	17.81	16.00	12.66	12.00
New Market Garden Phosphate	.90	1.12	2.02	2.00	5.51	1.23	6.77	6.00	3.24	10.01	7.00	10.03	10.00
Oats and Top-Dressing	7.73	.87	8.60	8.50	3.10	1.50	4.60	4.50	4.00	.86	8.00	8.29	8.00
Potato Phosphate	1.49	.53	2.02	2.00	5.18	4.25	9.43	9.00	2.55	11.98	10.00	5.39	5.00
Soluble Corn and General Crops Manure	1.49	1.01	2.50	2.50	2.98	2.98	5.96	6.00	4.24	10.10	8.00	9.02	8.00
J. W. SANBORN, Pittsfield, N. H.													
Prof. Sanborn's Chemical Fertilizer for Grass and Grain	5.04	.20	5.24	4.75	3.59	2.11	6.00	4.50	2.05	8.05	6.00	6.22	5.75
Prof. Sanborn's Chemical Fertilizer for Fall Seeding to Grass	.80	1.47	2.27	2.20	6.89	1.12	8.01	7.00	2.35	10.36	9.50	8.51	8.00
Prof. Sanborn's Chemical Fertilizer for Potatoes and Corn	1.53	1.97	3.50	3.30	7.71	1.51	9.22	7.00	2.78	12.00	9.50	.....	8.00
Prof. Sanborn's Chemical Fertilizer for use in Hill and Drill	1.72	.78	2.50	2.40	6.98	.67	7.65	7.00	5.18	12.83	11.50	4.57	4.00
Prof. Sanborn's Competitor for Hoed Crops in the Drill	1.50	1.07	2.57	2.00	3.31	6.19	9.50	7.00	2.91	12.41	11.00	4.30	2.50
Prof. Sanborn's Special Grass Fertilizer for Acid Soils	5.48	.21	5.69	5.00	3.48	3.19	6.67	5.00	2.03	8.70	7.50	7.20	6.60
FRANK SMITH & CO., Lancaster, N. H.													
For Seeding Grain, Potatoes and Corn	4.10	.34	4.44	3.00	6.21	1.38	7.51	8.04	1.03	8.57	.....	11.88	10.00
Top-Dressing	6.38	.....	6.37	5.52	6.83	.37	7.20	7.00	1.85	9.05	.....	8.18	6.60

COMPOSITION OF COMMERCIAL FERTILIZERS SAMPLED AND ANALYZED IN 1913.—*Continued.*

NAME OF MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.							POTASH.	
			Total.				Available.			Total.			
	Inorganic.	Organic.	Found.	Guaranteed.	Soluble.	Reverted.	Found.	Guaranteed.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.
THE PULVERIZED MANURE CO., Chicago, Ill.													
Wizard Brand, Pulverized Sheep Manure	.....	.....	2.04	1.80	.....	.....	1.65	1.00	3.80	2.63	.....	2.10	1.00
WHITMAN & PRATT RENDERING CO., Lowell, Mass.													
Whitman & Pratt's Pure Ground Bone	.....	.....	3.05	2.46	.....	.....	.....	.....	.....	25.90	25.00	.....	.....

SEED TESTS,
1913.

SEED TESTS FOR 1913.

Made July 1, 1911, to December 1, 1912.

The provisions of the Pure Seed Law enacted by the General Court in 1909 require the publication annually of a bulletin by the New Hampshire Experiment Station of the results of all seed tests made officially during the previous year. The administration of said law is in the hands of the secretary of the State Board of Agriculture, who has appointed the writer, agronomist of the experiment station, as his regular agent for making all tests and analyses in this state.

During the year only fifty-five samples of seed were examined as against seventy-eight for the year preceding and two hundred and thirty-eight for the year preeeding that. This very small number of tests for as much seed as is sold in the state indicates one of three conditions: (1) That the seed dealers are buying their seeds from outside parties upon a purity and germination test guarantee; (2) that the dealers are making their own tests and basing their guarantees upon them; or (3) that the farmers are buying seeds without any guarantee of their purity and vitality.

Of the few samples tested the analytic agent has no knowledge that seeds which these samples represented were offered for sale in the state. Quite frequently samples are sent in for inspection by dealers before purchase in lot or bulk is made, and if the test shows the seeds to be of inferior quality it is presumed the seeds are not purchased. Individuals sometimes ask for a report upon the quality of a given sample and make the

purchase of seed for their own use upon the basis of said report. It should not, therefore, be understood that all of the seeds represented by the samples inspected were offered for sale by the parties for whom the inspection was made.

The writer wishes to acknowledge his appreciation of the efficient work of Professor Frank App, who made the tests and examinations of the samples herewith reported.

SEED EXAMINATION, 1913.

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Per cent. of Pure seed.	Per cent. of Weed seed.	Per cent. of other Grass seeds.	Per cent. of Inert Matter.	Per cent. of Germination.
319	**Red clover,** (*Choice*)..... Whitney-Eckstein Seed Co., Buffalo, N. Y. Oct. 27, 1911. Field dodder, 454; Green foxtail, 546; Lamb's quarters, 91; Ox-eye daisy, 546; Rib-grass, 3,731; Selfheal, 91; Sorrel, 91; Yellow trefoil, 91.	95.9	1.3	.....	3.8	86.5
320	**Red clover,** (*Pan-American*)..... Whitney-Eckstein Seed Co., Buffalo, N. Y. Oct. 27, 1911. Canada thistle, 91; Dock, 182; Field dodder, 273; Green foxtail, 546; Lamb's quarters, 91; Rib-grass, 1,001; Sorrel, 273; Timothy, 273.	97.7	.6	trace	1.7	90.5
321	**Timothy,** (*Choice*)..... Whitney-Eckstein Seed Co., Buffalo, N. Y. Oct. 27, 1911. Alsike clover, 2,270; Canada thistle, 227; Five finger, 2,043; Kentucky bluegrass, 45,400; Peppergrass, 6,180; Red clover, 681; Sorrel, 454; White clover, 681; Plantain, 1,589.	92.0	.6	1.7	5.7	70 0
322	**Red Top,** (*Fancy*)..... Whitney-Eckstein Seed Co., Buffalo, N. Y. Oct. 27, 1911. Yarrow, 5,448.	96.0	.4	.....	3.6	85.5
323	**Alsike clover,** (*Fancy Export*)..... Whitney-Eckstein Seed Co., Buffalo, N. Y. Oct. 27, 1911. Dock, 227; Redtop, 227; Sorrel, 454; Timothy, 227.	98.4	trace	trace	1.6	91.0
324	**Alsike clover,** (*Pan-American*)..... Whitney-Eckstein Seed Co., Buffalo, N. Y. Oct. 27, 1911. Canada thistle, 227; Docks, 454; Lamb's quarters, 227; Rib-grass, 1,816; Sorrel, 6,583; Yellow trefoil, 454; Plantain, 1,816.	90.8	1.5	5.2	2.3	76.5
325	**Timothy,** (*Pan-American*)..... Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 15, 1911. Alsike clover, 227; Green foxtail, 227; Kentucky bluegrass, 227; Peppergrass, 454; Sorrel, 681.	99.6	trace	trace	.3	96.0
326	**Timothy,** (*Choice*)..... Whitney-Eckstein Seed Co., Buffalo, N. Y. Oct. 27, 1911. Alsike clover, 1,135; Kentucky bluegrass, 3,859; Rib-grass, 227; Sorrel, 227.	98.6	trace	trace	1.0	93.5
327	**Timothy,** (*Strictly Prime*)..... Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 15, 1911. Alsike clover, 2,724; Canada thistle, 227; Chickweed, 681; Kentucky bluegrass, 20,884; Peppergrass, 2,497; Red clover, 1,816; Rugel's plantain, 227; Sorrel, 2,270	95.7	.9	1.3	2.2	95.5
328	**Alsike clover,** (*Choice*)..... Whitney-Eckstein Seed Co., Buffalo, N. Y. Oct. 27, 1911; Canada thistle, 227; Chickweed, 3,178; Docks, 1,362; Kentucky bluegrass, 4,086; Ox-eye daisy, 227; Red clover, 8,853; Rib-grass, 2,497; Sorrel, 11,123; Timothy, 73,548; Yellow foxtail, 454; Yellow trefoil, 454.	86 9	2.2	8.2	2.8	81.0
329	**Timothy,** (*Gold Medal*)..... Whitney-Eckstein Seed Co., Buffalo, N. Y. Oct. 27, 1911. Alsike clover, 454; Dock, 227; Peppergrass, 227.	99.7	trace	trace	.3	95.5
330	**German Millet**..... Whitney-Eckstein Seed Co., Buffalo, N. Y. Oct. 27, 1911. Alsike clover, 273; Crabgrass, 1,547; Timothy, 91; Miscellaneous, 273.	99.6	.2	trace	.1	94.5
331	**Redtop,** (*Strictly Prime*)..... Whitney-Eckstein Seed Co., Buffalo, N. Y. Oct. 27, 1911. Timothy, 466,712; Five Finger, 7,264.	71.4	trace	23.6	4.8	52.5
332	**Redtop,** (*Prime*)..... Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 15, 1911. Peppergrass, 908; Red clover, 908; Timothy, 562,960; Five Finger, 54,480.	62.0	1.4	26.0	10.6	63.0

SEED EXAMINATION, 1913.—*Continued.*

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Per cent. of Pure seed.	Per cent. of Weed seed.	Per cent. of other Grass seeds.	Per cent. of Inert Matter.	Per cent. of Germination.
333	**Hungarian Millet**	99.7	trace	trace	trace	94.0
	Whitney-Eckstein Seed Co, Buffalo, N. Y. Oct. 27, 1911. Redtop, 182; Timothy, 273; Common millet, 91; Cleavers, 273; Miscellaneous, 91.					
334	**Redtop,** (*Choice*)	75.4	trace	19.8	4 2	47.0
	Whitney-Eckstein Seed Co., Buffalo, N. Y. Oct. 27, 1911. Timothy, 429,484; Five Finger, 4,540.					
335	**Bluegrass,** (*Fancy Canadian*)	86.4	trace	2.6	11.0	18.0
	Whitney-Eckstein Seed Co., Buffalo, N. Y. Nov. 23, 1911. Alsike clover, 4,540; Chickweed, 908; Sorrel, 3,632; Timothy, 53,572; Five Finger, 3,632.					
336	**Bluegrass,** (*Fancy Kentucky*)	91.0	trace	trace	9.0	26.0
	Whitney-Eckstein Seed Co., Buffalo, N. Y. Nov. 23, 1911. Redtop, 908; Pennyroyal, 908; Smartweed, 1,816.					
337	**Clover,** (*Eureka*)	99.8	.....	.....	.2	95.5
	Whitney-Eckstein Seed Co., Buffalo, N. Y. Nov. 23, 1911.					
338	**Timothy,** (*Pan-American*)	99.5	trace	trace	trace	97.0
	Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 1, 1911. Alsike clover, 227; Green foxtail, 227; Kentucky bluegrass, 227; Pig-weed, 227.					
339	**Redtop,** (*Fancy*)	96.8	trace	trace	3.2	95 6
	Whitney-Eckstein Seed Co., Buffalo, N. Y. Dec. 14, 1911. Rugel's plantain, 908.					
340	**Timothy,** (*Brandon*)	88.2	5.3	trace	6 5	92.5
	Holbrook Grocery Co., Keene, N. H. Feb. 2. Old Witch grass, 227; Ox-eye daisy, 457; Five Finger, 26,559; Redtop, 3,178; Rugel's plantain, 227; Shepherd's Purse, 31,099; Vervain, 1,816; Sedge, 1,135; Brown-eyed Susan, 908; Miscellaneous, 1,589.					
341	**Timothy,** (*Middlebury*)	94.4	1.2	2.7	1.7	92.5
	Holbrook Grocery Co., Keene, N. H. Feb. 2. Lamb's-quarters, 227; Ox-eye daisy, 1,356; Five Finger, 2,260; Red clover, 679; Redtop, 90,400; Sorrel, 2,486; Sedge, 1,230; Black-eyed Susan, 452; Miscellaneous, 679.					
342	**Clover,** (*Vula*)	97.9	.3	.....	1.8	.....
	Whitney-Eckstein Seed Co., Buffalo, N. Y. Feb. 2. Catchfly, 272; Docks, 90; Rib-grass, 452.					
343	**Timothy,** (*White Mountain*)	99.9	.....	.....	.1	97.0
	Holbrook Grocery Co., Keene, N. H. Feb. 26.					
344	**Red clover,** (*White Mountain*)	99.5	trace	.....	.5	93.0
	Holbrook Grocery Co., Keene, N. H. March 2. Sorrel, 182.					
345	**Peas,** (*Yellow*)	100.0	.....	.....	.....	98 0
	Holbrook Grocery Co., Keene, N. H. March 2.					
346	**Peas,** (*Canada Field*)	97.5	.....	.....	2.5	98.0
	C. L. Jenness, Dover, N. H. March 2.					
347	**Red Clover,** (*Eureka*)	97.2	.4	.1	2.3	89.0
	C. L. Jenness, Dover, N. H. March 30. Alsike clover, 364; Green fox-tail, 454; Kentucky bluegrass, 91; Rib-grass, 1,090; Sorrel, 91; Timothy, 364.					
348	**Timothy,** (*No. X 4*)	90.7	3.1	1.7	4.6	90.0
	Holbrook Grocery Co., Keene, N. H. April 8. Black Mustard, 1,816; Chess, 4,540; Old Witch Grass, 681; Ox-eye daisy, 4,540; Sedge, 681; Five Fingers, 5,675; Redtop, 19,295; Selfheal, 681; Sorrel, 12,485; White clover, 2,043; Miscellaneous, 4,540.					
349	**Alfalfa,** (*Clover*)	.....	.....	.....	.....	96 5
	Holbrook Grocery Co., Keene, N. H. April 9.					
350	**Barley,** (*Six-rowed*)	98.0	.....	.6	1.4	73.0
	Gates & Moore, Lisbon, N. H. April 19. Oats, 198.					

SEED EXAMINATION, 1913.—*Continued.*

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Per cent. of Pure seed.	Per cent. of Weed seed.	Per cent. of other Grass seeds.	Per cent. of Inert Matter.	Per cent. of Germination.
351	**Oats,** (*No. 1 White Reed*) Gates & Moore, Lisbon, N. H. April 19. Wheat, 18.	99.6	.....	trace	.4	96.0
352	**Oats,** (*Elwood's*) Gates & Moore, Lisbon, N. H. April 19. Wheat, 36.	99.2	.....	.5	.3	97.5
353	**Oats,** (*F. J. F.*) Holbrook Grocery Co., Keene, N. H. April 19.	.....	.....	.....	.....	29.0
354	**Oats** E. C. & W. L. Hopkins, Greenfield, N. H. May 8.	.....	.....	.....	.....	90.0
355	**Oats,** (*White Mountain*) Holbrook Grocery Co., Keene, N. H. May 4.	99.9	.....	.....	.1	97.5
356	**Millet,** (*Japanese*) H. E. Hanson, Rockingham, N. H. May 27.	.....	.....	.....	.....	91.0
357	**Timothy** The Albert Dickinson Co., Chicago, Ill. June 13. Alsike clover, 681; Sedge, 454; Peppergrass, 227; Redtop, 227; Sorrel, 227.	99.5	.1	.1	.3	92.0
358	**Clover** The Albert Dickinson Co., Chicago, Ill. June 13. Bracted plantain, 182; Rib-grass, 182; Rugel's plantain, 273; Sorrel, 637.	97.8	.4	.....	1.8	94.0
359	**Alfalfa** The Albert Dickinson Co., Chicago, Ill. June 13. Canada thistle, 91; Bull thistle, 91.	97.2	trace	.....	2.8	98.0
360	**Millet,** (*Common*) The Albert Dickinson Co., Chicago, Ill. June 13. Lady's Thumb, 455; Lamb's-quarters, 8,918; Pigweed, 637; Sorrel, 91; Miscellaneous, 637.	98.1	1.9	.....	trace	92.5
361	**Orchard Grass** The Albert Dickinson Co., Chicago, Ill. June 13.	76.5	.....	.....	23.5	60.0
362	**Kentucky bluegrass** The Albert Dickinson Co., Chicago, Ill. July 10. Peppergrass, 454; Red clover, 454.	96.9	trace	trace	3.1	6.0
363	**Corn,** (*White Dent*) Joseph Saladino, Orford, N. H. July 19.	.....	.....	.....	.....	75.0
364	**Corn,** (*Yellow Dent*) Joseph Saladino, Orford, N. H. July 19.	.....	.....	.....	.....	57.0
365	**Redtop,** (*No. 1*) George H. Brown, Manchester, N. H. Aug. 1.	.....	.....	.....	.....	44.0
366	**Redtop,** (*No. 2*) George H. Brown, Manchester, N. H. Aug. 1.	.....	.....	.....	.....	38.0
367	**Timothy,** (*No. 1*) George H. Brown, Manchester, N. H. Aug. 1.	.....	.....	.....	.....	92.5
368	**Timothy,** (*No. 2*) George H. Brown, Manchester, N. H. Aug. 1.	.....	.....	.....	.....	94.0
369	**Red clover,** (*No. 1*) George H. Brown, Manchester, N. H. Aug. 1.	.....	.....	.....	.....	95.5
370	**Red clover,** (*No. 2*) George H. Brown, Manchester, N. H. Aug. 1.	.....	.....	.....	.....	96.0
371	**Corn** D. M. Hadley, Dunbarton, N. H. Sept. 24.	.....	.....	.....	.....	61.0
372	**Corn,** (*Sanford*) Holbrook Grocery Co., Keene, N. H. Nov. 4.	.....	.....	.....	.....	64.0

SUMMARY TABLE SHOWING THE KINDS OF FOREIGN SEEDS FOUND IN SAMPLES EXAMINED IN 1912, AND THE NUMBER OF SAMPLES IN WHICH THEY WERE FOUND.

Names of Foreign Seeds.	Names of samples examined.								
	Red Clover.	Alsike Clover.	Alfalfa.	Timothy.	Redtop.	Blue Grass.	Millet.	Oats.	Barley.
Number of Samples Examined	7	3	1	11	5	3	3	3	1
Alsike clover	1			7		1	1		
Black-mustard				1					
Bracted plantain	1								
Brown-eyed Susan				2					
Bull thistle			1						
Canada thistle	1	2	1	2					
Catchfly	1								
Chess				1					
Chickweed		1		1		1			
Cleavers							1		
Crab-grass							1		
Docks	2	3		1					
Field-dodder	2								
Five-finger				4	3	1			
Green fox-tail	3			2					
Kentucky blue grass	1	1		5					
Lady's thumb							1		
Lamb's quarters	2	1		1			1		
Oats									1
Old witchgrass				2					
Ox-eye Daisy	1	1		3					
Pennyroyal						1			
Peppergrass				5	1	1			
Pig-weed				1			1		
Plantain		1		1					
Red clover		1		4	1	1			
Redtop		1		3		1	1		
Rib-grass	5	2		1					
Rugel's plantain	1			2	1				
Sedge				4					
Self-heal	1			1					
Shepherd's purse				1					
Sorrel	5	3		7		1	1		
Timothy	2	2			3	1	2		
Vervain				1					
Wheat								2	
White clover				2					
Yarrow					1				
Yellow fox-tail		1							
Yellow trefoil	1	2							
Miscellaneous or unknown				3	1	1	3		

TABLE SHOWING RESULTS OF TESTS AND EXAMINATION OF SAMPLES OF SEEDS RECEIVED FROM JULY 1, 1911, TO DECEMBER 1, 1912.

KIND OF SEED.	Total number of samples received.	For purity test.	For germination.	Purity Test.												Germination Test.			
				Pure Seed.				Foreign Seed.			Inert Matter.								
				Highest per cent.	Lowest per cent.	Average per cent.	Standard per cent.	Highest per cent.	Lowest per cent.	Average per cent.	Highest per cent.	Lowest per cent.	Average per cent.						
Alfalfa	12	1	12	97.2	97.2	97.2	98.	.0	.0	.0	2.8	2.8	2.8				98.0	96.5	97.3	98.0
Alsike clover	3	3	3	98.4	86.9	92.0	95.	10.4	.0	5.7	2.8	1.6	2.2				91.0	76.5	82.8	78.0
Barley	1	1	1	98.0	98.0	98.0	99.	0.6	.6	0.6	1.4	1.4	1.4				73.0	73.0	73.0	93.0
Bluegrass (Canada)	1	1	1	86.4	86.4	86.4	90.	2.6	2.6	2.6	11.0	11.0	11.0				18.0	18.0	18.0	48.0
Bluegrass (Kentucky)	12	12	12	96.9	91.0	94.0	90.	.0	.0	.0	90.0	3.1	6.1				26.0	6.0	16.0	48.0
Corn (field)	4	....	4	....	....	....	....	....	....	....	....	....	....				75.0	57.0	64.3	93.0
Millet	4	3	4	99.7	98.1	99.1	99.	1.9	.0	0.7	0.1	.0	.0				94.5	91.0	93.0	88.0
Oats	5	3	5	99.9	99.2	99.6	99.	0.5	.0	.0	0.4	0.1	0.3				97.5	29.0	82.0	93.0
Orchard grass	1	1	1	76.5	76.5	76.5	95.	.0	.0	.0	23.5	23.5	23.5				60.0	60.0	60.0	90.0
Peas	2	2	2	100.0	97.5	98.8	99.	.0	.0	.0	2.5	.0	1.3				98.0	98.0	98.0	96.0
Red clover	9	7	8	99.8	95.9	98.1	98.	1.3	.0	0.4	3.8	0.2	1.7				96.0	86.5	92.5	88.0
Redtop	7	5	7	96.8	62.0	80.3	95.	27.4	.0	14.1	10.6	3.2	5.3				95.0	38.0	60.8	78.0
Timothy	13	11	13	99.9	88.2	96.2	98.	5.3	.0	1.6	6.5	.0	2.1				97.0	70.0	92.2	88.0
Total	54	40	53																	

Average Number of Seeds in One Pound of Pure Seed.

Kentucky Bluegrass	2,400,000
Orchard Grass	579,000
Redtop	6,030,000
Timothy	1,170,000
Alsike Clover	707,000
Red Clover	279,000
White Clover	740,000
Alfalfa	209,000

Note.—The number of seeds per pound may vary 20 per cent. either way, depending on the proportion of small or large seeds.

A comparison of the average per cent. of purity and vitality of the seeds tested this year with those tested last year shows that a better quality of seeds are now on the market. In all of the seeds tested except corn and oats the average of germination was higher. The average purity of all seeds except alsike clover, redtop and timothy was also slightly higher than last year. No samples of very dirty or foul seed were inspected, although a greater variety of weed seeds was found than last year. Two or three samples of redtop were badly mixed with timothy which lowered their purity percentage and therefore their value. Such mixtures, however, are not considered injurious.

A considerable quantity of poor seed corn was on the market a year ago, owing to the poor corn season of the year previous. Some farmers bought this seed without a germination guarantee, and after securing a very poor stand sent in a sample of the seed for testing. The farmer found out his trouble too late, however. The conclusion seems to be, therefore, that the quality of our seeds is generally improving and that the farmer can get good seed if he insists upon it.

THE TEXT OF THE LAW.

STATE OF NEW HAMPSHIRE.

IN THE YEAR OF OUR LORD ONE THOUSAND NINE HUNDRED AND NINE.

AN ACT

To Regulate the Sale of Agricultural Seeds.

Be it enacted by the Senate and House of Representatives in General Court convened:

SECTION 1. Every lot of agricultural seeds, including seeds of cereals, grasses, forage plants, vegetables, garden plants, and white pine trees, but not including those of other trees, shrubs, and ornamental plants, which is sold, offered, or exposed for sale for seed in bulk or package of one pound or more, within this state, shall be accompanied by a plainly written or printed guarantee, stating first its percentage of purity from foreign seeds and other matter, and second, its percentage of vitality.

SECT. 2. Sellers or dealers in seeds may base their guarantees upon tests or analyses conducted by themselves, their agents, or by the secretary of the State Board of Agriculture or his agents, *provided* that such tests or analyses shall be made in such a manner and under such conditions as the said secretary may prescribe.

SECT. 3. The results of all tests or analyses of seeds made by the said secretary, together with the names and

addresses of the persons from whom the samples of seed were obtained, shall be published annually in a bulletin by the New Hampshire College Experiment Station, and biennially in the report of the State Board of Agriculture. The said secretary shall also publish from time to time in the quarterly report of the State Board of Agriculture equitable standards of purity and vitality, together with such information concerning agricultural seeds as may be of public benefit.

SECT. 4. Whoever sells, offers, or exposes for sale or for distribution, within this state, any agricultural seeds heretofore named in this act, without complying with the requirements of sections one and two, or whoever, with intention to deceive, wrongly marks or labels any lot of agricultural seeds, including the seeds of cereals, grasses, forage plants, vegetables, garden plants, and white pine trees, but not including those of other trees, shrubs, and ornamental plants, as pertains to their percentage of purity and vitality, shall be punished by a fine not exceeding one hundred dollars for the first offense, and not exceeding two hundred dollars for each subsequent offense.

SECT. 5. The provisions of the four preceding sections shall not apply to any person growing, selling, offering, or exposing for sale cereals and other agricultural seeds for food.

SECT. 6. The secretary of the State Board of Agriculture shall diligently enforce the provisions of sections one and four of this act, and in his discretion prosecute offenses against the same.

THE OBJECT OF THE LAW.

The object of this law is in substance the same as that of our pure food and fertilizer laws, namely, to have the buyer know just what he is buying. It is intended to

provide a means whereby our farmers and other purchasers of seeds may have reliable information, on the basis of which they may protect themselves against the introduction of noxious weeds and against loss through weak or otherwise worthless seeds; also to provide a reasonable protection for careful, conscientious dealers against negligent, designing, or unscrupulous ones.

It is not the purpose or intent of the law to work a hardship on our seed dealers or to hurt their legitimate business, and neither is it intended to require farmers and other growers to purchase seeds of a better quality than they desire.

Labeling.

The law does not apply to the common five and ten-cents packages of garden and flower seeds. Only seeds sold in bulk or in packages of one pound or more are subject to the provisions of the law and are required to be accompanied by a guarantee stating their percentage of purity and vitality.

The guarantee or label may be of any form desired by the seller of the seeds, as a tag, sticker, or direct brand upon the container. It must, however, be plainly written or printed, and placed distinctly visible to the purchaser. Each dealer will provide his own labels.

Taking of Samples.

To secure a fair average sample of a lot or bulk, take small quantities from all of the bags or from different parts of any particular bulk. Mix thoroughly and take out the sample to be inspected. When the seeds are in bags or large bins, the use of a grain sampler is most convenient, since this will insure getting seeds from the top, middle, and bottom alike. Since the report of the

analysis is based upon the nature of the sample inspected, it is important that the sample be carefully taken.

Size and Amount of Samples.

The size and amount of the samples necessary for a test will depend upon the size and weight of the seeds. About one half ounce, or a tablespoonful of the smaller grass and vegetable seeds, like alsike and white clover, redtop, lettuce, onions, radish, turnip, etc.; about one ounce or two tablespoonfuls of the larger seeds, like timothy, millet, red clover, alfalfa, rape, etc.; and about four ounces or a small cupful of the cereal grains or vegetable seeds, like oats, barley, corn, peas, beans, etc., should be sent.

Sending of Samples.

Samples sent to the experiment station for testing should be enclosed in a strong paper envelope and securely fastened. They should not be sent in bottles or glass jars owing to the danger of breakage. When a number of samples are to be sent they should be put up securely in a single package and forwarded either by parcel post or by express. Each sample sent in should be marked as follows:

Name and address of sender.
Date of sending.
Kind of seed.
Brand name (if any), and number of package.

Purity or germination test desired (one or both).

Write a letter stating the number and kind of samples sent so that their receipt may be promptly acknowledged.

Address all samples and communications regarding the same to F. W. Taylor, Experiment Station, Durham, N. H.

Tests and Examinations.

Section two of the law states the provisions under which the tests and analyses shall be made. The secretary of the State Board of Agriculture has appointed F. W. Taylor, agronomist of the experiment station, as his regular agent for making all tests and analyses in this state. The sellers or dealers who desire to base their guarantees upon tests made by themselves or their agents must first secure the approval by the secretary of the State Board of Agriculture of the methods to be used in making the tests, and of the person who is to conduct them.

Other Information.

Other publications on the subject of seed testing are as follows:

Circulars Nos. 34 and 35, U. S. Department of Agriculture, Washington, D. C.

Bulletin No. S.1, Canadian Department of Agriculture, Ottawa, Can.

Bulletin No. 152, Maine Experiment Station, Orono, Me.

Bulletin No. 146, Vermont Experiment Station, Burlington, Vt.

Bulletin No. 260, Michigan Experiment Station, East Lansing, Mich.

Circular No. 4, Wisconsin Experiment Station, Madison, Wis.

Bulletin No. 115, Iowa Experiment Station, Ames, Iowa.

Bulletin No. 110, Nebraska Experiment Station, Lincoln, Neb.

Seed Bulletin No. 1, North Dakota Experiment Station, Fargo, N. D.

Bulletin No. 83, Bureau of Plant Industry, Washington, D. C.

Bulletin No. 267, Michigan Experiment Station, East Lansing, Mich.

Bulletin No. 333, New York Experiment Station, Geneva, N. Y.

Bulletin No. 148, Kentucky Experiment Station, Lexington, Ky.

Bulletin No. 111, Bureau of Plant Industry, Washington, D. C.

Farmers' Bulletin No. 260, Division of Publications, Washington, D. C.

REPORT OF CATTLE COMMISSIONERS

BOARD OF CATTLE COMMISSIONERS.

IRVING A. WATSON, President.....Concord.

NAHUM J. BACHELDER, Secretary.....Concord.

RICHARD PATTEE.....Plymouth.

REPORT.

To His Excellency the Governor and to the Honorable Council:

The report of the State Board of Cattle Commissioners from September 1, 1912, to September 1, 1913, is herewith presented.

It contains the public statutes under which the work of the board has been carried out, the orders and regulations issued by the board, the record of inspections made, and number of diseased animals destroyed.

CHAPTER 113, PUBLIC STATUTES.

UNITED STATES INSPECTORS.

SECTION 1. The governor is authorized to accept on behalf of the state the rules and regulations prepared by the commissioner of agriculture under and in pursuance of section three of an act of congress approved May 29, 1884, entitled, "An act for the establishment of a bureau of animal industry, to prevent the exportation of diseased cattle, and to provide means for the suppression and extirpation of pleuro-pneumonia and other contagious diseases among domestic animals," and to coöperate with the authorities of the United States in the enforcement of the provisions of such act.

SECT. 2. The inspectors of the bureau of animal industry of the United States shall have the right of inspection, quarantine, and condemnation of animals affected with any contagious, infectious, or communicable disease, or suspected of being so affected, or that have been exposed

to any such disease; and for these purposes are authorized and empowered to enter upon any ground or premises. They shall have power to call on sheriffs, constables, and peace officers to assist them in the discharge of their duties in carrying out the provisions of said act of congress; and it is made the duty of said officers to assist them when so requested. The inspectors shall have the same powers and protection as peace officers while engaged in the discharge of their duties.

SECT. 3. All damages and expenses incurred under the preceding sections shall be paid by the United States, and in no case shall this state be liable for any part thereof.

STATE BOARD OF CATTLE COMMISSIONERS.

SECT. 4. The secretary of the State Board of Agriculture, the master of the New Hampshire State Grange of the Patrons of Husbandry, and the secretary of the State Board of Health, for the time being, shall constitute a board, to be known as the State Board of Cattle Commissioners. If a vacancy in the board shall occur, the governor, with the advice of the council, shall fill it by appointment, and the appointee shall hold office until the vacancy in the office occasioning the vacancy in the board is filled.

SECT. 5. The board shall make investigations in regard to the existence of contagious and infectious diseases among domestic animals within the state, and may make regulations prohibiting the introduction into the state of animals so diseased, and controlling or prohibiting their transportation, and such other regulations as the board deems necessary to exclude or arrest any such disease, and may modify or amend its regulations as the circumstances shall require.

SECT. 6. The board may employ skilled veterinarians and agents and servants to aid in the performance of the duties assigned to the board.

SECT. 7. Any person or corporation who shall violate any of the regulations of the board shall be fined not exceeding one hundred dollars.

SECT. 8. The compensation and expenses of the board shall be audited and fixed by the governor and council, and shall be paid from the state treasury, but all expenses incurred under the provisions of this chapter shall not exceed ten thousand dollars in any one year.

CARE AND DISPOSITION OF DISEASED ANIMALS.

SECT. 9. Selectmen shall cause all horses infected with glanders or other contagious disease, and all other domestic animals infected with contagious diseases, or which have been exposed to such diseases, to be collected in some suitable place or places and kept isolated from other animals so long as may be necessary to prevent the spread of the diseases.

SECT. 10. In the performance of the duties prescribed by the preceding section, the selectmen shall be governed by the regulations and directions that may be made or given on the subject by the state Board of Cattle Commissioners.

SECT. 11. The State Board of Cattle Commissioners, or, if they have not taken cognizance of the case, the selectmen of the town in which the animal is, may order any domestic animal to be killed and buried, which, in the opinion of a veterinary surgeon selected by them, has a contagious or infectious disease.

SECT. 12. The owners of animals so killed shall be entitled to recover of the town the value of such animals in their diseased condition, if they have been owned in the state three months at least before the disease was detected. The State Board of Cattle Commissioners or the selectmen, as the case may be, shall cause the value to be ascertained by the appraisal of three competent and disinterested per-

sons selected by them, who shall be sworn to the faithful discharge of their duties.

SECT. 13. In case the owner is aggrieved by the appraisal, he may appeal by petition to the supreme court within thirty days after he is notified of the appraisal. He shall notify the town of his appeal, and enter and prosecute it as he would if it were a civil action at law wherein the same amount of damages was claimed, and judgment shall be rendered therein in like manner.

SECT. 14. If upon such appeal he recovers a larger sum than the appraisers awarded him, he shall recover his taxable costs; otherwise he shall pay costs.

SECT. 15. All damages and expenses incurred under the six preceding sections, except expenses incurred by the State Board of Cattle Commissioners, shall be paid by the town in the first instance; but four fifths thereof shall be reimbursed to it from the state treasury. The governor and council shall audit all claims thus presented and the governor shall draw his warrants upon the treasurer for the amounts allowed in favor of the towns entitled thereto.

PRECEDENCE IN AUTHORITY.

SECT. 16. In cases where United States inspectors, state commissioners and selectmen, or any two of such boards, take action with reference to the same subject matter under the provisions of this chapter, they shall have precedence in authority in the order above named.

PENALTIES IN CERTAIN CASES.

SECT. 17. Any person or corporation who shall bring into the state between the twentieth day of May and the twentieth day of October any Texas or Cherokee cattle that have not been kept north of the Ohio or Missouri river during the winter immediately preceding, shall be

fined not exceeding twenty-five dollars for each animal so brought into the state. The term Texas or Cherokee cattle shall be construed to mean the native cattle of Texas and Louisiana and the classes of cattle known under those names.

SECT. 18. Any person who shall expose, or suffer to be exposed, in any highway, public place, or pasture, any horse affected by the disease known as glanders, shall be fined not exceeding fifty dollars for each offense, for the benefit of the town or city where the offense is committed.

SECT. 19. Any person exposing any domestic animal as aforesaid, affected with any other contagious or troublesome disease, shall be fined not exceeding twenty-five dollars for each offense for the benefit of the town.

SECT. 20. It shall be the duty of selectmen and police officers of towns in which any of the offenses mentioned in the three preceding sections shall be committed, to cause the offenders to be prosecuted.

AMENDMENT OF 1893.

At the session of the legislature of 1893 the following amendment was passed:

SECTION 1. The owners of cattle killed by order of the State Board of Cattle Commissioners shall recover of the state one half the value of such animals upon a basis of health, said value to be ascertained by a disinterested appraisal, provided they have been owned in the state three months at least before the disease was detected.

SECT. 2. All acts and parts of acts inconsistent with this act are hereby repealed, and this act shall take effect upon its passage.

Amendment of 1911.

AN ACT TO AMEND SECTION 1, CHAPTER 33, LAWS OF 1895, RELATING TO PAYMENT FOR CATTLE WHICH ARE KILLED BY ORDER OF THE BOARD OF CATTLE COMMISSIONERS OF ANY STATE.

Be it Enacted by the Senate and House of Representatives in General Court convened:

Section 1. Amend section 1, chapter 33, Laws of 1895, by inserting the words of any state between the words "commissioners" and "shall" in the second line of said section by striking out the word "the" between the words "of" and "state" in said second line, and inserting in place thereof, the word this, by striking out the words "have been" in the fifth line and inserting in place thereof the word are, and by inserting after the word "owned" in said fifth line the following: by a citizen of this state and, by adding to said section, after the word "detected" in the last line the following: *And provided* that not more than thirty days shall have elapsed since said cattle have been removed from this state, so that said section as amended shall read as follows: Section 1. The owners of cattle killed by order of the State Board of Cattle Commissioners of any state shall recover of this state one half the value of such animals upon a basis of health, said value to be ascertained by a disinterested appraisal, *provided* they are owned by a citizen of this state, and in the state three months at least before the disease was detected. *And provided* that not more than thirty days shall have elapsed since said cattle have been removed from this state.

[Approved April 14, 1911.]

REGULATIONS GOVERNING ADMISSION OF CATTLE TO THE STATE.

STATE OF NEW HAMPSHIRE.

BOARD OF CATTLE COMMISSIONERS.

CONCORD, August 25, 1903.

To Transportation Companies, Stock Dealers and Owners, and All Persons Whom It May Concern:

1. The order of the State Board of Cattle Commissioners issued under date of November 28, 1902, establishing certain quarantine regulations on account of foot-and-mouth disease, is hereby revoked.

2. Sheep, goats, swine and all other domestic animals excepting neat cattle, may be brought into the state without a permit from the State Board of Cattle Commissioners.

3. No neat cattle from any state, territory, district, or country shall be brought into the state of New Hampshire except upon a permit issued by the State Board of Cattle Commissioners.

4. All neat cattle, excepting calves under six months of age, to be brought into New Hampshire from any state, territory, district, or country for any other purpose than pasturing or exhibition must first pass the tuberculin test at the hands of a competent and regularly educated veterinary surgeon, or one recommended by the cattle commissioners of the state from which the cattle are to be sent. Upon receipt of examination papers, showing that the animal is free from tuberculosis, a permit will be issued. Blanks for the use of veterinary surgeons (one for each animal to be tested) will be furnished upon application.

5. Parties desiring to bring neat cattle into New Hamp-

shire for pasturing or exhibition purposes should apply to the board for blank forms of application for permit, as there are certain conditions to be complied with; the animals must pass a physical examination at the hands of a competent and regularly educated veterinary surgeon, or one recommended by the cattle commissioners of the state from which the cattle are to be sent, and the application and veterinary surgeon's certificate must be filed at the office of this board, when a permit will be issued allowing the cattle to enter the state.

6. This order is issued under authority of chapter 113 of the Public Statutes of New Hampshire, and all violations will be prosecuted according to law.

IRVING A. WATSON,

President New Hampshire State Board of Cattle Commissioners.

INSPECTIONS.

The law enacted to govern this matter confers upon the executive officer of the State Board of Health, the State Board of Agriculture, and State Grange, the authority in the suppression of contagious diseases among domestic animals, and all action taken and money expended has been with the approval of the executive officer of the several organizations named and by the advice of the governor and council. Every case coming to the attention of the board has been investigated and such action taken as the policy of the board demanded. All applications to the board for inspection of herds within the state have been given attention by forwarding to the parties making application a blank form of which the following is a copy:

STATE OF NEW HAMPSHIRE.

BOARD OF CATTLE COMMISSIONERS.

APPLICATION FOR CATTLE INSPECTION.

To the State Board of Cattle Commissioners, Concord, N. H.:

GENTLEMEN:—I hereby make application for an official inspection of my herd of cattle in regard to which I make the following statement:

My entire herd consists of.....
Number showing disease.....
The disease suspected is.....
First noticed symptoms of disease about.....
.....
The symptoms stated in full, are.....
.....

These cattle are in my stable, located about.....
miles from.....the nearest railroad station.

If the board considers an investigation advisable, and upon a physical examination finds tuberculosis or other contagious or infectious disease in the herd, I hereby authorize the board to take such action as it may deem best; with the understanding that the expense of making the examination is to be borne entirely by the board, and that according to law, I am to receive one half the health value of all animals condemned, and destroyed in the presence of myself or of my agent. I also agree to disinfect the stable, and to take other precautionary measures in accordance with the instructions of the cattle commissioners.

.....
P. O. Address.....
Date....., 19 .

NOTE. All applications will be carefully considered, and when, in the opinion of the board, an examination is warranted, a veterinary surgeon will be sent to make an inspection as soon as the case can be reached in its order, usually within two weeks—often within a few days.

With the blank above given is sent the following:

INSTRUCTIONS.

1. When a herd of cattle, or any animal in it, shows symptoms of tuberculosis, and it is desired that an examination be made by the State Board of Cattle Commissioners, application must be made upon blanks furnished by the board for that purpose, and EVERY SYMPTOM FULLY DESCRIBED.

2. Cattle will not be examined simply upon a suspicion that tuberculosis may be present. The animal must show symptoms of the disease, otherwise an inspection will not be made by the board. A cough, alone, is not sufficiently indicative of tuberculosis, but there must be other symptoms also, chief among them a progressive loss of flesh.

Ordinarily the owner should hold the animal under observation for a sufficient length of time to convince him that the disease exists before bringing the matter to the attention of this board.

3. All investigations authorized by this board will be made by competent veterinary surgeons and will be by physical examination only. The tuberculin test will not be made. For this reason applications for examination should not be made until the case has reached the stage above referred to.

4. As tuberculosis in cattle is of several months' duration before terminating fatally, and even before suspected in some instances, the urgency for investigation is never so great as to require telegraphic or telephonic request for an examination. In all cases the facts should be reported by mail.

5. It is not always possible to make an investigation at once, even when deemed necessary by the board, as other examinations may have priority; but cases can usually be reached in a few days after the application is received, although sometimes ten days, or even two weeks, may intervene.

6. In the event that any cattle are destroyed by order of this board the state will pay the owner one half the appraised value of the animal in good health; but no losses will be paid upon any animal that has not been in the state at least three months prior to the discovery of the disease.

Payments will be made as soon after the close of the quarter as the bills can be audited by the governor and council. No cattle will be paid for by the state except those destroyed by order of this board.

In connection with this work the language used in a previous report may be repeated:

This plan has been strictly adhered to except in an occasional case where arrangements had been previously made to inspect herds in the immediate vicinity of the person applying, and there was not time to have the blank forwarded and returned. The inspection would then be made without the formal application, as it required no extra expense. Other exceptions have been in the case of applications from boards of health, or in the suspected existence of glanders in horses, both of which have generally had prompt attention.

All applications for inspection in official form, as indicated above, have had careful consideration by the board, and if conditions reported warranted, an official inspection was ordered. The conditions referred to are symptoms of a contagious disease. These applications have generally been given attention in the order in which they were received, and as soon as the exigencies of the case seemed to demand. We have not undertaken to reach cases where haste was necessary in order to arrive before the death of

animals, and have not paid for animals that have died before the arrival of the inspector. We have constantly held that the law did not contemplate, primarily, the reimbursement of owners for animals about to die, but that the first object was to destroy such animals as were endangering the health of animals and human beings, and, incidentally, pay the owner such recompense as is provided by the law. We have destroyed all animals found to be tuberculous from a physical examination, whatever their condition, and have attended to all cases within thirty days of receiving official notice, and many of them within one half this period, but have been to no undue haste to get to animals in the last stages of the disease.

It has not been the practice of the board to make a second inspection in a town immediately after a previous visit, but to make the inspection as soon as the circumstances seemed to warrant, using discretion in the matter. In this work the most distant sections of the state have had equal attention with the central, and no inspection has been withheld on account of any extra expense in reaching the herd. The applications made to the board since our previous report which, upon consideration, were worthy of an investigation, and which are on file as the authority of the board for ordering investigations, are as follows:

THE FOLLOWING IS THE NUMBER OF CATTLE AND STABLE INSPECTIONS FROM SEPTEMBER 1, 1912, TO SEPTEMBER 1, 1913.

1912.

September	27
October	35
November	46
December	21

1913.

January	28
February	18
March	19
April	34
May	35
June	18
July	24
August	19
Total	324

EXPENDITURES.

Expenditures by the Cattle Commission have been as follows:

286 tuberculous cattle destroyed in New Hampshire (one-half health value)	$6,149.25
65 tuberculous cattle destroyed in Massachusetts (one-half health value)	1,428.45
8 glandered horses destroyed (diseased value)	40.00
Services of veterinarians	1,511.50
Expenses of veterinarians	853.50
Services and expenses of appraisers	525.54
Services and expenses of executive officer and members of board	1,128.62
	$11,536.86

Respectfully submitted,

IRVING A. WATSON,
NAHUM J. BACHELDER,
RICHARD PATTEE,
Board of Cattle Commissioners.

ADMISSION OF CATTLE TO THE STATE OF NEW HAMPSHIRE.

During the period covered by this report permits based upon physical examination were issued to admit cattle to the state for pasturing purposes, the same to be returned to their respective states at the close of the pasturing season unless tested with tuberculin and the report of results forwarded to the State Board of Cattle Commissioners, when a permit would be given to allow them to remain in the state, if the test showed them to be free from tuberculosis.

These permits cover several thousand head of cattle. In addition thereto, many permits have been issued admitting cattle to the state to remain permanently, such permits having been based in all cases upon the tuberculin test.

In no instance are cattle now admitted to the state of New Hampshire (except for pasturage, or for exhibition purpose) until they have passed the tuberculin test at the hands of a competent veterinary surgeon. This regulation seems to be necessary for the protection of the purchaser, as well as the state, inasmuch as the laws and regulations of some of the adjacent states are so strict as not to admit of the return of animals in case they should not pass the tuberculin test in this state. Therefore, the board has felt obliged to enforce this regulation to the letter.

CONCLUSION.

The work during the period covered by this report has been conducted along the lines followed in previous years with the addition of greater effort in the matter of disinfection of premises where diseased animals were destroyed. In all such instances the veterinarians have left

with owner or manager of such stables written instruction as to what steps to take to prevent the reappearance of the disease, and a signed statement by the owner or manager that such instruction had been carried out has been made a condition of payment for animals destroyed. We are still of the opinion, as expressed in previous reports and acted upon as far as possible, that preventive measures regarding light and ventilation of stables are most effective and far-reaching in dealing with this matter. It is necessary as the foundation of suppressing tuberculosis in cattle to remove diseased animals, but this alone will not fully accomplish the purpose of the action taken. Abundant light and good ventilation in stables must follow the removal of diseased animals and disinfection if permanent results are to be obtained. Acting upon this principle, a vigorous effort has been made to secure its adoption, and we hope with tangible and permanent effect.

Respectfully submitted,

IRVING A. WATSON,
NAHUM J. BACHELDER,
RICHARD PATTEE,
Board of Cattle Commissioners.

NEW HAMPSHIRE AGRICULTURE

REPORT

OF THE

DEPARTMENT OF AGRICULTURE

FOR THE

YEAR ENDING AUGUST 31, 1914

ANDREW L. FELKER, Commissioner

CONCORD, N. H.
1915

REPORT OF THE COMMISSIONER.

STATE OF NEW HAMPSHIRE.

OFFICE OF THE DEPARTMENT OF AGRICULTURE.

CONCORD, September 1, 1914.

To His Excellency the Governor and the Honorable Council:

I have the honor to submit herewith my report as Commissioner of Agriculture for the year ending August 31, 1914.

A copy of the law enacted by the legislature of 1913 creating a Department of Agriculture follows:

SECTION 1. There is hereby created a department for promoting the agriculture of the state in all its varied branches, and which shall be known as the department of agriculture.

SECT. 2. There shall be appointed by the governor, by and with the advice and approval of the council, a state commissioner of agriculture whose official title shall be commissioner of agriculture, and who shall give bond to the state, with surety or sureties approved by the governor and council, in the sum of ten thousand dollars, and who shall qualify by taking the oath of office before the secretary of state within ten days after his appointment. He shall hold office for three years, and until his successor is appointed and qualified. His salary shall be thirty-five hundred dollars per annum, payable in monthly installments; and he shall be allowed his actual expenses when on official duty elsewhere than in the office of the depart-

ment, the same to be verified by proper vouchers and audited by the state auditor. He may, subject to the approval of the governor and council, employ office assistants for said department, at an expense not to exceed eighteen hundred dollars annually.

SECT. 3. The state shall be divided into three agricultural districts as follows: The counties of Coös, Grafton, Carroll and Belknap shall comprise district number one; the counties of Strafford, Rockingham and so much of Merrimack and Hillsborough as lie on the easterly side of the Merrimack river shall comprise district number two; the counties of Sullivan, Cheshire and the remaining portions of Hillsborough and Merrimack, including the town of Hill, shall comprise district number three. The governor, by and with the advice and approval of the council, shall appoint six practical agriculturalists, two of whom shall reside in each of the foregoing districts, who shall constitute an advisory board of the department of agriculture. They shall be appointed and commissioned for one and three years respectively, and shall hold office for the period specified in their commission and until their successors are appointed and qualified. All appointments after the expiration of those whose terms are limited for one year, shall be for two years. They shall receive four dollars per day for such time as they are actually engaged in the performance of their duties, and their actual and necessary expenses while performing official duty, to be verified by proper vouchers, and to be audited and approved by the state auditor. They shall attend institute meetings held within their district and render to the commissioner of agriculture such aid as he may deem suitable. They shall meet at the office of the commissioner of agriculture as often as once in two months, and shall advise with the commissioner of agriculture as to the work of said department. In case of inability of any deputy commissioner of agriculture to perform his official duties, the com-

missioner of agriculture may direct some member of the advisory board to temporarily perform the duties, and for such service he shall be allowed four dollars per day and his actual expenses, subject to the approval of the state auditor.

SECT. 4. It shall be the duty of the commissioner of agriculture to devote his entire time to the duties of his office, in the promotion of every agricultural interest of public importance. To this end, he shall hold one or more farmers' institute meetings in each county annually and at least one state meeting. All such meetings shall be open to all citizens of the state and interests related to the department, and the coöperation of all other farm or kindred organizations seeking the development of agriculture in any of its branches shall be encouraged. He shall coöperate, so far as may be practicable, with the extension work of the New Hampshire College of Agriculture and the Mechanic Arts, and shall provide courses of study of one week or more to be pursued in connection with the county institute meetings of those counties offering satisfactory coöperation. These courses shall be accompanied by demonstration, whenever practicable, and shall cover the fundamental principles underlying one or more departments of farming, including domestic science and art, dairy science and practice, horticulture, pomology, vegetable gardening, floriculture, poultry farming, apiculture, forestry, the combatting of insects and other foes to agriculture, soil testing, animal and plant nutrition, tillage, the philosophy of crop rotation and kindred subjects. For the purpose of teaching such branches, at institute meetings, the commissioner of agriculture shall appoint capable teachers of the science of agriculture in its practical application to the various departments of the farm and its allied work. Said department shall be open to all who are engaged within this state in any form of agriculture or forestry in any of their branches, or any allied

vocation, for advice, either in person or through correspondence, as to any matter involving such interests, and to that end, he shall gather, tabulate, index and keep on file, statistics giving information of public interest, upon the subject-matters of his department. The commissioner of agriculture shall, in coöperation with the state superintendent of public instruction, prepare an elementary course in agriculture for use by such pupils in approved secondary schools as may elect to pursue the same; and also such courses of elementary work for the lower grades as may properly prepare pupils for the course pursued in approved secondary schools; and he shall, in coöperation with the state superintendent of public instruction and the principals of the normal schools within the state, prepare a suitable course which shall be open to normal school students.

Sect. 5. The official duties existing next prior to the passage of this act, upon the part of the cattle commission; the state agent for the suppression of gipsy and browntail moths; and the state board of agriculture and of its secretary, are hereby made a part of the duties of the office of the commissioner of agriculture; and the tenure of office of said board of agriculture; the cattle commission; and the state agent for the suppression of gipsy and browntail moths is hereby terminated and the office of said board, commissions and agent is hereby abolished. The commissioner of agriculture shall, with the approval of the governor and council, appoint a deputy commissioner who shall have the powers and perform the duties heretofore required of the cattle commission; and a like deputy who shall have the powers and perform the duties heretofore required of the agent for the suppression of gipsy and browntail moths; and their compensation shall be fixed by the governor and council; and they shall be allowed their actual expenses when on official duties elsewhere than in the office of the depart-

ment, to be verified by proper vouchers and audited by the state auditor. In all matters pertaining to the suppression of gipsy and browntail moths, the department shall coöperate, so far as may be practicable, with the New Hampshire College of Agriculture and the Mechanic Arts.

SECT. 6. The commissioner of agriculture shall cooperate with the attorney-general and county solicitors in enforcing the laws relating to farm-foods adulteration, the pure-seed laws, the fertilizer laws and such other laws as relate to the subject-matter of this department. He shall collect and publish information relative to the agricultural resources of the state, and disseminate such information throughout the country in such ways as may be approved by the governor and council. He shall, annually, between September first and October thirty-first, submit a report to the governor and council, which shall include an account of the general work of the department, the institute work, the special teaching, and that of the heads of the various departments under his jurisdiction, and such other information pertaining to the department as may be of public and general interest. He shall include such recommendations for legislative action as the premises may demand. He shall also include in his report a statement of the total amounts of all expenditures, so classified as to show the amount expended in support of the several departments of work covered, and he shall also include therein an account stating by properly classified totals, all moneys received from sources other than the state treasury. The report shall be distributed to the town and public libraries of the state and to farmers, agriculturalists, and others desiring it.

SECT. 7. All moneys received officially by the commissioner of agriculture, from sources outside the state treasury, shall be turned over to the state treasurer in monthly payments, with an account showing the date when and

the source from which the same was received, and the consideration therefor.

SECT. 8. The provisions of the budget bills, so far as appropriations are thereby made for the board of agriculture, the cattle commission, and the department for the suppression of the gipsy and browntail moths, are hereby made applicable to the department of agriculture hereby created, and to the sub-division thereof, excepting in so far as they conflict with the salaries and clerical expenses hereby fixed, as to which the provisions hereof shall prevail, and such shall be paid out of the treasury on the warrant of the governor, and any unexpended balance thereof shall lapse at the end of three years from the passage hereof. The books of the office shall be at all times open to inspection by the governor and council, the state auditor, and state treasurer.

SECT. 9. All acts or parts of acts inconsistent with this art are hereby repealed, and this act shall take effect September first, nineteen hundred and thirteen.

[Approved May 21, 1913.]

This law became operative September 1, 1913, but the department was not permanently organized until January 16, 1914, when the present commissioner qualified and assumed the duties of the office. Mr. M. Gale Eastman, a graduate of the State Agricultural College, and the successful County Agricultural Agent of Sullivan county, was chosen Assistant Commissioner. The following men were appointed by the Governor and Council as members of the Advisory Board:

Herbert O. Hadley, Peterborough.
Etna J. Fletcher, Greenfield.
Jeremiah W. Sanborn, Gilmanton.
Richard Pattee, Laconia.
Samuel O. Titus, Rollinsford.
Ernest Folsom, Dover.

Prof W. C. O'Kane, entomologist of the New Hampshire Agricultural College, was appointed Deputy Moth Commissioner.

The law also provides for the appointment of a Deputy Cattle Commissioner, and the names of two men were presented for this position with recommendations. Neither was confirmed, however, and this work has been conducted from the office of the Department under the direct supervision and management of the Commissioner of Agriculture.

INSTITUTES AND PUBLIC MEETINGS.

No small part of the admirable work accomplished by the Board of Agriculture in the past was along the lines of agricultural meetings, and it has been the policy of the new Department of Agriculture to extend and magnify this work in every advantageous way. During the seven months, to which the services of the department have been necessarily limited by late appointments, ten institutes have been held in coöperation with subordinate granges about the state. At all such meetings the local officials have provided a hall and minor parts of the program and assisted in securing attendance in such ways as they were able without expense. Speakers have been furnished by the department who could competently handle, in a thoroughly practical and up to date way, such subjects as were assigned to them. In all cases where possible, the individual needs of the community have been taken into consideration and such questions handled as were requested. A discussion period has always been provided at these meetings, giving an opportunity for the members of the audience to ask questions and have them satisfactorily answered. All advertising by means of posters and press articles has been done at the expense of the department.

Soon after the department became operative by the ap-

pointment of a commissioner, the first annual winter meeting was held in coöperation with the Granite State Dairymen's Association in the city of Concord. In spite of the very cold weather which prevailed in our state during the time of these meetings on February 11 and 12, a most excellent attendance was secured and the usual interest manifested. Some very exeellent addresses on topies of vital importance to the farmers were presented by men of national reputation in their respective fields.

The summer meeting at Hampton Beach, held on August 5, was up to its usual standard both in quality and attendance, the latter in spite of very questionable weather conditions in the forenoon suggesting rain. Talent of unquestionable acceptability was furnished both for pleasure and profit and a most enjoyable day provided for all who availed themselves of the opportunity to attend.

In addition to the foregoing, which might be designated almost as routine work from having been carried on for many years by the state, a great deal of work has been done by the commissioner and assistant commissioner in visiting subordinate granges, local agricultural clubs, Old Home Day gatherings, community fairs, men's clubs and similar organizations for the purpose of giving talks along agricultural lines of an inspirational or instructive nature. At least thirty such appointments have been filled by this office.

NEW HAMPSHIRE CONVENTION OF AGRICULTURE.

First annual meeting of the Department of Agriculture in coöperation with the Granite State Dairymen's Association's twenty-ninth annual meeting, Concord, N. H., February 11-12, 1914.

All sessions of the convention were held in the assembly hall of the Memorial Parish House, on Center Street, just east of State, immediately in the rear of the State Library and one block from the State House.

Exhibits and demonstrations were held in the Parish House, in the basement and on the second floor.

Programme.

Wednesday, February 11.

Program arranged by New Hampshire Department of Agriculture.

Morning Session, 10.30 a. m.

Prayer, Rev. Roger F. Etz
Address of Welcome, Governor Samuel D. Felker
Response, Commissioner Andrew L. Felker
Address, Beekeeping in New Hampshire,
Dr. Burton N. Gates, Chief Apiary Inspector of Massachusetts.

The address was illustrated with lantern slides and with demonstrations.

Afternoon Session, 2.00 p. m.

Music, contralto solo, Miss Marjorie L. Barnard
Address, Sheep Raising Possibilities in New Hampshire,
W. C. Coffey, Professor of Sheep Husbandry, University of Illinois.

Address, The Extension Service of New Hampshire College and Its Value to New Hampshire Agriculture,
Director J. C. Kendall, New Hampshire Agricultural Experiment Station.
Music, contralto solo, Miss Marjorie L. Barnard
Address, Cultural Methods, Cover Crops and Fertilization in Apple Orchards,
John P. Stewart, Horticulturist of the Pennsylvania Agricultural Experiment Station.
The address was illustrated with charts.

Evening Session, 7.45 p. m.

Dr. E. T. Fairchild, President of New Hampshire College, presiding.
Music, contralto solo, Miss Florence Little
Address, Farm Management Problems in New England and How to Meet Them,
W.J. Spillman, Chief, Office of Farm Management, U. S. Department of Agriculture.
Music, violin solo, Miss Marion Kilkenny
Address, Teaching Agriculture in Rural Schools,
A. B. Graham, Chief of Extension Service, Ohio State University.
Music, Scotch ballads, Miss Alice M. Rainey

Thursday, February 12.

Program arranged by Granite State Dairymen's Association.

Business Session, 8.30 a. m. to 10.00 a. m.
10.00 a. m., Public Session.
Address of Welcome, Mayor Charles J. French, Concord
President's Annual Address,
W. D. F. Hayden, Dover, N. H., Superintendent Middlebrook Farm.
Report of Superintendent of Dairy Show,
E. L. Childs, Pembroke, N. H.

Address, More and Better Cows for New Hampshire,
P. A. Campbell, Dixville Notch, N. H., Manager of Balsam Stock Farms.
Discussion, J. W. Prentiss, Walpole, N. H.
Address, Inspected Milk for New Hampshire,
W. F. Purrington, State Board of Health, Concord, N. H.

Afternoon Session, 1.30 p. m.

Music, contralto solo, Mrs. Josephine Rolfe
Address, Summer Forage for the Dairy Cow,
F. W. Taylor, Professor of Agronomy, New Hampshire College.
Discussion, John E. Ladd, Beverly, Mass., Herdsman Cherry Hill Farm.
Address, Winter Roughage for the Dairy Cow,
J. H. Hills, Burlington, Vt., Director Vermont Experiment Station.
Discussion, H. W. Ranney, Derry, N. H., Superintendent Hood Farm.
Music, contralto solo, Mrs. Josephine Rolfe
Address, Abortion, Its Prevention and Treatment,
O. L. Eckman, Professor of Animal Husbandry, New Hampshire College.

Evening Session, 8 p. m.

Music, Young Ladies' Orchestra of Concord
Address, Value of Milk as a Food,
Ernest Kelly, in charge of Market Milk Investigation, U. S. Department of Agriculture.
Music, Young Ladies' Orchestra of Concord
Address, The Milk Question from the Consumer's Standpoint, Dr. J. R. Williams, Rochester, N. Y.
Dr. Williams' lecture was illustrated.
Music, Capital Male Quartette

FARMERS' INSTITUTES.

Farmers' Institute in coöperation with Merry Meeting Grange at Grange Hall, Alton, N. H., February 25, 1914. Two sessions, afternoon and evening. Everybody welcome.

Programme.

Afternoon Session, 2 O'clock.

Invocation.
Address of Welcome, Mrs. Emma L. Adams
Response, Jeremiah W. Sanborn, Gilmanton,
Member of Advisory Board
Piano solo, Mrs. Edna Frohock
Address, "The Control by Parasites,"
Charles H. Hadley, Jr., Durham, N. H.
Recitation, Mrs. Mary A. Lang
Address, "Vegetable Gardening,"
Professor David Lumsden, Durham, N. H.
Piano solo, Mrs. Edna Frohock

Evening Session, 7.30 O'clock.

Vocal solo, Mrs. Ella F. Bassett
Address, "The County Agricultural Work,"
M. Gale Eastman, Concord, N. H.,
Assistant Commissioner of Agriculture
Recitation, Mrs. Edith A. Lambertson
Address, "Evolution and Improvement of Vegetables" (illustrated), Professor David Lumsden, Durham, N. H.
Piano solo, Mrs. Edna Frohock
Discussion at the close of each address.

Supper was served between the afternoon and evening sessions to all those coming from a distance.

HON. J. W. SANBORN,
Member Advisory Board.

Farmers' Institute in coöperation with Tuftonboro Grange at Grange Hall, Tuftonboro Centre, February 26, 1914. Two sessions, afternoon and evening. Everybody welcome.

Programme.

Afternoon Session, 2 O'clock.

Invocation, Rev. Levi Ferguson
Address of Welcome, Robert Lamprey
Response, Jeremiah W. Sanborn, Gilmanton,
Member Advisory Board
Singing, Grange Choir
Address, "The County Agricultural Work,"
M. Gale Eastman, Concord, N. H.,
Assistant Commissioner of Agriculture
Reading, Miss Ethel J. Frisbee
Address, "Small Fruits and Their Culture,"
Professor W. H. Wolff, Durham, N. H.

Evening Session, 7.30 O'clock.

Singing, Grange Choir
Address, "The New Department of Agriculture,"
M. Gale Eastman, Concord, N. H.,
Assistant Commissioner of Agriculture
Vocal solo, Mrs. John Ferguson
Address, "Possibilities of Fruit Growing in New Hampshire." Professor W. H. Wolff, Durham, N. H.

Discussion at the close of each address.

Supper was served between afternoon and evening sessions to all those coming from a distance.

HON. J. W. SANBORN,
Member Advisory Board.

Farmers' Institute in coöperation with Crown Point Grange at Grange Hall, Strafford Corner, February 27, 1914. Two sessions, afternoon and evening. Everybody welcome.

Programme.

Afternoon Session, 2 O'clock.

Invocation, Rev. Mr. Gray
Singing, Ladies' Quartette
Address of Welcome,
Dana R. Berry, Master of Crown Point Grange
Response, Ernest B. Folsom, Dover, N. H.,
Member Advisory Board
Recitation.
Address, "Small Fruits and Their Culture,"
Professor W. H. Wolff, Durham, N. H.
Address, "Vegetable Gardening,"
Professor David Lumsden, Durham, N. H.

Evening Session, 7.30 O'clock.

Piano solo, Miss Katherine Tibbetts
Address, "Possibilities of Fruit Growing in New Hampshire," Professor W. H. Wolff, Durham, N. H.
Singing. Ladies' Quartette
Address, "The Work of the New Department of Agriculculture," Andrew L. Felker, Concord, N. H.,
Commissioner
Recitation.
Address, "Evolution and Improvement of Vegetables" (illustrated), Professor David Lumsden, Durham, N. H.
Discussion at the close of each address.

Supper was served between the afternoon and evening sessions to all coming from a distance.

HON. ERNEST B. FOLSOM,
Member Advisory Board.

Farmers' Institute in coöperation with Miller Grange at Town Hall, Temple, March 17, 1914. Two sessions, afternoon and evening. Everybody welcome.

Programme.

Afternoon Session, 2 O'clock.

Invocation, Rev. Harvey Eastman
Singing, Grange Choir
Address of Welcome,
Orlo J. Fiske, Master of Miller Grange
Response, Herbert O. Hadley, Member of Advisory Board
Recitation, Mrs. Nellie Holt
Address. "Fertilizers and Feeds." Prof. B. E. Curry
Discussion.
Music, Choir
Address, "Work of the County Agricultural Agent,"
M. Gale Eastman, Assistant Commissioner
Discussion.

Evening Session, 7.30 O'clock.

Singing, Grange Choir
Address, "New Hampshire Agriculture,"
Herbert O. Hadley
Discussion.
Singing, Choir
Address, "The Farmer and His Department,"
M. Gale Eastman
Discussion.
Recitation.
Address, "Fertilizer for Grass." Prof. B. E. Curry
Discussion.

Supper was served between afternoon and evening sessions to those coming from a distance.

HON. HERBERT O. HADLEY,
Member Advisory Board.

Farmers' Institute in coöperation with John Hancock Grange at Town Hall, Hancock, March 18, 1914. Two sessions, afternoon and evening. Everybody welcome.

Programme.

Afternoon Session, 2 O'clock.

Invocation, Rev. James Lade
Solo, Mrs. Annie L. Putnam
Address of Welcome,
Mrs. Ella L. Goodhue, Master of John Hancock Grange
Response, Herbert O. Hadley, Member of Advisory Board
Reading, Mrs. Lizzie H. Stone
Address, "Fertilizers and Feeds," Prof. B. E. Curry
Discussion.
Music, Grange Choir
Address, "Work of the County Agricultural Agent,"
M. Gale Eastman, Assistant Commissioner
Discussion.

Evening Session, 7.30 O'clock.

Singing, Grange Choir
Address, "New Hampshire Agriculture,"
Herbert O. Hadley, Member of Advisory Board
Discussion.
Singing, Grange Choir
Address, "The Farmer and His Department,"
M. Gale Eastman
Discussion.
Reading, Mrs. Annie A. Hadley
Address, "Fertilizer for Grass," Prof. B. E. Curry
Discussion.

Supper was served between afternoon and evening sessions to those coming from a distance.

HON. HERBERT O. HADLEY,
Member Advisory Board.

Farmers' Institute in coöperation with Great Meadow Grange at Town Hall, Westmoreland, March 19, 1914. Two sessions, afternoon and evening. Everybody welcome.

Programme.

Afternoon Session, 2 O'clock.

Invocation, Rev. Grant Van Blarcom
Music, Grange Choir
Address of Welcome,
Orrin Harvey, Master Great Meadow Grange
Response, H. O. Hadley, Member Advisory Board
Singing, Grange Choir
Address, "Fertilizers and Feeds,"
Professor B. E. Curry, Durham, N. H.
Discussion.
Recitation.
Address. "Work of the County Agricultural Agent."
M. Gale Eastman, Assistant Commissioner
Discussion.

Evening Session, 7.30 O'clock.

Singing, Grange Choir
Address, "New Hampshire Agriculture,"
Herbert O. Hadley, Member Advisory Board
Discussion.
Singing, Grange Choir
Address, "The Farmer and His Department,"
M. Gale Eastman, Assistant Commissioner
Discussion.
Recitation, Miss Mae McDonald
Address. "Fertilizer for Grass."
Professor B. E. Curry, Durham, N. H.
Discussion.

Supper was served between afternoon and evening sessions to those coming from a distance.

HON. HERBERT O. HADLEY,
Member Advisory Board.

Farmers' Institute in coöperation with Cornish Grange at Grange Hall, Cornish, March 20, 1914. Two sessions, afternoon and evening. Everybody welcome.

Programme.

Afternoon Session, 2 O'clock.

Invocation.
Singing.
Address of Welcome,
W. C. Grannis, Master of Cornish Grange
Response, Andrew L. Felker, Commissioner
Recitation.
Address, "Control of Moth Pests by Parasites,"
Charles H. Hadley, Jr., Durham, N. H.,
Assistant Entomologist
Discussion.
Music.
Address, "Apple Growing in New Hampshire,"
Rev. Willis Sanborn, Sanbornton, N. H.
Discussion.

Evening Session, 7.30 O'clock.

Singing.
Address, Herbert O. Hadley, Peterborough, N. H.,
Member Advisory Board
Discussion.
Singing.
Address, "Efficiency the Watchword,"
Andrew L. Felker, Commissioner
Discussion.
Address, "Insect Pests of Fruit."
Charles H. Hadley, Jr., Durham, N. H.,
Assistant Entomologist
Discussion.

Supper was served between afternoon and evening sessions to those coming from a distance.

HON. HERBERT O. HADLEY,
Member Advisory Board.

Farmers' Institute in coöperation with Londonderry Grange at Grange Hall, Londonderry, April 2, 1914. Two sessions, afternoon and evening. Everybody welcome.

Programme.

Afternoon Session, 2 O'clock.

Invocation, Rev. Bernard F. Christopher
Address of Welcome,
William S. Nevins, Lecturer of Londonderry Grange
Response, Samuel O. Titus, Member Advisory Board
Solo, Mrs. Harriet Watts
Address, "Western Methods of Fruit Growing for New Hampshire," Rev. Willis Sanborn, Laconia, N. H.
Discussion.
Recitation, Mrs. Cordelia Parmenter
Address, "Improving Worn-Out Fields,"
Professor George H. Whitcher, Concord, N. H.
Discussion.

Evening Session, 7.30 O'clock.

Address, "The New Department of Agriculture,"
Andrew L. Felker
Discussion.
Harmonica solo, Eddie A. Davenport
Address, "Practical Rural Education,"
Professor George H. Whitcher, Concord, N. H.
Discussion.
Recitation. Mrs. Harriet L. Mack
Address, "You Are Where You Are Because of What You Are." Rev. Willis Sanborn, Laconia, N. H.
Discussion.

Supper was served between afternoon and evening sessions to those coming from a distance.

HON. SAMUEL O. TITUS.
Member Advisory Board.

Farmers' Institute in coöperation with Atkinson Grange at Grange Hall, Atkinson, April 3, 1914. Two sessions, afternoon and evening. Everybody welcome.

Programme.

Afternoon Session, 2 O'clock.

Invocation, Rev. R. Albert Goodwin
Singing, Grange Choir
Address of Welcome,
George A. Page, Master Atkinson Grange
Response, Samuel O. Titus, Member Advisory Board
Recitation. Mrs. Alice F. Gilbert
Address, "Western Methods of Fruit Growing for New Hampshire." Rev. Willis Sanborn, Laconia, N. H.
Discussion.
Music, Choir
Address, "Milk and Dairy Inspections,"
Wallace F. Purrington, Concord, N. H.,
Inspector State Board of Health
Discussion.

Evening Session, 7.30 O'clock.

Singing, Grange Choir
Address, "Work of the Department of Agriculture,"
Andrew L. Felker
Discussion.
Singing, Male Quartette
Address, "Domestic Economy,"
Prof. Helen B. Thompson, Durham, N. H.
Discussion.
Recitation.
Address, "You Are Where You Are Because of What You Are," Rev. Willis Sanborn, Laconia, N. H.
Discussion.

Supper was served between afternoon and evening sessions to those coming from a distance.

HON. SAMUEL O. TITUS,
Member Advisory Board.

Farmers' Institute in coöperation with Starr King Grange at Grange Hall, Jefferson, May 14, 1914. Two sessions, afternoon and evening. Everybody welcome.

Programme.

Afternoon Session, 2 O'clock.

Invocation.
Address of Welcome, George C. Evans
Response,
Richard Pattee, Secretary N. E. Milk Producers' Association, Member of Advisory Board
Music. Grange Choir
Address, "Preparation of Soil for Plant Growth,"
M. Gale Eastman,
Assistant Commissioner of Agriculture
Discussion.
Reading, Nellie B. Nevers
Music, Grange Choir
Address, "Nature Study and Agriculture,"
Professor George H. Whitcher,
Deputy Superintendent of Public Instruction
Discussion.

Evening Session, 7.30 O'clock.

Music. Grange Choir
Reading, Miss Alice Cotton
Address, "The New England Milk Problem,"
Richard Pattee, Laconia, N. H.
Discussion.
Address, "Practical Rural Education,"
Professor George H. Whitcher
Discussion.
Reading, Miss Delia Ingerson
Address, "Dairying in New Hampshire,"
Prof. P. A. Campbell,
Superintendent "The Balsams" Stock Farm
Discussion.
Address, "The State Department of Agriculture,"
M. Gale Eastman
Discussion.

Programme of farmers' meeting at Hampton Beach, August 5, 1914. Two sessions, forenoon and afternoon at 10.30 and 1.30, in the Casino. A delightful shore dinner at the Ocean House at 12 o'clock.

Forenoon Session, 10.30 O'clock.

Music, Pentueket Orchestra
Invocation.
Address, "The Grange in New Hampshire,"
Wesley Adams, Master, Londonderry
Address, "Alfalfa,"
Prof. Frederick W. Taylor, B. Se., Durham
Music, Orchestra
Address, "The New England Farmer and the Grange,"
Leonard H. Healey, Secretary State Board of Agriculture, Hartford, Conn.

Afternoon Session, 1.30 O'clock.

Music, Orchestra
Address,
Hon. Samuel D. Felker, Governor of New Hampshire
Solo, Miss Ethel Seavey, Portsmouth
Address, "The Statesmanship of Agriculture,"
Kenyon L. Butterfield, LL. D., President of Massachusetts Agricultural College, Amherst, Mass.
Solo, Miss Seavey
Address, "Six Years Among Old Apple Trees; Costs and Receipts," George M. Twitchell, Auburn, Me.

Farmers' Institute in coöperation with Nutfield Grange at Town Hall, East Derry, September 23, 1914. Two sessions, afternoon and evening. Meeting free with a welcome for all.

Programme.

Afternoon Session, 2 O'clock.

Invocation, Rev. Mr. Kelley
Song, Grange Choir
Address of Welcome, M. Edson Odell, Master
Address, "The Relation of the Rural School to the Farm,"
Professor George H. Whitcher, Concord,
Deputy Superintendent of Public Instruction.
Song, Grange Choir
History of Nutfield Grange, Mrs. H. A. Hill
Address, "The Septic Tank for the Disposal of Sewage,"
Wallace F. Purrington, Concord

Evening Session, 7.30 O'clock.

Singing, Grange Choir
Lecture, "Sell Your Hammer and Buy a Horn,"
Rev. Willis J. Sanborn, Laconia, N. H.
Music.
Remarks, Andrew L. Felker and others

Supper was served between afternoon and evening sessions.

M. EDSON HILL,
Master Nutfield Grange,
Derry, N. H.

INSTITUTE ADDRESSES.

INSTITUTE ADDRESSES.

POSSIBILITIES OF SHEEP RAISING IN NEW HAMPSHIRE.

*BY F. R. MARSHALL.

I recognize that an easier task might have been assigned me than that of convincing New Hampshire farmers that it will be profitable for them to engage in sheep raising more extensively. Of course, when I accepted the invitation to talk upon sheep raising it was supposed that I would speak favorably of that industry for this state and I feel that I can do so in all sincerity.

I am aware that there once existed in New Hampshire a very flourishing sheep industry which has now greatly declined. I attempted to gain some information of the extent and rate of this decline from the various figures that are published from time to time. My experience with such figures is possibly somewhat like yours has been. They are likely to be very contradictory. Some one has said that there are three kinds of lies: white lies, black lies, and statistics. Statistics, however, are sufficiently accurate to show the general tendency and there is no mistaking the fact that the tendency of the sheep industry in New Hampshire has been sharply downward. The fact that there were a half million sheep in the state sixty years ago shows that sheep, when properly cared for, will thrive in New Hampshire. It paid the farmers of those days to give their sheep the attention they needed, because they received a high price for their wool. There may be difficulties to confront

*Mr Marshall was substituted for W. C. Coffey at the Annual Winter Meeting.

to-day that did not exist then, but I am sure that if we will fully appreciate the returns that it is possible to receive from land devoted to sheep raising we will find that the production of mutton and wool is one of the most profitable uses to which we can put our farm lands. It might be said that since history shows that the sheep industry once flourished in New Hampshire and subsequently declined that the state is not adapted to sheep raising. However, if we will consider the facts as they appear and have regard for the former conditions of the industry, recognizing the reasons for its present status, we may derive a wholly different conclusion for our future guidance.

Reasons for Decline in Sheep Industry.

When the sheep industry reached its highest point in New Hampshire, which was in 1850, the main consideration was the production of wool. The population of the eastern states was increasing very rapidly. Very little wool was obtainable from west of the Alleghenies. The great sheep ranges of Australia and South America were not then known. The price from wools was very high and the value of the fleece was such that a profit was obtained even though the wool was the only source of income. This condition was a temporary one. With the influx of wools from other states and from other countries having cheaper lands the competition was too unequal to allow New Hampshire farmers to continue raising sheep for wool. I would not argue at the present time for establishing flocks solely for wool production in any part of the country. It is quite possible that wool prices will again be high, but there is a great certainty of steadiness in mutton prices, and it is entirely possible to combine within one sheep the ability to produce valuable wool along with a carcass of mutton.

Even with the wool industry established in the Western states it might have been possible for New England to return to sheep raising for the supplying of mutton to home

markets. Here again, however, the unequal competition from the Western ranges made the prices so low that they allowed no profit for even the best shepherds operating on improved farms. These things explain why the number of sheep kept had fallen off. The causes referred to no longer exist.

Character of Future Sheep Industry.

It is the judgment of those best qualified to hold an opinion that the profitable sheep of the future must be primarily a mutton producer. It is within the range of possibility that a fleece may bring more than it cost to keep a sheep a year, but such periods are likely to be of short duration. On the other hand we have an expanding market for mutton and while prices have ruled high for two or three years, stocks have not increased. It is entirely possible to secure an income of $7 per year from each ewe kept. This includes from $5 to $6 from a lamb. Many sheep owners receive more than $7 for each ewe kept. One hundred per cent. of lambs is easily obtained. In the government's Southdown flocks at Middlebury, Vt., the average yield of lambs during the past five seasons has been one hundred twenty-two per cent. With such lamb yields being possible and with present day prices for lamb and mutton there are but few instances in which a farmer can justify breeding for wool alone. It will pay to produce these lamb crops and to prepare the lambs for market on our New England farms. One hundred ewes can be wintered, and well wintered, for one hundred fifty days with the crops from thirty acres of land. By using forage crops in summer the flock can be kept in the best of health and the keeping of one hundred ewes the year around and finishing their lambs can be accomplished upon sixty acres. There is no other way by which $13 per acre can be returned with so little labor. While the work with sheep is light, it must be intelligent and can never be left to the average hired hand.

Meaning of Removal of Western Competition.

Did you ever consider what the present condition of agriculture and of farm life in New England would be if we never had been forced to compete in our own markets with products from west of the Mississippi? Suppose the population of the New England states had been dependent upon their own area for their supplies of food and clothing. Such a condition would have given us an agriculture wholly similar to that now found in old European countries. All tillable land would be under the highest state of cultivation. All non-tillable land would be utilized for summer grazing for stock to be finished in winter from the crops of the better land. Keeping of live-stock would be general. Farms would all be stocked with high-class animals. With the prices obtained from our own markets, not only would agricultural production have been stimulated but the prosperity of the farmers would have been evidenced in other ways. Most young men would have remained upon the farms. There would have been a different rural life. More luxuries would have been found in farm homes and the building of good roads would have been no burden. In fact if our agriculture had been allowed to develop without the interruption that did occur, we would have a country life as attractive to right-thinking people as exists anywhere at the present time.

If you admit that such might have been you may be sure that it still will be. The natural progress of our farming communities was interfered with by unequal competition with Western products that has existed for half a century, making it unattractive and impossible for many of our best young men to remain in the country. But while the unequal competition of that half century produced the effect we all know of, it is quite certain that a new order of things has come about. The West has an increasing population of its own to support. The property values

have risen until those states have little or no advantage over ours when we take into account what they can produce and the value of what they have to sell at the time they must dispose of it. We could not compete with the sheep man of the West whose only expense in raising wool and some mutton was the wages and provisions needed for herders and for shearers once a year. At the present time such a man must use five acres of land worth at least $5 per acre to support a sheep and very often has a shipping expense of $1 per head on lambs that bring $4 at the market. With $25 worth of land necessary to support each breeding ewe he has no advantage over areas in which $50 land will support two ewes.

There is no doubt but that the opportunity is before us to develop our agriculture along the lines and toward the happy condition that seemed about to be realized in the 70's of last century. This is why I said in the beginning that an unbiased study of the factors that caused a rise and a fall in New Hampshire's sheep industry, when candidly studied, suggest the reëstablishment of that industry if our farming is to be as profitable as it may be. There is the best of assurance that the prices obtainable for well-finished lambs will be considerably in excess of what is actually required to produce them.

Need of Sheep in Good Farming.

History has repeatedly shown that farming sections that continue to be prosperous devote themselves largely to the production of live-stock. Only when stock is kept is it possible to increase the fertility of the soil at the same time that a fair net return is received from each acre. I am not prepared to advise the devoting of farms to exclusive sheep raising. It is likely, however, that sheep raised on farms devoted exclusively to them would receive better care than when kept on small farms and regarded as a side issue. There are some peculiarities of sheep, however, that make

them indispensable in securing maximum returns from the average farm. Many pastures that are too rough to be suitable to cattle furnish the best of grazing for sheep and can not be so well utilized in any other way. But the sheep is indispensable on the best crop-producing lands. Their ability to keep weeds in check is well known. In fact it has sometimes been so highly appreciated as a weed destroyer that the flock has been regarded primarily as scavengers and has not received the feed and attention which they would have well repaid. There is a great deal of feed goes to waste on every farm where sheep are not kept. The growth in fence corners and along roadsides, the grain lost in harvesting and other similar waste, can be converted into meat by sheep and by sheep alone.

The sheep has an advantage over hogs in that it can be made ready for market with a comparatively small portion of grain. This specially adapts sheep to New England farms having good pastures and fair crops of small grains but unable to produce the corn crops of the West. The sheep has an advantage over cattle, first, in that it consumes a great deal of stuff that grows on the farm that cattle will not eat. The amount of labor required to produce a hundred dollars worth of mutton is less than that required to produce the same value of beef, and very much less than what is required to produce a hundred dollars worth of milk. No animal puts as much of the feed that it eats into marketable gains as does the sheep. This is partly because they can easily be made to bring the highest price at from three to eight months of age. They are ready for sale at the end of their growing period, and the gains made by a growing animal are always cheaper than those made by a mature one.

Another peculiar advantage in raising sheep on the farm is the possibility of using the meat for the family. A lamb carcass can be handled at any time of the year by a couple of ordinary families, and is available at all times. Our

city folks have been increasing the use of mutton much more rapidly than have the country folks. They find it economical and can obtain it at all times, as could farmers if flocks were more numerous.

Obstacles to Sheep Farming.

The dog nuisance is the first obstacle to more general keeping of sheep. A mistaken form of sentiment has prevented legislation to protect sheep owners from the ravages of stray and worthless dogs. The actual losses from being worried or chased to death by dogs are very serious. But for every flock injured by dogs there are a dozen farmers prevented from keeping sheep by the probability of such loss. Now that national and state governments are concerning themselves with methods of increasing the meat supply, there is a more favorable opportunity to secure the legislation needed to control the dog nuisance. Every dog should carry the name of his owner. Under present laws the owner of sheep could probably secure judgment against the owner of a sheep-killing dog, but it is not always possible to identify the dog or to catch him, even though he carried the name of his owner. Sheep owners should be protected by law in destroying dogs found in the same field with sheep. Some shepherds have maintained healthy and profitable flocks even under the necessity of keeping their sheep in yards every night. During the summer sheep will do best grazing in the cool of the day, but even when compelled to graze only in the daytime it has been found possible to secure satisfactory returns. Bringing to the yard each night involves some labor. Here again the routine of caring for a flock is the same for a small number as for a large number and the labor cost for sheep is not more for fifty ewes than for fifteen or twenty, and with the larger sized flock their importance in contributing to the income of a farm will insure the daily attention that is likely to be lacking when only a small flock is kept and

regarded as a side issue. Woven wire fences will turn dogs but the cost of building such fences around large hilly pastures is very often prohibitive. The English shepherd's freedom from the dog nuisance is mainly due to the fact that the large flocks are kept during summer on comparatively few acres of land, sown to such crops as rye, rape and vetches. Twenty-five acres can be planted to a succession of forage crops to furnish summer feed for one hundred ewes and their lambs, and the feeding cost per sheep is much reduced by this means, while at the same time sheep are better fed and can be kept in better health than when allowed to run over old pastures likely to be infected with the larvæ of the stomach worm.

The stomach worm is less serious in New England than in other sections. The plan of planting a succession of forage crops is the best preventive, and prevention is much more satisfactory than treatment. In fact the control of the dog nuisance and the prevention of trouble from internal parasites both point toward summer grazing on forage crops, and with the possible income of $7 per ewe it is doubtful if land can be put to better use, especially when we consider that the sheep do all the harvesting themselves and waste but little.

The third and main obstacle to sheep farming is the lack of understanding of what sheep can really do. Because the West has once put us out of the sheep business we have been too ready to assume that the sheep belongs only to very rough and cheap land. Sheep are now kept on only one farm in twelve in New Hampshire and the figures are probably not very far wrong when they show that there is one sheep to each 90 acres of land in farms. In England and Wales where there is considerable broken land and where the tillable land is very much higher-priced than ours and rents for large figures, there is one breeding ewe for every one and eight-tenth acres. With the passing of unequal competition from the West, we are undoubtedly coming into an era of high-pressure farming, such as is

practiced in England, and in this kind of farming the sheep will inevitably have a very important place.

Plan of Sheep Farming.

I have already referred to the economy of keeping a flock large enough to make it seem worth while to give the attention necessary to insure the greatest safety, health and rate of growth. With our markets so near by and willing to pay good prices for lambs, especially in seasons when they cannot be obtained from other sections, specialized sheep farming can be made very remunerative. The number of sheep that can be carried per acre varies greatly with the character of the land and the way it is handled. Twenty-two tons of hay and five hundred bushels of oats will furnish one hundred fifty days winter feed for one hundred ewes. This can be produced upon thirty acres. Fifteen tons of hay, fifteen tons of ensilage and five hundred bushels of oats will furnish the same feed and can be produced upon twenty-six acres. While forage crops for summer have advantages that have been referred to, grass pastures are safe for old ewes and even during summer drouth old ewes are less likely to suffer from scarcity of feed than any other kind of stock. Lambs dropped in the spring cannot always be kept in health or be made ready for the early market on the old grass pastures, and it is altogether economical to furnish at least part of the spring and summer grazing on fall or spring-sown crops.

The class of sheep to be used in such a business should undoubtedly be first of all of good mutton form. All of the Down breeds have this form, though they vary in their adaptability to different kinds of land. There are numerous distinct advantages to be realized when several farmers in a neighborhood keep the same type, if not the same breed, of sheep. One of these advantages is the economy to be effected by coöperation in buying good rams and in exchanging them with others in the neighborhood when

their ewe lambs are to be bred. Another advantage is in the possibility of having a shipment of lambs of uniform type ready at one time. A third advantage is in the establishment of a community feeling that is unfavorable to the prowling dog.

It is seldom advisable or necessary to go great distances for foundation breeding ewes. The native blood has peculiar characteristics which are of value. It is possible to retain these in large measure, while at the same time effecting such improvement as is necessary by the use of purebred rams. The culling of the ewe flock, however, is equally as important as the selection of the ram. The aim should be to keep the ewes to the standard that is necessary to produce lambs with best carcasses, but at the same time the preference should be given to lambs from ewes that keep in good health. One hundred per cent. of lambs is too low a figure to aim at and more than one hundred twenty-five per cent. can be obtained without sacrificing other qualities. Ewes that produce twins frequently or regularly should be given a preference and lambs from such ewes are much more likely to bear twins than those from ewes always producing single lambs. These considerations are important. Another feature likely to be overlooked is the milking qualities of the ewe. This has all to do with putting the finish on the lambs and getting them on the market while the price is high. The ewe's milking qualities are best shown by the thrift of her lambs. Too often the ewe that is thin and run down after weaning her lambs is discarded as undesirable, while as a matter of fact she is thin because she has raised her lambs well. Even while giving attention to these points it is possible and necessary to keep up the weight and quality of the fleece. Aside from the value of the fleece on the market, it is closely related to the health of the sheep. A ewe well covered, over all parts of the body, with a close fleece is the best keeper and usually the result of better breeding than the bare-bellied and short-wooled individual.

Winter Lambs.

Tennessee and Kentucky send large numbers of lambs to the Boston market in the early summer months. They have practically no advantage over New Hampshire in producing these lambs. We have a peculiar advantage over them, however, in the possibilities of the winter lamb trade. During the winter and until March there is a market that is not overcrowded for well-finished young lambs that bring $13 per head and upward. Such lambs dropped in November and December can be made to dress twenty-five pounds when three months old. Of course, it is not possible to procure the maximum percentage of lambs when the ewes are bred in June, as they must be to get lambs on the market at this time. The large price for the lambs, however, offsets all other features. The winter lamb trade has the further advantage that most of the work comes in the winter months. During the summer there is only the ewe flock to look after and that can be carried on the grass land. Such ewe lambs as are needed to keep up the ewe flock are much better able to go through the summer without injury from parasites than lambs dropped in the spring and most in need of feed at the time it is likely to be lacking. Expensive buildings are not needed for this enterprise. A warm room in which to care for the lambs for a few hours after birth is sometimes used, but is not an actual necessity, especially if lambs are dropped in November, as is desirable, if they are to bring the highest price. The main difficulty in this type of sheep farming is in getting ewes in lamb in early summer. There is no secret in this but only a few have the necessary experience and patience to accomplish it successfully. Ewes having Dorset or Merino blood breed in summer much more readily than other breeds. Mutton sires are advisable, however, to give proper shape and finish to the carcass. The production of winter lambs is a specialized business and the returns that can be received amply repay those who will master its details.

There is an altogether reasonable certainty of continu-

ation of good prices for mutton and lamb. With intelligent handling of the crop land and studied management of the flock, it is possible to produce mutton and lamb at a sufficiently low cost to allow a very attractive margin of profit. When selling only finished products it is possible to improve the productivity of the crop land and so still further reduce the cost of production. The labor with sheep is pleasant, light and absorbing to those who will give the study necessary to any profitable venture. Considering the opportunity as it exists and the kind of farming that is going to be followed in the happy future of our New England farming section, the sheep is an indispensable animal and will play a very important part in the better farming of the years to come.

CULTURAL METHODS, COVERCROPS AND FERTILIZATION IN APPLE ORCHARDS.

BY DR. JOHN P. STEWART, EXPERIMENTAL POMOLOGIST, STATE COLLEGE, PENNSYLVANIA.

The development and maintenance of an apple orchard in its highest state of efficiency involves many decisions. Even among the principal operations, there are usually at least two courses available, between which it is often difficult to decide. In such cases the ideal procedure whenever possible is to ask the trees. With the individual orchardist, however, this is frequently out of the question, especially when immediate action is required or when only a few trees of a single variety are available. The careful determination of the general effects of the leading operations, under various conditions, is therefore evidently the work of the various state and national agencies already provided. The net results of their experiments will then become available to the grower as a basis for immediate action, and this action can be further adjusted to the exact local conditions by means of suitable individual tests, wherever the operations are sufficiently extensive.

Experiments of this general character have now been in operation under the writer's direction, in the leading orchard sections of Pennsylvania, since 1907. Altogether these experiments include ten different soil types and about 3,700 trees, some 2,200 of which are in various stages of bearing. The latter have produced over 42,000 bushels of fruit under the various treatments during the last six years. The wide extent of the work largely eliminates the variations of individual trees and localities, and incidentally makes this much the largest and most comprehensive series of experiments on apple production so far reported. The details of the Pensylvania experiments are given elsewhere, so that the present discussion is confined merely to the more striking and practical phases of the results. Of these the first that we shall consider is the matter of cultural methods or soil management in young orchards.

Cultural Methods in Young Orchards.

How should the soil be managed in a young orchard so as to give the best growth and the earliest fruiting of the trees? Should it be thoroughly tilled, both before and after planting, or may equal or superior results be secured in other ways? Does it pay to fertilize young apple trees, and if so, how? Do covercrops pay? Can intercrops, or crops for profit, be grown between the rows without material injury to the trees? These and similar questions must be answered in some way by everyone who expects to earn his living by means of apple production. Fortunately, data now available from three of the Pensylvania experiments, covering the first six years of the life of the trees, will assist materially in answering them.

The first of these experiments is on Volusia silt loam, in the western end of the state and about midway between Pittsburgh and Erie. The experiment was started with the planting of the orchard in the spring of 1908. The field had been in sod, of a rather light and poor growth, and it was plowed and prepared about as for corn before the trees

were set, in all plats except the last, No. 14. In it the sod was left undisturbed, the trees were planted with a spade and were mulched at once with about 100 pounds each of straw or similar vegetation and were also protected from mice. Since then the mulch has been maintained by means of the intergrowth and by further additions of outside materials as needed to prevent any appreciable growth of vegetation immediately over the majority of the tree roots. All the other plats have been tilled annually in the usual manner, and in addition they have received the various treatments indicated in Table I. The first 10 plats contain 18 trees each, of three varieties,—Baldwin, Northern Spy, and Rome Beauty. The last four contain 45 trees each, of the same varieties, and all are set at the rate of 27 to the acre.

TABLE I. INFLUENCE OF FERTILIZATION AND CULTURAL METHODS ON GROWTH.

(Average Increases in Trunk-girth, 1908-1913, the First Six Years, Experiment 337.)

Plat.	Treatment.	Average increase.	Gain over normal growth.
	(a) *Fertilization.*		
		In.	%
1	Check (unfertilized)	4.85	....
2	Nitrogen and acid phosphate	5.43	10.10
3	Nitrogen and potash	5.07	1.20
4	Check	5.09	....
5	Phosphate and potash	5.79	6.20
6	Complete fertilizer	6.45	11.20
7	Check	6.19	....
8	Manure	6.63	11.40
9	Lime (and fertilizer, 1912)	6.21	7.80
10	Check*	5.54	....
	(b) *Cultural Methods.*		Gain over lowest. %
11	Tillage and covercrop	5.41	5.67
12	Tillage and intercrop	5.12	....
13	Tillage alone	5.34	4.30
14	Mulch	6.00	17.20

* The average check shows 5.417 inches of increase.

In connection with the average increases shown here, it should be stated that plats 6 to 10 are situated slightly lower than the others, and apparently more favorably. Hence their actual gains are not so valuable for comparison throughout the experiment as their percentages of gain over the normal growth for the situation. On the latter basis, it will be noted that certain forms of fertilization—particularly those containing nitrogen and phosphorus—are beginning to show considerable influence. This is doubtless connected with the fact that this particular soil type is often unusually low in these elements, as young apple trees frequently fail to respond appreciably to any application involving plant food alone.

This soil is also usually well supplied with moisture—so much so in fact that drainage is generally its first need. Even at that, it will be noted that the mulched trees of plat 14—a treatment especially fitted to conserve moisture—have made the largest per cent. of increase of any trees in the experiment. The excellent showing of the trees receiving manure is also doubtless partially due to its mulching effect.

In the other cultural plats, all those involving tillage without any definite fertilization have fallen much below the mulched trees in rate of growth. The intercrop here has apparently been a slight detriment, but the reduction in tree growth is less than 6 per cent. and judging from other results this is probably due more to a slightly unfavorable location, recently corrected by drainage, than to any necessary influence of the intercrops used. All cereals, excepting corn, have been excluded here and elsewhere in our experiments and none but tilled annuals have been used. The addition of an annual covercrop in Plat 11 shows a slight gain over its absence in No. 13, but the benefit even yet is much too small to make the addition pay.

Results on Young Trees at the College.—Most of the results in the above experiment are brought out more clearly and are extended considerably in two of the experiments

located near the college in the central part of the state. The treatments and results in one of these experiments are shown in Table II.

The soil in this case is of limestone origin, technically known as Hagerstown silt and clay loam, and it was badly run down in fertility before the trees were planted. This field also was in a rather poor sod, which was left undisturbed in plats 7 to 9, and the trees were merely planted with a spade and mulched, or mulched and manured, as indicated in the table. The other plats were plowed in the fall and thoroughly prepared as for corn before planting in the spring of 1908. Plats 1, 4 and 7 contain 45 trees each and the others 27, of three varieties—York Imperial, Stayman Winesap and Baldwin. The other details of treatment are as already indicated in connection with Table I, or as shown in the present table.

TABLE II. INFLUENCE OF CULTURAL METHODS ON TREE GROWTH AND SOIL MOISTURE.

(Average Increases in Trunk-girth, 1908-1913, the First Six Years, Experiment 331.)

Plat.	Treatment.	Average increase.	Gain over tillage alone.	Av. moisture Sept., 1913.	Rel. to optimum.
		In.	%	%	%
1	Tillage alone.....	5.19	....	10.6	53.0
2	Tillage, covercrop and intercrop	5.42	4.43	5.5	27.6
4	Tillage and covercrop	5.21	.39	8.5	42.7
5	Tillage, covercrop and manure	6.62	27.55	9.2	45.9
6	Tillage, covercrop and com. fertilizer.....	5.92	14.07	9.4	47.2
7	Mulch	6.32	21.77	17.1	85.6
8	Mulch and manure...	6.81	31.21	18.2	90.8
9	Mulch and com. fertilizer	6.89	32.26	18.1	90.4

In this case again the untilled, mulched and spade-planted trees have shown decidedly the best average growth. They also have developed by far the most blossoms and they would doubtless have borne a fair amount of fruit during

the past season had it not been killed by the unusually late and serious frosts. The addition of a mulch alone has given a gain in tree growth of more than 21 per cent. over the trees receiving annual tillage alone. On the same basis, the further addition of manure or a "complete" fertilizer shows an additional gain of about 10 per cent. more than the mulch alone.

In this case, therefore, it appears that moisture conservation, which is the chief accomplishment of the mulch, is about twice as important in trees of this age as the application of plant food. Fully half the benefit shown in plat 5 is also doubtless a result of the mulching effect of the manure, though this does not appear in the present moisture column, chiefly because in 1913 the mulching effect was purposely eliminated so far as possible by removing the accumulations from around the trees and working them into the soil.

While the mulched trees are doing so well, those receiving annual tillage alone are making the least growth of all, and the addition of a covercrop has improved it by less than a half of one per cent. Incidentally, the moisture content is noticeably less under the covercrop, and this reduction has evidently practically offset the plant-food additions that should have come from the annual leguminous covers. The further addition of an intercrop here has thus far actually improved the trees by a trifle more than 4 per cent., although the moisture content of this plat was lowest of all at the time taken. This result is probably due partly to the presence of a fertilizer in connection with the intercrop and also to the later seeding of the covercrop on this plat. The addition of a complete fertilizer in plat 6 is now showing a somewhat larger benefit than might be expected, but this has just begun to appear in the last couple of years, and its moisture situation is slightly favorable—a fact which shows up in the last two columns.

The striking correlation between moisture supply and the growth of young trees is evident here in the first two and

last two columns. The only important exception appears in the manure effects in plat 5 and this has already been at least partly explained. In general, therefore, on the average soil and with average moisture conditions the best growth of young trees will naturally be secured by the method that is most efficient in conserving moisture.

In this connection we may state that the samples for the present moisture determinations were taken on September 6, after a six-week period of unusual drought, which enabled us to test quite fully the moisture-conserving qualities of the various cultural methods. Only 1.27 inches of rain had fallen in the forty-three days immediately preceding the test, or only about 22.6% of the normal for the period, which is about 5.6 inches. The moisture was determined both in the first and second six inches of soil, at a distance of about four and one-half feet from the trees, and the figures given in the third column show the average moisture present in the surface foot. The figures in the last column are calculated from those in the third, on the basis that a moisture content of 20% is about the optimum or best possible content for the soil involved.

In both the third and fourth columns, the remarkable efficiency of the definite mulches in conserving moisture is evident. Next to them, but decidedly lower, comes the plat that had received tillage alone, while those receiving covercrops, and especially the one with an intercrop, had been reduced practically to an air-dry condition, from which little or no more moisture could be extracted by the trees. This comparison may be hardly fair to tillage, since the tests were made long after the regular tillage season was over. But they do show exactly what is likely to occur in the latter part of any season, with the result that the growth is frequently curtailed, under the drier conditions. And even the most active tillage has never yet proved equal in moisture conserving to a definite vegetative mulch, so far as the writer is aware. From this and other data now available, we would say that orchard tillage is simply to be regarded as preferable to sod or to the presence of other

untilled intercrops, but it is not equal to a definite mulch either in moisture conservation or in promoting the growth of young trees.

Results from Covercrops Alone.—The other experiment at the college referred to above is concerned with tillage and covercrops alone. This is because some form of annual tillage and covercrops was generally considered best at the time these experiments were started. Along with the twelve annual covers, however, we have one permanent cover, viz., alfalfa in plat 13. It was sowed the first year, along with the usual liming, manuring and inoculation necessary for its proper growth, and was turned under and immediately reseeded the following spring owing to a poor stand. Since then it has remained as a permanent cover and has been cut two or three times per season and placed around the trees as a mulch so far as needed. It thus has developed and maintained a very satisfactory mulch for five years without the addition of any outside materials. The other crops are seeded annually at the usual times and plowed under the following spring. The results thus far are shown in Table III.

TABLE III. INFLUENCE OF COVERCROPS ON TREE GROWTH.

(Average Increases in Trunk-girth, 1908-1913, the First Six Years, Experiment 333.)

Plat.	Treatment.	Average increase.	Gain over original size.	Rank.
		In.	%	
1	Medium Red Clover...	5.70	274.0	12
2	Mammoth Red Clover.	5.40	278.3	11
3	Alsike	5.53	298.9	9
4	Crimson Clover	6.00	339.0	6
5	Hairy Vetch	6.50	401.2	2
6	Cowpeas	5.75	273.8	13
7	Soy Beans	6.03	291.8	10
8	Oats and Peas.....	6.12	336.3	7
9	Rye	5.76	331.0	8
10	Millet	6.52	360.2	4
11	Rape and Turnips....	6.07	344.9	5
12	Buckwheat	6.65	363.4	3
13	Alfalfa	7.12	442.2	1

Here again the mulched and untilled trees of the alfalfa plat are distinctly in the lead. In fact their actual increases are the greatest of any trees in the entire experimental orchard of thirty-three acres. And this is accomplished without the addition of any outside materials whatever and by means of a plant that has been widely stated to be injurious to apple trees. The latter might possibly be the case where the roots are allowed to compete too freely, but where this is prevented as in the present case, the results are all that could be desired.

Among the annual covers the vetch has given the best per cent. of gain. It is a leguminous plant, of very low moisture draft owing to its hairy or woolly covering, and of a spreading and matted habit of growth which largely prevents direct evaporation from the soil. It is therefore not surprising that its trees should show an exceptional growth. Incidentally this plant is likely to be one of the best for a permanent cover and as a basis for mulch where it does not winter-kill too badly. Although naturally an annual, it is being kept satisfactorily without resowing, by means of a thorough discing along in August or whenever a sufficient amount of its own seeds have formed. This plan is now working very well both in Virginia and in Southern Pennsylvania, and it is well worth trying farther north, especially on the lighter or sandier soils.

The other leguminous annuals have not fared so well. This is especially true of the cow-peas and soy-beans which are practically at the bottom of the list. The unusually low rank of the medium red and mammoth clovers is probably due more to some unfavorable condition of the soil in their plats than to any direct action of the clovers themselves, because it has been difficult to get even them to grow satisfactorily. From the general characters of these plants we would expect them to rank about with crimson clover, which itself has unexpectedly dropped from third

to sixth position during the past year. In the case of the cow-peas and beans the difficulty appears to be largely due to the fact that they have to be seeded too early,—about the 25th to the 30th of June,—which materially shortens the tillage season, and the crops themselves soon begin growing vigorously and thus apparently do more harm through competition for moisture than good through the addition or release of plant food.

The high rank of the millet, buckwheat, rape, and cow-horn turnips, is worthy of note, and it is also rather hard to explain, though in the case of buckwheat it may be partly due to location. Our results with this class of crops, however, are not materially different from those of Emerson at the Nebraska Station, published in 1903 and 1906 in their Bulletins 79 and 92, and the same is true of our results with intercrops. Our results with mulches are also practically duplicated by the experiment at the Ohio Station, which is reported in their Bulletin 171.

This particular group of crops is composed of frost-killed annuals which make no demand for moisture in the spring and this is apparently much to their credit. The millet is much the best of the lot as a winter cover, and the rape and turnips are the poorest. For the average orchard, however, the writer is still inclined to prefer vetch and at least some of the clovers. But from the present indications and especially in view of the low cost of their seed, these plants are undoubtedly worthy of attention and they are very likely to come more nearly paying for themselves in many cases than many of the plants now frequently sown for orchard covers.

Cultural Methods in Orchards of Early Bearing Age.

The data from our experiments in orchards ranging from six to twenty years of age are too extensive and somewhat too complicated for definite presentation here. In gen-

eral, however, their results are not materially different in trend from those already given. The mulched trees have usually been first in both yields and growth, and they have been followed in most cases by those receiving tillage alone. The tillage and covercrop treatment has fallen slightly behind tillage alone in the majority of cases, while the sod treatment has practically uniformly resulted in the least growth, and it is now also last in yields in about two-thirds of the comparisons. The mulched fruit also has usually averaged largest in size, and generally second to sod in color. The sod fruit on the other hand has practically always been highest in color, but lowest or next to the lowest in size in most cases.

The addition of a mulch alone in these orchards, at the rate of about three tons per acre of outside materials, has given an average increase of about twenty-five bushels per acre annually, and a maximum average gain of thirty-six bushels. The mulch therefore must evidently be confined to relatively cheap materials in order to show an immediate and regular profit in trees of this age. In two cases out of nine the addition of covercrops has given an average increase of about twenty-five bushels per acre annually over the use of tillage alone. In one other case there has been a slight gain from the covercrops, but in all the remaining comparisons they have fallen behind tillage alone, and in one instance they now show a deficit of over forty bushels per acre. In growth the covercrops have shown a slight advantage in five cases out of nine, but the benefit has been too slight to justify clearly their use. In view of these and the other results already presented, it now seems inadvisable for any orchardist to make an extensive use of annual covercrops without first testing them fairly thoroughly and determining whether or not they are of any material value in his particular location.

Cultural Methods in Mature Orchards.

When we come to mature orchards, we find some reversals of previous form, especially in regard to growth. Data on this will be found in Table IV. This experiment is located on a sandy loam of alluvial origin in Wyoming County, north of Wilkes-Barre and Scranton. The trees are Baldwin and Spy and they were thirty-six years old at the start of the experiment in 1907. The usual orchard tillage has been used, along with annual leguminous covers composed of vetch and clover. The mulch has been made with annual applications of swamp hay at the rate of about three tons per acre, in addition to the intergrowth, which has been rather light. The manure has been added annually at the rate of 12 tons per acre, and the fertilizer at the rate of 30 pounds of nitrogen, 60 pounds of P^2O^5 and 100 pounds of K^2O per acre. At present, however, we are recommending only eight tons of manure or the fertilizer indicated later.

TABLE IV. INFLUENCE OF CULTURAL METHODS ON YIELD AND GROWTH, EXPERIMENT 221.

(Annual Yields Per Acre, 1909-1913, and the Average Increase in Trunk-girth, 1907-1912.)

	Average yields, last 5 years.		Average growth, 6 years.	
Treatment.	Tillage and covercrop.	Sod mulch.	Tillage and covercrop.	Sod mulch.
	Bu.	Bu.	In.	In.
Without fertilization	381.7	363.8	5.39	3.19
Gain over mulch....	17.9	....	2.20	...
Relative gain	4.9%	....	69.00%	...
Rank	1	2	1	2
With manure	436.8	561.4	6.72	4.26
Gain over lowest....	....	124.6	2.46	...
Relative gain	....	28.5%	57.70%	...
Rank	2	1	1	2
With fertilizer.....	463.4	489.7	6.06	4.16
Gain over lowest....	....	26.3	1.90	...
Relative gain	....	5.7%	45.60%	...
Rank	2	1	1	2

In this experiment, where the mulch alone has been compared with the tillage and covercrops alone, the latter have excelled in yield by about 18 bushels per acre annually. In this case, therefore, the covercrops are evidently furnishing something that cannot be fully equaled by the mulch. Their plant-food value may be coming more to the front in this soil and with trees of this age, where the cropping strain has been fully developed and plant-food has also been withdrawn for many years in the annual wood production.

In the other treatments, however, where definite amounts of plant food have been added to both cultural methods, the superiority in yields is still with the mulched trees. The advantage in one case amounts to more than 26 bushels per acre annually and in the other to nearly 125 bushels. This evidently makes it possible to continue orchards under the mulch treatment without loss of efficiency even after full maturity is reached, provided sufficient materials are available and a proper fertilizer is used.

As indicated in the table, the tree growth in this experiment has been rather decidedly greater throughout, under the tillage and covercrop treatment. In fact, it is quite possible that too much growth is being made by these trees in some cases. In any event, a large growth is generally objectionable in mature trees, and it is the growth that is associated with the highest average yields that count.

Relation of Cultural Methods and Fertilization to Steadiness of Yields.—It is not sufficient to have a good crop merely once in a while. It is the steady crop every year that counts and enables one to develop and maintain his reputation on the market. In this same experiment we have a rather striking case of steady and uniform crops being produced right alongside of the typical biennial sort. This appears in Table V, which shows the annual yields under the various treatments during the past seven years.

TABLE V. INFLUENCE OF CULTURAL METHODS, WITH AND WITHOUT FERTILIZATION, ON STEADINESS OF YIELD.

(Yields in Bushels Per Acre Annually for Seven Years in Experiment 221.)

	Treatment.	1907.	1908.	1909.	1910.	1911.	1912.	*1913.	Av. last 5 years.
		Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.
1	Covercrop alone	23	467	195	505	202	481	525	381.7
2	Mulch alone ...	29	221	215	391	246	439	527	363.8
3	Covercrop and manure	117	145	493	216	612	188	654	436.8
4	Mulch and manure	84	215	493	526	621	413	753	561.4
5	Covercrop and fertilizer	129	122	639	118	573	161	826	463.4
6	Mulch and fertilizer	38	199	409	560	370	416	693	489.7

* The 1913 yields are based on the Spy alone, since the Baldwins were seriously and irregularly affected by frost.

As shown in the table, in all the tilled plats there has been a well-defined biennial bearing habit, while in the adjacent plats receiving a mulch and fertilization, the yields have not only been steady but they have shown an almost continuous increase. The real cause of this difference is not yet fully determined, but it is apparently connected with three facts,—the presence of sufficient plant-food, the absence of excessive yields in any one year, and undisturbed root-systems on the mulched trees. Judging from our other similar data, none of these three conditions can be omitted without breaking up the series and destroying the steadiness and regularity of the fruiting.

These and other results apparently demonstrate the feasibility of obtaining practically annual crops from such supposedly refractory biennial bearers as the Baldwin, York, Imperial, Spy and Tompkins King, provided the

conditions are made right. They also indicate that where annual tillage is followed, it should be done with double-action discs or cutaways, or their equivalent, in preference to the regular plows, wherever the soil conditions will permit.

Relative Influence of Cultural Methods and Fertilization on Yield.

As apple trees become older, and their yields are increased, the need and influence of proper fertilization usually become greater. In most cases, this results sooner or later in the fertilization influence surpassing that of cultural methods.

Data on this are available in another of our experiments on Volusia silt loam, in Lawrence County north of Pittsburgh. This is in the famous Johnston orchard in which we have obtained such remarkable results from fertilization. The variety is Baldwin, now 25 years of age, and planted at the rate of 48 to the acre. The mulching and tillage have been the same as above, with the exception that all the cultural-method plats received a uniform application of fertilizer in 1911. This fertilizer was made up on a 6-10-5 basis and applied at the rate of about 600 pounds to the acre. The frost also injured the crop quite severely on most of the fertilized portion of this experiment in 1913, while that on the cultural-method plats was scarcely touched. Whatever experimental advantages have arisen therefore have been distinctly on the side of the cultural methods rather than otherwise. The results up to date are given in Table VI.

TABLE VI. RELATIVE INFLUENCE OF CULTURAL METHODS AND FERTILIZATION ON YIELD.

(Annual Yield Per Acre During Five Years, 1909-1913, in Experiment 338.)

Treatment.	An. yields per acre.	An. gain over sod.	An. gains 3 yrs., before fertilization of Cult. Methods.
(a) *Cultural Methods.*			
	Bu.	Bu.	Bu.
Sod	204.9	....	....
Sod mulch	293.2	88.3	22.0
Tillage and cover-crop	356.0	151.1	100.0
(b) *Fertilization.*			
Sod plus phosphate and potash	251.0	46.1	123.0
Sod plus nitrogen and phosphate	519.2	314.3	451.0
Sod plus manure	541.3	336.4	390.0

The results here are self-explanatory. Through a five-year period, the addition of a mulch alone has increased the annual yields by 88 bushels per acre over sod, and the substitution of tillage and covercrops have increased this gain to as much as 151 bushels. These are both important gains and they are the maximum thus far shown by either treatment in any of our experiments.

When we add certain kinds of fertilization to this same sod, however, still more important increases are secured. These have not been obtained by the orchard fertilizer commonly recommended, viz., phosphorus and potash. This combination has here given an increase of only 46 bushels per acre, and that incidentally is a fairly characteristic showing for this particular application. But when nitrogen and phosphorus are added, either in commercial form or in manure, the annual gains are more than twice as great as the maximum shown by the best of the cultural methods. And these results have been obtained merely by

spreading the proper fertilization over the surface of the ground, above the majority of the tree roots, and letting the rains carry it down,—and we also have other quite similar gains from this same combination elsewhere.

A General Fertilizer for Apples.

In view of the evident importance of proper fertilization in many orchards, we have derived from our present experimental results a general fertilizer that should meet the needs in most cases until the particular requirements of the given orchard can be ascertained. This general fertilizer is one carrying about 30 pounds of actual nitrogen, 50 pounds of actual phosphoric acid (P^2O^5) and 25 to 50 pounds of actual potash (K^2O). Where potash is not known to be lacking the smaller amount should be used, or after a little testing it may even be omitted entirely. With the smaller amount of potash, the essentials of this combination are carried in 500 pounds of a 6-10-5 fertilizer or its equivalent, and this is the amount recommended for an acre of bearing trees where most of the ground is to be covered. For younger trees these amounts should be reduced approximately in proportion to the reduction in area covered.

In our work about half of the nitrogen is carried in nitrate of soda and the other half in dried blood. This combination gives a quick action and also one that is prolonged well through the season. There is also no objection to stable manure or to leguminous covers for a part or all of the nitrogen, where they are available and have been shown to pay. With the other elements any of the ordinary carriers should be satisfactory and hence those that are actually least expensive or most convenient should be chosen.

If nitrates are used, the applications should not be made too early. From present indications, the best results with nitrates can probably be secured from applications made some time between the setting of the fruit and the first

of July. An incidental advantage of this delay appears in the opportunity that it offers to vary the rate of application somewhat in accord with the amount of fruit set. In other words, one can reduce the applications when the crop is light, because enough fruit buds are naturally formed under such conditions, and they may then be increased when the crop is large, so as to avoid a complete failure in the following year. The mineral fertilizers can be applied at any time and hence we apply them along with the nitrates. Manure also may be applied almost any time, excepting possibly late summer and fall, without danger of appreciable loss or ill effects.

As to method of application, we have simply scattered the fertilizer broadcast around the trees, applying it heaviest under the outer two-thirds of the spread of the branches, and grading it off more lightly for several feet beyond. It may then either be left on the surface to be washed in by the rains or it may be harrowed or lightly plowed into the soil. With this done, the results must not be expected until the following year at the earliest, and it may be even later before important results appear.

Adjusting the Fertilizer to Particular Orchards.

Not all orchards will respond to fertilization, and those that do will not always respond to the same elements. If one desires to find out just which of the ingredients of our general formula is most important in his own orchard, and which if any may well be reduced or omitted, he can do so by following the local testing plan given in Table VII. This plan is especially adapted to the needs of commercial orchardists and to "community" tests among the smaller growers. A test of this kind naturally requires some work, but as yet it is the only way that one can become really acquainted with the exact needs of his orchard, and where the income from it is important, the time thus spent should be most profitable.

TABLE VII. PLAN FOR LOCAL ORCHARD—FERTILIZER TEST.

(Pounds for a Mature Tree in Bearing.)

1	Check (unfertilized).
2	Nitrate, 2½ lbs.; Dried Blood, 3½ lbs.; Acid Phosphate, 10 lbs.
3	Nitrate, 2½ lbs.; Dried Blood, 3½ lbs.; Potash, 2 lbs.
4	Acid Phosphate, 10 lbs.; Potash, 2 lbs.
5	Check.
6	Nitrate, 2½ lbs.; Dried Blood, 3½ lbs.; Acid Phosphate, 10 lbs.; Potash, 2 lbs.
7	Same as 6, plus Lime, 12 to 25 lbs.
8	Manure, 400 lbs.
9	Check.

This test should be located in a typical part of the orchard, and should include not less than five average trees of the same variety and age in each plat. All the trees should be labeled and carefully measured at a fixed point on the trunk, and definite records of their growth and yields should be kept for at least three years. Frequently, good indications of the orchard's needs may be obtained in less time than this, but at least this period should be allowed and more should be used when necessary.

The same time and methods of application should be followed as described above. The materials are indicated here in amounts per bearing tree instead of per acre as above, and the same proportionate reductions should be made for younger trees. In other words, if only a third of the ground is to be covered, then only about a third of these amounts should be used, if the rate of application is to be kept within proper bounds. This test or its equivalent, properly carried out, will give one a more exact knowledge of the real fertility needs of his orchard than can be secured in any other way now known.

ESSAYS.

ESSAYS.

DAIRYING.*

RICHARD PATTEE, SECRETARY NEW ENGLAND MILK PRODUCERS' ASSOCIATION.

Agricultural prosperity depends largely upon soil fertility. Those agricultural practices which most cheaply and efficiently perpetuate and increase the fertility of her soil constitute, other things being equal, the best system of farming for our state. The history of agriculture in all times and in all places shows that the surest way to build up the productivity of land is to return to it as fertilizer the largest possible amount of the vegetation produced on that land by feeding farm crops to live-stock. The ideal is to feed crops to stock, use manure thus made to grow larger crops to feed more stock; then more crops and more stock until the land reaches its maximum production. The natural increase of the stock and the by-products sold measure the value of the productivity of the land. Generally speaking, this was the system of farming practiced in New Hampshire during the past period of her greatest agricultural prosperity. To such a system, adapted to modern conditions, must she return for her agricultural restoration.

Our lapse from such a system is easily accounted for. The opening of vast areas of rich, free land in the West, and the establishment of cheap, quick transportation facilities arrogated millions of dollars from the East, and attracted large numbers of the most progressive and intelli-

* Essay especially prepared for this report.

gent young men. There, land was cheap and sure to rise in value; there, land was productive without the addition of fertilizers—producing its maximum without artificial upbuilding or restoration.

To-day, the conditions which led to the abandonment of eastern for western farming have largely ceased to exist. The rapid peopling of the West, the breaking up of its vast ranches into smaller farms, and the approaching exhaustion of its virgin fertility have removed in a large measure the old-time inequality of conditions. The tremendous increase of population absorbs a larger and larger proportion of the products of central and western farms at its source and drives the price of land ever upward—in some cases already to an almost prohibitive figure. The demand of the eastern market, which is again on the ascendancy, is no longer coveted by the West. The operation of these causes has led to an interesting reversal of conditions under which the cheap lands of the country, measured in dollars to be paid, or production to be had, are now in the eastern states. Already the flow of money and intelligence has turned and people all over the United States are looking to New England for profitable farms. Evidence of the fact is found in the constantly increasing number of inquiries for New Hampshire farms and the higher prices likely to be obtained for New Hampshire land. Live-stock farming, the repopulation of our hills and valleys with flocks and herds, has already begun and will increasingly continue.

During the past depressive period in New Hampshire agriculture, dairy cattle have most persistently clung to our farms. The best business practices and the necessities of man require that, while the primary object of stock-raising may be fertility and productivity, there must be secondary returns to offset in the largest possible way the expenses of maintenance. Like other branches of farming, the dairying of New Hampshire has under-

gone, and is now susceptible to, interesting and important changes.

Years ago the surplus milk on our farms became home-made butter or cheese that was marketed, largely in exchange for other commodities, through the local trader. Skim-milk and butter-milk went to growing calves or the production of pork. With the advent of improved machinery, creameries and cheese factories sprang up and flourished. This era removed much work from the homes and left the women of the farms with more leisure. It established a higher standard of quality for butter and, through the use of the Babcock test, did much to create interest in breeding and in the selection of better dairy stock. But here again the West came into competition with the East. The breaking up of ranches into small farms, making beef production less attractive; the establishment of coöperative creameries and cheese factories there; the perfection of the refrigerator car; and other causes have operated against the successful continuance of the creamery business of New Hampshire.

Chief among such other causes has been the recent development of the market for whole milk and cream. The growing demands of the cities and towns of New England for these products have largely eliminated the butter-making industry in New Hampshire. Creamery after creamery has surrendered its patrons to the siren call of the whole milk contractors and gone out of business. The conditions under which this change has been brought about reflect, in some cases at least, little credit to the foresight of the seller or to the integrity of the buyer. Practically the whole milk production of the state is now sold either as whole milk or cream in the city markets.

So far human ingenuity has not devised a carrier system which enables far distant production to compete with

nearby farmers in the supply of milk and cream. Milk averages to be carried less than three hundred miles. The consumption of the New England cities has only recently increased to absorb the production of our farms. There seems to be no likelihood that distant competition will soon have to be met in this field. Under the old regime, at certain times in the year there had been a surplus production to be transformed into butter in competition with a distant production of the same article, thus destroying in large part the advantage of the non-competitive condition in the market for whole milk. Until within two or three years there has been a big potential supply of milk within reasonable transportation distance from the cities, which has acted as a check upon any material advance in price. All that has been necessary to utilize this supply was for the market to bid slightly more for the milk as such than it was worth as an equivalent amount of butter in competition with the West. Gradually the milk and cream market absorbed this supply until in all New England it had become so small that its total absorption was in sight; and the removal of the competitive feature and the establishment of a monopolistic market was at hand. Recent changes in our economic legislation have introduced a new element, however, which will have to be considered.

The removal of the tariff on milk and cream has made available to the New England city market a vast supply of dairy products, well within quick transportation distance. Already this field of production has been entered upon by city milk buyers. Competition with Canadian production has for the first time been introduced to New Hampshire farmers.

The milk and cream consumption of Boston and vicinity amounts now to about $8,000,000 annually. It is growing rapidly. Heretofore this vast sum has been released in

New England in the purchase, transportation and handling of these products. The money thus transferred to the farming and allied industries has gone to increase the purchasing power of New England people and has found its way inevitably into New England's banking and industrial systems. Should any considerable part of this sum be sent to the Canadian provinces, it will as naturally and inevitably flow away from New England through the banking and industrial systems of the Canadian people and a serious loss must be sustained by localities which have had a secondary though important interest in the matter.

These conditions have come to the notice of the bankers and business men through the activities of the New England Milk Producers' Association. The Boston Chamber of Commerce, together with State and Federal Departments of Agriculture in New England, has recently devoted much study to the situation with a view to betterment for local production in competition with Canadian sources.

Notable features of the dairy business of New Hampshire have been the growth of the demand for cream and manufactured products of cream. The demand for raw cream has doubled many times within the past few years and, during the summer months, the ice cream trade requires more cream than our dairies can supply. Cream is sold upon a butter fat basis, which has stimulated the establishment of record keeping cow-test associations and better breeding. Machinery, even, has been introduced for turning fresh butter back to cream in order that a part of the surplus milk and butter might be more profitably utilized than if thrown on the butter market during a period of congestion. A large demand for butter-milk has been developed. This beverage can now be found at soda fountains, hotels, restaurants and saloons,

and adds, in some measure, to the value of milk. An interesting modern development is the commercial bread supply. Hundreds of tons of bread are sold in stores and markets all over New England. This business consumes no small amount of skim-milk and milk powder.

Cost records, carefully kept, have disclosed the fact that many, if not most, of the cows of New Hampshire fail to return to their owners enough value in milk products to pay for their keep. There is a very general effort throughout the state to bring up to a paying basis the quantity and quality of production. "Less cows and better ones" has been the slogan that is now giving way to "Better cows and more of them." At present prices there is no profit in the cow that makes less than 6,000 pounds of milk per year, and the average of New Hampshire's cows is less than that. Under these circumstances there is little wonder that cows are disappearing, but this is no cause for discouragement. We are firmly convinced that paying cows are gaining in numbers—very decidedly so—and this is a very hopeful feature.

Whether a cow reimburses her owner for care and keep, or fails to do so, depends not only on the amount and quality of her product but also on the market price per unit of production. Any movement to stabilize the price of dairy products, especially milk, will be a help to the New Hampshire farmer. It is of little use to increase production if the prices are to be lowered. To this end we welcome and support the effort being made to establish uniform prices for the longest possible periods of time.

EDUCATION IN RELATION TO HOME, FARM AND SHOP IN NEW HAMPSHIRE PUBLIC SCHOOLS.

[Pursuant to the law which makes it possible for the Department of Agriculture to coöperate in every legitimate way with the Department of Public Instruction for the betterment of education and agriculture, the following paper and illustrations submitted by Deputy Superintendent of Public Instruction George H. Whitcher are included in this report to show something of the status of agricultural instruction in the schools of our state.]

The real object of all education is to so discipline each individual that in his productive years he may be able to adjust himself and his surroundings into a mutually satisfactory relationship both as to the individual himself and to society at large. This view of the education process mutually makes the *environment*, as well as the individual, an important factor in school planning and administration.

Education, being a process of adjustment, is known to be best accomplished by *doing things now* rather than by *knowing that others have done things in the past;* it is an individual development brought about by personal activity and, what is of still greater importance, this activity must be predominantly physical in the early school days with a constantly, but not too rapidly, increasing mental accompaniment as the school years pass. At no time, however, within the public school years from six to eighteen, must the physical factor drop to a subordinate position relative to the mental factor. To do things with the hands, the brain of the individual thereby being normally stirred into action, as it was in the race when facility of the hand led, causes and conditions brain development,— this is the secret of the superiority of the modern reorganized school with its utilization of farm, field and forest; of the tools and utensils employed in tillage, in the household, in the shop; of the processes of plant husbandry, stock-feeding, horticulture, cooking, canning,

laundering, spinning, knitting, sewing, weaving, etc., as contrasted with the school of the past with its emphasis unduly placed upon the deeds of the dead and the thoughts of days gone by.

In the early pioneer days it is true there was much of the physical, manipulative element in the education of both boys and girls, for then the primitive household and farm industries provided *in the home* the real basis of that purposeful training of which so much is justly said; but as these industries one by one vanished from field and fireside, nothing came to take their places as educative agencies capable of developing that king of qualities, "gumption," until the public schools were literally driven to supply the deficiency.

This is the history of the development of the Practical Arts Courses in the public schools throughout the civilized world of to-day.

What New Hampshire is Doing in Practical Arts Education.

New Hampshire high schools have made rapid advancement in Practical Arts education in the past ten years, as the following summary clearly shows:

Courses.	1904.	1914.
Mechanic Arts	1	8
Domestic Arts	0	41
Agriculture	0	21
Commercial Arts	10	39

At the present time (September, 1914), there are 98 approved high schools in New Hampshire, and of these 21 have one Practical Arts course, 23 have two Practical Arts courses, and 14 have three Practical Arts courses. In all 58 have some form of practical adjustive education based upon some one or more groups of com-

mercial or industrial activities common in their respective localities, thus bringing the school and the community into closer relationship and at least making possible an education both broad and serviceable to the youth of that community.

The few photographic reproductions herewith presented are selected from more than a hundred of like nature secured by the Department of Public Instruction the past year.

The following inadequate outline merely suggests a few of the constructive and productive projects from last year's high school Practical Arts work:

AGRICULTURE.

Soil examination, in field and laboratory.

Testing new seed: Corn, potatoes, oats.

Raising staple field crops: Corn, potatoes, oats.

Horticulture: Pruning, grafting, budding, raising small fruits.

Stock feeding: For beef, pork, milk, eggs.

Farm mechanics: Building carts, wheelbarrows, ladders, repairing and reconstructing buildings, laboratories, etc. Making and ironing whiffletrees, eveners, neck yokes, etc.

DOMESTIC ARTS.

Canning and preserving: Fruits, berries and vegetables put up in a great variety of ways and in quantities up to 300 cans in some cases.

Cookery: Everything required to serve complete meals and for the purpose of actually serving luncheons and dinners. Making raised bread, etc.

Sewing: Making a complete list of everything needed for clothing and personal use from a pocket handkerchief to an elaborate graduation dress, a winter garment, and a school-made hat.

Household appliances: Careful first-hand study and investigation of the numerous tools, utensils and appliances found in a modern home; a study of the scientific principles involved in their use.

Farm and household sanitation: A careful study of the means whereby milk and food may be kept in wholesome condition; the methods of sewage and garbage disposal; proper heating, ventilating, etc.

Household design and decoration: Plans of houses made, schemes of decoration worked out; actual decoration of teachers' rooms, Domestic Arts rooms, etc.; draperies made and stenciled, and embroidered work.

Thus the two oldest and most fundamental of all human occupations, *home-making,* with all that the phrase implies, and *farming,* by means of which alone the race exists, are made the basis of education in our rural schools.

This fact is of large significance to those who now and in the future turn their thoughts towards New Hampshire, not merely as a summer playground, but as a real home where children may be raised and educated for usefulness and where the world's supply of men and women as well as of food and clothing may be added to and improved.

TABLE OF SCHOOLS BY COUNTIES.

	Hillsboro.	Coos.	Grafton.	Carroll.	Belknap.	Strafford.	Rockingham.	Sullivan.	Cheshire.	Merrimack.
Agriculture	3	4	1	0	1	0	3	2	3	4
Domestic Arts.....	6	6	4	0	3	1	5	4	4	8
Commercial Arts...	6	5	11	0	3	4	3	2	1	5
Mechanic Arts.....	1	1	1			1	1		1	2
	16	16	17	0	7	6	12	8	9	19

KIMBALL UNION ACADEMY.—An old basement made over into an inexpensive but warm and sanitary modern cow stable where the class in stock-feeding carry on tests.

Alton High School Boys Planting Beans.

"Learning to Do by Doing."
Boys in Agronomy Class at Warner High School.

Pinkerton Academy.—Boys and girls weeding, hoeing and watering an extensive and intensive school garden. (The best co-educational effort and the nearest to an ideal school scene I have ever photographed.—G. H. W.)

Pinkerton Academy, Derry, N. H., Boys Spraying Fruit Trees with Lime-Sulphur Spray.

Alton High School Boys Pruning Trees.
Six boys in this school earned $250 last spring Saturdays pruning trees for farmers in that vicinity.

Alton High School Boys "Dehorning" a "Skyscraper."

WEEK SCHOOLS AND DEMONSTRATIONS.

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WEEK SCHOOLS.

Plans are being perfected for a week school to be held in coöperation with local authorities in the town of Gilmanton. The purpose of this school is to furnish a foundation in the fundamental principles of agriculture and domestic science which shall enable those attending to undertake a more successful and up-to-date type of farming and home-keeping. The exercises will be a blending of schoolroom methods and the general lecture systems. Starting with the problems and fundamental principles of fertilization, the course will lead through the proper culture and disposition of crops, and the feeding and breeding of the different farm animals. Lectures and demonstrations in domestic science will cover the fundamentals of cookery, cutting and designing, and home adornment both internal and external. It is expected that a class of young men will be made up of individuals who will endeavor to be present at every session and to make a systematic study of the material presented. All attendants will be urged to provide themselves with paper and pencil for taking notes. This will be the first school of the kind ever held in the state of New Hampshire. It will be held at Dockham's Hall, Gilmanton Iron Works, from November 2 to 6, inclusive. A detailed account of the same will appear in our next report.

DEMONSTRATIONS.

In the field of demonstration it seemed advisable to work with the fairs. In accordance with this plan, Prof. J. A. McLean, head of the Department of Animal Husbandry at the Massachusetts Agricultural College, was secured to

give demonstrations in judging dairy cattle at the Greenfield Fair on August 26. Mr. J. C. Farmer, a successful poultryman, of South Newbury, N. H., was also engaged to give demonstrations in killing and dressing poultry. These exercises proved successful and plans are formulated for similar work at all the larger fairs to be held in the state. Prof. W. H. Wolff, of the Horticultural Department, New Hampshire College, has been secured to demonstrate box and barrel packing of apples in conjunction with the demonstrations of Messrs. McLean and Farmer at Rockingham Fair on the days of September 2, 3 and 4. Similar work will be carried on at the Rochester Fair, to be held in Rochester, September 22 to 25, inclusive, and at the fair in Plymouth, September 29, 30 and October 1.

An exhibit has been prepared for the fairs to occupy about 500 square feet of space. Concessions of this amount have been secured at Rockingham, Rochester and Plymouth. The exhibit consists of pictures showing some of the most desirable farm land in our state, including good houses, smooth fertile fields, and magnificent scenery. Some statisties giving the status of different types of live-stock in New Hampshire during the past few decades will be on exhibition in order that he who runs may read. Samples of typical grains and grasses will be used for decorating purposes, and plates of fruit will be arranged for the two later fairs. A comprehensive and detailed exhibit of the moth suppression work will be shown, including pictures and mounts of the more common insects, with printed instructions for their control; also all stages of the gypsy and browntail moths, and the parasites imported for the destruction of these newly acquired enemies of our forest and orchard trees. Bulletins of the Department of Agriculture relating to feed, fertilizer and seed inspections, and divers college publications dealing with the moth work will be distributed. An attendant will give courteous attention to those who may ask questions in seeking information relative to the exhibit or to the work of the department.

FURTHER ACTIVITIES OF THE DEPARTMENT.

FURTHER ACTIVITIES OF THE DEPARTMENT.

Besides the specific law creating the Department of Agriculture there are other separate and distinct laws which the commissioner is required to put into effect and enforce. They control the following divisions:

Contagious diseases of animals.
Feeding-stuffs inspection.
Fertilizer inspection.
Seed inspection.
Moth suppression.
Nursery inspection.
Milk, cream and butter shipments.
Immigration and advertising.

A report of what has been done in each department is herewith submitted:

CONTAGIOUS DISEASES OF ANIMALS.

The work under this division covers a varied field of activities ranging from the granting of permits for the movement of domestic animals, both within the state and interstate, to the control and suppression of infectious and contagious diseases.

The law seems to be adequate to meet all the exigencies that arise in this particular department, and with the exception of a few minor changes, which will be recommended, I strongly advise that it remain as it now is.

The law and regulations controlling this work, the orders issued, the records of inspections, number of animals destroyed and the cost to the state, follow:

CHAPTER 113, PUBLIC STATUTES.

UNITED STATES INSPECTORS.

SECTION 1. The governor is authorized to accept on behalf of the state the rules and regulations prepared by the commissioner of agriculture under and in pursuance of section three of an act of congress approved May 29, 1884, entitled, "An act for the establishment of a bureau of animal industry, to prevent the exportation of diseased cattle, and to provide means for the suppression and extirpation of pleuro-pneumonia and other contagious diseases among domestic animals," and to coöperate with the authorities of the United States in the enforcement of the provisions of such act.

SECT. 2. The inspectors of the bureau of animal industry of the United States shall have the right of inspection, quarantine, and condemnation of animals affected with any contagious, infectious, or communicable disease, or suspected of being so affected, or that have been exposed to any such disease; and for these purposes are authorized and empowered to enter upon any ground or premises. They shall have power to call on sheriffs, constables, and peace officers to assist them in the discharge of their duties in carrying out the provisions of said act of congress; and it is made the duty of said officers to assist them when so requested. The inspectors shall have the same powers and protection as peace officers while engaged in the discharge of their duties.

SECT. 3. All damages and expenses incurred under the preceding sections shall be paid by the United States, and in no case shall this state be liable for any part thereof.

STATE BOARD OF CATTLE COMMISSIONERS.

SECT. 4. The secretary of the State Board of Agriculture, the master of the New Hampshire State Grange of the Patrons of Husbandry, and the secretary of the State

Board of Health, for the time being, shall constitute a board, to be known as the State Board of Cattle Commissioners. If a vacancy in the board shall occur, the governor, with the advice of the council, shall fill it by appointment, and the appointee shall hold office until the vacancy in the office occasioning the vacancy in the board is filled.

SECT. 5. The board shall make investigations in regard to the existence of contagious and infectious diseases among domestic animals within the state, and may make regulations prohibiting the introduction into the state of animals so diseased, and controlling or prohibiting their transportation, and such other regulations as the board deems necessary to exclude or arrest any such disease, and may modify or amend its regulations as the circumstances shall require.

SECT. 6. The board may employ skilled veterinarians and agents and servants to aid in the performance of the duties assigned to the board.

SECT. 7. Any person or corporation who shall violate any of the regulations of the board shall be fined not exceeding one hundred dollars.

SECT. 8. The compensation and expenses of the board shall be audited and fixed by the governor and council, and shall be paid from the state treasury, but all expenses incurred under the provisions of this chapter shall not exceed ten thousand dollars in any one year.

CARE AND DISPOSITION OF DISEASED ANIMALS.

SECT. 9. Selectmen shall cause all horses infected with glanders or other contagious disease, and all other domestic animals infected with contagious diseases, or which have been exposed to such diseases, to be collected in some suitable place or places and kept isolated from other animals so long as may be necessary to prevent the spread of the diseases.

SECT. 10. In the performance of the duties prescribed by the preceding section, the selectmen shall be governed by the regulations and directions that may be made or given on the subject by the State Board of Cattle Commissioners.

SECT. 11. The State Board of Cattle Commissioners, or, if they have not taken cognizance of the case, the selectmen of the town in which the animal is, may order any domestic animal to be killed and buried, which, in the opinion of a veterinary surgeon selected by them, has a contagious or infectious disease.

SECT. 12. The owners of animals so killed shall be entitled to recover of the town the value of such animals in their diseased condition, if they have been owned in the state three months at least before the disease was detected. The State Board of Cattle Commissioners or the selectmen, as the case may be, shall cause the value to be ascertained by the appraisal of three competent and disinterested persons selected by them, who shall be sworn to the faithful discharge of their duties.

SECT. 13. In case the owner is aggrieved by the appraisal, he may appeal by petition to the supreme court within thirty days after he is notified of the appraisal. He shall notify the town of his appeal, and enter and prosecute it as he would if it were a civil action at law wherein the same amount of damages was claimed, and judgment shall be rendered therein in like manner.

SECT. 14. If upon such appeal he recovers a larger sum than the appraisers awarded him, he shall recover his taxable costs; otherwise he shall pay costs.

SECT. 15. All damages and expenses incurred under the six preceding sections, except expenses incurred by the State Board of Cattle Commissioners, shall be paid by the town in the first instance; but four fifths thereof shall be reimbursed to it from the state treasury. The governor and council shall audit all claims thus presented

and the governor shall draw his warrants upon the treasurer for the amounts allowed in favor of the towns entitled thereto.

PRECEDENCE IN AUTHORITY.

SECT. 16. In cases where United States inspectors, state commissioners and selectmen, or any two of such boards, take action with reference to the same subject matter under the provisions of this chapter, they shall have precedence in authority in the order above named.

PENALTIES IN CERTAIN CASES.

SECT. 17. Any person or corporation who shall bring into the state between the twentieth day of May and the twentieth day of October any Texas or Cherokee cattle that have not been kept north of the Ohio or Missouri river during the winter immediately preceding, shall be fined not exceeding twenty-five dollars for each animal so brought into the state. The term Texas or Cherokee cattle shall be construed to mean the native cattle of Texas and Louisiana and the classes of cattle known under those names.

SECT. 18. Any person who shall expose, or suffer to be exposed, in any highway, public place, or pasture, any horse affected by the disease known as glanders, shall be fined not exceeding fifty dollars for each offense, for the benefit of the town or city where the offense is committed.

SECT. 19. Any person exposing any domestic animal as aforesaid, affected with any other contagious or troublesome disease, shall be fined not exceeding twenty-five dollars for each offense for the benefit of the town.

SECT. 20. It shall be the duty of selectmen and police officers of towns in which any of the offenses mentioned in the three preceding sections shall be committed, to cause the offenders to be prosecuted.

Amendment of 1893.

At the session of the legislature of 1893 the following amendment was passed:

Section 1. The owners of cattle killed by order of the State Board of Cattle Commissioners shall recover of the state one half the value of such animals upon a basis of health, said value to be ascertained by a disinterested appraisal, provided they have been owned in the state three months at least before the disease was detected.

Sect. 2. All acts and parts of acts inconsistent with this act are hereby repealed, and this act shall take effect upon its passage.

Amendment of 1911.

AN ACT TO AMEND SECTION 1, CHAPTER 33, LAWS OF 1895, RELATING TO PAYMENT FOR CATTLE WHICH ARE KILLED BY ORDER OF THE BOARD OF CATTLE COMMISSIONERS OF ANY STATE.

Be it enacted by the Senate and House of Representatives in General Court convened:

Section 1. Amend section 1, chapter 33, Laws of 1895, by inserting the words of any state between the words "commissioners" and "shall" in the second line of said section by striking out the word "the" between the words "of" and "state" in said second line, and inserting in place thereof, the word this, by striking out the words "have been" in the fifth line and inserting in place thereof the word are, and by inserting after the word "owned" in said fifth line the following: by a citizen of this state and, by adding to said section, after the word "detected" in the last line the following: *And provided* that not more than thirty days shall have elapsed since said cattle have been removed from this state, so that said section as

amended shall read as follows: SECTION 1. The owners of cattle killed by order of the State Board of Cattle Commissioners of any state shall recover of this state one half the value of such animals upon a basis of health, said value to be ascertained by a disinterested appraisal, *provided* they are owned by a citizen of this state, and in the state three months at least before the disease was detected. *And provided* that not more than thirty days shall have elapsed since said cattle have been removed from this state.

[Approved April 14, 1911.]

REGULATIONS GOVERNING ADMISSION OF CATTLE TO THE STATE.

To Transportation Companies, Stock Dealers and Owners, and All Persons Whom It May Concern:

1. Sheep, goats, swine and all other domestic animals excepting neat cattle, may be brought into the state without a permit from the State Board of Cattle Commissioners.

2. No neat cattle from any state, territory, district, or country shall be brought into the state of New Hampshire except upon a permit issued by the State Board of Cattle Commissioners.

3. All neat cattle, excepting calves under six months of age, to be brought into New Hampshire from any state, territory, district, or country for any other purpose than pasturing or exhibition must first pass the tuberculin test at the hands of a competent and regularly educated veterinary surgeon, or one recommended by the proper authorities of the state from which the cattle are to be sent. Upon receipt of examination papers, showing that the animal is free from tuberculosis, a permit will be issued. Blanks for the use of veterinary surgeons will be furnished upon application.

4. Permits will be granted under the following conditions to all parties who desire to bring cattle into New Hampshire for pasturing purposes: A physical examination must be made by a qualified veterinarian approved or recommended by the Live-Stock Commission, or his agent, of the state from which the cattle are to be sent.

A metal tag shall be placed in the ear of each animal, which shall bear the abbreviated name of the state from which the cattle came and a number legibly stamped thereon. A record of the same shall be made by the veterinarian, signed by him and the owner and forwarded to the office of the Department of Agriculture, Concord, N. H.

5. Regulation No. 4 shall apply to the bringing of cattle into New Hampshire for exhibition purposes except that it shall not be necessary to use the metal tag.

6. This order is issued under authority of chapter 113 of the Public Statutes of New Hampshire, and all violations will be prosecuted according to law.

A blank like the following outline must be filled out before inspections for tuberculosis will be instigated:

STATE OF NEW HAMPSHIRE.

DEPARTMENT OF AGRICULTURE,

DIVISION OF ANIMAL INDUSTRY,

CONCORD, N. H.

APPLICATION FOR CATTLE INSPECTION.

To the Commissioner,

DEAR SIR:—I hereby make application for an inspection of my herd of cattle in regard to which I make the following statement:

My entire herd consists of.....
Number showing disease.....

The disease suspected is.....
Symptoms of disease first noticed when.....
The symptoms stated in full are.....
.....
.....
.....
.....
These cattle are at my stable.....
miles from.....the nearest railroad station.

If an investigation is made and by a physical examination you find tuberculosis or any other communicable disease in the herd, I hereby authorize you to take such action as you may deem best, with the understanding that the expense of making the examination is to be borne by the state, and that according to the law, I am to receive one-half the health value of all animals condemned and destroyed in the presence of myself or of my agent. I agree to disinfect the stable and take such other precautionary measures as the department may require.

.....
P. O. Address.....
Date.....19 .

NOTE:—All applications will be carefully considered, and, if in the opinion of the commissioner an inspection is necessary, a veterinary will be sent to make the examination as soon as the case is reached in its order.

When the above blank is sent out it is accompanied with a sheet of instructions as follows:

INSTRUCTIONS.

1. When a herd of cattle, or any animal in it, shows symptoms of tuberculosis, and it is desired that an examination be made, application must be made upon blanks furnished by the Department of Agriculture for that purpose and EVERY SYMPTOM FULLY DESCRIBED.

2. Cattle will not be examined simply upon a suspicion that tuberculosis may be present. The animal must show symptoms of the disease, otherwise an inspection will not be made. A cough, alone, is not sufficiently indicative of tuberculosis, but there must be other symptoms also, chief among them a progressive loss of flesh.

The owner should isolate the animal from the rest of the herd, and hold it under observation for a sufficient length of time to be reasonably sure that the disease exists before reporting the case.

3. All investigations authorized by the Commissioner will be made by competent veterinary surgeons and will be by PHYSICAL EXAMINATION ONLY. The tuberculin test cannot be recognized under the law as sufficient reason to authorize destroying animals at the expense of the state. On this account, applications for examination should not be made until the case has reached the stage above referred to.

4. As tuberculosis in cattle is of several months' duration before terminating fatally, the urgency for investigation is never so great as to require telegraphic or telephonic request for an examination. In all cases the facts should be reported by mail.

5. It is not always possible to make an investigation at once, even when deemed necessary, as other examinations may have priority; but cases can usually be reached in a few days after the application is received.

6. In the event that any cattle are destroyed by order of the commissioner the state will pay the owner one-half the appraised value of the animal in good health, but no losses will be paid on any animal that has not been in the state at least three months prior to the discovery of the disease. No cattle will be paid for by the state except those destroyed by order of the commissioner. After the report of the veterinarian has been received all claims will be immediately filed with the state auditor for payment.

THE FOLLOWING IS THE NUMBER OF CATTLE AND STABLE INSPECTIONS FROM SEPTEMBER 1, 1913, TO SEPTEMBER 1, 1914.

1913.

September	31
October	27
November	29
December	27

1914.

January	21
February	19
March	27
April	28
May	32
June	32
July	18
August	22
Total	313

FINANCIAL STATEMENT.

September 1, 1913, to September 1, 1914.

Appropriation		$15,000.00
Refund of mileage account of Richard Pattee,		5.85
		$15,005.85
313 stables and herds inspected.		
238 tuberculous cattle destroyed (one half health value)	$5,344.25	
29 glandered horses destroyed (diseased value)	145.00	
97 New Hampshire cattle destroyed in Massachusetts (one half health value, less salvage)	1,372.53	
Services of veterinarians	1,374.00	
Expenses of veterinarians	779.77	
Services and expenses of appraisers within the state	93.15	
Services and expenses of appraisers at Brighton, Mass.	140.44	
Postage, stationery and office supplies	239.02	
		9,488.16
Unexpended balance		$5,517.69
For possible expenses of epidemic		$3,000.00
On account of glanders in Rochester and vicinity		225.00
Unexpended balance		$2,775.00

ANALYSIS OF FEEDING-STUFFS FOR 1914

MADE FOR THE

STATE DEPARTMENT OF AGRICULTURE

By B. E. Curry and T. O. Smith,

Experiment Station Chemists.

STATE LAW.

An Act to Regulate the Sale of Concentrated Commercial Feeding-stuffs.

Section 1. Every manufacturer, company, or person, who shall sell, offer, or expose for sale or for distribution in this state any concentrated commercial feeding-stuff used for feeding farm live stock, shall furnish with each car or other amount shipped in bulk and shall affix to every package of such feeding-stuff, in a conspicuous place on the outside thereof, a plainly printed statement clearly and truly certifying the number of net pounds in the package sold or offered for sale, the name or trademark under which the article is sold, the name of the manufacturer or shipper, the place of manufacture, the place of business, and a chemical analysis stating the percentages it contains of crude protein, allowing one per centum of nitrogen to equal six and one-fourth per centum of protein, of crude fat, and of crude fibre, both constituents to be determined by the methods prescribed by the association of official agricultural chemists. Whenever any feeding-stuff is sold at retail in bulk or in packages belonging to the purchaser, the agent or dealer, upon request of the purchaser, shall furnish to him the certified statement named in this section.

Sect. 2. The term "concentrated commercial feeding-

stuffs,'' as used in this act, shall include linseed meals, cottonseed meals, pea meals, cocoanut meals, gluten meals, gluten feeds, maize feeds, starch feeds, sugar feeds, dried brewers' grains, malt sprouts, hominy feeds, cerealine feeds, rice meals, oat feeds, corn and oat chops, wheat, rye and buckwheat bran and middlings, ground beef, or fish scraps, mixed feeds and all other materials of similar nature; but shall not include hays and straws, the whole seeds nor the unmixed meals made directly from the entire grains of wheat, rye, barley, oats, Indian corn, buckwheat and broom corn.

SECT. 3. Before any manufacturer, company, or person shall sell, offer, or expose for sale in this state any concentrated commercial feeding-stuffs, he or they shall, for each and every feeding-stuff bearing a distinguishing name or trade-mark, file annually during the month of December with the secretary of the Board of Agriculture a certified copy of the statement specified in the preceding section, said certified copy to be accompanied, when the secretary shall so request, by a sealed glass jar or bottle containing at least one pound of the feeding-stuff to be sold or offered for sale, and the company or person furnishing said sample shall thereupon make affidavit that said sample corresponds within reasonable limits to the feeding-stuff which it represents, in the percentage of protein and fat which it contains.

SECT. 4. Each manufacturer, importer, agent, or seller of any concentrated commercial feeding-stuffs, shall pay annually during the month of December to the secretary of the Board of Agriculture an analysis fee of fifteen dollars, for each brand offered for sale within the state. Whenever a manufacturer, importer, agent, or seller of concentrated commercial feeding-stuff desires at any time to sell such material and has not paid the analysis fee therefor in the preceding month of December, as required by this section, he shall pay the analysis fee prescribed

herein before making any such sale. The amount of analysis fees received by said secretary pursuant to the provisions of this section shall be paid by him to the treasurer of the state of New Hampshire. The treasurer of the state of New Hampshire shall pay from such amount when duly approved the moneys required for the expense incurred in making the inspection required by this act and enforcing the provisions thereof. The secretary of the Board of Agriculture shall report biennially to the legislature the amount received pursuant to this act, and the expense incurred for salaries, laboratory expenses, chemical supplies, traveling expenses, printing, and other necessary matters. Whenever the manufacturer, importer, or shipper of concentrated commercial feeding-stuff shall have filed the statement required by section 1 of this act and paid the analysis fee as prescribed in this section, no agent or seller of such manufacturer, importer, or shipper shall be required to file such statement or pay such fee.

SECT. 5. The secretary of the Board of Agriculture shall annually cause to be analyzed at the New Hampshire College Agricultural Experiment Station, at least one sample, to be taken in the manner hereinafter prescribed, of every concentrated commercial feeding-stuff sold or offered for sale under the provisions of this act. Said secretary shall cause a sample to be taken, not exceeding two pounds in weight, for said analysis, from any lot or package of such commercial feeding-stuff which may be in the possession of any manufacturer, importer, agent, or dealer in this state; but said sample shall be drawn in the presence of the parties in interest, or their representatives, and taken from a parcel or a number of packages, which shall not be less than ten per centum of the whole lot sampled, and shall be thoroughly mixed, and then divided into two equal samples, and placed in glass vials and carefully sealed and a label placed on each stating the

name of the party from whose stock the sample was drawn and the time and place of drawing, and said label shall also be signed by the person taking the sample, and by the party or parties in interest or their representatives at the drawing and sealing of said samples; one of said duplicate samples shall be retained by the secretary and the other by the party whose stock was sampled, and the sample or samples retained by the secretary shall be for comparison with the certified statement named in section 3 of this act. The result of the analysis of the sample or samples so procured, together with such additional information as circumstances advise, shall be published in reports or bulletins from time to time.

SECT. 6. Any manufacturer, importer, or person who shall sell, offer or expose for sale or for distribution in this state any concentrated commercial feeding-stuff, without complying with the requirements of this act, or any feeding-stuff which contains substantially a smaller percentage of the constituents than are certified to be contained, shall, on conviction in a court of competent jurisdiction, be fined not more than one hundred dollars for the first offense, and not more than two hundred dollars for each subsequent offense.

SECT. 7. Any person who shall adulterate any kind of meal or ground grain with milling or manufacturing offals, or any other substance whatever, for the purpose of sale, unless the true composition, mixture, or adulteration thereof is plainly marked or indicated upon the package containing the same or in which it is offered for sale; or any person who knowingly sells, or offers for sale, any meal or ground grain which has been so adulterated unless the true composition, mixture, or adulteration is plainly marked or indicated upon the package containing the same, or in which it is offered for sale, shall be fined not less than twenty-five or more than one hundred dollars for each offense.

SECT. 8. Whenever said secretary becomes cognizant of the violation of any of the provisions of this act he shall prosecute the party or parties thus reported; but it shall be the duty of said secretary, upon thus ascertaining any violation of this act, to forthwith notify the manufacturer, importer, or dealer in writing, and give him not less than thirty days thereafter in which to comply with the requirements of this article; but there shall be no prosecution in relation to the quality of any concentrated commercial feeding-stuff if the same shall be found substantially equivalent to the certified statement named in section 3 of this article.

SECT. 9. This act shall take effect December first, nineteen hundred and one.

THE CONSTITUENTS OF FEEDING-STUFFS.

In the complete chemical analysis of a feeding-stuff the following determinations are made: moisture, ash, protein, fat, fibre, and nitrogen-free extract. The value of a feeding-stuff is generally based on the amount of protein and fat it contains. For that reason these two constituents are often the only ones determined. We are, however, beginning to realize that while the amount of protein and fat is important, at the same time the carbohydrates are also very important and in many classes of feeding-stuffs form the chief source of value.

MOISTURE.

Water is present to some extent in all classes of feeds. The per cent. in most cases varies between five and fifteen. The amount varies with the nature of the feed, the process of manufacture, and the manner of storage.

ASH.

The ash of a feed is the residue left after burning off the organic matter. It represents the inorganic or mineral constituent of the plant. This part of the feed furnishes the material for the bones of the animal.

CRUDE PROTEIN.

By crude protein is meant that portion of a feeding-stuff which contains nitrogen. Nitrogenous feeds build up muscular tissue and the proteins are of the greatest importance in determining the value of a feed. Most of the crude protein in the plant is found at the point of growth, or in the leaves and seeds.

CRUDE FAT.

The term crude fat is rather arbitrarily used to include all the substances of the feed soluble in dry ether or similar solvents. They are the pure fats, such as cotton-seed oil, linseed oil, etc., and the waxes, resins, chlorophyl, etc. These latter substances are generally so small in amount that for practical purposes the ether extract of a feed represents the amount of fat which it contains. The fats are readily digested and rank next to protein in value.

FIBRE.

The crude fibre in a feeding-stuff is that portion which goes to make up the cell-walls and structural material of the plant. It is fairly indigestible and in general a *high* percentage of crude fibre indicates a *low-grade* feed.

NITROGEN-FREE EXTRACT.

The nitrogen-free extract is that portion of the feed readily extracted by water or dilute acids and composed

of non-nitrogenous materials. The principal substances included under the term are starches and sugars.

CARBOHYDRATES.

The term carbohydrates is sometimes used in speaking of feeding-stuffs. It is generally used to include both crude fibre and nitrogen-free extract. A feeding-stuff which contains small amounts of moisture, ash and crude fibre must be classed as high grade, if digestible. When these constituents are present in small amounts the total amount of the valuable constituents—protein, fat and nitrogen-free extract—must be high.

The Value of a Chemical Examination of Commercial Feeding-stuffs.

The chemical analysis of feeding-stuffs is valuable in many ways, chief of which are the following:

1. It shows whether or not the guarantees of the manufacturer are correct.
2. It protects the buyer against the unscrupulous manufacturer or retailer.
3. It aids the buyer in deciding money values in purchasing feed.
4. It affords a clue as to the nature of the constituents of the feed.
5. It furnishes data for making up any desired feeding ration.
6. It enables the consumer to decide whether it is a useful feed for his particular purpose.

The following definitions are given for the use of the consumer and represent the terms used for the particular feeding-stuffs by the general trade:

General Definitions.

COTTONSEED MEAL.

Cottonseed meal is the meal obtained from the cottonseed kernel after the extraction of the oil. The following standard classification adopted by the Inter-State Cottonseed Crushers' Association will interest the buyer of cottonseed meal:

"*Choice cottonseed meal* must be finely ground, perfectly sound and sweet in odor, yellow, free from excess of lint, and by analysis must contain forty-nine per cent. of combined protein and fat."

"*Prime cottonseed meal* must be finely ground, of sweet odor, reasonably bright in color, yellow, not brown or reddish, free from lint, and contain at least forty-six per cent. of combined protein and fat."

"*Good cottonseed meal* must be finely ground, of sweet odor, reasonably bright in color, and by analysis must contain at least forty-three per cent. of combined protein and fat."

LINSEED MEAL.

Linseed meal, oil meal, or flaxseed meal is the ground residue from the extraction of oil from flaxseed. The oil is extracted by two processes, known as the old process and the new process. In the old process the oil is simply expressed from the seed by hydraulic pressure. In the new process naphtha or a similar solvent is used to extract the oil. On account of the extraction being more complete when a solvent is used, the new process generally contains less fat than the old process, while they contain about the same per cent. protein.

WHEAT PRODUCTS.

Wheat bran is the coarse outer covering of the wheat berry. It contains much of the fibrous material of the grain, but is rich in protein.

Middlings or shorts. These terms have generally the same meaning in the trade, and are the fine particles of the outer bran as well as considerable starchy matter. They are the intermediate product between bran and flour.

Red dog is a low-grade wheat flour containing the finer particles of bran.*

Wheat mixed feed or shipstuff is a mixture of the by-products from the milling of the wheat berry.*

Mixed feed. The term mixed feed has been so generally used to mean a mixture of wheat products that it is practically a misrepresentation to use the term to mean a mixture of other cereals. A feed carrying less than fifteen per cent. protein and four per cent. fat cannot be a good mixed feed.

CORN PRODUCTS.

Corn bran is the outer coating of the corn kernel.* It has a low feeding value.

Corn and cob meal is the ground whole ear of corn. In this case the cobs are not considered an adulterant.

Gluten meal is a product obtained in the manufacture of starch and glucose from corn. It is the flinty portion of the kernel which lies in its outer circumference just beneath the hull.*

Gluten feed is a product obtained in the manufacture of starch and glucose from corn and is a mixture of gluten meal and corn bran to which may be added the residue resulting from the evaporation of the so-called "steep water."*

Corn feed meal is the siftings obtained in the manufacture of cracked corn and table meal made from the whole grain.*

Hominy meal, feed or chop is the bran and germs of the corn kernel and may contain a part of the starchy portion of the kernel.*

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* Definitions marked (*) are those adopted by the Association of Feed Control Officials of the United States.

DISTILLERY AND BREWERY BY-PRODUCTS.

Distillers' dried grains are the dried residue from cereals obtained in the manufacture of alcohol and distilled liquors.*

Brewers' dried grains are dried barley grains after they have been malted and the soluble sugar and dextrin extracted.

Malt sprouts are the sprouts of the barley grain.*

MISCELLANEOUS PRODUCTS.

Alfalfa meal is the entire alfalfa hay ground and does not contain an admixture of ground alfalfa straw or other materials.*

Meat meal is finely ground beef scraps.*

Buckwheat shorts or middlings are that portion of the buckwheat grain immediately inside of the hull after separation from the flour.*

Molasses feeds are generally a mixture of some filler such as oat hulls, oat clippings, flax bran, or grain screenings with molasses and a concentrated feed, such as cottonseed meal, brewers' grains, or malt sprouts.

Filler is a term used to designate certain by-products generally of little feeding value used to give weight and bulk to concentrated feeds in the manufacture of compounded feeds. Among the materials commonly used as fillers are: ground corn corbs, peanut hulls, oat hulls, cotton seed hulls, grain screenings, flax plant stems and pods, rice hulls, etc. These materials are ground so fine that their presence is discovered only by careful examination, sometimes only with the aid of a microscope. Most fillers contain relatively small amounts of crude protein and crude fat and large amounts of crude fibre. The presence of a filler in some cases may actually decrease the value of the concentrates present.

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* Definitions marked (*) are those adopted by the Association of Feed Control Officials of the United States.

Compound feeds are those feeds bearing trade names which are not descriptive in any way of the materials which have been used in their manufacture. They may contain any mixture of stock feed materials and therefore cannot be compared with standards of average composition. They often represent various industrial by-products such, for example, as are obtained in the manufacture of breakfast foods.

FEEDING-STUFFS INSPECTION AND ANALYSIS.

1914.

The samples of the various brands of feeding-stuffs for the 1914 inspection were collected by Mr. C. J. Bickford under the direction of the retiring State Board of Agriculture and the new Commissioner of Agriculture. In all 278 samples have been analyzed at the Experiment Station.

It has been the custom for the Experiment Station to analyze miscellaneous samples of feeding-stuffs without cost to the person sending the samples. This practice will be continued provided the person sending the samples will at the same time send the following information:

1. Name of the brand of feeding-stuff.
2. Name and address of the manufacturer.
3. Name and address of the dealer.
4. Guarantee under which feed is sold.
5. Number of bags sampled.
6. Number of bags in lot.

Until the above information can be obtained no analyses will be made.

In taking samples, equal representative portions should be drawn from at least six bags and thoroughly mixed. More bags should be sampled when large lots are involved. A pound of the mixture should be sent for analysis. Samples should be sent in a tight box or a pint fruit jar.

It is worthy of attention to note here at least one sharp practice of the feed trade. Some jobbers are selling their customers cotton seed meal guaranteed to carry 41 per cent. protein. When the meal arrives it is found to be guaranteed 38.62 to 43 per cent. protein. The guarantee bears the statement that a rebate of 50 cents per unit will be paid when the meal fails to meet the invoice guarantee. If the meal is accepted it must be accepted on a 41 per cent. basis, and the retailer is obliged to bear the inconvenience and expense of having the meal analyzed. The practice is both unfair and sharp. The jobber buys the meal on a 38.62 per cent. basis and sells to the retailer on a 6.1 per cent. advance. If the jobber gets caught he simply pays the rebate and appears virtuous; if he does n't get caught he pockets the 6.1 per cent. profit. The ultimate consumer, the farmer, pays the bill. A matter of 6.1 per cent. means but little to the individual consumer but it aggregates a very large sum where the jobber handles thousands and thousands of tons of the meal. A good many of our dairymen are paying the price of 41 per cent. meal for meal guaranteed to carry only 38.62 per cent. protein. There seems to be no way to get at these exceedingly clever jobbers except through the consumer. There can be no obvious gain for the consumer to contribute 6.1 per cent. additional net profit to the jobber. In some instances it appears that the retailer is taking advantage of the consumer and is making the extra profit himself. The average consumer who reads the guarantee and "rebate" clause may not suspect that often the "invoice" guarantee to the retailer is higher than the guarantee on the tags. The retailer usually does n't care much because he simply adds commission to his cost. These facts are noted here so that the consumer of cottonseed meal may have an opportunity to know the game through which he is made a victim.

The brands of feeding-stuffs sampled the present year

are not different from what have been found other years. There are many first-class products on the market and there seems to be no reason why the careful feeder cannot secure first class products for his purpose.

There are also certain very poor feeding-stuffs on the market. Most of these contain large quantities of crude fibre and small quantities of protein. It is doubtful if some of the products can be used profitably for any purpose. This must be true because of the low quality of the goods and the relatively high prices for which they are sold. It is difficult to understand why a part of the consuming public will continue to purchase low grade feeds which have an unknown feeding value and pay almost, if not altogether, as high a price as must be paid for standard products which have a known feeding value. Freight rates and commissions are no less on oat hulls, corn cobs and sphagnum moss than on wheat feeds, brewers' and distillers' grains, cottonseed meal, etc. However, some very inferior products come on to our market year after year.

The writers wish to acknowledge the assistance rendered by Messrs. H. M. Eastman, M. H. Broggini, G. L. Ham, and A. J. Grant, in preparing the following analytical data.

Name of Sample.	Manufactured by	Address.	Protein.		Fat.		Crude Fibre.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
WHEAT FEEDS.								
Trojan Middlings	Allen & Wheeler Co.	Troy, Ohio	17.16	15.00	5.00	4.00	.....	6.00
Trojan Mixed Feed	Allen & Wheeler Co.	Troy, Ohio	16.81	14.50	4.79	4.00	.....	8.00
Middlings	Ansted & Buck Co.	Springfield, Ohio	19.18	14.50	4.61	4.00	.....	4.50
Wm. Tell Bran	Ansted & Buck Co.	Springfield, Ohio	14.80	14.00	4.71	3.00	.....	9.00
Atlas Bran	Atlas Flour Mills Co.	Milwaukee, Wis.	15.24	15.00	5.59	3.50	12.01	12.00
Fancy Winter Mixed Feed	C. W. Bailey & Co.	Montpelier, Vt.	16.99	16.00	4.89	3.70	.....	8.50
Fancy Low Grade Flour Middlings	Barber Milling Co:	Minneapolis, Minn.	18.04	18.00	4.21	5.00	.91	4.00
Winona Bran	Bay State Milling Co.	Winona, Minn.	16.64	15.00	5.57	5.00	.....	11.00
Choice Bran	L. G. Campbell Milling Co.	Owatonna, Minn.	16.55	13.40	5.38	4.50	.....	12.20
Commander Standard Middlings	Commander Mills	Minneapolis, Minn.	17.43	15.00	6.06	4.00	.....	9.00
Pure Wheat Flour Middlings	Consolidated Milling Co.	Minneapolis, Minn.	18.48	15.50	5.81	4.50	.....	6.00
Bran (Winter Wheat)	Wm. A. Coombs Milling Co.	Coldwater, Mich.	15.33	14.00	4.68	3.00	.....	.....
Middlings (Winter Wheat)	Wm. A. Coombs Milling Co.	Coldwater, Mich.	16.73	15.00	4.57	3.00	5.95	.....
Mixed Feed (Winter Wheat)	Wm. A. Coombs Milling Co.	Coldwater, Mich.	16.99	16.00	5.44	3.00	.....	.....
Monogram Fancy Bran	Chas. M. Cox Co.	Boston, Mass.	15.50	15.00	5.31	4.00	.....	10.00
Wirthmore Middlings	Chas. M. Cox Co.	Boston, Mass.	16.90	15.00	5.15	4.00	.....	7.00
Wirthmore Wheat Feed	Dominion Flour Mills Co.	Boston, Mass.	16.55	16.00	5.30	4.00	.....	7.00
Tiger Middlings	Chas. M. Cox Co.	Detroit, Mich.	17.08	16.00	5.50	5.00	.....	.....
Bran	Detroit Milling Co.	Montreal, Can.	16.81	15.00	5.87	4.75	.....	11.00
Boston Mixed Feed	Duluth Superior Milling Co.	Duluth, Minn.	16.99	15.00	5.39	4.00	8.80	9.50
Duluth Imperial Bran	Duluth Superior Milling Co.	Duluth, Minn.	16.20	15.00	5.57	4.00	9.32	11.25
Red Dog Flour Middlings	Duluth Superior Milling Co.	Duluth, Minn.	18.39	17.00	6.14	4.50	.....	4.00
Bran and Screenings	B. A. Eckhart Milling Co.	Chicago, Ill.	14.80	14.00	5.30	3.00	9.24	.....
E-A-Co. Winged Horse Bran	Everett, Aughenbauck & Co.	Waseca, Minn.	16.29	14.00	5.37	3.00	.....	12.00
E-A-Co. Winged Horse Mixed Feed	Everett, Aughenbauck & Co.	Waseca, Minn.	17.51	15.00	5.30	3.00	7.70	12.00
Lucky Spring Bran	Federal Milling Co.	Lockport, N. Y.	15.85	15.00	5.52	4.50	.....	11.00
Sphinx Fancy Flour Middlings	Federal Milling Co.	Lockport, N. Y.	16.73	17.00	5.69	4.50	.....	9.00
Sphinx Fancy Mixed Feed	Federal Milling Co.	Lockport, N. Y.	16.64	15.50	5.38	4.00	.....	9.00
Grafton Mixed Feed	Grafton Roller Mill Co.	Grafton, No. Dak.	16.99	15.50	4.51	6.10	.....	11.90
Grafton Wheat Feed	Grafton Roller Mill Co.	Grafton, No. Dak.	16.64	15.40	5.29	4.50	.....	9.30
Xtragood Mixed Feed	Griswold & Mackinnon	St. Johnsbury, Vt.	19.26	16.00	5.12	4.00	.....	7.00

WHEAT FEEDS.—*Continued.*

Red Dog Flour	The Gwinn Milling Co.	Columbus, Ohio	20.40	.....	3.98	.....	2.41	.....
Wheat Bran	The Gwinn Milling Co.	Columbus, Ohio	16.38	15.70	4.33	4.40	.....	1.80
Wheat Middlings	The Gwinn Milling Co.	Columbus, Ohio	17.08	17.00	5.70	4.00	.....	8.00
Hecker's Standard Middlings	Hecker-Jones-Jewell Milling Co.	Buffalo, N. Y.	17.86	16.00	6.99	5.50	8.53	8.00
Purity Mixed Feed	The Wm. S. Hills Co.	Boston, Mass.	16.90	15.00	5.67	4.00	.....	10.00
Ben-Hur Flour Middlings	Hennepin Mill Co.	Minneapolis, Minn.	18.13	17.00	5.57	5.00	.....	6.00
Pure Wheat Middlings	John Hoffer Flouring Mill Co.	Steelton, Pa.	17.16	.....	3.95	.....	.....	.....
Robin Hood Bran	Robbin Hood Mills, Ltd.	Canada	16.25	16.25	5.38	5.20	.....	9.80
Vixen Flour Middlings	E. C. & W. L. Hopkins (Agt.).	Greenfield, N. H.	20.49	.....	3.96	.....	.....	.....
Pure Flaky Bran	Hubbard Milling Co.	Mankato, Minn.	16.38	15.00	5.80	4.80	.....	11.50
Standard Fine Middlings	Hubbard Milling Co.	Mankato, Minn.	16.90	14.50	6.22	5.10	.....	10.00
Sunshine Mixed Feed	Hunter-Robinson-Wing Mill. Co.	St. Louis, Mo.	15.85	14.50	4.45	4.00	7.12	2.00
Jenk's White Middlings	The Huron Milling Co.	Harbor Beach, Mich.	14.19	13.00	3.43	3.50	.....	2.50
Standard Spring Wheat Bran and Mill-Run Screenings	Indiana Milling Co.	Terre Haute, Ind.	16.51	14.00	5.31	4.00	.....	11.00
Paleface Bran	Kehlor Flour Mills Co.	St. Louis, Mo.	17.08	14.00	4.56	3.50	5.88	10.00
Anchor Mixed Feed	Kemper Mill & Elevator Co.	Kansas City, Mo.	16.11	16.00	4.91	4.00	.....	10.00
Carnation Gray Middlings	Kemper Mill & Elevator Co.	Kansas City, Mo.	19.26	16.00	5.48	4.30	.....	6.00
Buckwheat Middlings	Larrowe Milling Co.	Detroit, Mich.	11.91	.....	2.00	.....	25.08	.....
Snow Flake Mixed Feed	Lawrenceburg Roller Mills Co.	Lawrenceburg, Ind.	17.43	15.20	4.26	4.30	.....	8.00
Elmco Fancy Bran	Listman Mill Co.	La Crosse, Wis.	15.94	15.80	4.91	4.72	.....	8.43
Waseo Bran	Lyon & Greenleaf	Wauseon, Ohio	14.80	14.50	5.15	4.00	.....	9.50
Waseo Middlings	Lyon & Greenleaf	Wauseon, Ohio	16.99	16.00	5.49	4.00	.....	6.00
Waseo Mixed Feed	Lyon & Greenleaf	Wauseon, Ohio	15.06	15.00	5.28	4.00	.....	8.00
Wheat Bran	J. G. Lysle Milling Co.	Leavenworth, Kan.	14.71	15.00	4.23	4.00	.....	10.00
Flour Middlings	Medelia Roller Mills C. S. Christensen Co.	Madelia, Minn.	16.85	14.25	5.59	3.00	.....	5.35
Bran	Maple Leaf Milling Co.	Canada	14.89	.....	5.22	.....	.....	.....
Rex Middlings	Maple Leaf Milling Co.	Canada	16.73	16.00	5.58	5.50	.....	10.00
Brooks' Fancy Mixed Feed	A. H. McLeod Milling Co.	St. Johnsbury, Vt.	17.18	16.00	5.34	4.00	.....	8.00
Frese Ground Mixed Feed	Geo. O. Moon & Co.	Binghampton, N. Y.	16.81	16.50	5.36	5.00	8.89	7.00
Mystic Bran	Mystic Milling Co.	Sioux City, Iowa	15.85	14.00	4.89	4.50	.....	15.00
Osota Pure Wheat Bran and Pure Wheat Middlings	National Milling Co.	Toledo, Ohio	17.08	17.00	5.00	4.50	.....	8.00
Pennant Mixed Feed	National Milling Co.	Toledo, Ohio	17.41	16.00	4.82	3.75	.....	8.50
Pure Wheat Bran	National Milling Co.	Toledo, Ohio	16.11	16.50	5.36	5.50	11.42	12.50
Hiawatha, Special Mixed Feed	New England Flour Co.	Boston, Mass.	16.87	15.00	5.21	3.00	.....	10.00
Powerful, Standard Bran	New England Flour Co.	Boston, Mass.	14.10	14.00	5.83	3.00	.....	12.00
Seal of Minnesota Bran	New Prague Flouring Mills Co.	New Prague, Mo.	14.94	14.60	5.58	4.76	10.85	11.00

Name of Sample.	Manufactured by	Address.	Protein.		Fat.		Crude Fibre.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found	Guaranteed.
WHEAT FEEDS.—*Continued.*								
Low Grade Flour Middlings	Niagara Falls Milling Co	Niagara Falls, N. Y.	16.20	16.00	3.85	3.00	1.45	1.25
Bran	Northwestern Consol. Mill. Co.	Minneapolis, Minn.	16.64	14.50	5.62	4.00	.....	11.00
Flour Middlings	Northwestern Consol. Mill. Co.	Minneapolis, Minn.	16.38	15.50	6.20	4.50	.....	6.00
Middlings	Northwestern Consol. Mill. Co.	Minneapolis, Minn.	15.41	15.00	6.02	4.50	.....	10.00
Mixed Feed	Northwestern Consol. Mill. Co.	Minneapolis, Minn.	17.43	15.00	5.75	4.00	.....	10.00
Planet Feed	Northwestern Consol. Mill. Co.	Minneapolis, Minn.	17.51	15.00	5.99	4.00	6.70	8.00
XXX Comet	Northwestern Consol. Mill. Co.	Minneapolis, Minn.	18.04	16.50	6.43	4.00	.....	3.00
Pillsbury's Bran	Pillsbury Milling Co	Minneapolis, Minn.	15.76	14.50	6.12	4.00	10.80	11.00
Pillsbury's Fancy Mixed Feed	Pillsbury Milling Co	Minneapolis, Minn.	17.25	16.00	5.14	4.50	.....	8.00
B Middlings	Pillsbury Milling Co	Minneapolis, Minn.	15.85	15.00	5.24	4.00	.....	8.00
Pillsbury XX Daisy	Pillsbury Milling Co	Minneapolis, Minn.	17.51	10.00	4.84	4.00	.....	4.00
Normal, Flour Middlings	C. Plummer (Agent)	E. Jaffrey, N. H.	17.86	.....	4.76	.....	.....	.....
Champion Mixed Feed	Portland Milling Co	Portland, Mich.	16.99	13.56	5.03	8.47	6.37	3.58
Middlings	Porter & Co	Winona, Minn.	16.55	15.00	6.42	4.50	.....	10.00
Wheat Bran	Postum Cereal Co., Ltd	Battle Creek, Mich.	15.68	15.00	4.01	2.00	.....	24.00
Bran	C. D. Prescott (Agent)	Greenville, N. H.	15.59	.....	4.61	.....	10.03	.....
Bell Cow Middlings	Quaker Oats Co	Chicago, Ill.	16.20	15.30	5.77	5.50	.....	7.60
Buckeye Mixed Feed	Quaker Oats Co	Chicago, Ill.	19.00	15.50	5.57	4.50	.....	8.50
Middlings	A. H. Randall Mill Co	Tekonsha, Mich.	16.64	14.00	4.96	5.00	.....	3.50
Bran	Russell-Miller Milling Co	Minneapolis, Minn.	15.85	13.00	5.27	4.00	.....	11.00
Occident Wheat Feed	Russell-Miller Milling Co	Minneapolis, Minn.	18.48	15.00	5.81	4.50	6.81	10.00
Regular Wheat Feed	Russell Flour Co	Albany, N. Y.	17.16	15.00	5.48	4.50	.....	10.00
Standard Middlings	Russell-Miller Milling Co	Minneapolis, Minn.	17.25	15.00	6.09	4.00	.....	9.00
Gold Mine Wheat Feed	Sheffield-King Milling Co	Minneapolis, Minn.	17.08	15.90	5.55	4.80	.....	8.80
Shredded Wheat Waste	The Shreded Wheat Co	Niagara Falls, N. Y.	12.61	10.00	2.16	1.50	.....	2.00
Rich Bran or Mill Run	Standard-Tilton Milling Co	St. Louis, Mo.	16.73	14.00	4.85	4.00	7.67	.....
Wheat Middlings	Star & Crescent Milling Co	Chicago, Ill.	16.11	15.00	5.17	4.00	.....	10.00
Star Wheat Bran	F. W. Stock & Sons	Hillsdale, Mich.	16.55	15.00	6.62	4.00	.....	8.00
Winter Wheat Bran	F. W. Stock & Sons	Hillsdale, Mich.	15.33	15.00	4.39	4.00	.....	10.00
Superior Wheat Feed	F. W. Stock & Sons	Hillsdale, Mich.	16.55	16.00	5.10	4.50	.....	7.00
Try-Me Mixed Feed	Sparks Milling Co	Alton, Ill.	16.55	16.00	4.62	3.50	.....	8.00

WHEAT FEEDS.—*Continued.*							
Fine White Middlings	David Stott	Detroit, Mich	15.85	16.00	4.30	5.00	6.00
Heavy Mixed Feed	David Stott	Detroit, Mich	16.64	16.00	5.00	4.00	9.00
Honest Mixed Feed	David Stott	Detroit, Mich	17.34	16.50	5.06	5.00	.....
Pennant Middlings	David Stott	Detroit, Mich	17.51	17.00	5.11	5.50	7.00
Stott's Pure Spring Wheat Bran	David Stott	Detroit, Mich	16.46	10.00	4.93	4.00	10.00
Stag Flour	David Stott	Detroit, Mich	15.00	15.00	2.38	1.50	3.00
Middlings	Stratton & Co	Concord, N. H	15.76	16.20	4.80	4.26	6.50
Mill Bran	Stratton & Co	Concord, N. H	16.55	.....	4.66	.....	.....
Mixed Feed	Stratton & Co	Concord, N. H	14.19	14.00	4.77	4.00	7.09
Chippewa Fancy Middlings	Traders & Producers Supply Co.	Buffalo, N. Y	16.99	16.00	5.22	5.50	9.00
Wheat Bran	Union Mill Co	Cedar Falls, Iowa	14.71	14.00	5.50	4.00	10.00
Farmers' Favorite Cow Feed	Valley City Milling Co	Grand Rapids, Mich.	17.33	14.18	4.98	4.25	9.98
Farmers' Favorite Middlings	Valley City Milling Co	Grand Rapids, Mich.	15.94	15.50	4.99	4.25	7.71
Vimco Winter Wheat Bran	Valley City Milling Co	Grand Rapids, Mich.	16.55	14.38	5.31	5.00	5.92
Middlings	Voigt Milling Co	Grand Rapids, Mich.	15.59	.....	4.84	.....	.....
Mixed Feed	Voigt Milling Co	Grand Rapids, Mich.	16.55	16.50	4.78	5.50	10.00
Pure Bran	Voigt Milling Co	Grand Rapids, Mich.	17.69	17.00	4.58	6.50	5.00
Adrian Red Dog Flour Middlings	Washburn-Crosby Co	Minneapolis, Minn.	19.18	17.00	6.21	5.00	7.50
Coarse Bran	Washburn-Crosby Co	Minneapolis, Minn.	14.63	14.50	5.95	4.00	4.00
Flour Middlings	Washburn-Crosby Co	Minneapolis, Minn.	17.43	17.00	5.20	5.00	11.00
Standard Pure Hard Wheat Middlings	Washburn-Crosby Co	Minneapolis, Minn.	16.73	15.00	6.00	4.00	6.00
Wheat Bran with Ground Screenings	Washburn-Crosby Co	Minneapolis, Minn.	16.64	14.50	5.81	4.00	6.19
Wheat Superior Mixed Feed	Washburn-Crosby Co	Minneapolis, Minn.	16.46	16.00	5.69	4.50	10.73
Bran	Webster Mill Co	Webster, So. Dak.	16.11	15.10	5.46	4.60	9.00
Mixed Feed	Webster Mill Co	Webster, So. Dak.	16.73	15.30	5.89	4.80	11.70
Bran	Western Canada Flouring Mills Co.		16.61	16.82	5.42	5.50	10.10
Kent Mixed Feed	The Williams Bros. Co	Kent, Ohio	14.28	12.00	3.87	2.00	6.63
COTTONSEED MEAL.							
Red Tag Cottonseed Meal	American Cotton Oil Co	Clarksdale, Miss	39.69	38.55	9.11	7.00	8.00
Cottonseed Meal	American Oil Co	Americus, Ga	39.81	.....	7.18	.....	11.50
Cub Prime Cottonseed Meal	F. W. Brode & Co	Memphis, Tenn	39.76	40.00	8.02	6.00	.....
Dove, High-grade Cottonseed Meal	F. W. Brode & Co	Memphis, Tenn	38.70	38.63	8.35	6.00	10.00
Owl High-grade Cottonseed Meal	F. W. Brode & Co	Memphis, Tenn	42.73	41.00	9.03	6.00	10.00
Buckeye Prime Cottonseed Meal	Buckeye Cotton Oil Co	Cincinnati, Ohio	39.03	38.50	8.49	6.50	10.00
Old Gold High Grade Cottonseed Meal	T. H. Bunch Commission Co	Little Rock, Ark	40.19	38.62	7.52	6.00	10.00

Name of Sample.	Manufactured by	Address.	Protein.		Fat.		Crude Fibre.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
COTTONSEED MEAL.—*Cont'd.*								
Good Luck Cottonseed Meal	S. P. Davis	Little Rock, Ark.	41.70	41.00	10.50	7.00	.....	10.50
Medium Grade Cottonseed Meal	Enterprise Cotton Oil Co.		39.84	.....	8.37	.....	8.47	.....
Dixie Cottonseed Meal	Humphreys-Godwin Co.	Memphis, Tenn.	42.12	38.62	7.12	6.00	.....	8.00
Forfat Cottonseed Meal	Humphreys-Godwin Co.	Memphis, Tenn.	38.87	38.62	8.94	6.00	11.11	8.00
Peacock Cottonseed Meal	Keeton-McArthur Co.	Atlanta, Ga.	39.93	41.00	6.73	6.00	.....	10.00
Pilgrim Cottonseed Meal	J. E. Soper & Co.	Boston, Mass.	40.89	38.50	7.75	5.00	.....	10.00
Pioneer Cottonseed Meal	J. E. Soper & Co.	Boston, Mass.	42.99	41.00	7.71	7.00	.....	10.00
Cottonseed Meal	Stratton & Co.	Concord, N. H.	28.68	.....	6.64	.....	.....	.....
Creamo Cottonseed Meal	Stratton & Co.	Concord, N. H.	37.83	20.00	6.37	5.00	.....	.....
Cottonseed Meal	Stratton & Co.	Concord, N. H.	42.64	.....	6.50	.....	.....	.....
HOMINY FEEDS.								
Homco Feed	American Hominy Co.	Indianapolis, Ind.	11.12	9.50	8.22	7.00	5.34	7.00
Hiquality Hominy Feed	Donahue-Stratton Co.	Milwaukee, Wis.	10.42	10.00	7.62	7.00	.....	7.00
Buffeco Hominy Feed	Buffalo Cereal Co.	Buffalo, N. Y.	10.86	10.00	6.30	7.00	.....	3.00
Hominy Meal	Chas. M. Cox Co.	Boston, Mass.	10.68	9.50	8.13	7.50	5.02	5.00
Paragon Hominy Feed	Chas. M. Cox Co.	Boston, Mass.	10.59	10.50	6.89	7.50	.....	.....
Badger Hominy Feed	Chas. A. Krause Milling Co.	Milwaukee, Wis.	11.99	10.00	6.79	6.00	5.33	5.00
Hominy Feed	The Patent Cereals Co.	Geneva, N. Y.	11.73	10.00	6.62	7.00	4.39	4.00
Yellow Hominy Feed	The Quaker Oats Co.	Chicago, Ill.	10.24	9.00	7.19	4.00	4.50	4.00
Blue Ribbon Hominy Chop	J. E. Soper Co.	Boston, Mass.	10.42	10.00	6.81	6.00	4.77	5.00
MOLASSES FEEDS.								
Sucrene Dairy Feed	American Milling Co.	Peoria, Ill.	16.55	16.50	5.93	3.50	12.71	12.00
Climax Feed	International Sugar Feed Co.	Minneapolis, Minn.	14.45	12.50	5.79	3.50	11.80	12.00
Special Dairy Feed	International Sugar Feed Co.	Minneapolis, Minn.	15.17	15.00	6.33	3.50	12.98	12.00
Molassine Meal	The Molassine Co., Ltd.	London, Eng.	7.09	7.00	1.77	.75	6.80	7.00
Quaker Dairy Molasses Feed	The Quaker Oats Co.	Chicago, Ill.	15.06	16.00	4.47	3.50	13.86	12.00
Purina Molasses Feed	Ralston Purina Co.	St. Louis, Mo.	9.81	9.00	3.05	1.50	10.81	12.00
POULTRY FEEDS.								
Egg Mash	Blatchford's Calf Meal Factory.	Waughegan, Ill.	17.08	9.00	5.06	4.00	9.89	10.00

POULTRY FEEDS.—*Continued.*							
Wirthmore Poultry Feed	Chas. M. Cox Co.	Boston, Mass.	18.21	17.00	3.79	4.00	5.87	9.50
Queen Poultry Mash	The Albert Dickinson Co.	Chicago, Ill.	11.21	11.00	3.75	2.50	5.18	10.00
Fish Mash	Greene Chicken Feed Co.	Marblehead, Mass.	16.81	12.00	7.53	3.00	.....	.....
Meat Mash	Greene Chicken Feed Co.	Marblehead, Mass.	14.98	12.00	5.82	3.00	7.22	7.00
Hen-o-la Dry Mash	Hen-e-ta Bone Co.	Blairsville, Pa.	12.43	12.00	3.53	2.00	3.58	3.00
Purity Poultry Mash	The Wm. S. Hills Co.	Boston, Mass.	19.44	17.00	6.38	4.00	6.24	8.00
Hoods Dry Mash	H. P. Hood & Son	Derry, N. H.	20.31	18.00	5.72	5.00	7.92	.....
Poultry Mash	McQuestion & Lewis.	Manchester, N. H.	18.41	11.00	4.82	2.50	8.47	7.00
Dry Mash	Park & Pollard Co.	Boston, Mass.	18.36	18.00	4.43	3.50	6.82	12.00
Growing Feed	Park & Pollard Co.	Boston, Mass.	15.24	10.00	3.96	3.50	8.63	8.00
Chicken Chowder	Purina Mills.	St. Louis, Mo.	17.01	17.00	5.44	3.00	8.68	9.00
Quaker Poultry Mash	The Quaker Oats Co.	Chicago, Ill.	17.34	17.50	5.36	4.00	6.90	10.00
Dry Mash	Stratton & Co.	Concord, N. H.	20.00	18.00	4.11	3.50	10.89	9.00
Oat Feed	Robin Hood Mills, Ltd.	Canada	5.60	7.00	2.79	3.00	23.35	30.00
Ground Oats	J. Cushing & Co.	Fitchburg, Mass.	13.49	.....	5.20	.....	8.25	.....
COMPOUND FEEDS.								
Milk Mash	Blatchford's Calf Meal Factory.	Waukegan, Ill.	19.44	20.00	5.17	4.00	.....	7.50
Unicorn Dairy Ration	Chapin & Co.	Hammond, Ind.	29.33	26.00	7.46	5.50	10.05	10.00
Empire State Dairy Feed	Clark Bros. & Co.	Peoria, Ill.	31.18	30.00	11.60	12.00	11.30	9.00
Peerless Dairy Ration	Clover Leaf Milling Co.	Buffalo, N. Y.	22.33	21.00	5.39	7.00	9.36	9.00
Wirthmore Balanced Ration for Milch Cows	Chas. M. Cox Co.	Boston, Mass.	25.57	25.50	5.74	5.20	8.90	9.08
Wirthmore Stock Feed	Chas. M. Cox Co.	Boston, Mass.	10.68	9.00	6.26	4.00	8.54	7.00
Corn and Oat Feed	S. A. Dow.	No. Hampton, N. H.	11.03	.....	4.31	.....	3.97	.....
Empire Feed	Empire Mills.	Oleon, N. Y.	9.37	7.50	4.98	3.00	7.37	9.00
Provender	Fowler Bros.	Suncook, N. H.	9.98	.....	4.56	.....	4.32	.....
Grendin's Stock Feed	D. R. Grendin Milling Co.	Jamestown, N. Y.	9.02	8.50	5.00	3.50	11.30	10.00
Xtragood Stock Feed	Griswold & Mackinnon	St. Johnsbury, Vt.	11.21	10.00	3.84	3.25	4.18	.....
Dairy Feed	The Gwinn Milling Co.	Columbus Ohio.	16.20	16.00	5.24	4.00	6.81	7.00
Yellow Feed Meal	The Gwinn Milling Co.	Columbus Ohio.	9.28	.....	4.24	.....	1.87	.....
Haskell's Stock Feed	W. A. Haskell & Co.	Toledo, Ohio.	9.46	8.00	7.08	4.00	9.70	6.00
Purity Horse Feed	The Wm. S. Hills Co.	Boston, Mass.	9.63	8.50	4.34	3.00	8.21	5.00
Purity Milk Maker	The Wm. S. Hills Co.	Boston, Mass.	22.68	24.00	8.12	8.00	.....	9.00
Purity Stock Feed	The Wm. S. Hills Co.	Boston, Mass.	17.25	10.00	5.81	3.25	13.60	9.00
Re-ground Oat Feed Mill-Run	Robin Hood Mills.	Moose Jaw, Sask.	6.31	7.00	2.51	3.50	27.65	30.00
Provender	E. C. & W. L. Hopkins.	Greenfield, N. H.	14.71	.....	3.93	.....	3.87	.....
Imperial Steam and Cooked Feed	The Imperial Grain & Milling Co.	Toledo, Ohio.	9.60	9.50	4.60	4.00	5.00	4.00
Regal Stock Feed	The Imperial Grain & Milling Co.	Toledo, Ohio.	8.67	8.00	3.33	3.50	11.90	13.00
Holstein Feed	Indiana Milling Co.	Terre Haute, Ind.	12.17	12.00	4.09	3.00	13.86	14.00

Name of Sample.	Manufactured by	Address.	Protein.		Fat.		Crude Fibre.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
COMPOUND FEEDS.—*Cont'd.*								
Larro-Feed. The Ready Ration..	The Larrowe Milling Co.....	Detroit, Mich.....	20.81	19.00	4.98	3.00	13.44	14.00
Brooks Fancy Stock Feed.....	A. H. McLeod Milling Co.....	St. Johnsbury, Vt..	9.63	9.00	3.54	3.00	.....	7.50
Blue Ribbon Dairy Feed.....	The Quaker Oats Co.....	Chicago, Ill.....	25.71	25.00	5.54	4.00	10.93	9.00
Daisy Dairy Feed.....	The Quaker Oats Co.....	Chicago, Ill.....	16.03	10.00	5.48	3.50	11.09	14.50
Schumacher Stock Feed.....	The Quaker Oats Co.....	Chicago, Ill.....	10.21	10.00	3.68	3.25	10.31	10.00
Purina Dairy Feed.....	Ralston Purina Co.....	St. Louis, Mo.....	16.90	16.50	3.42	3.00	20.22	15.00
Winner Feed.....	David Stott.....	Detroit, Mich.....	10.68	9.00	6.50	5.00	6.46	10.00
Winner Chop Feed.....	David Stott.....	Detroit, Mich.....	9.87	8.00	6.40	5.00	6.30	10.00
Provender	Stratton & Co.....	Concord, N. H.....	10.86	.....	4.58	.....	4.92	.....
Stock Feed.....	Stratton & Co.....	Concord, N. H.....	10.42	9.00	5.13	4.00	11.03	9.00
Star Feed	The Toledo Elevator Co.....	Indianapolis, Ind..	8.64	7.00	6.18	5.50	11.85	10.00
Blue Grass Feed.....	A. Waller & Co.....	Henderson, Ky....	16.90	16.50	3.42	3.00	20.22	15.00
Hammond Dairy Feed.....	Western Grain Products Co....	Hammond, Ind....	17.08	16.50	5.63	3.50	.....	11.00
Hammond Horse Feed.....	Western Grain Products Co....	Hammond, Ind....	14.98	12.00	5.08	2.80	10.85	11.00
ALFALFA MEALS.								
Cub Alfalfa	Joseph Breck & Sons.....	Boston, Mass.....	12.78	12.00	2.96	1.00	.....	30.00
Pure Alfalfa Meal.....	The Consolidated Alfalfa Milling Co.	Newton, Kans.....	14.10	14.00	3.23	1.20	.....	33.00
Alfalfa Meal.....	The Albert Dickinson Co.....	Chicago, Ill.....	15.00	12.00	3.08	1.00	.....	35.00
Pioneer Alfala Meal.....	Kornfalfa Feed Milling Co....	Kansas City, Mo...	15.85	12.00	2.46	1.50	.....	35.00
Pure Dustless Alfalfa Meal.....	The Otto Weiss Alfalfa Stock Food Co.	Wichita, Kan.....	16.64	14.00	2.43	1.50	.....	30.00
CALF MEALS.								
Blatchford's Calf Meal.....	The Blatchford Calf Meal Factory	Waukegan, Ill.....	23.99	24.00	5.30	5.00	5.82	5.00
Schumacher Calf Meal.....	The Quaker Oats Co.....	Chicago, Ill.....	20.93	19.00	7.63	8.00	1.40	3.00
BEET PULPS.								
Dried Beet Pulp.....	Menominee River Sugar Co....	Menominee, Mich..	8.32	8.00	.75	.50	.....	20.00
Dried Beet Pulp.....	Michigan Sugar Co.....	Alma, Mich.....	8.32	8.00	1.39	.50	18.20	20.00
Dried Beet Pulp.....	Michigan Sugar Co.....	Caro, Mich.....	8.14	8.00	1.46	.50	.....	20.00
Dried Beet Pulp.....	Michigan Sugar Co.....	Saginaw, Mich....	8.38	8.00	1.50	.50	.....	20.00

BEET PULPS.—*Continued.*							
Dried Beet Pulp	Michigan Sugar Co.	Schewaing, Mich.	8.58	8.00	1.03	.50	17.50	20.00
Dried Beet Pulp	The Toledo Sugar Co.	Toledo, Ohio	9.54	8.00	1.29	.50	.....	20.00
Dried Beet Pulp	West Bay City Sugar Co.	Bay City, Mich.	8.14	8.00	1.68	.50	.....	20.00
DISTILLERS' GRAINS.								
Ajax Flakes	Ajax Milling & Feed Co.	New York, N. Y.	30.38	30.00	16.03	11.00	.....	14.00
Brewers' Dried Grains	Farmers' Grain & Feed Co.	Chicago, Ill.	32.14	.....	1.65	.....	12.80	.....
Eagle DDD Grains	The Dewey Bros. Co.	Blanchester, Ohio	28.89	30.00	15.59	10.00	8.04	8.00
Eagle Grains	The Dewey Bros. Co.	Blanchester, Ohio	30.63	30.00	14.76	10.00	12.63	9.00
Hester Distillers' Dried Grains	Hottelet & Co.	Milwaukee, Wis.	32.84	30.00	13.75	12.00	12.21	14.00
Crown Brewers' Dried Grains	Milwaukee Grains & Feed Co.	Milwaukee, Wis.	25.74	25.00	6.89	5.00	13.98	15.00
Union Grains (Ubiko)	The Ubiko Milling Co.	Cincinnati, Ohio	21.69	21.00	7.79	7.00	.....	9.00
FLAXSEED MEALS.								
Cleveland Flax Meal	American Linseed Co.	Chicago, Ill.	35.00	36.00	3.23	2.00	9.19	9.00
Linseed Oil Meal	American Linseed Co.	Chicago, Ill.	36.34	36.00	3.75	2.00	.....	9.00
Old Process Oil Meal	American Linseed Co.	New York, N. Y.	34.06	32.00	6.69	5.00	.....	5.50
Old Process Oil Meal	American Linseed Co.	New York, N. Y.	35.03	34.00	5.97	5.00	.....	8.00
Old Process Oil Meal	American Linseed Co.	New York, N. Y.	32.49	32.00	7.21	5.00	.....	5.50
Ameo, Old Process Linseed Meal	American Milling Co.	Superior, Wis.	32.45	32.00	8.68	6.00	.....	11.00
Pure Old Process Oil Meal	Kellogg & Miller	Amsterdam, N. Y.	33.89	32.00	6.11	4.00	.....	6.00
Old Process Oil Meal	The Guy G. Major Co.	Toledo, Ohio	34.41	30.00	6.58	5.00	.....	2.00
Pure Old Process Linseed Oil Meal	The Mann Bros. Co.	Buffalo, N. Y.	32.23	31.00	7.51	6.00	.....	5.00
Old Process Ground Linseed Cake	Midland Linseed Products Co.	Minneapolis, Minn.	32.84	32.00	8.03	5.00	.....	9.00
Major Old Process Oil Meal	The Toledo Seed & Oil Co.	Toledo, Ohio	31.53	30.00	6.39	5.00	.....	2.00
Old Process Oil Meal	The Toledo Seed & Oil Co.	Toledo, Ohio	32.75	30.00	6.35	5.00	.....	2.00
GLUTEN FEEDS.								
Gluten Feed, Cream of Corn	American Maize Products Co.	New York	25.04	23.00	2.04	2.50	8.39	8.50
Clinton Gluten Feed	Clinton Sugar Refining Co.	Clinton, Iowa	23.12	20.00	3.32	3.00	7.13	8.00
Continental Gluten Feed	Continental Cereal Co.	Peoria, Ill.	31.53	29.00	12.78	12.50	.....	8.50
Buffalo Gluten Feed	Corn Products Refining Co.	New York	24.61	23.00	4.48	2.00	7.23	8.50
Crescent Gluten Feed	Corn Products Refining Co.	New York	24.43	23.00	4.80	2.00	.....	8.50
Diamond Gluten Meal	Corn Products Refining Co.	New York	39.58	40.00	1.63	1.50	2.35	4.00
Globe Gluten Feed	Corn Products Refining Co.	New York	25.57	23.00	2.50	2.00	.....	8.50
Jenk's Gluten Feed	The Huron Milling Co.	Harbor Beach, Mich.	22.68	22.00	3.91	3.00	7.93	8.00
P Bros. Gluten Feed	Piel Bros. Starch Co.	Indianapolis, Ind.	25.92	21.00	3.49	2.00	9.48	8.00
Gluten Feed	A. E. Staley Mfg. Co.	Decatur, Ill.	22.03	20.00	2.45	2.50	8.15	9.00
Staley's Gluten Feed	A. E. Staley Mfg. Co.	Decatur, Ill.	24.69	23.00	4.16	2.50	8.14	9.00

Name of Sample.	Manufactured by	Address.	Protein.		Fat.		Crude Fibre.	
			Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
MEAT AND BONE FEEDS.								
Ground Beef Scraps	American Agricultural Chem. Co.	New York	52.98	40.00	10.24	5.00	.....	5.00
Beef Scraps	Beach Soap Co	Lawrence, Mass.	43.61	40.00	15.08	20.00	.....	7.00
Star Meat and Bone Meal	Beach Soap Co	Lawrence, Mass.	32.75	30.00	9.62	10.00	.....	6.00
Animal Meal	Bowker Fertilizer Co	Boston, Mass.	43.52	40.00	9.10	5.00	.....	15.00
Bowker's Imperial Meal	Bowker Fertilizer Co	Boston, Mass.	48.04	40.00	10.12	5.00	.....	15.00
Ground Beef Scraps	Jos. Breck & Sons	Boston, Mass.	44.39	43.00	14.85	12.00	.....	.....
Bone and Meat Meal	Burlington Rendering Co	Burlington, Vt.	40.72	35.00	14.16	8.00	.....	.....
Poultry Scraps	Burlington Rendering Co	Burlington, Vt.	42.03	40.00	12.83	8.00	.....	.....
Ground Scraps	Carroll S. Page	Hyde Park, Vt.	48.00	40.00	29.05	15.00	.....	.....
Beef Scraps	John C. Dow Co	Boston, Mass.	48.07	43.00	17.09	12.00	.....	.....
Old-Fashioned Meat Scraps	The Greene Chicken Feed Co.	Marblehead, Mass.	37.91	30.00	10.59	5.00	.....	.....
Bone and Meat Meal	Hinckley Rendering Co	Somerville, Mass.	38.53	35.00	10.02	8.00	.....	.....
Poultry Food	Hinckley Rendering Co	Somerville, Mass.	38.53	35.00	10.99	8.00	.....	.....
Red Star Fish Scraps	International Glue Co	Boston, Mass.	53.41	45.00	2.89	2.00	.....	.....
Beef Scraps	A. Lord & Co	Chelsea, Mass.	33.28	30.00	19.57	17.00	.....	.....
Peerless Poultry Food	Lowell Rendering Co	Lowell, Mass.	41.59	40.00	16.12	8.00	.....	.....
Cracked Bone	Manchester Rendering Co	Manchester, N. H.	25.66	20.00	5.24	5.00	.....	.....
Bone and Meat Meal	Manchester Rendering Co	Manchester, N. H.	36.86	35.00	8.44	8.00	.....	.....
Poultry Food	Manchester Rendering Co	Manchester, N. H.	39.05	40.00	13.27	8.00	.....	.....
Beef Scraps	The Geo. E. Marsh Co	Lynn, Mass.	43.59	45.00	14.13	10.00	.....	.....
Poultry Scraps	New England Dressed Meat and Wool Co	Boston, Mass.	48.51	50.00	14.23	10.00	.....	.....
Ground Fish Scraps	Park & Pollard Co	Boston, Mass.	58.49	.....	3.08	.....	.....	.....
Portland Poultry Food	Portland Rendering Co	Portland, Me.	39.93	40.00	13.11	9.00	.....	.....
Beef Scraps	Whitman & Pratt Co	Lowell, Mass.	45.00	45.00	10.12	10.00	.....	.....
Extra Quality Beef Scraps	Whitman & Pratt Co	Lowell, Mass.	63.22	55.00	17.80	10.00	.....	.....

The following tables are given to show the relative value of the principal feeding-stuffs and may be used for reference, to aid the buyer in preparing feeding rations for his animals.

TABLE NO. 1.

AVERAGE COMPOSITION OF FEEDING-STUFFS—PER CENT.

(Henry's, Jordan's and Lindsay's Compilations.)

	Dry Matter	Water	Ash	Protein	Fat	Carbohydrates Nitrogen Free Ext'ct Fibre	
Corn	89.4	10.6	1.5	10.3	5.0	2.2	70.4
Corn Meal	85.0	15.0	1.4	9.2	3.8	1.9	68.7
Corn Bran	90.6	9.4	1.2	11.2	6.2	11.9	60.1
Corn Chops	87.2	12.3	1.5	9.8	4.4	2.0	69.5
Hominy Meal	90.4	9.6	2.7	10.5	8.0	4.9	64.3
Gluten Feed	90.8	9.2	2.0	25.0	3.5	6.8	53.5
Corn and Cob Meal	84.9	15.1	1.5	8.5	3.5	6.6	64.8
Corn Cob	89.3	10.7	1.4	2.4	0.5	30.1	54.9
Oats	89.6	10.4	3.2	11.4	4.8	10.8	59.4
Oat Middlings	91.2	8.8	4.5	16.2	6.9	7.1	56.5
Oat Feed	93.0	7.0	5.3	8.0	2.9	21.5	55.3
Wheat	89.5	10.5	1.8	11.9	2.1	1.8	71.9
Wheat Bran	88.1	11.9	5.8	15.4	4.0	9.0	53.9
Wheat Middlings (shorts)	88.8	11.2	4.4	16.9	5.1	6.2	56.2
Flour Middlings	90.0	10.0	3.2	19.2	4.8	3.2	59.6
Shipstuff	89.1	10.9	5.6	16.3	4.6	7.5	55.1
Barley	89.2	10.8	2.5	12.0	1.8	4.2	68.7
Buckwheat	86.6	13.4	2.0	10.8	2.4	11.7	59.7
Buckwheat Feed	88.4	11.6	3.9	18.3	4.9	19.2	42.1
Brewers' Dried Grains	91.3	8.7	3.7	25.0	6.7	13.6	42.3
Distillers' Dried Grains	92.4	7.6	2.0	31.2	12.2	11.6	35.4
Malt Sprouts	90.5	9.5	6.1	26.3	1.6	11.6	44.9
Flax Seed	90.8	9.2	4.3	22.6	33.7	7.1	23.2
Linseed Meal (O. proc's)	90.2	9.8	5.5	33.9	7.8	7.3	35.7
Linseed Meal (N. proc's)	91.0	9.0	5.5	37.5	2.0	8.9	36.4
Cotton Seed	89.7	10.3	3.5	18.4	19.9	23.2	24.7
Cotton Seed Meal	93.0	7.0	6.6	45.3	10.2	6.3	24.6
Alfalfa Hay	91.6	8.4	7.4	14.3	2.2	25.0	42.7
Dried Beet Pulp	91.6	8.4	4.5	8.1	0.7	17.5	60.8
Meat Scraps	89.3	10.7	4.1	71.2	13.7	...	0.3
Molasses Feed	89.6	10.4	6.5	17.1	2.9	11.9	51.2

TABLE NO. 2.

AVERAGE DIGESTIBLE NUTRIENTS OF FEEDS—PER CENT.

(Henry's, Jordan's and Lindsay's Compilations.)

	Dry Matter	Protein	Fat	Carbohydrates Fibre	Nitrogen Free Ext'ct
Corn	81.35	7.83	4.30	1.28	65.47
Corn Meal	74.8	6.07	3.46	. . .	63.29
Corn Bran	63.42	6.05	4.74	6.78	45.68
Corn Chops	78.0	6.95	3.88	1.25	64.38
Hominy Meal	74.13	6.83	7.36	3.28	57.23
Gluten Feed	79.0	21.25	2.87	5.17	47.62
Corn and Cob Meal	67.07	4.42	2.94	2.97	57.02
Corn Cob	52.67	0.4	0.25	19.57	32.94
Oats	62.72	8.78	4.27	3.35	45.74
Oat Middlings	82.08	13.12	6.49	3.48	54.24
Oat Feed	37.20	5.20	2.61	1.88	23.23
Wheat	. . . .	10.2	1.7	69.2	
Wheat Bran	58.15	11.86	2.5	3.69	38.27
WheatMiddlings(shorts)	. . . .	13.0	4.5	1.86	43.84
Flour Middlings	73.8	16.9	4.1	1.15	52.45
Shipstuff	65.04	12.7	4.0	4.65	42.43
Barley	76.71	8.4	1.6	2.10	63.2
Buckwheat	61.49	8.1	2.4	2.81	45.37
Buckwheat Feed	. . . .	15.6	4.4	38.2	
Brewers' Dried Grains	56.61	20.0	6.0	6.8	25.38
Distillers' Dried Grains	73.0	22.78	11.6	11.02	28.67
Malt Sprouts	70.59	20.3	1.4	9.63	36.37
Flax Seed	69.92	20.6	29.0	4.26	12.76
Linseed Meal(O. proc's)	71.26	30.2	6.9	4.16	27.85
Linseed Meal(N. proc's)	74.62	31.5	2.4	6.59	29.12
Cotton Seed	59.2	12.5	17.3	17.63	12.35
Cotton Seed Meal	71.61	37.6	9.6	2.21	19.19
Alfalfa Hay	. . . .	10.44	0.31	10.0	29.89
Dried Beet Pulp	70.53	4.1	. . . .	12.6	52.29
Meat Scraps	83.05	66.2	13.4	. . . .	. . . .
Molasses Feed	64.51	10.8	2.2	6.55	41.47

FINANCIAL STATEMENT ON FEEDING-STUFFS ACCOUNT.

Received analysis fees, 294 brands at $15, $4,410, which amount was paid to the state treasurer in compliance with the law.

The appropriation made for the purpose of this act was $3,500, and is accounted for as follows:

Paid Mr. C. J. Bickford for collecting samples.	$350.54
Paid New Hampshire Agricultural College for analyzing 278 samples	1,503.00
Paid B. E. Curry	12.61
Paid Ira C. Evans Co., printing supplies and bulletins	201.73
	$2,067.88
Unexpended balance, August 31, reverting to treasury department	$1,432.12

While I believe it to be highly essential that an analysis of our concentrated feeding-stuffs be made for the protection of the buyer, and that an analysis fee should be collected from the manufacturer or dealer to meet this expense, yet I do not believe that the fee should be large enough to create a revenue above cost, owing to the fact that whatever amount is charged by the state is added to the price of the feed, and the ultimate consumer pays the bill.

Our feeding-stuffs law needs to be changed to insure further protection to the buyers of concentrated feeds.

All feeds should be sold on a minimum guarantee of protein and fat content and a maximum guarantee of crude fibre.

The manufacturer or jobber should also be required to print upon the sacks or upon a tag attached thereto in clear type a statement giving the names of the different ingredients that are used in the mixing or manufacturing of his product.

If sphagnum moss, corn cobs, mill screenings and oat hulls are to form a part of the feed the farmer has to buy, he wants to know it.

I shall recommend such changes.

THE FERTILIZER INSPECTION FOR 1914

MADE FOR THE

STATE DEPARTMENT OF AGRICULTURE

By B. E. Curry and T. O. Smith,

Experiment Station Chemists.

STATE OF NEW HAMPSHIRE.

Chapter 43, Session Laws of 1901.

AN ACT TO REGULATE THE SALE OF FERTILIZERS.

Section 1. Every lot or parcel of commercial fertilizer or fertilizer material sold or offered or exposed for sale within this state shall be accompanied by a plainly printed statement, clearly and truly certifying the number of net pounds of fertilizer in the package, the name, brand, or trademark under which the fertilizer is sold, the name and address of the manufacturer or importer, the location of the factory, and a chemical analysis stating the percentage of nitrogen, of potash soluble in distilled water, or phosphoric acid in available form soluble in distilled water, and reverted, and of total phosphoric acid.

Sect. 2. Before any commercial fertilizer is sold or offered or exposed for sale, the manufacturer, importer, or party who causes it to be sold or offered for sale, within this state, shall file with the secretary of the Board of Agriculture a certified copy of the statement named in section 1 of this act, and shall also deposit with said secretary, at his request, a sealed glass jar or bottle containing not less than one pound of the fertilizer, accompanied by an affidavit that it is a fair average sample thereof.

Sect. 3. The manufacturer, importer, agent, or seller of any brand of commercial fertilizer or fertilizer material

shall pay for each brand on or before the first day of March, annually, to the secretary of the Board of Agriculture an analysis fee, as follows, namely: ten dollars for the phosphoric acid, five dollars for the nitrogen, and five dollars for the potash, contained or claimed to be in the said brand of fertilizer, but the fee for any brand shall not exceed fifteen dollars; *provided,* that whenever the manufacturer or importer shall have paid the fee herein required, any person acting as agent or seller for such manufacturer or importer shall not be required to pay the fee named in this section.

SECT. 4. No person shall sell or offer or expose for sale in this state any pulverized leather, hair or wool waste, raw, steamed, roasted, or in any form as a fertilizer without an explicit printed certificate of the fact conspicuously affixed to every package of such fertilizer.

SECT. 5. Any person selling or offering or exposing for sale any commercial fertilizer without the statement required by the first section of this act, or with a label stating that said fertilizer contains a larger percentage of any one or more of the constituents mentioned in said section than is contained therein, or respecting the sale of which all the provisions of the foregoing sections have not been fully complied with, shall forfeit fifty dollars for the first offense and one hundred dollars for each subsequent offense.

SECT. 6. This act shall not affect parties manufacturing or importing fertilizer for their own use and not to sell in this state.

SECT. 7. The secretary of the Board of Agriculture shall annually cause to be analyzed at the New Hampshire College Agricultural Experiment Station one or more samples of every commercial fertilizer or fertilizer material sold or offered for sale under the provisions of this act. Said secretary shall cause a sample to be taken, not exceeding two pounds in weight, for said analysis, from any lot or

package of such fertilizer or fertilizer material, which may be in the possession of any manufacturer, importer, agent, or dealer in this state; but said sample shall be drawn in the presence of the parties in interest or their representatives and taken from a parcel or a number of packages, which shall not be less than ten per cent. of the whole lot sampled, and shall be thoroughly mixed and then divided into equal samples and placed in glass vessels and carefully sealed and a label placed on each, stating the name or brand of the fertilizer or material sampled, the name of the party from whose stock the sample was drawn, and the time and place of drawing, and said label shall also be signed by the person taking the sample and by the party or parties in interest, or their representative present at the drawing and sealing of said samples; one of said duplicate samples shall be retained by the secretary and the other by the party whose stock was sampled; and the sample retained by the secretary shall be for comparison with the certified statement named in section 1. The result of the analysis of the samples shall be published from time to time, together with such additional information as circumstances may advise, in reports of bulletins by the New Hampshire College Agricultural Experiment Station and in the biennial report of the State Board of Agriculture. All parties violating this act shall be prosecuted by the secretary of the Board of Agriculture.

Sect. 8. The amount of license fees received by said secretary by virtue of this act shall be paid by him to the treasurer of the state of New Hampshire. The treasurer of the state of New Hampshire shall pay from such amount, when duly approved, the moneys required for the expense incurred in making the inspection required by this act and enforcing the provisions thereof. Said expenses shall include those incurred for laboratory ex-

penses, chemical supplies, traveling expenses, printing, and other necessary matters.

SECT. 9. This act shall take effect July first, nineteen hundred and one, and all acts and parts of acts inconsistent with this act are hereby repealed.

The samples of fertilizers for the 1914 inspection were collected by Mr. Albion Weeks under the direction of the commissioner of agriculture. Aside from duplicates 184 brands were sampled and analyzed.

The brands of fertilizers received, almost without exception, have met their guarantee in every respect. The manufacturers are to be commended in their efforts to have their goods meet the guarantees.

One lot of New England Mineral Fertilizer has been analyzed. Its value is approximately 60 cents per ton or one twenty-fifth of the price at which it sells wholesale.

Messrs. M. J. Broggini, G. L. Ham, A. J. Grant, and P. S. Willand have assisted with the following analytical data.

COMPOSITION OF COMMERCIAL FERTILIZERS SAMPLED AND ANALYZED IN 1914.

MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.							POTASH.	
			Total.				Available.			Total.			
	Inorganic.	Organic.	Found.	Guaranteed.	Soluble.	Reverted.	Found.	Guaranteed.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.
AMERICAN AGRICULTURAL CHEMICAL CO., New York City.													
Complete Manure for Top Dressing	3.36	1.71	5.07	4.94	3.30	1.40	4.70	4.00	.60	5.30	5.00	6.26	6.00
Complete Manure with 10 per cent. Potash	2.05	1.24	3.29	3.29	4.10	2.90	7.00	6.00	1.40	8.40	7.00	10.12	10.00
Fine Ground Bone	....	....	2.48	2.47	....	....	....	....	....	23.00	22.88	....	....
Grass and Lawn Top Dressing	3.07	1.05	4.12	3.91	2.20	4.20	6.40	5.00	.80	7.20	6.00	3.08	2.00
Grass and Oats Fertilizer	....	....	....	....	8.80	2.20	11.00	11.00	2.00	13.00	12.00	2.78	2.00
Six per cent. Ground Tankage	....	....	5.18	4.94	....	....	....	....	....	16.20	13.73	....	....
High Grade Dried Blood	....	....	9.86	9.87	....	....	....	....	....	....	....	....	....
High Grade Fertilizer with 10 per cent. Potash	1.60	1.06	2.66	2.47	2.90	3.90	6.80	6.00	2.00	8.80	7.00	10.15	10.00
Muriate of Potash	....	....	....	....	....	....	....	....	....	....	....	49.35	49.00
New Hampshire Special Chemical Mixture	.22	1.54	1.76	1.65	5.60	2.70	8.30	8.00	3.00	11.30	9.00	5.00	5.00
Nitrate of Soda	....	....	15.70	15.00	....	....	....	....	....	....	....	....	....
Pacific Potato Special	1.32	.86	2.18	2.06	5.20	3.50	8.70	8.00	1.50	10.20	9.00	3.14	3.00
Plain Super-Phosphate	....	....	....	....	12.70	1.40	14.10	14.00	1.50	15.60	15.00	....	....
Fourteen per cent. Plain Super-Phosphate	....	....	....	....	11.30	3.10	14.40	14.00	2.30	16.70	15.00	....	....
Sixteen per cent. Plain Super-Phosphate	....	....	....	....	14.40	1.70	16.10	16.00	1.10	17.20	17.00	....	....
Soluble Pacific Guano	1.21	1.17	2.38	2.06	5.20	4.40	9.60	8.00	1.30	10.90	9.00	1.91	1.50
Ten per cent. Vegetable and Potato Manure	1.23	.45	1.68	1.65	6.10	2.10	8.20	8.00	1.60	9.80	9.00	10.18	10.00
Bradley's Complete Manure for Corn and Grain	1.81	1.62	3.43	3.29	3.80	4.60	8.40	8.00	2.10	10.50	9.00	7.05	7.00
Bradley's Comp. Manure for Potatoes and Vegetables	2.05	1.24	3.29	3.29	7.40	1.00	8.40	8.00	2.70	11.10	9.00	6.76	7.00
Bradley's Complete Manure for Top Dressing Grass and Grain	3.03	2.04	5.07	4.94	2.90	2.50	5.40	4.00	1.60	7.00	5.00	6.57	6.00
Bradley's Complete Manure with 10 per cent. Potash	2.06	1.23	3.29	3.29	4.40	2.60	7.00	6.00	1.60	8.60	7.00	10.05	10.00
Bradley's Corn Phosphate	1.19	.87	2.06	2.06	6.20	2.00	8.20	8.00	1.70	9.90	9.00	1.76	1.50
Bradley's Eclipse Phosphate for all crops	.23	.88	1.11	1.03	4.40	4.10	8.50	8.00	2.90	11 40	9.00	2.21	2.00

Bradley's Potato Manure	1.60	.91	2.51	2.47	3.90	3.20	7.10	6.00	1.60	8.70	7.00	5.01	5.00
Bradley's Potato Fertilizer	.95	1.12	2.07	2.06	4.30	4.00	8.30	8.00	2.70	11.00	9.00	3.10	3.00
Bradley's Seeding Down Manure	1.56	.92	2.48	2.47	7.70	2.00	9.70	9.00	1.70	11.40	10.00	2.01	2.00
Bradley's XL Super-Phosphate of Lime	1.27	1.26	2.53	2.47	4.00	5.15	9.15	9.00	2.70	11.85	10.00	2.92	2.00
Cleveland Dryer Fertilizer for all crops	2.70	.87	1.14	1.03	5.60	2.60	8.20	8.00	2.80	11.00	9.00	2.50	....
Cleveland Dryer Potato Phosphate	.94	1.29	2.23	2.06	6.60	2.00	8.60	8.00	2.50	11.10	9.00	3.02	3.00
Cleveland Potato Phosphate	1.09	1.25	2.34	2.06	6.10	2.20	8.30	8.00	1.50	9.80	9.00	3.10	3.00
Crocker's Ammoniated Corn Phosphate	.83	1.24	2.07	2.06	5.50	3.50	9.00	8.00	2.30	11.30	9.00	1.78	1.50
Crocker's Potato Hop and Tobacco Fertilizer	.60	1.46	2.06	2.06	5.80	4.20	10.00	8.00	1.10	11.10	9.00	3.07	3.00
Crocker's Potato Hop and Tobacco Phosphate	1.23	1.81	3.04	2.06	6.80	2.30	9.10	8.00	.90	10.00	9.00	3.01	3.00
Crocker's Special Potato Manure	1.78	1.50	3.28	3.29	3.20	4.10	7.30	6.00	1.60	8.90	7.00	9.75	10.00
Cumberland Potato Fertilizer	1.08	1.02	2.10	2.06	5.30	3.20	8.50	8.00	1.80	10.30	9.00	3.09	3.00
Cumberland Super-Phosphate	1.40	1.18	2.58	2.06	5.40	3.40	8.80	8.00	1.20	10.00	9.00	2.01	1.50
Darling's Animal Fertilizer	1.30	2.02	3.32	3.29	7.30	1.00	8.30	8.00	1.70	10.00	9.00	4.12	4.00
Darling's Blood, Bone and Potash	2.10	2.02	4.12	4.11	3.50	3.50	7.00	7.00	2.00	9.00	8.00	7.02	7.00
Darling's Farm Favorite	1.29	1.01	2.30	2.06	6.20	2.60	8.80	8.00	1.70	10.50	9.00	3.26	3.00
Darling's Potato Manure	1.76	.75	2.51	2.47	4.10	3.20	7.30	6.00	.80	8.10	7.00	5.74	5.00
Great Eastern Complete Manure	1.88	.81	2.69	2.47	4.70	2.70	7.40	6.00	1.00	8.40	7.00	10.08	10.00
Great Eastern General	.35	1.07	1.42	.82	5.90	2.30	8.20	8.00	1.90	10.10	9.00	4.21	4.00
Great Eastern Northern Corn Special	.94	1.44	2.38	2.06	4.20	3.80	8.00	8.00	2.60	10.60	9.00	1.80	1.50
Packer's Union Gardner's Complete Manure	1.09	1.88	2.97	2.47	6.80	2.70	9.50	6.00	1.10	10.60	7.00	10.06	10.00
Packer's Union Potato Manure	1.53	.82	2.35	2.06	7.40	2.60	10.00	8.00	1.70	12.10	9.00	6.08	6.00
Quinnipiac Corn Manure	1.33	1.09	2.42	2.06	7.10	1.80	8.90	8.00	1.30	10.20	9.00	2.43	1.50
Quinnipiac Potato Phosphate	1.43	.81	2.24	2.06	7.10	2.50	9.60	8.00	1.40	11.00	9.00	3.05	3.00
Read's Farmers' Friend Super-Phosphate	.77	1.67	2.44	2.06	5.80	2.90	8.70	8.00	1.40	10.10	9.00	3.01	3.00
Read's Practical Special Fertilizer	.27	.78	1.05	.82	2.70	3.30	6.00	4.00	1.80	7.80	5.00	9.32	8.00
Read's Standard Super-Phosphate	.30	.78	1.08	.82	5.30	3.70	9.00	8.00	1.50	10.50	9.00	4.25	4.00
Thomas' Phosphate Powder (Basic Slag)	....	....	....	....	....	....	....	....	....	20.00	17.00	....	....
Williams & Clark Prolific Crop Producer	.17	1.19	1.36	.82	4.00	3.40	7.40	7.00	2.90	10.30	8.00	1.28	1.00
ARMOUR FERTILIZER WORKS, Chrome, N. J.													
Armour's Bone, Blood and Potash	2.45	1.67	4.12	4.11	6.50	1.80	8.30	8.00	1.60	9.90	8.50	7.20	7.00
Armour's Complete Potato Fertilizers	1.51	1.67	3.18	3.29	4.90	2.10	7.00	6.00	1.30	8.30	6.50	9.30	10.00
Armour's Crop Grower	.25	1.37	1.62	.82	6.70	1.80	8.50	8.00	1.10	9.60	8.50	3.26	2.00
Armour's Fruit and Root Crop Special	.57	1.00	1.57	1.65	6.70	1.70	8.40	8.00	1.70	10.10	8.50	5.40	5.00
Armour's Grain Grower	.20	1.45	1.65	1.65	6.40	2.80	7.20	8.00	1.70	10.90	8.50	2.12	2.00
Armour's High Grade Potato Fertilizer	.83	.84	1.67	1.65	5.80	2.40	8.20	8.00	1.70	9.90	8.50	10.20	10.00
Armour's Special Corn Manure	1.04	1.86	2.90	2.88	6.20	2.50	8.70	8.00	1.80	10.50	8.50	4.10	4.00
Armour's Truckers Special	1.49	2.03	3.52	3.29	4.20	2.70	6.90	6.00	.90	7.80	6.50	10.12	10.00

COMPOSITION OF COMMERCIAL FERTILIZERS SAMPLED AND ANALYZED IN 1914.—*Continued.*

MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.							POTASH.	
			Total.				Available.			Total.			
	Inorganic.	Organic.	Found.	Guaranteed.	Soluble.	Reverted.	Found.	Guaranteed.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.
BEACH SOAP CO., Lawrence, Mass.													
Beach's Pure Bone Meal	....	....	2.10	....	....	....	....	....	....	2.93	....	....	....
BOWKER FERTILIZER CO., Boston and New York.													
Bowker's Corn Phosphate	1.29	.48	1.76	1.65	6.30	2.80	9.10	8.00	1.80	10.90	9.00	2.34	2.00
Bowker's Early Potato Manure	2.00	1.48	3.48	3.29	5.20	3.60	8.80	8.00	1.80	10.60	9.00	7.20	7.00
Bowker's Farm and Garden Phosphate	1.05	.67	1.72	1.65	5.90	2.60	8.50	8.00	1.20	9.70	9.00	2.33	2.00
Bowker's Fresh Ground Bone	....	....	2.63	2.47	....	....	....	....	....	23.00	22.88	....	....
Bowker's Highly Nitrogenized Formula	6.19	2.71	8.90	8.23	6.30	1.90	8.20	7.00	1.10	9.30	8.00	8.66	8.00
Bowker's Highly Nitrogenized Mixture	7.80	.46	8.26	8.23	5.60	2.50	8.10	7.00	.80	8.90	8.00	8.75	8.00
Bowker's Hill and Drill Phosphate	1.12	1.29	2.41	2.47	5.00	5.40	10.40	9.00	3.10	13.50	10.00	2.21	2.00
Bowker's Market Garden Fertilizer	1.75	.75	2.50	2.47	4.60	2.50	7.10	6.00	1.20	8.30	7.00	10.01	10.00
Bowker's Potash or Staple Phosphate	.28	.58	.86	.82	5.70	3.95	9.65	8.00	2.20	11.85	9.00	4.50	3.00
Bowker's Potato and Vegetable Fertilizer	1.54	.94	2.48	2.47	6.50	3.00	9.50	8.00	1.40	10.90	9.00	4.11	4.00
Bowker's Potato and Vegetable Phosphate	1.09	.77	1.86	1.65	5.70	4.10	9.80	8.00	1.30	11.10	9.00	3.50	2.00
Bowker's Sure Crop Bone Phosphate	.55	.51	1.06	.82	7.50	1.90	9.40	8.00	1.30	10.70	9.00	2.53	2.00
Bowker's Sure Crop Phosphate	.20	1.00	1.20	.82	4.40	4.80	9.20	8.00	2.30	11.50	9.00	2.19	2.00
Bray's Mixture for Grass	3.05	2.93	5.98	4.93	6.20	1.00	7.20	6.50	1.00	8.20	7.00	6.12	6.00
Nitrate of Soda	....	....	15.26	15.00	....	....	....	....	....	....	....	....	....
Pulverized Sheep Manure	....	....	2.52	1.25	....	....	....	....	....	3.10	1.50	4.40	2.00
Stockbridge Special Complete Manure for Corn and all Grain Crops	1.85	1.46	3.31	3.29	7.60	3.30	10.90	10.00	1.90	12.80	11.00	7.42	7.00
Stockbridge Special Complete Manure for Potatoes and Vegetables	2.30	1.04	3.34	3.29	4.20	2.00	6.20	6.00	1.70	7.90	7.00	10.14	10.00
Stockbridge Complete Manure for Seeding Down, Permanent Dressing and Legumes	.92	2.03	2.95	2.47	8.80	3.20	12.00	10.00	1.60	13.60	11.00	8.00	8.00
Stockbridge Special Complete Manure for Top Dressing and Forcing	3.52	1.51	5.03	4.94	3.30	1.00	4.30	4.00	1.50	5.70	5.00	6.05	6.00

JOSEPH BRECK & SONS CORP., Boston, Mass.													
Ram's Head Brand Pulverized Sheep manure	....	....	2.26	2.25	....	....	....	....	....	1.90	1.50	2.60	1.50
BUFFALO FERTILIZER CO., Buffalo, N. Y.													
Top Dresser	3.32	1.89	5.21	5.70	2.70	4.00	6.70	6.00	2.70	9.40	7.00	5.22	5.00
COE MORTIMER CO., New York City.													
E. Frank Coe's Celebrated Special Potato Fertilizer	.73	1.07	1.80	1.65	6.00	2.30	8.30	8.00	1.70	10.00	9.00	4.10	4.00
E. Frank Coe's Columbian Corn and Potato Fertilizer	.85	.56	1.41	1.23	8.20	2.20	10.40	8.50	1.30	11.70	9.50	3.62	2.50
E. Frank Coe's Extra Special Potato Fertilizer and Fruit Grower	1.16	.45	1.91	1.65	6.20	3.00	9.20	8.00	1.10	10.30	9.00	10.09	10.00
E. Frank Coe's Famous Prize Brand Grass & Grain Fertilizer	....	....	....	....	7.90	2.10	10.00	10.00	1.40	11.40	11.00	2.88	2.00
E. Frank Coe's Fine Ground Bone	....	....	2.62	2.47	....	....	....	....	....	24.30	22.88	....	....
E. Frank Coe's High Grade Ammoniated Super-Phosphate	.83	1.17	2.00	1.85	5.20	3.10	8.30	8.00	1.90	10.20	9.00	3.04	3.00
E. Frank Coe's New Englander Corn and Potato Fertilizer	.22	1.06	1.28	.82	5.60	2.40	8.00	8.00	2.40	10.40	9.00	3.05	3.00
E. Frank Coe's Standard Potato Fertilizer	2.31	.98	3.29	3.29	2.40	3.90	6.30	6.00	1.90	8.20	7.00	9.56	10.00
E. Frank Coe's XXV Ammoniated Phosphate	.35	.80	1.15	.82	5.40	3.50	8.90	8.00	1.60	10.50	9.00	2.51	2.00
Muriate of Potash	....	....	....	....	....	....	....	....	....	....	....	19.10	49.00
Nitrate of Soda	....	....	15.52	15.00	....	....	....	....	....	....	....	....	....
ESSEX FERTILIZER CO., Boston, Mass.													
Essex Complete Manure for Corn, Grain and Grass	1.05	2.30	3.35	3.28	5.20	1.20	6.40	6.00	1.70	8.10	7.00	10.34	10.00
Essex Complete Manure for Potatoes, Roots and Vegetables	1.28	1.01	3.29	3.28	5.40	.80	6.20	6.00	1.50	7.70	7.00	10.00	10.00
Essex Market Garden and Potato Manure	.87	1.22	2.09	2.00	6.20	2.40	8.60	8.00	1.20	9.80	9.00	5.02	5.00
Essex Potato Grower with 10 per cent. Potash	1.28	1.41	2.69	2.46	5.40	1.90	7.30	6.00	1.20	8.50	7.00	10.00	10.00
Essex XXX Fish and Potash for all crops	.90	1.40	2.30	2.00	6.90	1.60	8.50	8.00	2.10	10.60	9.00	3.04	3.00
S. C. HAWES, Hampton Falls, N. H.													
Ground Bone and Tankage	....	....	4.99	....	....	....	....	....	....	12.50	....	....	....

COMPOSITION OF COMMERCIAL FERTILIZERS SAMPLED AND ANALYZED IN 1914.—*Continued.*

MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.							POTASH.	
			Total.				Available.			Total.			
	Inorganic.	Organic.	Found.	Guaranteed.	Soluble.	Reverted.	Found.	Guaranteed.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.
THE INTERNATIONAL AGRICULTURAL CORP., Buffalo, N. Y.													
Buffalo Two-Eight-Ten	1.07	.65	1.72	1.60	6.20	2.70	8.90	8.00	2.30	11.20	9.00	10.10	10.00
Celery and Potato Special	.94	.96	1.90	1.60	6.00	3.00	9.00	8.00	1.40	10.40	9.00	10.08	10.00
Dissolved Phosphate	....	....	....	....	11.20	3.70	14.90	14.00	1.30	16.20	15.00	....	....
Farmers' Choice	.31	.74	1.05	.80	5.90	3.10	9.00	8.00	1.90	10.90	9.00	5.57	5.00
High Grade Manure	1.75	1.57	3.32	3.30	2.00	5.90	7.90	7.00	2.30	10.20	8.00	10.02	10.00
New England Special	.63	.89	1.52	1.50	4.70	4.40	9.10	9.00	2.70	11.80	10.00	4.90	5.00
Nitrate of Soda	....	....	15.70	....	....	....	....	....	....	....	....	....	....
Vegetable and Potato	1.25	.21	2.46	2.40	5.70	2.70	8.40	8.00	2.30	10.70	9.00	7.56	7.00
LISTER'S AGRICULTURAL CHEMICAL CO., (Manufactured by American Agricultural Chemical Co.) New York City.													
Nitrate of Soda	....	....	15.52	15.00	....	....	....	....	....	....	....	....	....
Lister's Grain and Grass Fertilizer	....	....	....	....	8.40	1.60	10.00	10.00	1.90	11.90	11.00	2.32	2.00
Lister's High Grade Special for Spring Crops	1.89	1.19	3.08	1.65	5.60	.80	6.40	8.00	1.00	7.40	9.00	5.60	10.00
Lister's 10 per cent. Potato Grower	2.14	1.18	3.32	3.29	2.70	4.00	6.70	6.00	2.00	8.70	7.00	10.10	10.00
Lister's Potato Manure	2.03	1.29	3.32	3.29	4.50	4.50	9.00	8.00	1.70	10.70	9.00	7.06	7.00
Lister's Special Corn	.79	.76	1.55	1.23	6.00	2.40	8.40	8.00	1.70	10.10	9.00	4.19	3.00
Lister's Special Potato Fertilizer	.86	1.25	2.11	1.65	4.40	4.70	9.10	8.00	1.50	10.60	9.00	4.38	3.00
Lister's Success Fertilizer	.81	.75	1.56	1.23	6.90	2.70	9.60	9.00	1.40	11.00	10.00	3.10	2.00
LOWELL FERTILIZER CO., Boston, Mass.													
Dried Blood	....	....	9.92	9.84	....	....	....	....	....	....	....	....	....

Ground Tankage	....	....	5.03	5.00	....	....	....	....	....	16.00	....	....	....
Lowell 12 per cent. Acid Phosphate	....	....	....	....	10.50	4.90	15.40	12.00	.80	16.20	14.00	....	....
Lowell 14 per cent. Acid Phosphate	....	....	....	....	12.20	4.80	17.00	14.00	.70	17.70	15.00	....	....
Lowell Animal Brand for all crops	1.19	1.28	2.47	2.46	8.20	.60	8.80	8.00	1.20	10.00	9.00	4.78	4.00
Lowell Bone Fertilizer for Corn, Grain, Grass and Vegetables	.72	.97	1.69	1.64	7.20	2.00	9.20	8.00	1.50	10.70	9.00	3.14	3.00
Lowell Cereal Fertilizer	.28	.83	1.11	.82	5.30	1.80	7.10	7.00	1.40	8.50	8.00	1.34	1.00
Lowell Dissolved Bone and Potash	.84	.92	1.76	1.64	6.60	2.40	9.00	9.00	2.40	11.40	10.00	2.30	2.00
Lowell Empress Brand for Corn, Potatoes and Grain	.49	1.06	1.55	1.24	6.40	1.90	8.30	7.00	1.20	9.50	8.00	2.19	2.00
Lowell Grass Mixture for Top Dressing and Lawns	1.90	2.63	4.52	4.10	6.10	1.30	7.40	7.00	1.60	9.00	8.00	5.96	6.00
Lowell Ground Bone	....	....	2.49	2.46	....	....	....	....	....	26.94	23.00	....	....
Lowell Lawn Dressing	3.94	.30	4.24	4.10	6.50	1.40	7.90	7.00	1.10	9.00	8.00	6.00	6.00
Lowell Market Garden Manure	1.95	2.14	4.09	4.10	5.10	2.50	7.60	7.00	1.00	8.60	8.00	6.37	6.00
Lowell Potato Grower with 10 per cent. Potash	1.29	2.00	3.29	3.28	5.20	1.50	6.70	6.00	1.40	8.10	7.00	10.30	10.00
Lowell Potato Manure	.87	.95	1.76	1.61	5.80	1.30	7.10	7.00	1.40	8.50	8.00	4.61	4.00
Lowell Potato Phosphate	1.11	1.58	2.69	2.46	8.40	.80	9.20	8.00	1.60	10.80	9.00	6.00	6.00
Lowell Potato Phosphate	1.07	1.63	2.70	2.64	6.90	1.70	8.60	8.00	1.80	10.40	9.00	6.72	6.00
Lowell Special Potato Fertilizer with 10 per cent. Potash	1.16	1.36	2.52	2.46	5.60	.80	6.40	6.00	1.40	7.80	7.00	9.44	10.00
Lowell Sterling Phosphate	.10	1.16	1.26	.82	6.20	3.10	9.30	8.00	1.10	10.40	9.00	4.68	4.00
Lowell Superior Fertilizer with 10 per cent. Potash	1.88	2.02	3.90	3.69	6.00	1.90	7.90	7.00	1.10	9.00	8.00	10.28	10.00
Muriate of Potash	....	....	....	....	....	....	....	....	....	....	....	50.95	50.00
Nitrate of Soda	....	....	15.58	15.00	....	....	....	....	....	....	....	....	....
Sulphate of Potash	....	....	....	....	....	....	....	....	....	....	....	49.88	43.00
McQUESTION & LEWIS, Manchester, N. H.													
Muriate of Potash	....	....	....	....	....	....	....	....	....	....	....	53.16	....
Nitrate of Soda	....	....	15.94	....	....	....	....	....	....	....	....	....	....
Sulphate of Potash	....	....	....	....	....	....	....	....	....	....	....	50.75	....
NATIONAL FERTILIZER CO., New York and Boston.													
Chittenden's Ammoniated Bone Phosphate	1.22	.52	1.74	1.65	5.80	2.90	8.70	8.00	1.30	10.00	9.00	2.37	2.00
Chittenden's Complete Grass Fertilizer	2.06	2.49	4.55	4.11	5.10	1.80	6.90	6.00	1.00	7.90	7.00	5.52	5.00
Chittenden's Complete Root and Grain Fertilizer	2.23	1.20	3.43	3.29	6.60	2.30	8.90	8.00	1.60	10.50	9.00	6.72	6.00
Chittenden's Eureka Potato Fertilizer	1.78	.83	2.61	2.47	4.50	1.60	6.10	6.00	1.60	7.70	7.00	10.40	10.00
Chittenden's High Grade Special Tobacco Fertilizer	3.33	2.44	5.77	5.76	5.30	1.40	6.70	5.00	1.40	8.10	6.00	9.60	10.00
Chittenden's 14 per cent. Plain Super-Phosphate	....	....	....	....	11.80	4.00	15.80	14.00	1.20	17.00	15.00	....	....
Chittenden's Potato Phosphate	1.75	.43	2.18	2.06	7.20	1.40	8.60	8.00	1.80	10.40	9.00	6.12	6.00
Chittenden's Universal Phosphate	.22	.73	.95	.82	5.70	3.10	8.80	8.00	1.40	10.20	9.00	5.18	5.00
Chittenden's Tobacco Special with Sulphate of Potash	.82	4.00	4.82	4.53	1.60	2.00	3.60	3.00	1.00	4.60	4.00	5.98	5.50

COMPOSITION OF COMMERCIAL FERTILIZERS SAMPLED AND ANALYZED IN 1914.—*Continued.*

MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.							POTASH.	
			Total.				Available.			Total.			
	Inorganic.	Organic.	Found.	Guaranteed.	Soluble.	Reverted.	Found.	Guaranteed.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.
NEW ENGLAND FERTILIZER CO., Boston, Mass.													
New England Corn and Grain Fertilizer	.33	.97	1.50	1.24	6.00	1.60	7.60	7.00	1.10	8.70	8.00	2.49	2.00
New England Corn Manure for Corn, Vegetables and Root Crops	1.40	1.92	3.32	3.28	6.70	1.40	8.10	8.00	2.00	10.10	9.00	7.02	7.00
New England Corn Phosphate	.88	.94	1.82	1.64	7.10	1.30	8.40	8.00	2.10	10.50	9.00	3.12	3.00
New England High Grade Potato Fertilizer	1.76	.92	2.68	2.46	7.30	.90	8.20	8.00	2.00	10.20	9.00	6.00	6.00
New England Market Garden Manure	1.92	2.06	3.98	4.10	6.10	1.90	8.00	7.00	1.10	9.10	8.00	7.92	7.00
New England Potato Fertilizer	4.80	1.23	1.71	1.64	6.20	.90	7.10	7.00	1.70	9.00	8.00	4.35	4.00
New England Potato Grower with 10 per cent. Potash	.90	1.57	2.47	2.46	5.20	1.50	6.70	6.00	1.20	7.90	7.00	10.09	10.00
New England Super-Phosphate for all crops	1.61	1.04	2.65	2.46	7.60	1.00	8.90	8.00	1.30	10.20	9.00	4.05	4.00
THE NEW MINERAL FERTILIZER CO., Boston, Mass.													
New Mineral Plant Food	....	....	.11	....	....	....	....	....	....	.60	....	.08	....
NITRATE AGENCIES CO., Boston, Mass.													
Nitrate of Soda	....	....	15.57	15.00	....	....	....	....	....	....	....	....	....
OLDS & WHIPPLE, Hartford, Conn.													
Olds & Whipple Complete Corn and Potato Fertilizer	1.69	1.90	3.59	3.30	1.70	7.00	8.70	6.00	3.90	12.60	6.00	7.20	6.00
Olds & Whipple Complete Tobacco Fertilizer	1.01	4.39	5.40	4.50	1.00	3.00	4.00	3.00	1.10	5.10	3.00	6.68	5.50
Olds & Whipple High Grade Potato Fertilizer	1.19	2.50	3.69	3.30	.80	5.60	6.40	6.00	2.80	9.20	6.00	11.44	10.00
Olds & Whipple Nitrate of Soda	....	....	15.66	15.00	....	....	....	....	....	....	....	....	....
Sulphate of Potash	....	....	....	....	....	....	....	....	....	....	....	48.12	48.00

PARMENTER & POLSEY FERTILIZER CO., Boston, Mass.													
P. & P. Aroostook Special with 10 per cent. Potash	1.96	1.76	3.72	3.69	6.30	1.10	7.47	7.00	1.30	8.70	8.00	11.12	10.00
P. & P. Maine Potato Fertilizer with 10 per cent. Potash	1.14	2.39	3.53	3.28	4.80	1.70	6.50	6.00	1.30	7.80	7.00	10.04	10.00
P. & P. Plymouth Rock Brand for all crops	1.70	1.02	2.72	2.46	7.50	.90	8.40	8.00	1.40	9.80	9.00	4.30	4.00
P. & P. Potato Grower with 10 per cent. Potash	1.16	1.19	2.65	2.46	5.70	.80	6.50	6.00	1.10	7.60	7.00	10.00	10.00
ROGERS & HUBBARD CO., Middletown, Conn.													
Complete Phosphate	.42	1.26	1.68	1.50	4.80	3.60	8.40	7.00	2.60	11.00	8.00	5.65	5.00
Fertilizer for Seeding Down and Fruit	.22	2.03	2.25	2.20	.70	12.50	13.20	6.50	5.70	18.90	16.00	12.34	12.00
New Market Garden Phosphate	1.08	1.05	2.13	2.00	4.20	2.50	6.70	6.00	2.40	9.10	7.00	10.20	10.00
Oats and Top Dressing	6.22	2.44	8.66	8.50	.80	6.10	6.90	4.50	2.00	8.90	8.00	8.26	8.00
Potato Phosphate	1.02	1.08	2.10	2.00	6.90	2.90	9.80	9.00	2.40	12.20	10.00	5.12	5.00
Soluble Corn and General Crops Manure	1.11	1.41	2.52	2.50	2.80	3.60	6.40	6.00	2.20	8.60	8.00	8.30	8.00
Soluble Potato Manure	2.51	2.60	5.11	5.00	2.30	7.10	9.40	7.00	2.30	11.70	10.00	6.15	5.00
J. W. SANBORN, Pittsfield, N. H.													
Prof. Sanborn's Chemical Fertilizer for Potatoes and Corn	1.34	1.27	3.61	3.30	6.70	1.70	8.40	7.00	1.30	9.70	9.50	8.68	8.00
Prof. Sanborn's Chemical Fertilizer for use in Hill and Drill	1.42	1.17	2.59	2.40	5.70	1.60	7.30	7.00	2.90	10.20	11.50	4.66	4.00
Prof. Sanborn's Chemical Fertilizer for Grass and Grain	3.63	1.51	5.14	4.75	3.60	1.50	5.10	4.50	2.10	7.20	6.00	6.08	5.75
Prof. Sanborn's Special Grass Fertilizer for Acid Soils	4.57	.91	5.48	5.00	2.00	4.70	6.70	5.00	1.10	7.80	7.50	6.92	6.60
Prof. Sanborn's Special Potato	1.81	1.50	3.31	3.29	5.40	1.10	6.50	6.00	1.50	8.00	8.50	10.00	10.00
Prof. Sanborn's Chemical Fertilizer for Clover and Beans	1.63	.95	2.58	2.00	2.70	4.50	7.20	6.00	2.20	9.40	8.00	10.40	10.00
FRANK SMITH & CO., Lancaster, N. H.													
For Seeding Grain, Potatoes, Corn	2.24	1.29	3.53	....	7.80	1.10	8.90	8.04	1.20	10.10	8.04	10.04	10.00
Top Dressing	4.80	1.14	5.94	5.50	5.20	1.90	7.10	7.00	.70	7.80	....	6.75	6.60

Financial Statement on Fertilizer Account.

Received license fees on brands registered in 1914, $2,535, which amount was paid to the state treasurer in compliance with the law.

The appropriation made for the purpose of this act was $2,500, and is accounted for as follows:

Paid A. G. Weeks, collecting samples.....	$405.61
Paid New Hampshire Agricultural College for analyses	1,974.63
Paid Ira C. Evans Co., paper and printing bulletins	119.76
	$2,500.00

A balance of $315.37 was due the Agricultural College for analytical work which was paid from the 1915 appropriation when it became available on September 1.

For the last few years this appropriation has not been sufficient to meet the expenses for this work, running short about $250. In submitting the estimate for appropriations for 1915, I shall ask for $3,000.

SEED TESTS FOR 1914.

MADE FOR THE

STATE DEPARTMENT OF AGRICULTURE

By Frederick W. Taylor, B. Sc.,

Agronomist.

PURE SEED LAW.

STATE OF NEW HAMPSHIRE.

IN THE YEAR OF OUR LORD ONE THOUSAND NINE HUNDRED AND NINE.

AN ACT

To Regulate the Sale of Agricultural Seeds.

Be it enacted by the Senate and House of Representatives in General Court convened:

Section 1. Every lot of agricultural seeds, including the seeds of cereals, grasses, forage plants, vegetables, garden plants and white pine trees, but not including those of other trees, shrubs and ornamental plants, which is sold, offered or exposed for sale for seed in bulk or package of one pound or more, within this state, shall be accompanied by a plainly written or printed guarantee, stating first, its percentage of purity from foreign seeds and other matter, and second, its percentage of vitality.

Sect. 2. Sellers or dealers in seeds may base their guarantees upon tests or analyses conducted by themselves, their agents, or by the Secretary of the State Board of Agriculture or his agents; *provided* that such tests or analyses shall be made in such a manner, and under such conditions as the said secretary may prescribe.

Sect. 3. The results of all tests or analyses of seeds

made by the said secretary, together with the names and addresses of the persons from whom the samples of seed were obtained, shall be published annually in a bulletin by the New Hampshire College Experiment Station, and biennially in the report of the State Board of Agriculture. The said secretary shall also publish from time to time in the Quarterly Report of the State Board of Agriculture equitable standards of purity and vitality, together with such information concerning agricultural seeds as may be of public benefit.

SECT. 4. Whoever sells, offers or exposes for sale or for distribution, within this state, any agricultural seeds heretofore named in this act, without complying with the requirements of sections one and two, or whoever, with intention to deceive, wrongly marks or labels any lot of agricultural seeds, including the seeds of cereals, grasses, forage plants, vegetables, garden plants and white pine trees, but not including those of other trees, shrubs and ornamental plants, as pertains to their percentage of purity and vitality, shall be punished by a fine not exceeding one hundred dollars for the first offense, and not exceeding two hundred dollars for each subsequent offense.

SECT. 5. The provisions of the four preceding sections shall not apply to any person growing, selling, offering or exposing for sale cereals and other agricultural seeds for food.

SECT. 6. The Secretary of the State Board of Agriculture shall diligently enforce the provisions of sections one and four of this act, and in his discretion prosecute offenses against the same.

THE OBJECT OF THE LAW.

The object of this law is in substance the same as that of our pure food and fertilizer laws, namely, to have the

buyer know just what he is buying. It is intended to provide a means whereby our farmers and other purchasers of seeds may have reliable information, on the basis of which they may protect themselves against the introduction of noxious weeds and against loss through weak or otherwise worthless seeds; also to provide a reasonable protection for careful, conscientious dealers against negligent, designing, or unscrupulous ones.

It is not the purpose or intent of the law to work a hardship on our seed dealers or to hurt their legitimate business, and neither is it intended to require farmers and other growers to purchase seeds of a better quality than they desire.

Until the present year the expense of making the tests has been borne by parties sending in samples. The charge for making a purity test was seventy-five cents, and for the germination test twenty-five cents per sample.

As a result, only a limited number of samples were sent in to be tested. The legislature in 1913 increased the appropriation to $500, making it possible for the commissioner to collect samples and have them tested without cost to the parties from whom they were secured. Thus without heavy cost to the state the farmers may be sure that the seeds they buy are up to the guarantee made by the seed dealers.

We believe this is a wise provision and the appropriation should be continued.

The appropriation of $500 is accounted for as follows:

Paid New Hampshire Agricultural College, making tests	$111.00
Paid Ira C. Evans Co., for stock, printing supplies and bulletins for 1913	179.68
Paid John Carter & Co., sample containers	.88
	$291.56

SEED TESTS.

BY F. W. TAYLOR.

MADE SEPTEMBER 1, 1913, TO SEPTEMBER 1, 1914.

The administration of this law is now in the hands of the State Commissioner of Agriculture, who has appointed the writer, agronomist of the Experiment Station, as his regular agent for making all tests and analyses in this state.

During the year ending September 1, 1914, thirty-five samples of seed were voluntarily sent in for analysis. In addition to these, the collector secured and sent in ninety-one, making a total of 126 samples submitted for analysis during the year.

The samples sent in by the collector were secured from eighteen dealers in as many different towns, representing each of the ten counties of the state. These samples included 3 of alfalfa, 4 of alsike clover, 7 of barley, 13 of corn, 7 of millet, 7 of oats, 12 of red clover, 8 of redtop, 2 of rye, 18 of timothy, and 10 of miscellaneous seeds.

Of the 35 samples sent in voluntarily for examination, the writer has no knowledge that seeds represented by these samples were on the market. Quite frequently individuals ask for a report upon the quality of a given sample and make the purchase of seed for their own use upon the basis of this report. It should not, therefore, be understood that seeds represented by all the samples inspected were offered for sale by the parties for whom the inspection was made.

The writer desires to acknowledge his appreciation of the careful and efficient work of Mr. W. E. Stokes, who made the tests and examinations of the samples herewith reported.

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Percent Pure Seed	Percent Weed Seed	Percent Other Grass Seeds	Percent Inert Matter	Percent germination
480	RED CLOVER (*Hamilton*) Holbrook Grocery Co., Keene, N. H. Oct. 30, 1913. Black Mustard, 270; Bracted Plantain, 360; Crab Grass, 90; Docks, 3,150; Lady's Thumb, 1,080; Lamb's Quarters, 720; Old Witch Grass, 900; Indian Mustard, 90; Ribgrass, 360; Rugel's Plantain, 900; Sorrel, 1,080; Timothy, 4,860.	91.5	5.0	1.4	2.1	....
481	TIMOTHY (*Hamilton*) Holbrook Grocery Co., Keene, N. H. Oct. 30, 1913. Cinquefoil, 227; Canada Bluegrass, 1,362; Peppergrass, 454; Red Clover, 2,043; Red Top, 2,070; Rugel's Plantain, 227; Yellow Daisy, 454.	99.1	.4	.1	.4	....
482	TIMOTHY Frank W. Mason, Millis, Mass. Nov. 28, 1913. Kentucky Bluegrass, 681; Unknown, 227; Peppergrass, 227; Red Top, 681; Rugel's Plantain, 227; White Clover, 1,135.	99.6	.1	.1	.2	....
483	RED TOP Frank W. Mason, Millis, Mass. Nov. 28, 1913. Old Witchgrass, 5,434; Hard Fescue, 906; Timothy, 9,966.	61.9	.3	.4	37.4	....
484	OATS (*R. N. S.*) Holbrook Grocery Co., Keene, N. H. Dec. 17, 1913. Crabgrass, 15; Lamb's Quarters, 870; Old Witchgrass, 15; Shepherd's Purse, 15; Sorrel, 90; Timothy, 150; Wild Mustard, 1,050; Miscellaneous, 45; Red Top, 75; Quackgrass, 75.	97.2	.5	1.2	1.1	96.5
485	OATS (*Mill*) Holbrook Grocery Co., Keene, N. H. Jan. 30, 1914. Ball Mustard, 60; Barley, 45; Buckwheat, 285; Wheat, 210; Wild Oats, 120; False Flax, 15.	96.7	2.2	.4	.7	74.0
486	TIMOTHY (*14 A*) Holbrook Grocery Co., Keene, N. H. Feb. 6, 1914.	....	....	....	....	84.5
487	OATS (*Canadian*) E. C. & W. L. Hopkins, Greenfield, N. H. Feb. 16, 1914. Barley, 15; Wheat, 15.	99.8	.2	....	....	96.5
488	CANADA FIELD PEAS Holbrook Grocery Co., Keene, N. H. Feb. 23, 1914.	99.2	....	....	.8	95.5
489	SWEET CORN (*Golden Bantam*) C. L. Jenness, Dover, N. H.	....	....	....	....	88.5
490	CORN (*Sanford*) Holbrook Grocery Co., Keene, N. H. March 1, 1914.	....	....	....	....	81.0
491	OATS W. F. Peel, Nashua, N. H. March 4, 1914.	....	....	....	....	94.5
492	RED CLOVER M. B. Blaisdell, Wolfeboro, N. H. March 3, 1914. Alsike Clover, 4,530; Green Foxtail, 2,718; Timothy, 6,342.	99.4	trace	.2	.4	....
493	TIMOTHY M. B. Blaisdell, Wolfeboro, N. H. March 3, 1914.	99.8	....	....	.2	....
494	CORN (*Eight-row*) Andrew Langley, Durham, N. H. March 12, 1914.	....	....	....	....	100.0
495	OATS Stratton & Co., Concord, N. H. March 18, 1914.	....	....	....	....	92.5
496	OATS E. E. Hodgdon, North Conway, N. H. March 27, 1914. Lady's Thumb, 15; Corn, 15; Barley, 60; Timothy, 15; Wild Mustard, 75; Yellow Foxtail, 30; Black Bindweed, 30; Wheat, 75; Wild Rose, 315.	96.8	.7	1.7	.8	3.5

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Percent Pure Seed	Percent Weed Seed	Percent Other Grass Seeds	Percent Inert Matter	Percent Germination.
497	TIMOTHY (*Gold Medal*) Rand, Ball & King Co., Claremont, N. H. April 12, 1914.	99.7	trace	....	.3	96.0
498	TIMOTHY (*Pan American*) Rand, Ball & King Co., Claremont, N. H. April 2, 1914.	99.9	....	....	trace	95.5
499	RED CLOVER (*Eureka*) Rand, Ball & King Co., Claremont, N. H. April 12, 1914. Alsike Clover, 180; Docks, 180; Timothy, 15,840.	96.4	....	1.5	2.1	96.5
500	RED TOP (*3 X*) Rand, Ball & King Co., Claremont, N. H. April 2, 1914. Timothy, 2,268.	93.5	....	.2	6.3	89.5
501	GRASS MIXTURE Harvey J. Hall, Pittsfield, N. H. April 2, 1914.	....	....	....	....	76.5
502	TIMOTHY (*Pine Tree*) Holbrook-Marshall Co., Nashua, N. H. April 2, 1914. Kentucky Bluegrass, 1,130; Peppergrass, 226; Self-heal, 226; Sorrel, 226.	99.7	trace	.1	.2	95.0
503	OATS (*W. D.*) Holbrook Grocery Co., Keene, N. H. April 3, 1914. Wheat, 378; Black Bind Weed, 313; Ball Mustard, 84; Flax, 63; Large Seeded False Flax, 42; Wild Oats, 21; Barley, 42.	96.0	.6	2.6	.8	98.5
504	CRIMSON CLOVER Harvey J. Hall, Pittsfield, N. H. April 2, 1914.	....	....	....	....	96.5
505	TIMOTHY (*Pine Tree*) C. L. Jenness, Dover, N. H. April 24, 1914. Ragweed, 2,265.	92.8	.3	6.5	.4	96.5
506	RED TOP (*Globe*) C. L. Jenness, Dover, N. H. April 24, 1914. Chicory, 906; False Flax, 906.	99.8	trace	.1	.1	76.5
507	RED CLOVER (*Ace*) C. L. Jenness, Dover, N. H. April 24, 1914. Bracted Plantain, 90; Docks, 90; Yellow Foxtail, 815.	99.4	.3	....	.3	96.0
508	ALSIKE CLOVER (*Pine Tree*) C. L. Jenness, Dover, N. H. April 24, 1914. Night Flowering Catchfly, 679; Red Clover, 1,812; Sorrel, 453; Timothy, 9,060; White Clover, 1,359.	97.7	.2	1.7	.4	98.0
509	OATS (*Welcome*) C. L. Jenness, Dover, N. H. April 24, 1914.	100.0	....	....	....	92.5
510	ALFALFA C. L. Jenness, Dover, N. H. April 24, 1914. Yellow Foxtail, 90; miscellaneous, 90.	99.8	.1	....	.1	97.0
511	RED TOP (*Bay State*) Hilliard & Kimball, Exeter, N. H. April 24, 1914. English Plantain, 453; Yellow Foxtail, 453.	97.0	.5	....	2.5	58.5
512	RED CLOVER (*Bay State*) Hilliard & Kimball, Exeter, N. H. April 24, 1914. Night Flowering Catchfly, 90; Timothy, 90; Yellow Foxtail, 906.	99.1	.4	trace	.5	98.0
513	TIMOTHY (*White Mountain*) Hilliard & Kimball, Exeter, N. H. April 24, 1914. Alsike Clover, 453; Kentucky Bluegrass, 226; Peppergrass, 226.	99.5	....	.1	.4	96.0
514	TIMOTHY (*Bay State*) Hilliard & Kimball, Exeter, N. H. April 24, 1914.	99.9	....	....	.1	97.0
515	TIMOTHY (*Pine Tree*) Hilliard & Kimball, Exeter, N. H. April 24, 1914. Alsike Clover, 226.	99.8	....	trace	.2	95.0
516	CORN (*Improved Leaming*) Hilliard & Kimball, Exeter, N. H. April 24, 1914.	100.0	....	....	....	93.5
517	RED CLOVER (*White Mountain*) Hilliard & Kimball, Exeter, N. H. April 24, 1914. Yellow Foxtail, 3,624.	99.9	.1	....	....	97.5

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Percent Seed	Percent Weed Seed	Percent Other Grass Seeds	Percent Inert Matter	Percent Germination
518	ALFALFA (*White Mountain*) Hilliard & Kimball, Exeter, N. H. April 24, 1914.	99.9	....	....	.1	92.0
519	ALSIKE CLOVER (*White Mountain*) Hilliard & Kimball, Exeter, N. H. April 24, 1914. Timothy, 8,833.	99.3	....	.5	.2	84.5
520	RED CLOVER W. A. Bryer & Co., Peterborough, N. H. May 2, 1914. Alsike Clover, 270; Green Foxtail, 720; Lamb's Quarters, 540; Pigweed, 540; Timothy, 180; Buckhorn, 540.	98.7	.8	trace	.5	96.0
521	RED TOP W. A. Bryer & Co., Peterborough, N. H. May 2, 1914. Cinquefoil, 61,608; Red Clover, 453; Selfheal, 1,359; Sorrel, 4,983; Timothy, 81,540; White Clover, 1,812; Tumbling Mustard, 1,812.	74.9	2.2	5.4	17.5	60.5
522	TIMOTHY W. A. Bryer & Co., Peterborough, N. H. April 29, 1914. Cinquefoil, 3,616; Kentucky Bluegrass, 1,808; Peppergrass, 226; Red Top, 2,712; Sorrel, 2,260; Vervain, 226; White Clover, 1,356.	98.2	.5	.1	1.2	90.5
523	RED CLOVER (*Pan American*) W. F. Neal, Derry, N. H. May 19, 1914. Ragweed, 180; Buckhorn, 90; Yellow Foxtail, 90.	99.7	.1	....	.2	86.5
524	RED TOP (*Choice*) W. F. Neal, Derry, N. H. June 22, 1914. Alsike Clover, 1,359; Cinquefoil, 4,530; Peppergrass, 6,795; Timothy, 97,848.	91.8	1.2	4.5	2.5	50.0
525	TIMOTHY (*Imperator*) W. F. Neal, Derry, N. H. May 19, 1914. Alsike Clover, 2,260; Cinquefoil, 226; Canada Bluegrass, 678; Rugel's Plantain, 226; Sorrel, 226.	98.7	.5	....	.8	88.0
526	TIMOTHY (*Bison*) R. L. Costello, Portsmouth, N. H. May 21, 1914. Alsike Clover, 2,717; Cinquefoil, 452; Kentucky, 2,717; Peppergrass, 1,130; Red Top, 226; Rugel's Plantain, 678; Sorrel, 226.	98.5	.4	.2	.9	86.0
527	RED TOP (*Ace*) R. L. Costello, Portsmouth, N. H. June 22, 1914. Kentucky Bluegrass, 253; Sorrel, 253; Timothy, 5,436; Yarrow, 2,718.	94.5	.5	1.0	4.0	40.5
528	RED CLOVER (*Kaiser*) R. L. Costello, Portsmouth, N. H. May 21, 1914. Alsike Clover, 990; Docks, 270; Lamb's Quarters, 450; Old Witchgrass, 90; Buckhorn, 1,170; Timothy, 1,350; Yellow Foxtail, 360; Black Seeded Plantain, 90.	98.4	.6	.3	.7	93.0
529	RED CLOVER (*Mammoth*) R. L. Costello, Portsmouth, N. H. May 22, 1914. Alsike Clover, 450; Docks, 90; Lamb's Quarters, 180; Sorrel, 360; Timothy, 270; Yellow Foxtail, 990; English Plantain, 720.	97.6	.5	.3	1.6	90.0
530	TIMOTHY (*Pine Tree*) R. L. Costello, Portsmouth, N. H. May 22, 1914. Kentucky Bluegrass, 252; Red Clover, 452.	99.7	trace	.1	.2	89.5
531	ALSIKE CLOVER (*Kaiser*) R. L. Costello, Portsmouth, N. H. May 22, 1914. Cinquefoil, 226; Docks, 226; Kentucky Bluegrass, 452; Crimson Clover, 452; Red Clover, 409; Sorrel, 8,136; Timothy, 32,770; Treacle Mustard, 226; Catchfly, 904.	94.2	1.4	2.9	1.5	84.0
532	ALFALFA (*Pine Tree*) R. L. Costello, Portsmouth, N. H. May 22, 1914.	99.7	....	....	.3	97.0
533	ORCHARD GRASS (*Neck*) R. L. Costello, Portsmouth, N. H. May 22, 1914. Docks, 676; Kentucky Bluegrass, 2,712; Sorrel, 2,034; Yellow Foxtail, 1,808.	93.4	.4	.2	6.0	27.5

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Percent Pure Seed	Percent Weed Seed	Percent Other Grass Seeds	Percent Inert Matter	Percent Germination
534	MILLET (*Hungarian*) R. L. Costello, Portsmouth, N. H. May 22, 1914. Lamb's Quarters, 90; Smartweed, 720.	99.9	.1	....	trace	92.0
535	MILLET (*Japanese*) R. L. Costello. Portsmouth, N. H. May 22, 1914. Ragweed, 1,260; Yellow Foxtail, 2,430.	96.5	1.9	1.5	.1	93.0
536	MILLET (*German*) R. L. Costello, Portsmouth, N. H. May 22, 1914. Crabgrass, 270; Lamb's Quarters, 180; Japanese Millet, 180; Ragweed, 90; Smartweed, 360; Yellow Foxtail, 990; Hungarian Millet, 2,520.	98.1	.2	1.6	.1	95.0
537	CREEPING BENT R. L. Costello, Portsmouth, N. H. June 2, 1914.	....	....	....	....	19.0
538	RED FESCUE (*52369*) R. L. Costello, Portsmouth, N. H. June 22, 1914.	....	....	....	....	57.5
539	MEADOW FESCUE (*G. B. 94554*) R. L. Costello, Portsmouth, N. H. June 22. 1914. Docks, 151; Flax, 151; Field Bromegrass, 2,269.	98.2	.1	.7	1.0	95.0
540	CRFSTED DOGSTAIL R. L. Costello, Portsmouth, N. H. June 2, 1914. Fireweed, 1,808.	99.8	.2	....	....	27.5
541	KENTUCKY BLUEGRASS R. L. Costello, Portsmouth, N. H. June 3, 1914. Alsike Clover, 1,359; Docks, 453; Millet, 453; Peppergrass, 452; Red Clover, 1,812; Red Top, 1,359.	97.6	1.2	....	1.2	....
542	OATS (*Montana*) R. L. Costello, Portsmouth, N. H. June 2. 1914. Wild Oats, 75; Wheat, 30; Barley, 15; Wild Rose, 15.	99.1	.1	.8	trace	99.5
543	LAWNGRASS R. L. Costello, Portsmouth, N. H. June 15, 1914.	....	....	....	....	5.0
544	BARLEY (*Beardless*) R. L. Costello, Portsmouth, N. H. June 2, 1914. Wheat, 15.	99.7	....	.1	.2	98.0
545	BARLEY (*Six-row*) R. L. Costello, Portsmouth, N. H. June 2, 1914. Wheat, 30; Oats, 90.	99.4	....	.5	.1	98.5
546	RHODE ISLAND BENT GRASS R. L. Costello, Portsmouth, N. H. July 7, 1914.	....	....	....	....	25.5
547	CORN (*Field*) R. L. Costello, Portsmouth, N. H. June 2, 1914.	100.0	....	....	....	88.5
548	CORN (*Improved Leaming*) R. L. Costello, Portsmouth, N. H. June 2, 1914.	100.0	....	....	....	83.5
549	CORN (*Mondamin*) R. L. Costello, Portsmouth, N. H. June 2, 1914.	100.0	....	....	....	99.5
550	BUCKWHEAT (*Japanese*) R. L. Costello. Portsmouth, N. H. June 2, 1914. Oats, 15; Ragweed, 15.	99.4	trace	.1	.5	96.0
551	RAPE (*Dwarf Essex*) R. L. Costello, Portsmouth, N. H. June 5, 1914.	99.6	....	....	.4	95.5
552	RYE (*Spring*) R. L. Costello, Portsmouth, N. H. June 2, 1914. Wheat, 150; Wild Oats, 30.	97.8	....	.9	1.3	92.5
553	TIMOTHY (*Gold Medal*) H. Evans & Co., Rochester, N. H. June 2, 1914. Kentucky Bluegrass, 452; Red Clover, 452; English Plantain, 452.	99.5	.2	trace	.3	93.0
554	RED TOP (*Fancy*) H. Evans & Co., Rochester, N. H. June 22, 1914. Alsike Clover, 906; Yarrow, 3,624.	91.7	.3	....	8.0	45.5
555	ALSIKE CLOVER (*642*) H. Evans & Co., Rochester, N. H. June 2, 1914. Pigweed, 226; Red Clover, 2,034; Red Top, 226; Selfheal, 226; Timothy, 2,938.	98.4	.5	.5	.6	84.0

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Percent Pure Seed	Percent Weed Seed	Percent Other Grass Seeds	Percent Inert Matter	Percent Germination
556	CORN (*Leaming*) H. Evans & Co., Rochester, N. H. June 2, 1914.	98.1	....	....	1.9	90.0
557	BARLEY (*Canadian Cluster*) H. Evans & Co., Rochester, N. H. June 2, 1914. Oats, 15; Wheat, 15; Wild Buckwheat, 15.	97.7	.1	.2	2.0	92.0
558	TIMOTHY (*Pan American*) H. Evans & Co., Rochester, N. H. June 2, 1914. Alsike Clover, 452; Old Witchgrass, 226; Peppergrass, 678; Rugel's Plantain, 226.	99.6	.2	....	.2	86.5
559	MILLET (*Hungarian*) H. Evans & Co., Rochester, N. H. June 2, 1914. Old Witchgrass, 90; Smartweed, 90; Timothy, 900; Yellow Foxtail, 90.	99.5	....	.1	.4	19.5
560	RED CLOVER L. P. Varney, Alton Bay, N. H. June 2, 1914. Alsike Clover, 5,040; Catnip, 90; Crabgrass, 450; Docks, 270; Old Witchgrass, 90; English Plantain, 450; Pigweed, 450; Rugel's Plantain, 7,740; Timothy, 32,040; Yellow Foxtail, 1,080.	92.3	2.0	3.5	2.2	87.5
561	RED CLOVER (*23020*) L. P. Varney, Alton Bay, N. H. June 2, 1914. Alsike Clover, 9,630; Crabgrass, 630; Docks, 720; Green Foxtail, 2,340; Lamb's Quarters, 630; English Plantain, 450; Bracted Plantain, 90; Rugel's Plantain, 1,890; Smartweed, 450; Sorrel, 1,260; Timothy, 36,720; Wild Mustard, 180; Evening Primrose, 90.	90.7	2.8	4.4	2.1	82.0
562	RED TOP (*XX*) L. P. Varney, Alton Bay, N. H. June 23, 1914. Cinquefoil, 14,496; Peppergrass, 453; Timothy, 67,950; Yarrow, 2,718.	88.4	.4	3.2	8.0	30.0
563	CORN (*Sanford White*) F. H. Moore, Laconia, N. H. June 5, 1914.	100.0	....	....	....	96.0
564	TIMOTHY (*XXX*) F. H. Moore, Laconia, N. H. June 5, 1914. Alsike Clover, 1,582; Peppergrass, 678; Rugel's Plantain, 226; Sorrel, 452.	99.3	.3	....	.4	76.5
565	BARLEY (*Six-row White Mountain*) F. H. Moore, Laconia, N. H. June 5, 1914. Oats, 465; Black Bindweed, 30.	99.7	1.6	....	1.7	99.0
566	OATS (*White Mountain*) F. H. Moore, Laconia, N. H. June 5, 1914. Wheat, 18; Barley, 18.	98.9	....	.3	.8	99.5
567	CORN (*Cuban Giant*) Batchelder Bros., Tilton, N. H. June 5, 1914.	100.0	....	....	....	94.0
568	CORN (*Mastodon*) Batchelder Bros., Tilton, N. H. June 5, 1914.	100.0	....	....	....	92.0
569	CORN (*Leaming*) Batchelder Bros., Tilton, N. H. June 5, 1914.	100.0	....	....	....	96.0
570	PETUNIA (*Mixed*) Joseph Breck & Sons, Boston, Mass. May 26, 1914.	....	....	....	....	28.0
571	NASTURTIUM (*Tall Mixed*) Joseph Breck & Sons, Boston, Mass. May 19, 1914.	....	....	....	....	64.0
572	NASTURTIUM (*Dwarf Mixed*) Joseph Breck & Sons, Boston, Mass. May 19, 1914.	....	....	....	....	59.0
573	KALE (*Tall Green Curled*) Joseph Breck & Sons, Boston, Mass. May 16, 1914.	....	....	....	....	94.5
574	TURNIP (*Early Purple Top*) Joseph Breck & Sons, Boston, Mass. May 19, 1914.	....	....	....	....	94.0
575	KALE (*Tall Green Curled No. 1*) Joseph Breck & Sons, Boston, Mass. May 16, 1914.	....	....	....	....	85.5
576	KALE (*Dwarf Green Curled No. 3*) Joseph Breck & Sons, Boston, Mass. May 16, 1914.	....	....	....	....	85.0
577	BARLEY (*Six-row Monadnock*) Holbrook Grocery Co., Keene, N. H. June 5, 1914. Oats, 225.	98.6	....	.7	.7	98.0

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Percent Pure Seed	Percent Weed Seed	Percent Other Grass Seeds	Percent Inert Matter	Percent Germination
578	TIMOTHY (*White Mountain*) Holbrook Grocery Co., Keene, N. H. June 5, 1914. Alsike Clover, 676; Kentucky Bluegrass, 226; Sorrel, 226.	99.6	.2	....	.2	96.0
579	RED CLOVER (*Queen*) Holbrook Grocery Co., Keene, N. H. June 5, 1914. Alsike Clover, 1,350; Burdock, 90; Docks, 540; Green Foxtail, 450; Lamb's Quarters, 90; Old Witchgrass, 90; Night Flowering Catchfly, 90; Rugel's Plantain, 90; Smartweed, 90; Sorrel, 360; Timothy, 4,050; Bracted Plantain, 90; English Plantain, 1,890.	97.3	1.3	.7	.7	89.5
580	RED CLOVER (*White Mountain*) Holbrook Grocery Co., Keene, N. H. June 5, 1914. Smartweed, 90; Timothy, 180; Bracted Plantain, 90.	99.7	.1	.1	.1	98.0
581	RED TOP (*White Mountain*) Holbrook Grocery Co., Keene, N. H. June 15, 1914. Ox-eye Daisy, 1,359; Yarrow, 3,171.	92.7	.3	....	7.0	45.0
582	TIMOTHY (*Monadnock*) Holbrook Grocery Co., Keene, N. H. June 5, 1914. Red Clover, 452.	99.6	.1	....	.3	87.0
583	OATS (*White Mountain*) Holbrook Grocery Co., Keene, N. H. June 5, 1914.	100.0	....	....	....	98.5
584	TIMOTHY (*Pine Tree*) Holbrook Grocery Co., Keene, N. H. June 5, 1914. Kentucky Bluegrass, 11,752.	99.3	....	.5	.2	94.0
585	RYE (*White Mountain*) Holbrook Grocery Co., Keene, N. H. June 5, 1914. Chess or Cheat, 37; Common Millet, 74.	96.0	....	.1	3.9	97.0
586	OATS (*Elwood*) R. M. Gordon, Goffstown, N. H. June 5, 1914. Green Foxtail, 45; Corn, 15; Red Clover, 15; Timothy, 15; Yellow Foxtail, 15.	97.5	....	1.0	1.5	95.0
587	TIMOTHY (*Pan American*) Frank Smith & Co., Lancaster, N. H. June 5, 1914. Alsike Clover, 1,130; Sorrel, 226.	99.3	.2	....	.5	89.5
588	RED CLOVER George C. Craig, Rumney Depot, N. H., June 3, 1914. Chickory, 90; Crabgrass, 270; Docks, 360; Old Witchgrass, 180; English Plantain, 540; Night-flowering Catchfly, 90; Pigweed, 90; Rugel's Plantain, 270; Smartweed, 180; Sorrel, 630; Timothy, 2,160; Wild Mustard, 90; Yellow Foxtail, 1,530.	97.7	.8	.6	.9	98.0
589	TIMOTHY (*Strictly Prime*) Moulton & Clarke, Lisbon, N. H. June 5, 1914. Kentucky Bluegrass, 4,972; Peppergrass, 678; Red Clover, 226; Red Top, 29,962; Selfheal, 452; Sorrel, 1,130; English Plantain, 226; unknown, 1.	97.0	.3	1.1	1.6	91.0
590	MILLET (*Hungarian*) Moulton & Clarke, Lisbon, N. H. June 15, 1914. Green Foxtail, 180; Mayweed, 90; Old Witchgrass, 90; Ragweed, 180; Smartweed, 180; Timothy, 90; Yellow Foxtail, 450; Lamb's Quarters, 90.	99.0	.2	.2	.6	71.0
591	CORN (*Pride of the North*) Frank Smith, Plymouth, N. H. June 15, 1914.	91.6	....	....	8.4	95.0
592	OATS (*Fancy Recleaned*) Moulton & Clarke, Lisbon, N. H. June 5, 1914. Black Mustard, 30; Wheat, 135; Barley, 45; Wild Oats, 15; Vetch, 15; Black Bindweed, 60.	97.9	.2	1.0	.9	91.0
593	BARLEY (*Six Row 100307*) A. H. Hill, Lebanon, N. H. June 15, 1914.	99.7	....	....	.3	98.5
594	TIMOTHY (*65468*) C. H. Dodge, New Boston, N. H. June 15, 1914. Sorrel, 226.	99.8	trace	....	.2	93.5

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Percent Pure Seed.	Percent Weed Seed.	Percent Other Grass Seeds.	Percent Inert Matter.	Percent Germination.
595	CORN (*Red Cob Ensilage*) Magowen Bros., Claremont, N. H.	100.0	....	....	....	98.0
596	CORN (*Early Eight-rowed Canada*) A. H. Hill, Lebanon, N. H. June 15, 1914.	100.0	....	....	....	98.0
597	MILLET (*Hungarian*) Magowen Bros., Claremont, N. H. June 15, 1914. Canada Thistle, 90; Green Foxtail, 540; Lamb's Quarters, 720; Old Witchgrass, 180; German Millet, 180; Smartweed, 180; Yellow Foxtail, 190.	99.2	.2	.2	.4	65.5
598	CORN (*Longfellow*) A. H. Hill, Lebanon, N. H. June 15, 1914.	100.0	....	....	....	98.0
599	BARLEY (*Two-row*) A. H. Hill, Lebanon, N. H. June 15, 1914. Oats, 56; Wheat, 56.	92.7	....	.5	6.8	84.0
600	TIMOTHY (*Bay State 64481*) Magowen Bros., Claremont, N. H. June 23, 1914. Alsike Clover, 904; Cinquefoil, 452; Kentucky Bluegrass, 678; Lamb's Quarter's 226; Rugel's Plantain, 226.	99.2	.2	.1	.5	91.0
601	OATS (*Welcome*) Magowen Bros., Claremont, N. H. June 15, 1914. Barley, 45; Wheat, 30; Wild Rose, 15.	99.0	.1	.4	.5	91.0
602	TIMOTHY (*65337*) O. L. & C. A. White, Mountainview, N. H. June 23, 1914. Cinquefoil, 452; Kentucky Bluegrass, 2,938; Lamb's Quarters, 226; Peppergrass, 678; Red Clover, 452; Red Top, 1,808; Rugel's Plantain, 226; Sorrel, 452; Yarrow, 452.	98.1	.3	.2	1.4	79.0
603	RED TOP (*X*) O. L. & C. A. White, Mountainview, N. H. June 26, 1914. Sorrel, 453; Timothy, 906; Yarrow, 3,171.	90.3	.3	trace	9.4	47.0
604	RED CLOVER (*Ace*) O. L. & C. A. White, Mountainview, N. H. June 23, 1914. Alsike Clover, 90; Lamb's Quarters, 90; Rugel's Plantain, 90; Yellow Foxtail, 270; English Plantain, 180.	99.2	.1	.1	.6	96.5
605	MILLET (*Hungarian S0154*) O. L. & C. A. White, Mountainview, N. H. June 23, 1914. Timothy, 90; Yellow Foxtail, 90.	99.2	....	.1	.7	87.0

SUMMARY TABLE, SHOWING THE KINDS OF FOREIGN SEEDS FOUND IN SAMPLES EXAMINED IN 1914 AND THE NUMBER OF SAMPLES IN WHICH THEY WERE FOUND.

Names of Foreign Seed	Names of Samples Examined													
	Alfalfa	Alsike Clover	Barley	Buckwheat	Kentucky Blue Grass	Meadow Fescue	Millet	Oats	Orchard Grass	Red Clover	Red Fescue	Red Top	Rye	Timothy
Number of Samples Examined	3	4	7	1	1	1	7	14	1	16	1	11	2	26
Alsike Clover	...	...	...	...	1	...	...	...	...	8	...	2	...	9
Black Seeded Plantain	...	...	...	...	...	...	...	...	...	1	...	...	...	....
Barley	...	...	...	...	...	...	...	8	...	...	...	...	...	....
Black Bindweed	...	...	2	...	...	...	...	3	...	...	...	...	...	....
Bracted Plantain	...	...	...	...	...	...	...	...	...	5	...	...	...	....
Bromegrass	...	...	...	...	...	...	1	...	...	...	...	...	...	....
Buckwheat	...	...	...	...	...	...	...	1	...	...	...	...	...	....
Burdock	...	...	...	...	...	...	...	...	...	1	...	...	...	....
Canada Thistle	...	...	...	...	...	...	1	...	...	...	...	...	...	....
Canada Bluegrass	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Catchfly	...	2	...	...	...	...	...	...	...	3	...	...	...	....
Catnip	...	...	...	...	...	...	...	...	...	1	...	...	...	....
Chicory	...	...	...	...	...	...	...	...	...	1	...	1	...	....
Cinquefoil	...	1	...	...	...	...	...	...	...	...	...	3	...	6
Corn	...	...	...	...	...	...	...	2	...	...	...	...	...	....
Crabgrass	...	...	...	...	...	...	1	1	...	5	...	...	...	....
Crimson Clover	...	1	...	...	...	...	...	...	...	...	...	...	...	....
Docks	...	1	...	...	1	1	...	...	1	9	...	...	...	....
Fireweed	...	...	...	...	...	...	...	...	...	1	...	...	...	....
Flax	...	...	...	...	...	1	...	1	...	...	...	...	...	....
Falseflax	...	...	...	...	...	...	...	2	...	...	...	1	...	....
Green Foxtail	...	...	...	...	...	...	2	1	...	4	...	...	...	....
Hard Fescue	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Kentucky Bluegrass	...	1	...	...	...	...	...	...	1	...	1	...	...	12
Lady's Thumb	...	...	...	...	...	...	...	1	...	1	...	...	...	....
Lamb's Quarters	...	...	...	...	...	...	4	1	...	7	...	...	...	2
Millet	...	...	...	...	1	...	...	...	...	...	...	...	1	....
Moth Mullen	...	...	...	...	...	...	1	...	...	...	...	...	...	....
Mustards	...	1	...	...	...	...	...	5	...	4	...	1	...	....
Oats	...	...	5	1	...	...	...	...	...	...	...	...	...	....
Old Witchgrass	...	...	...	...	...	...	3	1	...	5	1	...	...	1
Oxeye Daisy	...	...	...	...	...	...	...	...	...	...	...	1	...	....
Peppergrass	...	...	...	...	...	...	...	...	...	...	...	2	...	9
Pigweed	...	1	...	...	...	...	...	...	...	3	...	...	...	....
Quackgrass	...	...	...	...	...	...	...	1	...	...	...	...	...	....
Ragweed	...	...	...	1	...	...	3	...	...	1	...	...	...	1
Red Clover	...	3	...	...	...	...	...	1	...	...	...	1	...	5
Redtop	...	1	...	...	...	...	...	1	...	...	...	...	...	6
Ribgrass	...	...	...	...	...	...	...	...	...	9	...	1	...	2
Rugel's Plantain	...	...	...	...	...	...	...	...	...	6	...	...	...	8
Selfheal	...	1	...	...	...	...	...	...	...	...	...	1	...	2
Shepherd's Purse	...	...	...	...	...	...	...	1	...	...	...	...	...	....
Smartweed	...	...	...	...	...	...	5	...	...	4	...	...	...	....
Sorrel	...	2	...	...	...	...	...	1	1	5	...	3	...	10
Timothy	...	4	...	...	...	...	3	3	...	12	1	6	...	....
Unknown	1	...	...	...	...	...	...	1	...	...	...	...	...	1
Vervain	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Vetch	...	...	...	...	...	...	...	1	...	...	...	...	...	....
Wheat	...	...	4	...	...	...	...	8	...	...	...	...	1	....
White Clover	...	1	...	...	...	...	...	...	...	...	...	1	...	2
Wild Oats	...	...	...	...	...	...	...	4	...	...	...	1	...	....
Wild Rose	...	...	...	...	...	...	...	3	...	...	...	...	...	....
Yarrow	...	...	...	...	...	...	...	...	...	...	...	5	...	1
Yellow Daisy	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Yellow Foxtail	1	...	...	...	...	...	5	2	1	9	...	1	...	....

TABLE SHOWING RESULTS OF TESTS AND EXAMINATION OF SAMPLES OF SEEDS RECEIVED FROM SEPTEMBER 1, 1913, TO SEPTEMBER 1, 1914.

Kind of Seed	Total number of samples received	For Purity Test	For Germination	Purity Test										Germination Test			
				Pure Seed				Foreign Seed			Inert Matter						
				Highest percent	Lowest percent	Average percent	Standard percent	Highest percent	Lowest percent	Average percent	Highest percent	Lowest percent	Average percent	Highest percent	Lowest percent	Average percent	Standard percent
Alfalfa	3	3	3	99.9	99.7	99.8	98.0	.1	.1	.1	.3	.1	.2	97.0	92.0	95.0	88.0
Alsike Clover	4	4	4	99.3	94.2	97.4	95.0	4.3	.5	1.9	1.5	.2	.7	98.0	84.0	87.6	78.0
Barley	7	7	7	99.7	92.7	98.2	99.0	1.6	.0	.5	6.8	.1	1.7	99.0	84.0	95.4	93.0
Buckwheat	1	1	1	99.4	99.4	99.4	....	.1	.1	.1	.5	.5	.5	96.0	96.0	96.0	93.0
Corn (*Field*)	15	13	15	100.0	91.6	99.2	....	...	...	....	8.4	.0	.8	100.0	81.0	93.5	93.0
Corn (*Sweet*)	1	0	1	.....	....	....	99.0	...	...	....	....	....	....	88.5	88.5	88.5	88.0
Creeping Bentgrass	1	1	1	.....	....	....	....	...	...	....	....	....	....	19.0	19.0	19.0	....
Crested Dogstail	1	1	1	99.8	99.8	99.8	....	.2	.2	.2	....	....	....	27.5	27.5	27.5	....
Crimson Clover	1	0	1	.....	....	....	....	...	...	....	....	....	....	96.5	96.5	96.5	....
Kentucky Bluegrass	1	1	0	97.6	97.6	97.6	90.0	1.2	1.2	1.2	1.2	1.2	1.2	.....	....	....	47.0
Meadow Fescue	1	1	1	98.2	98.2	98.2	95.0	.8	.8	.8	1.0	1.0	1.0	95.0	95.0	95.0	88.0
Millet	7	7	7	99.9	96.5	98.7	99.0	3.4	.1	.9	.7	.0	.3	95.0	19.5	74.7	88.0
Oats	14	12	14	100.0	96.0	98.2	99.0	3.2	.0	1.2	1.5	.0	.6	99.5	3.5	87.3	93.0
Orchard grass	1	1	1	93.4	93.4	93.4	....	.6	.6	.6	6.0	6.0	6.0	27.5	27.5	27.5	....
Peas (*Field*)	1	1	1	99.2	99.2	99.2	....	.0	.0	.0	.8	.8	.8	95.5	95.5	95.5	....
Rape	1	1	1	99.6	99.6	99.6	99.0	.0	.0	.0	.4	.4	.4	95.5	95.5	95.5	93.0
Red Clover	16	16	14	99.9	90.7	97.3	98.0	7.2	.1	1.7	2.2	.0	.9	98.0	82.0	93.2	88.0
Redtop	11	11	10	99.8	61.9	88.8	95.0	7.6	.1	1.9	37.4	.1	9.3	89.5	30.0	54.3	78.0
Rhode Is. Bentgrass	1	0	1	.....	....	....	....	...	...	....	....	....	....	25.5	25.5	25.5	....
Rye	2	2	2	97.8	96.0	96.9	....	.9	.1	.5	3.9	1.3	2.6	97.0	92.5	94.7	....
Timothy	26	25	23	99.9	92.8	99.0	98.0	6.8	.0	.5	1.6	.0	.4	97.0	76.5	90.7	88.0
Miscellaneous	10	1	10	.....	....	....	....	...	...	....	....	....	....	.....	....	....	....
Total	126	109	119														

SUMMARY TABLE, SHOWING RESULTS OF EXAMINATION OF SAMPLES OF SEEDS OBTAINED BY THE COLLECTOR FOR THE YEAR 1914.

No.	Kind of Seed, Brand, Name and Address of Seller.	Percent Purity		Percent Germination	
		Found	Guaranteed	Found	Guaranteed
510	ALFALFA C. L. Jenness, Dover, N. H.	99.8	99.5	97.0	96.0
518	ALFALFA (*White Mountain*) Hilliard & Kimball, Exeter, N. H.	99.8	99.5	92.0	92.0
532	ALFALFA (*Pine Tree*) R. L. Costello, Portsmouth, N. H.	99.7	99.5	97.0	94.0
508	ALSIKE CLOVER (*Pine Tree*) C. L. Jenness, Dover, N. H.	97.7	96.7	98.0	92.0
519	ALSIKE CLOVER (*White Mountain*) Hilliard & Kimball, Exeter, N. H.	99.3	97.0	84.5	92.0
531	ALSIKE CLOVER (*Kaiser*) R. L. Costello, Portsmouth, N. H.	94.2	91.0	84.0	92.0
555	ALSIKE CLOVER (*642*) H. Evans & Co., Rochester, N. H.	98.4	97.0	84.0	90.0
544	BARLEY (*Beardless*) R. L. Costello, Portsmouth, N. H.	99.7	99.0	98.0	98.0
545	BARLEY (*Six-row*) R. L. Costello, Portsmouth, N. H.	99.4	99.0	98.5	98.0
557	BARLEY (*Canadian Cluster*) H. Evans & Co., Rochester, N. H.	97.7	98.0	92.0	90.0
565	BARLEY (*White Mountain*) F. H. Moore, Laconia, N. H.	99.7	97.0	99.0	90.0
577	BARLEY (*Monadnock*) Holbrook Grocery Co., Keene, N. H.	98.6	....	98.0	....
593	BARLEY (*100307*) A. H. Hill, Lebanon, N. H.	99.7	99.0	98.5	....
599	BARLEY (*Two-row*) A. H. Hill, Lebanon, N. H.	92.7	99.5	84.0	....
550	BUCKWHEAT (*Japanese*) R. L. Costello, Portsmouth, N. H.	99.4	98.0	96.0	92.0
516	CORN (*Improved Leaming*) Hilliard & Kimball, Exeter, N. H.	100.0	....	93.5	....
547	CORN (*Field*) R. L. Costello, Portsmouth, N. H.	100.0	....	88.5	....
548	CORN (*Improved Leaming*) R. L. Costello, Portsmouth, N. H.	100.0	....	83.5	....
549	CORN (*Mondamin*) R. L. Costello, Portsmouth, N. H.	100.0	....	99.5	....
556	CORN (*Leaming*) H. Evans & Co., Rochester, N. H.	98.1	98.0	90.0	90.0
563	CORN (*Sanford White*) F. H. Moore, Laconia, N. H.	100.0	....	96.0	....
567	CORN (*Cuban Giant*) Batchelder Bros., Tilton, N. H.	100.0	....	94.0	....
568	CORN (*Mastodon*) Batchelder Bros., Tilton, N. H.	100.0	....	92.0	....
569	CORN (*Leaming*) Batchelder Bros., Tilton, N. H.	100.0	....	96.0	....
591	CORN (*Pride of the North*) Frank Smith, Plymouth, N. H.	91.6	....	95.0	....
595	CORN (*Red Cob Ensilage*) Magowen Bros., Claremont, N. H.	100.0	....	98.0	....
596	CORN (*Early Eight-rowed Canada*) A. H. Hill, Lebanon, N. H.	100.0	....	98.0	....
598	CORN (*Longfellow*) A. H. Hill, Lebanon, N. H.	100.0	....	98.0	....
537	CREEPING BENT R. L. Costello, Portsmouth, N. H.	....	74.0	19.0	96.0
540	CRESTED DOGSTAIL R. L. Costello, Portsmouth, N. H.	99.8	99.0	27.5	89.0
541	KENTUCKY BLUEGRASS R. L. Costello, Portsmouth, N. H.	97.6	90.0	....	91.0
543	LAWN GRASS R. L. Costello, Portsmouth, N. H.	....	85.0	5.0	75.0
539	MEADOW FESCUE (*G. B. 94554*) R. L. Costello, Portsmouth, N. H.	98.2	97.0	95.0	92.0

No.	Kind of Seed, Brand, Name and Address of Seller.	Percent Purity		Percent Germination	
		Found	Guaranteed	Found	Guaranteed
534	MILLET (*Hungarian*) R. L. Costello, Portsmouth, N. H.	99.9	99.0	92.0	93.0
559	MILLET (*Hungarian*) H. Evans & Co., Rochester, N. H.	99.5	99.0	19.5	90.0
590	MILLET (*Hungarian*) Moulton & Clarke, Lisbon, N. H.	99.0	98.0	71.0	90.0
597	MILLET (*Hungarian*) Magowen Bros., Claremont, N. H.	99.2	98.0	65.5	92.0
605	MILLET (*Hungarian*) O. L. & C. A. White, Mountainview, N. H.	99.2	99.0	87.0	....
535	MILLET (*Japanese*) R. L. Costello, Portsmouth, N. H.	96.5	98.0	93.0	96.0
536	MILLET (*German*) R. L. Costello, Portsmouth, N. H.	98.1	98.0	95.0	94.0
509	OATS (*Welcome*) C. L. Jenness, Dover, N. H.	100.0	....	92.5	....
542	OATS (*Montana*) R. L. Costello, Portsmouth, N. H.	99.1	98.0	99.5	99.0
566	OATS (*White Mountain*) F. H. Moore, Laconia, N. H.	98.9	99.0	99.5	97.0
583	OATS (*White Mountain*) Holbrook Grocery Co., Keene, N. H.	100.0	99.0	98.5	97.0
586	OATS (*Elwood*) L. M. Gordon, Goffstown, N. H.	97.5	99.0	95.0	97.0
592	OATS (*Fancy Recleaned*) Moulton & Clarke, Lisbon, N. H.	97.9	....	91.0	....
601	OATS (*Welcome*) Magowen Bros., Claremont, N. H.	99.0	....	91.5	....
533	ORCHARD GRASS (*Neck*) R. L. Costello, Portsmouth, N. H.	93.3	82.0	27.5	90.0
551	RAPE (*Dwarf Essex*) R. L. Costello, Portsmouth, N. H.	99.6	99.0	95.5	92.0
507	RED CLOVER (*Ace*) C. L. Jenness, Dover, N. H.	99.4	98.0	96.0	93.0
512	RED CLOVER (*Bay State*) Hilliard & Kimball, Exeter, N. H.	99.1	99.0	98.0	94.0
517	RED CLOVER (*White Mountain*) Hilliard & Kimball, Exeter, N. H.	99.9	....	97.5	....
523	RED CLOVER (*Pan American*) W. F. Neal, Derry, N. H.	99.7	98.5	86.5	....
528	RED CLOVER (*Kaiser*) R. L. Costello, Portsmouth, N. H.	98.4	....	93.0	....
529	RED CLOVER (*Monmouth*) R. L. Costello, Portsmouth, N. H.	97.6	97.0	90.0	94.7
560	RED CLOVER L. P. Varney, Alton Bay, N. H.	92.3	....	87.5	....
561	RED CLOVER (*23030*) L. P. Varney, Alton Bay, N. H.	90.7	87.0	82.0	82.0
579	RED CLOVER (*Queen*) Holbrook Grocery Co., Keene, N. H.	97.3	95.0	89.5	94.0
580	RED CLOVER (*White Mountain*) Holbrook Grocery Co., Keene, N. H.	99.7	99.5	98.0	95.0
588	RED CLOVER George C. Craigg, Rumney Depot, N. H.	97.7	....	98.0	....
604	RED CLOVER (*Ace*) O. L. & C. A. White, Mountainview, N. H.	99.2	98.0	96.5	....
538	RED FESCUE (*52369*) (*Lawn Grass*) R. L. Costello, Portsmouth, N. H.	....	85.0	57.5	72.0
506	RED TOP (*Globe*) C. L. Jenness, Dover, N. H.	99.8	97.0	76.5	92.0
511	RED TOP (*Bay State*) Hilliard & Kimball, Exeter, N. H.	97.0	91.0	58.5	93.0
524	RED TOP (*Choice*) W. F. Neal, Derry, N. H.	91.8	85.0	50.0	....
527	RED TOP (*Ace*) R. L. Costello, Portsmouth, N. H.	94.5	90.0	40.5	90.0

No.	Kind of Seed, Brand, Name and Address of Seller.	Percent Purity		Percent Germination	
		Found	Guaranteed	Found	Guaranteed
554	RED TOP (*Fancy*) H. Evans & Co., Rochester, N. H.	91.7	90.0	45.5	85.0
562	RED TOP (*XX*) L. P. Varney, Alton Bay, N. H.	88.4	73.0	30.0	90.0
581	RED TOP (*White Mountain*) Holbrook Grocery Co., Keene, N. H.	92.7	95.0	45.0	93.0
603	RED TOP (*X*) O. L. & C. A. White Co., Mountainview, N. H.	90.3	95.2	47.0	92.0
546	RHODE ISLAND BENT R. L. Costello, Portsmouth, N. H.	....	77.0	25.5	94.0
552	RYE (*Spring*) R. L. Costello, Portsmouth, N. H.	97.8	98.0	92.5	90.0
585	RYE (*White Mountain*) Holbrook Grocery Co., Keene, N. H.	96.0	99.0	97.0	96.0
505	TIMOTHY (*Pine Tree*) C. L. Jenness, Dover, N. H.	92.8	99.0	96.5	93.0
513	TIMOTHY (*White Mountain*) Hilliard & Kimball, Exeter, N. H.	99.5	99.6	96.0	97.0
514	TIMOTHY (*Bay State*) Hilliard & Kimball, Exeter, N. H.	99.9	99.5	97.0	....
515	TIMOTHY (*Pine Tree*) Hilliard & Kimball, Exeter, N. H.	99.8	99.0	95.0	93.0
525	TIMOTHY (*Imperator*) W. F. Neal, Derry, N. H.	98.7	98.5	88.0	....
526	TIMOTHY (*Bison*) R. L. Costello, Portsmouth, N. H.	98.5	98.0	86.0	95.0
530	TIMOTHY (*Pine Tree*) R. L. Costello, Portsmouth, N. H.	99.7	99.5	89.5	96.0
553	TIMOTHY (*Gold Medal*) H. Evans & Co., Rochester, N. H.	99.5	99.7	93.0	98.0
558	TIMOTHY (*Pan American*) H. Evans & Co., Rochester, N. H.	99.6	99.5	86.5	95.0
564	TIMOTHY (*XXX*) F. H. Moore, Laconia, N. H.	99.3	98.5	76.5	94.0
578	TIMOTHY (*White Mountain*) Holbrook Grocery Co., Keene, N. H.	99.7	99.6	96.0	97.0
582	TIMOTHY (*Monadnock*) Holbrook Grocery Co., Keene, N. H.	99.6	99.5	87.0	96.0
584	TIMOTHY (*Pine Tree*) Holbrook Grocery Co., Keene, N. H.	99.3	99.0	94.0	97.0
587	TIMOTHY (*Pan American*) Frank Smith & Co., Lancaster, N. H.	99.3	99.5	89.5	95.0
589	TIMOTHY (*Strictly Prime*) Moulton & Clarke, Lisbon, N. H.	97.0	97.0	91.0	90.0
594	TIMOTHY (*65468*) C. H. Dodge, New Boston, N. H.	99.8	99.5	93.5	97.0
600	TIMOTHY (*Bay State 64481*) Magowen Bros., Claremont, N. H.	99.2	98.5	91.0	....
602	TIMOTHY (*65337*) O. L. & C. A. White, Mountainview, N. H.	98.1	97.0	79.0	....

Seventy-one of the 91 samples collected were guaranteed for purity and 61 for germination. In other words, about 80 per cent. of the seed represented by the samples was sold according to the law as regards purity and about 67 per cent. as regards germination. This is a decided improvement over last year when only about 50 per cent. of the seed represented by the samples inspected was guaranteed as to either purity or germination.

Of the total 71 samples which were guaranteed for purity, 58 of them or 82 per cent. were found to be up to the guarantee. The remaining 13 samples were from .1 per cent. to 6.8 per cent. below the guarantee. Of the 61 samples guaranteed for germination, 26 or 43 per cent. were found to be up to or above the guarantee. The remaining 35 samples ranged from 1 to 70 per cent. below the guarantee.

As regards the purity of the seeds tested this year, the alfalfa, alsike clover and timothy were on the average above the standard per cent., while the barley, oats, millet, red clover and redtop were on the average slightly below the standard per cent.

As regards the per cent. of germination of this year's samples the alfalfa, alsike clover, barley, corn, red clover and timothy were on the average above the standard, while millet, oats and redtop were on the average below the standard.

One sample of oats sent in by a farmer was found to germinate only 3.5 per cent. This was a heavy-weight, light-colored, clipped oats which had been weathered and afterwards sulphured. This is only another example of the danger of using ordinary feeding oats for seed purposes without first making a germination test.

Only one very dirty or foul sample of seed was analyzed. This was one of redtop which contained 37.4 per cent. of dirt and chaff.

Labeling.

The law does not apply to the common five- and ten-cent packages of garden and flower seeds. Only seeds sold in bulk or in packages of one pound or more are subject to the provisions of the law and are required to be accompanied by a guarantee stating their percentage of purity and vitality.

The guarantee or label may be of any form desired by the seller of the seeds, as a tag, sticker, or direct brand upon the container. It must, however, be plainly written or printed, and placed distinctly visible to the purchaser. Each dealer will provide his own labels.

Taking of Samples.

To secure a fair average sample of a lot or bulk, take small quantities from all of the bags or from different parts of any particular bulk. Mix thoroughly and take out the sample to be inspected. When the seeds are in bags or large bins, the use of a grain sampler is most convenient, since this will insure getting seeds from the top, middle, and bottom alike. Since the report of the analysis is based upon the nature of the sample inspected, it is important that the sample be carefully taken.

Size and Amounts of Samples.

The size and amount of the samples necessary for a test will depend upon the size and weight of the seeds. About one half ounce, or a tablespoonful of the smaller grass and vegetable seeds, like alsike and white clover, redtop, lettuce, onions, radish, turnip, etc.; about one ounce or two tablespoonfuls of the larger seeds, like timothy, millet, red clover, alfalfa, rape, etc.; and about four ounces or a small cupful of the cereal grains or vegetable seeds, like oats, barley, corn, peas, beans, etc., should be sent.

Tests and Examinations.

Section two of the law states the provisions under which the tests and analyses shall be made. The Commissioner of Agriculture has appointed F. W. Taylor, agronomist of the Experiment Station, as the regular agent for making all tests and analyses in this state. The sellers or dealers who desire to base their guarantees upon tests made by themselves or their agents must first secure the approval of the Commissioner of Agriculture of the methods to be used in making the tests, and of the person who is to conduct them.

Sending of Samples.

Samples sent to the experiment station for testing should be enclosed in a strong paper envelope and securely fastened. They should not be sent in bottles or glass jars owing to the danger of breakage. When a number of samples are to be sent they should be put up securely in a single package and forwarded either by parcel post or by express. Each sample sent in should be marked as follows:

Name and address of sender.
Date of sending. Kind of seed.
Brand name (if any), and number of package.
Purity of germination test desired (one or both).

Write a letter stating the number and kind of samples sent so that their receipt may be promptly acknowledged.

Address all samples and communications regarding the same to F. W. Taylor, Experiment Station, Durham, N. H.

Standards.

The law does not attempt to fix any standards as to purity and vitality, but for the information of those who

may desire to know what may be considered as "equitable standards" the following table, offered by the U. S. Department of Agriculture, and based upon investigations made by that department, is herewith appended.

The term "percentage of vitality," as used in the law, will be interpreted to mean the percentage of germination, or the number of seeds in 100 which show their vitality by germinating under laboratory test conditions.

Standards of Purity and Germination of Agricultural Seeds.

Seed.	Purity, %	Germination, %	Seed.	Purity, %	Germination, %
Alfalfa,	98	85—90	Lettuce,	99	85—90
Asparagus,	99	80—85	Kafir corn,	98	85—90
Barley,	99	90—95	Melon,	99	85—90
Beans,	99	90—95	Millets,	99	85—90
Beets,	99	*150	Mustard,	99	90—95
Bluegrass,			Oats,	99	90—95
Canadian,	90	45—50	Okra,	99	80—85
Bluegrass,			Onion,	99	80—85
Kentucky,	90	45—50	Parsley,	99	70—75
Brome, awnless,	90	75—80	Parsnip,	95	70—75
Buckwheat,	99	90—95	Peas,	99	93—98
Cabbage,	99	90—95	Pumpkins,	99	85—90
Carrot,	95	80—85	Radish,	99	90—95
Cauliflower,	99	80—85	Rape,	99	90—95
Celery,	98	60—65	Redtop,	95	75—80
Clover, alsike,	95	75—80	Rye,	99	90—95
Clover, crimson,	98	85—90	Salsify,	98	75—80
Clover, red,	98	85—90	Sorghum,	98	85—90
Clover, white,	95	75—80	Spinach,	99	80—95
Collard,	99	90—95	Spurry,	99	85—90
Corn, field or			Squash,	99	85—90
ensilage,	99	90—95	Timothy,	98	85—90
Corn, sweet,	99	85—90	Tomato,	98	85—90
Cowpea,	99	85—90	Turnip,	99	90—95
Cucumber,	99	85—90	Tobacco,	98	75—80
Eggplant,	99	75—80	Wheat,	99	90—95
Fescue, meadow,	95	85—90			

* Each beet fruit or "ball" is likely to contain from 2 to 7 seeds. One hundred balls should yield at least 150 sprouts.

It should be kept in mind that any fixed standard below that which is possible to be attained would be undesirable both for the seedsman and the farmer. Dealers should recognize this fact and aim to handle only the best seeds that can be obtained, and thus gain for themselves a reputation and profit for as high standards of quality and purity as may be reasonably attained. Many conditions affect the vitality of seeds,—the products of certain seasons being unavoidably poor. Many difficulties also attend the separation of certain varieties of farm and garden seeds from certain common weed seeds, and impurities are the result. Seedsmen and farmers, alike, should recognize these facts. But whether the seeds are good or bad, we must know *how* good or bad they are.

MOTH SUPPRESSION.

Plan and Progress of Work, 1913-1914.

W. C. O'KANE, DEPUTY COMMISSIONER OF AGRICULTURE, IN CHARGE OF MOTH WORK.

Beginning with September 1, 1913, the suppression of the gipsy and the browntail moths in the state of New Hampshire was made a part of the newly organized Department of Agriculture, under the supervision of the Commissioner of Agriculture. The writer was appointed Deputy Commissioner in charge of the work, succeeding the annulment of the position of State Moth Agent.

The plan of the state moth work for the year ending August 31, 1914, falls into four divisions, as follows:

1. Suppression of the gipsy moth in towns along the border of the present infested area in order to limit spread into the remainder of the state.
2. Inspection of threatened territory outside the infested area, where special danger of new infestation exists.
3. Collection, propagation and colonization of parasites of both the gipsy and the browntail moths.
4. Coöperation with and assistance of towns, municipalities and individuals throughout the infested areas to ameliorate the damage done by the pests, to assist in control on private and public property, and otherwise to carry out the duties prescribed by the statutes.

Coöperation with Federal Authorities.

In each of the first three divisions the Moth Department has worked in coöperation with the Bureau of Entomology of the United States Department of Agriculture. The

state's plans have been made to articulate with those of the Federal authorities, and a consistent program has been followed throughout.

The efforts of the United States officials within the state are of vital importance. For a number of years the Federal expenditures within New Hampshire have been large, totalling each year several times as much as the state appropriation. The state has had great benefit from this, not only in prosecuting the important work of suppression in border towns, as will be detailed later, but in making possible for the state increased colonization of parasites—an undertaking that would otherwise have been out of the question.

Suppression of the Gipsy Moth in Border Towns.

A large part of the area in New Hampshire now invaded by the gipsy moth has been infested for a considerable period. Scattering and unnoticed colonies of the pest undoubtedly existed in many towns long before the present active measures of inspection disclosed them, or before the increasing numbers of individuals in a colony attracted attention to it.

A characteristic of this insect is the inability of the female moth to fly. Hence it usually happens that in new localities there are at first only isolated centers of infestation, consisting at the beginning of a single or a few individuals. From these the pest spreads slowly as the numbers increase. At the same time new centers are apt to spring up here and there, where individuals from the original colony chance to be carried by some outside agency, such as vehicles. In this respect the gipsy is radically different from the browntail moth and many other pests, which fly readily as adult females, and therefore spread rapidly.

Why Scouting is Done.

Only a part of the state is yet invaded by the gipsy. Large sections are thus far free of the pest. Because of the limited manner of spread of the insect it follows that successful detection and suppression of any colonies along the border of the present infested area will help to limit invasion into the extensive sections of the state in which it is not yet found at all. Therefore, the active work of inspection and suppression in border towns, carried on by the state and the Federal authorities, is of the greatest importance.

This part of the work is especially vital for the following reason: The imported natural enemies of the gipsy are now becoming well established and effective in many of the older infested areas. If the spread of the pest can be sufficiently limited or retarded, these natural enemies will in time become numerous enough and well enough distributed to have great influence wherever the gipsy is found. Without such work of suppression in border towns the spread of the gipsy would go on unchecked, the White Mountain and other large regions of the state would soon be or would already be invaded, and probably many years would elapse before the parasites could overtake their host. The result would be tremendously increased damage, much of which may be saved the state.

It is obviously true that suppression in border towns does not help to reduce the numbers of the pest in towns that have been infested for a number of years and that do not constitute the border. In these latter places other methods must be and are pursued, as deseribed under the third and fourth divisions of the state work, notably the work of colonizing parasites, much of which is best carried out in the older infested areas. The state funds are limited, and necessarily must be expended along lines that will yield the greatest benefit to the entire state.

Division of Territory.

The present border of the gipsy moth area in New Hampshire begins at the southwest corner of the state and extends in a curved line to the east central margin. By arrangement with the Federal authorities, the state assumes responsibility for the eastern segment of the border, beginning at the eastern limits of Campton and extending to the Maine state line. Within this area, state crews carry on the work of inspection and suppression, designed to limit spread of the gipsy to the north and northwest into the White Mountain and other regions. All of the rest of the border to the west and southwest is assumed by the United States authorities, and is handled in similar manner by them.

For the purpose of scouting the area assumed by the state, several crews of trained men are employed in the fall and in the spring, and smaller crews in summer. The former two periods are required for scouting and creosoting; the summer period for tanglefooting any points where colonies were found, in order to detect and suppress whatever individuals escaped the earlier process.

Record of 1913-1914.

In the fall of 1913 crews began work in September. Taking advantage of the comparatively late winter, scouting was continued until January, when effective inspection no longer was possible because of snow. Work was resumed at the earliest opportunity in the spring, and proceeded until the time when the gipsy caterpillars hatch from the egg. Twelve towns were scouted, including Conway, Wakefield, Ossipee, Effingham, Eaton, Sandwich, Moultonborough, Wolfeboro, Freedom, Brookfield, Tuftonboro and Madison. In six of these, Ossipee, Freedom, Brookfield, Wakefield, Tuftonboro and Wolfeboro, men were provided by the town to assist the state men. Of

the above twelve towns, Sandwich, Moultonborough, Ossipee, Madison and Conway constitute the border of gipsy area. In most of these only a few isolated infestations of the pest have been found. The most thorough inspection is essential, therefore, and an earnest effort is made to detect any possible colonies of the insect and to suppress them.

For all of this work the state endeavors to employ only skilled, experienced men. In this scouting special attention is paid to trees on or near the roadsides, because it has been found that often the gipsy caterpillar is accidentally carried by teams or automobiles, and thus dropped in some new locality. Since apple trees are a favored food of the pest, all apple orchards, whether adjacent to the highway or not, are thoroughly inspected. Oak growths, also, require careful search. Each tree of any size is marked lightly by the inspector to indicate that it has been examined.

Results of Inspection.

The above system of inspection has resulted in finding and suppressing colonies of the pest that would otherwise undoubtedly have endangered the vast wooded areas of the White Mountains and in turn the sections beyond. In most cases these colonies when found consisted of only a single or a few egg-masses. The situation is closely parallel to that of forest fires, in their small beginning but disastrous end.

Thorough measures are taken to suppress any colonies found. If the egg-mass is located on a tree bordering a stone wall, the stones are taken down and examined in order to make certain that no egg-masses are overlooked in places that cannot readily be seen. Surrounding trees for a distance of several rods are given careful examination. The locality of the infestation is indicated by a mark in white paint on the tree itself, and a further mark

at the nearest point on the highway, if the tree is not located directly on the roadside. The mark used is the date "13" or "14," and the symbol of the foreman of the inspecting crew. Office records are maintained showing in detail the location of any infestation.

In the summer of 1914 localities where an infestation had been found the prior winter were tanglefooted; that is to say, the trees for a distance of several yards were given a band of the sticky substance known as tree tanglefoot, applied around the trunk at a height of five or six feet. The purpose of this is as follows: If any egg-masses have been overlooked beneath stones or rubbish, or in other obscure places, the caterpillars coming from these will try to crawl up the trees, will be stopped by the sticky bands and will be found and killed. After the bands have been applied, they are examined at least once a week, the tanglefoot is combed to freshen its surface, and any caterpillars are killed. This work is maintained until the time when the gipsy caterpillars have completed their growth in midsummer or later.

Inspection Outside the Infested Area.

As already noted the gipsy moth is characterized by peculiar circumstances in the manner of spread. Highways, orchards and the neighborhood of summer homes or camps are often the points where new infestations start. There is constant danger that accidental means will carry the pest to such points outside the present gipsy moth area, especially through the medium of automobiles which of course travel long distances rapidly. To guard against this as much as possible, inspection was made in 1913-1914 in certain towns outside the gipsy area, and, in addition, along the main lines of travel to the north. Crews of experienced men covered thoroughly Bartlett, Albany, Jackson and Tamworth. A smaller crew inspected the Crawford Notch and the Pinkham Notch,

following the automobile thoroughfares. A Federal crew scouted the town of Chatham.

The character of the work in this division is identical with that previously described, so far as the fall and spring inspections are concerned. The aim is to make the entire undertaking sufficiently thorough and complete to reduce to a minimum the chances that any unsuspected colony of the gipsy shall escape notice. There is, however, no tanglefooting in summer, for the reason that up to date no infestations have been found in the towns or localities here considered.

Distribution of Parasites.

An account of the principal features in the collection, propagation and distribution of parasites of the gipsy and the browntail can best be preceded by the statement of some facts concerning parasites in general.

Of the tremendous number of species of insects in existence not all attack plants. Many thousands habitually live out their lives as enemies of other insects. Frequently a species is adapted by nature and habits to attack only one kind of insect, and cannot live in any other way. These forms that live at the expense of others are known as parasites, and the insect attacked is known as the host.

It may be that the host is attacked when in its caterpillar or larval stage, the parasite living on or within the larva and eventually killing it. Thus there are parasites that assail the gipsy in its caterpillar stage, and some that infest the browntail. Again it may be that the host is invaded when in the egg stage, the parasite being so small that its grub finds enough food in a single egg of the host to complete its growth. For example, there are two species of parasites that attack the eggs of the gipsy, the adults being no larger than the head of a small pin. If the host is an insect that we consider dangerous or harm-

ful, such as the browntail or gipsy, then the parasites that invade it we naturally look on as desirable. There is never occasion to fear that the parasites will themselves turn to destroying plants, for their manner of living is so fixed through countless years that they cannot change their habits.

Control of Pests by Parasites.

The part played by parasites in nature in checking obnoxious insects is enormous. In many cases a species of pest is regularly assailed by four or five or even a dozen or more different species of parasites, each of them helping to reduce the numbers of the host and so to hold it in check. This is true for most insects in their native environment. In fact, if it were not for the work of these small enemies many of our common pests would overrun all bounds. No other single agency is so effective in holding them down to moderate numbers. Familiar examples may be found everywhere among the common pests of field, garden and orchard. The occasional outbreaks that occur, such as that of grasshoppers in the Merrimack Valley the past season, or the antlered maple worm in many towns a few years ago, usually mean that temporarily the parasites have diminished in number. So, also, the diminished numbers of the host after a year or two indicate that the parasites have resumed their normal numbers.

This natural balance, however, holds good only in the native environment of a pest; in other words, in the section or country where the pest had its origin. That is the only place where natural enemies, directly adjusted to it, could have come into existence. The same circumstances that brought about the life and habits of the host itself are the forces responsible for the existence of the parasites. Anywhere else there are no insect enemies that know it or have learned to adapt their lives to its habits and peculiarities.

Why Imported Insects are Dangerous.

If, now, an injurious insect is carried to a new section or country where it did not exist before, it is free of the enemies that held it in check in its native surroundings. If it succeeds in living and gaining a foothold in the new environment, there will be few natural foes to take it in hand. The result is likely to be an abnormal increase of the pest. It overruns all ordinary bounds and becomes a serious menace. We have in this country several illustrations of such an occurrence in the list of our worst insect plagues. The elm leaf beetle, the hessian fly, the potato beetle, the cabbage worm, the leopard moth, the cotton boll weevil, the onion maggot, the alfalfa leaf-weevil, and many others, are cases in point. Each of these is foreign to the sections where it now does immense damage, and, therefore, is more or less free of its original natural enemies. Usually there are few parasites already existing in the new surroundings that can or will attack the newcomer.

It is to be expected that in the course of time natural enemies of one kind or another will arise and the immigrant will eventually find itself held within bounds. Such a process, however, is apt to be exceedingly slow. Not simply a few seasons, but rather untold years or hundreds of years are likely to be needed for the process; in other words, a period of time that may equal that which was required to bring about the development of the host itself and its enemies in its native section.

The Gipsy and Browntail Free of Natural Enemies Here.

Both the gipsy and the browntail moths are examples of foreign insects accidentally set free in a new country. They are native to Europe and other areas of the eastern hemisphere. There is no trace that they were ever known

in this country until they were brought here and released through the unintentional agency of man. In their original environment they are well known as common pests, sometimes becoming seriously numerous and again falling back to such small numbers that their presence causes no marked damage, exactly as is the case here with many of our native insects.

Each of these two insects was sufficiently adaptable to establish itself when once it was introduced into America. It found conditions, as regards food plants, climate and the like, favorable. Its numbers rapidly increased. Evidently there were no insect enemies of consequence to invade it here. To-day there are no native American parasites of real effectiveness attacking either the gipsy or the browntail in this country. The thousands of various parasitic species that we have here, that prey on our native pests, are not adapted to these two foreign insects. The three or four that pay any attention to them amount to so little that only the most painstaking search has served to disclose their work.

Nor is there any reason to anticipate that effective native parasites will materialize, except in the slow process of time, which means, quite possibly, centuries. So far as the unassisted growth of natural control in this country is concerned the observed facts indicate nothing better than an indefinite period of vast damage.

There remain two methods of bringing about a reduction in numbers of the pests and a lessening of the damage done: (1) direct human means of control, such as spraying, creosoting, destroying winter nests, removing susceptible species of trees from forest growth, and similar measures; and (2) the collection of such parasites of the pests as may be found in Europe and elsewhere, their importation, propagation, and, if possible, their successful establishment in this country—in other words, an attempt to reproduce here something like the natural control found where the pests are native.

Introduction of Parasites Undertaken.

About ten years ago work was begun under the direction of the United States authorities looking toward the possibility of importing parasites of the gipsy and the browntail moths. There were innumerable technical difficulties in the way of the undertaking. It was necessary to determine what species of parasites there were attacking the two pests abroad, what the life history and habits of each species may be, how each might be collected, in what way each might be brought to this country, by what means each might be established here and set on the road toward natural increase and spread—if in fact it would consent to live here at all, and many other facts and procedures.

Slowly, though painstaking observations and experiments by Federal experts, the facts were secured and the work of introduction proceeded. It was found that there are a dozen or fifteen parasitic enemies of the gipsy and the browntail in Europe and Asia, that combined materially influence their numbers. Most of these were successfully collected and imported, and colonies of them were started here. A few parasitic species were found unable to survive conditions existing in this country, but certain others promised to thrive better here than abroad, and to reach greater effectiveness. In spite of the vast amount of information already collected by the Federal workers, and the successes already reached, the work is not yet fully completed. The whole undertaking is arduous and complex.

As regards the various species of parasites already successfully imported, the principal remaining work is that of helping to bring about general distribution and increase through the area occupied by the respective hosts. In many places where the colonies of parasites were first established, their combined effects are now evident. Some of the species tend to disperse rapidly. Others spread

very slowly, and measures that will assist propagation and dispersal are desirable. In any event and in any locality time must elapse before the parasitic species can multiply sufficiently to reach numbers having some kind of proportion to the host. This may require several seasons after the parasite is actually established in the locality. It is to be remembered also that natural control as it exists in Europe represents the combined work of various species of enemies. There is no one species there that suffices to serve as check by itself. The same truth may be expected to hold good here. A parasitic species may be well established in a section without its presence being suspected except on careful, expert search. It may be relatively numerous without its work attracting attention except as part of the general attack of the whole group of enemies of the host.

What the State Has Done.

During 1913-1914 the State Moth Department has cooperated with the United States authorities in furthering the breeding, distribution and colonization of parasites in New Hampshire.

Temporary parasite laboratories were established by the state at two points, one at Rochester, conveniently located for purposes of distribution in the eastern part of the state, and one at West Concord, to reach readily the central and western sections. In each case an inexpensive building was rented for the period necessary. The parasitic species dealt with and the measures carried out by the state were as follows:

A Parasite of Browntail and Gipsy Caterpillars.

An important parasite of the browntail and the gipsy caterpillars is a very small insect known as *Apanteles lacteicolor*. There is no common or English name for this

or for the other species of parasites, and the scientific designation must be used.

The parasite spends the winter as a very minute grub within the body of a living browntail caterpillar inside the winter nest. The infested caterpillars come out of the nest in the spring with those that have not been attacked. They feed for a time, and as they grow the parasitic grub within each one feeds and grows, devouring the substance of its host. Finally the browntail caterpillar dies as a result of the attack of the grub within it. The latter then comes out through the skin of the caterpillar and spins a small white cocoon outside. In this it transforms, and in a few days emerges as the adult, a tiny, gnat-like insect.

The adult now seeks young caterpillars of the gipsy moth, or some native species, if the latter happen to be available. In these it lays its eggs. The egg hatches into a tiny grub, which proceeds to feed and grow within its host, finally killing it. Again there is the cocoon and a transformation to the adult as before. This adult emerges in season to attack young browntail caterpillars in the fall, before they have retired to their winter nest. In this way the caterpillars in the winter nest become infested with the grubs, and carry them over, in dormant condition, until spring.

Method of Propagation.

In the spring of 1913, in the period preceding that covered by this report, the state bred and colonized considerable numbers of this parasite. In the spring of 1914 the work was resumed. Numbers of browntail nests were collected in localities where it was suspected that many caterpillars within the nests were infested with the parasites. The nests were placed in cold storage at Rochester and West Concord. Later they were removed and distributed in feeding trays in the laboratories. Each tray was of wood, four feet by three, the bottom covered with muslin,

and the sides along the upper inner margin coated with tanglefoot. When the caterpillars began to come out they were fed twice or three times each day with fresh leaves of wild cherry. As soon as the cocoons of the parasites began to appear the entire mass of material was gone over at intervals and the cocoons removed.

Manner of Colonizing.

As the cocoons accumulated, they were taken out to the desired colonization points. These points were selected with reference to the known previous distribution of the parasite, and the probable spread through this and succeeding seasons from the newly established colonies. The choice of location took into consideration also the extent of browntail infestation, which should be liberal, and the character of tree growth, which must be favorable to the browntail, both of these points being essential in order that the parasites might have advantageous conditions for gaining a foothold. One thousand cocoons constituted a colony. They were placed in a small weatherproof box with perforations in one side through which the adult parasites that would emerge from the cocoons could make their escape. The box was nailed to the trunk of a tree, and a band of tanglefoot applied to the trunk back of it to prevent ants from getting into the box and destroying or carrying away the cocoons.

Each colony location was marked with symbols in white paint and similar marks at the nearest point on the highway. Office records were made showing the location in detail. This is done with this and other species of parasites so that notes may be made later indicating whether the species has become established—an essential part of the work in order that useless effort may be avoided, either in faulty methods of colonization or in distribution at points where a species is already in existence.

Parasites of the Gipsy Moth Egg.

There are two parasites attacking the egg of the gipsy moth. One of these is a species known as *Anastatus bifasciatus*. As might be expected this parasite in all of its stages is very small. The adult lays minute eggs within those of the gipsy, one to each gipsy egg. This is done at the time when the female gipsy moths are newly emerged and are engaged in egg-laying, in midsummer or later. The parasitic grub feeds within the egg, consuming its contents, and in a few weeks is full-grown. It remains inside, in a dormant condition, until the following summer, when it transforms, and a little later the adult comes out, ready to parasitize the new lot of gipsy eggs that are by that time available.

In coöperation with the Federal parasite laboratory at Melrose Highlands, Massachusetts, 478 colonies of this species, consisting of 1,000 each, were located by the State Department in the spring of 1914, four of the state's employees being assigned to the work. In preparing for distribution of this parasite, collections of gipsy moth eggs were first made at various points where the parasite was believed to be established. These eggs were examined at the Federal laboratory. Further collections were then made in the localities where it was found that the percentage of parasitism was heaviest, and this material was sent to the laboratory at Melrose Highlands. Later, at the proper season, the supplies of parasitized eggs for colonization were furnished the state by the Federal authorities.

At the close of the period covered by this report preparations were under way for extensive colonization of another species of egg parasite of the gipsy moth, *Schedius kuvanae,* the material being furnished by the Federal authorities and the work carried on in coöperation with them. This important parasite, if it will live as far north as central New Hampshire, should be of great value. It attacks the gipsy eggs much as does the preceding

species, but with this significant difference—whereas *anastatus* requires a full year for its life round, *schedius* requires only a few weeks during warm weather. It has in it the possibility, therefore, of rapid multiplication. The fact is now known that it can survive the winters of southern New Hampshire. It is hoped that it may be able equally to withstand somewhat colder temperatures.

Another Valuable Parasite.

A somewhat larger parasite is the species *Compsilura concinnata,* which attacks the caterpillar of the gipsy and the browntail. The adult, which is a little larger than a house fly, does not lay eggs, but instead deposits living maggots. These are placed beneath the skin of the host caterpillar. When the maggot is full grown, which may require only two or three weeks, it comes out and transforms to a resting stage or pupa. From this, in a few days, emerges an adult, ready to begin the life cycle over again. The pupa may be found on or in the ground beneath the place where the maggot came out of the caterpillar, or sometimes near the dead body of the caterpillar victim. The species is one of the most valuable of the imported parasites.

In 1914 gipsy caterpillars were collected and brought to the state parasite laboratory at Rochester to rear supplies of this parasite for colonization. Collections were made at various points in that part of New Hampshire where the species is known to be in existence. The collections from two of the localities showed a heavy percentage of parasitism, indicating that in those sections the parasite was abundant and doing effective work. In one case from 5,342 gipsy caterpillars 2,000 parasites were secured, and in another from 1,250 caterpillars 588 parasites emerged. Sufficient material was secured to locate colonies of the parasite at eight new points in the state.

The Calosoma Beetles.

The fifth imported enemy of the gipsy and the browntail in the distribution of which the Moth Department has assisted, is a beetle known as *Calosoma sycophanta.* The adult is a conspicuous insect, and has been noted at work by many observers. It is about an inch long, its general color a brilliant bronze-green. Its legs are long, and it runs rapidly over the limbs or trunks of trees. The beetle has powerful jaws, and readily pierces the skin of a caterpillar. Also it attacks the pupa of its hosts, tearing an irregular hole in the pupal shell and devouring the contents. In its earlier stage the species is an active larva, and this larva also is an enemy of the gipsy and the browntail, in the same fashion as the adult beetle.

In the summer of 1914 both beetles and larvæ were collected by the Moth Department in sections along the southern border of New Hampshire. They were colonized at points farther north, where the species had not yet become distributed. Fifty male and 50 female beetles constitute a colony; or in the case of the larvæ, 50 to 100 individuals. The spread of this species is steadily pressing forward. It is known to be increasing in numbers to a marked degree and is doing effective work.

The Wilt Disease.

Many gipsy moth caterpillars die each year from the effects of a peculiar malady known as the wilt disease. The body of the infected caterpillar grows limp and its body contents become dark colored and watery. The caterpillar will be found hanging by one or two pairs of legs and dies in that position.

The exact cause of the disease and the precise manner of its transmission are not fully known. Apparently the entire race of the gipsy moth in this country are subject to attack. Attempts to induce or spread the disease arti-

ficially have not been satisfactory. The State Moth Department and others have tried to make use of it, but without success. If weather, moisture, food and various other conditions are favorable to the disease, it apparently manifests itself automatically and destroys immense numbers of the host.

Browntail caterpillars are attacked by a fungous disease that often causes the death of large numbers, under favorable circumstances of moisture and other conditions. This is not the same as the wilt disease of the gipsy.

Coöperation with Towns and Individuals.

An important and definite part of the state moth work can be accomplished only by uniting the department's activities with the efforts of individual property owners and of towns or municipalities. It is clearly the duty of the department to help the individual or the town to adopt such measures as experience has proved to be effective and practicable.

In accordance with state law, the department has furnished to boards of selectmen printed notices, which in turn are mailed by the board to all property owners. The form of notice has been altered so that it may convey to citizens various matters of information that should be of value concerning the two pests and their control.

Through boards of selectmen the state endeavors to secure abatement of the nuisance of browntail nests permitted to remain adjacent to the dwelling or valuable trees of another. Many instances of this nature occur. All are handled uniformly in the manner indicated, with satisfactory results in practically all instances. A similar arrangement is followed in the matter of browntail nests on trees in places much frequented by the public. With the gipsy moth the principle followed is the same. The department has endeavored to make clear to selectmen and others in authority its desire to assist in all possible

ways, and has conferred with boards and others to devise practicable measures adapted to local conditions.

Assistance of Individual Property Owners.

In the case of any insect pest a serious share of the burden of control always falls on the individual. Because of this fact, the department has adopted all feasible means to get into personal touch with the individual property owner, in order to be of as much direct service as possible.

Yellow, weatherproof signs, posted in conspicuous places two years ago and described in the last report, continue to bring many inquiries for information and advice. All such inquiries receive personal reply. Through the assistance of boards of selectmen and schools, the department has been brought into touch with many additional individuals, and has endeavored to be of all possible assistance.

Three printed circulars concerning the gipsy and the browntail and their control have been distributed in large numbers during the past year. The first of these, known as Circular No. 1, describes and pictures the gipsy moth in its several stages, gives its life history, and makes clear the facts on which control measures are based. The second, Circular No. 2, provides similar information concerning the browntail moth. The third, Circular No. 5, gives in concise form the methods to be followed in securing control of the gipsy moth in orchards and woodlands.

Control of the Gipsy Moth in Woodlots.

The last-named circular deals especially with the practical control of the gipsy in pine and mixed woodlots. It is now definitely known that certain kinds of trees are measurably resistant to the pest. Pine, for example, or other evergreen, is not injured at all if free of certain hard woods, notably gray birch and oak. The classes of

trees that are dangerous and those that are resistant are set forth in the circular. Many copies of this publication have been issued, as well as the preceding two circulars. Each is available, free to any citizen of New Hampshire, on application.

The department has furnished free lectures on the browntail and the gipsy moths to public gatherings that desired the service. These lectures have been illustrated with lantern slides where possible, or, lacking this, photographic enlargements have been utilized.

In the summer of 1914 exhibits were made at the principal fairs attended by the people of New Hampshire. The display was arranged to show interesting and important facts and methods in connection with the moth work. It included exhibition cases showing the gipsy and the browntail in their several stages, the methods used in fighting the pests, features of the scouting, inspection and tanglefoot work, display mounts showing some of the principal imported parasites and their work, and specimens of supplies utilized in breeding and colonizing parasites. Much interest was shown in the exhibit and many hundreds of citizens made use of it as an opportunity of securing information.

Throughout the year the department has adhered to the policy of responding if possible to all requests for personal conference and advice. It is the desire to provide this service for any who ask for it, since direct study of a given location will usually help to arrive at consistent and practicable control measures.

NURSERY INSPECTION, 1914,

MADE FOR THE

STATE DEPARTMENT OF AGRICULTURE

By Walter C. O'Kane, A. M.

P. S., CH. 12, FOLLOWING SECT. 7.

[1903, Ch. 43, Sect. 1. The state board of agriculture shall annually appoint some person qualified by scientific training and practical experience, to be state nursery inspector, and he shall be responsible to the board for the performance of his duties as prescribed in this act. The said inspector may appoint such number of deputies, not exceeding two, as he may deem necessary or expedient.]

[1903, Ch. 43, Sect. 2. It shall be the duty of the state nursery inspector, either personally or through his deputies, to inspect at least once each year all nurseries or places in the state where nursery stock is grown, sold or offered for sale, and if no dangerous insect or fungous pests are found therein a certificate to that effect shall be given. If such pests are found therein the owner of the stock shall take such measures to suppress the same as the state nursery inspector shall prescribe, and no certificate shall be given until the said inspector has satisfied himself by subsequent inspections that all such pests have been suppressed.]

[1903, Ch. 43, Sect. 3. Any owners of nurseries or of places in the state where nursery stock is grown, sold or offered for sale, who do not hold an unexpired certificate of inspection after the first annual inspection made after the passage of this act, who shall sell or otherwise dispose of nursery stock in the state, shall be subject to a penalty of not less than twenty-five nor more than one hundred dollars for each offense.]

[1903, Ch. 43, Sect. 4. Any owners of nurseries or of places in the state where nursery stock is grown, sold or offered for sale, who shall fumigate with hydrocyanic acid gas all stock which they sell, using at least two tenths of a gram of potassic cyanide to every cubic foot of space contained in the box, house or other place wherein this fumigation is performed, which place shall be gas tight, and who shall expose the said stock to the fumes of this gas of the strength aforesaid for at least forty minutes, or who shall treat the stock which they sell by some other method approved by the state nursery inspector, and who shall make affidavit before a justice of the peace that all stock sold by them has been thus fumigated or treated, and who shall attach a copy of such affidavit to each package, box or car of stock sold, may be exempt from the provisions of sections 2 and 3 of this act.]

[1903, Ch. 43, Sect. 5. All nursery stock shipped into this state from any other state, country or province shall bear on each box or package an unexpired certificate that the contents of said box or package have been inspected by a duly authorized inspecting officer, and that said contents appear to be free from all dangerous insects or diseases. In case nursery stock is brought within the state without such a certificate the consignee shall return it to the consignor at the expense of the latter, or shall call the state nursery inspector to inspect the same: *provided, however*, that any package or box bearing a certificate of fumigation which meets the requirements specified in section 4 of this act may be accepted as though bearing a proper certificate of inspection.]

[1903, Ch. 43, Sect. 6. The state nursery inspector shall determine the season for inspecting nurseries and the forms of certificates to be given, but in no case shall he issue a certificate which shall continue in force after the first day of July next following the date of inspection. He or any of his deputies shall at all times have the right to enter any public or private grounds in the performance

of any duty required by this act. The cost of said inspection shall not exceed three hundred dollars annually.]

[1903, Ch. 43, Sect. 7. All parties violating this act shall be prosecuted by the secretary of the State Board of Agriculture.]

REPORT OF STATE NURSERY INSPECTOR.

W. C. O'Kane,

Acting State Nursery Inspector.

The work of the State Nursery Inspector falls into two divisions, as follows:

First, inspection and certification of the various commercial nurseries in the state.

Second, inspection of nursery stock imported into New Hampshire from foreign countries; and miscellaneous inspection of minor lots of stock offered for shipment to points within or without the state.

In the first division the following nurseries have been inspected:

L. P. Butler, Keene.
Ralph E. Danforth, East Jaffrey.
Dearborn Bros., Pembroke.
D. Webster Dow, North Epping.
Ellis Bros., Keene.
Ellsworth, Brown & Co., Seabrook.
Granite State Nurseries, Durham.
A. P. Horne & Co., Manchester.
Warren Hoyt, North Danville.
Keene Forestry Association, Keene.
R. Kirkpatrick, Nashua.
John W. Sawson, Greenland Village.
D. A. Watson, Durham.
L. E. Williams, Exeter.

Both for the protection of the purchaser and for the welfare of the nurseries, an earnest endeavor has been made to give thorough and effective inspection. Plants growing in nursery rows are no more likely to be attacked by most of the dangerous insect pests or plant diseases, than are similar plants growing elsewhere. The fact that a nursery is subject to inspection should not be taken to signify that its stock is especially likely to be infested or diseased. It is a fact, however, that in any nursery, anywhere, insects or diseases may exist. The transfer of the stock to new localities furnishes for some of these pests ideal conditions for spread, since they are transported along with their host and thus find themselves provided with facilities for successful establishment and increase when they arrive in their new location. It is for this reason, and because of the fact that in years past some of our most destructive pests and diseases have been spread by nursery stock, that inspection and certification is essential. Because of the small size of some of the insects and obscure symptoms of the diseases, the inspection, to mean anything, must be painstaking and thorough.

The State Nursery Inspector has found the nurserymen of the state always willing to coöperate in the eradication of any pests or diseases noted. For this coöperation the inspector is grateful. It has helped materially to make the work efficient.

In the second division of duties inspection is now made of all nursery stock coming into the state from foreign countries. Through the provisions of a Federal law, the State Nursery Inspector is promptly informed by the Federal authorities whenever a shipment of foreign stock is to arrive within the state. On its arrival the shipment is then thoroughly inspected by the state official. This is the procedure now prevailing in practically all states in the Union.

The reason for this inspection is the necessity of safeguarding against further introduction of dangerous foreign insects and diseases. We have already in the United States several instances of immense damage resulting from accidental importation of foreign pests. The brown-tail moth is an example. In some cases these pests have arrived through the medium of imported plants. It is earnestly hoped that by means of the present system of inspection the danger of further importations of this nature may be materially reduced. If such results can be accomplished, the state of New Hampshire and other states may be saved damage running to tremendous sums.

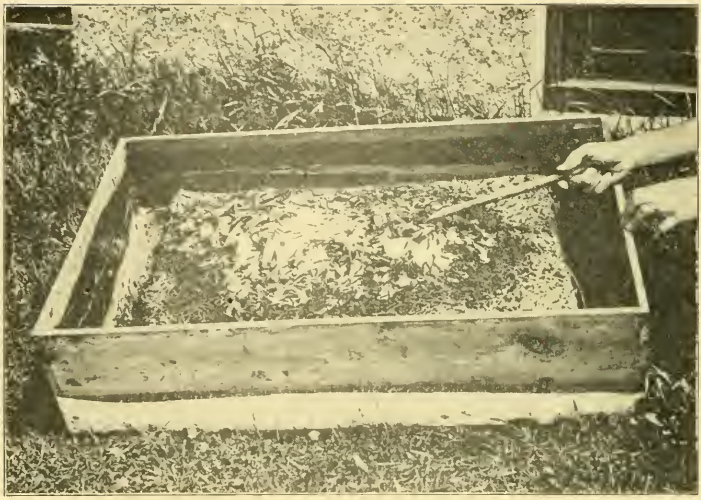
The expense of the work of inspection, etc., done under the nursery law follows:

Paid W. C. O'Kane	$244.60
Paid Charles H. Hadley	49.22
Paid Charles A. Weigel	109.51
	$403.33

The balance of $196.67 reverted to the state treasury, September 1, as provided by law.

The imported beetle, *Calosoma sycophanta*. This beetle destroys both gipsy and browntail caterpillars. It has been extensively colonized and is a valuable enemy of the pests.

The grub or immature stage of the imported beetle *Calosoma sycophanta*. This grub attacks gipsy caterpillars and destroys them.

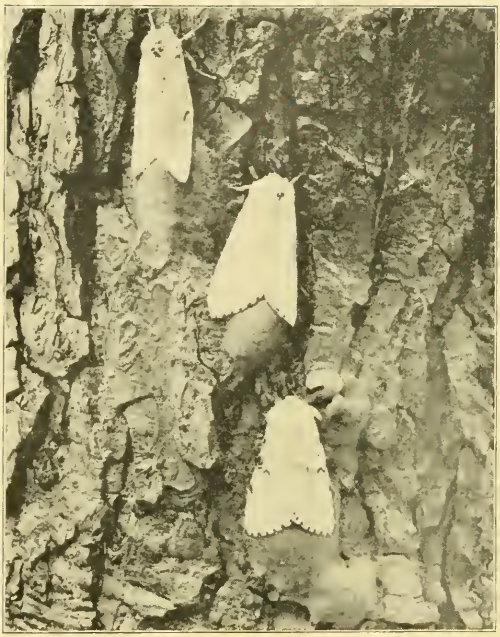


Breeding tray full of small browntail caterpillars. From these caterpillars are bred one of the imported parasites that attacks both the gipsy and the browntail.

The small, white cocoons of the imported parasite *Apantelcs lacteicolor* as they appear in the breeding trays. This parasite attacks browntail and gipsy caterpillars.

Band of tanglefoot around a tree. This is used in any infestation found near the border of the gipsy area. If eggs have escaped detection the caterpillars that hatch from them are stopped by the band. They can thus be found and killed.

Location of a typical gipsy infestation discovered by the scouting work near the border of the gipsy area. By careful work the egg-masses were destroyed and dangerous spread toward the White Mountains was checked.



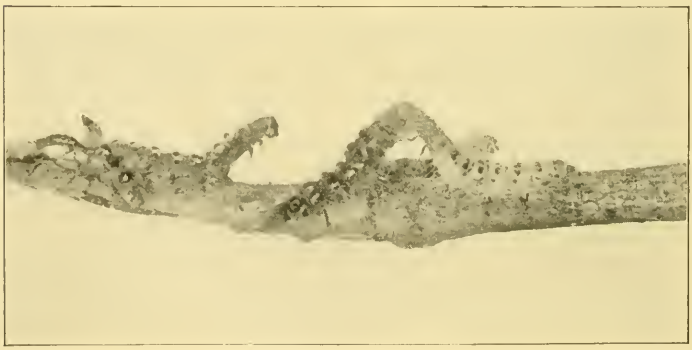
Female gipsy moths laying eggs. They are shown about one-half natural size. The egg-mass is just beneath and behind the moth.

Marking the location of a colony of imported parasites. The "S", marked in white paint, stands for *Schedius kuvanae*, which attacks gipsy moth eggs.

Placing a colony of the parasite *Schedius kuvanae* that attacks gipsy moth eggs. The adults are distributed over gipsy eggs, which they at once attack.

Adults of an imported parasite, *Schedius kuvanae* (the small black dots on the card). This parasite attacks the eggs of the gipsy moth. An egg-mass is seen just beyond the upper end of the card.

Gipsy caterpillars killed by the wilt disease. A typical dead caterpillar is seen hanging just below the small branch to the left.



Browntail caterpillars killed by a fungus disease. The surface of the body usually has a powdery appearance.

Illustrating the fact that some species of trees are not attacked by the gipsy moth. The large apple tree shown was stripped by gipsy caterpillars while the small white ash growing beside it remained uninjured. The susceptibility of different trees is described in Circular No. 5 of the Moth Department.

MILK, CREAM AND BUTTER.

THE MILK LAW.

At the last session of the legislature, a law was passed relating to the milk, cream and butter industry of our state. The purpose of this law is to protect the farmer from the impositions of unscrupulous contractors, who may bid high prices for milk or milk products with no intention of living up to their agreements, and also to prevent the accumulation of bills in arrears. It provides that all persons, companies and corporations buying the above mentioned products in the state shall give a bond, file a power of attorney with the Secretary of State, and buy a license from the Commissioner of Agriculture to do the business they contemplate. Under this disposition, absolute protection from bad bills is afforded the farmer.

The law has worked out with some complications due to the fact that possible methods of avoiding it have developed.

When milk is shipped by the producer and the transaction with the buyer completed in another state, the purchaser is no longer amenable to this law. Cognizant of this fact, many contractors are requiring the producers to pay the freight to some point outside of New Hampshire. One buyer hired a man to gather the milk in a certain section of this state, but instead of paying the bill for hire directly, he sent each producer two checks—one to pay for the milk and one to pay for its delivery into Massachusetts, but both to be signed by the seller. Some buyers deduct freight charges from their remittance to the shipper. Several contractors were so bold as to contend that the law was unconstitutional and consequently could not be enforced. Sufficient to say, this department has not found it easy to compel people to bond who did not see fit to do so.

Considerable effort was expended in bringing the law to the attention of the buyers and in urging them to comply with its requirements. Nearly all of the better class of contractors gladly purchased a license to show their respect for the law and their eagerness to do an honest business. Many of the less responsible companies have failed to get a license. Perhaps most often the companies who were not inclined to comply with the law are the ones whose bond, for various reasons, we most need. Then, again, the expense of twenty dollars or more required for bonding and licensing proves a burden to some in competition with those who do not get a license and to whom we have failed to make licensing obligatory. Under the present interpretation of the law, it seems necessary that the farmers should coöperate in its enforcement and universal acceptance by every last man refusing to ship his milk outside the state or to pay for its transportation. Then, and then only, can we eliminate all unfairness to the buyers and prove or disprove the practicability of the law.

A copy of the law follows:

CHAPTER 220.

AN ACT RELATING TO THE PURCHASE OF MILK, CREAM AND BUTTER WITHIN THE STATE FOR SHIPMENT AND SALE WITHOUT THE STATE.

Be it enacted by the Senate and House of Representatives in General Court convened:

SECTION 1. Every person, co-partnership, association or corporation that, as a part of his, their or its business, purchases milk, cream or butter within this state, to be shipped and sold beyond the state, is hereby required to first obtain a license therefor, as hereinafter provided.

SECT. 2. Every such applicant for a license shall file

with the agricultural department of the state, a statement showing: (1) the full name and address of the dealer, if an individual; (2) if it be a co-partnership, the full names and addresses of all members of the co-partnership, and their respective interests in the firm; (3) if it be an association, the full names and addresses of all members of the association, a copy of the articles of association duly attested by the clerk or secretary thereof, a list of all officers of the association and a copy of any by-laws or regulations thereof attested by such clerk or secretary; (4) if it be a corporation, a copy of its charter or articles of agreement; a copy of its by-laws or regulations; and a copy of such portions of its records as show the extent of its paid-up capital; a list of its stockholders and their respective holdings, a list of its officers, and a statement showing its financial condition, all of which shall be signed by the president, treasurer, and secretary or clerk of the corporation; (5) a complete statement of all real estate within this state, owned by such individual, co-partnership and the members thereof, association, or corporation, and of the incumbrances thereon, which shall also contain the place and details of the record of the applicants' title thereto; (6) a statement of the amount of such business done by such persons, co-partnership, association or corporation, within this state, during each month of the year preceding such application; (7) such further information relative to its organization or past business, or its proposed course of future business as the agricultural department of the state may require; (8) all resident individuals, co-partnerships, associations or corporations, giving bond, as hereinafter provided, and all non-resident individuals, co-partnerships, associations or corporations, shall, prior to receiving such license, file with the secretary of state, a power of attorney whereby the secretary of state is appointed his, their or its agent, for receiving service of process, returnable to any court within this state; and

shall also file a true copy of such power of attorney with the department of agriculture.

SECT. 3. Upon the filing of such certificate, and the payment of one dollar for each month that a license is applied for, the department of agriculture shall be empowered to license such applicant to make such purchases within this state, for shipment and sale without the state, until the first day of the next April, *provided* such person, co-partnership, association or corporation shall be found by said department to have sufficient real estate within this state to afford ample security for the protection of those from whom such person, co-partnership, association or corporation purchases the aforesaid products for such shipment and sale; *provided, further*, that any person, co-partnership, association or corporation, not having sufficient real estate within this state to afford such security, shall be permitted to furnish security by a bond signed by such applicant and some surety company authorized to do business within this state, which bond shall be in such sum as the department of agriculture shall fix, and shall be conditioned upon the payment by the principal of said bond, of all its accounts for milk, cream or butter so purchased within this state, within fifteen days after the same shall become due, and for the faithful performance of and compliance with all the conditions and requirements imposed upon such dealers, by the department of agriculture, or by the laws of the state. Such bond shall run to the governor of the state of New Hampshire, who shall be deemed to hold the same as trustee for the benefit of all residents of the state who may sell to the principal upon such bond any of the aforesaid products for shipment and sale, as aforesaid.

SECT. 4. The agricultural department may require such licensee to furnish detailed statements of the business transacted by such licensee thereunder; and may require

the licensee to furnish further bond whenever in the opinion of such department it becomes necessary for the protection of resident creditors of such licensee.

SECT. 5. Any licensee whom the department has accredited with security consisting of real estate, shall, before conveying or incumbering said real estate, notify the department of agriculture, and shall comply with such order as to furnishing bond in lieu of such real estate, as said department may make, before selling or encumbering said realty.

SECT. 6. Individuals, co-partnerships, associations or corporations so licensed may contract with his, their or its vendors, for the payment of the several sums due them for milk, cream or butter, at such times and in such manner as may be mutually agreed upon, but in the absence of any written memoranda thereof signed by both parties, in respect thereto, such payment shall be due and payable on the Tuesday next after the fifteenth day of each month, for all milk, cream or butter delivered or furnished during the preceding calendar month. At the time payment is made therefor, such licensee shall furnish to each payee a statement of the quantity delivered or furnished by him during the period covered by the payment so made, together with the price allowed for the same.

SECT. 7. If such licensee, for the space of fifteen days after the date upon which the payment of the several amounts due his, their or its vendors becomes due, shall, without the consent of such creditor, fail to pay the amount due for milk, cream or butter, delivered or furnished by such creditor, then and in that event, the bond given by such licensee shall be forfeitable as for condition broken.

SECT. 8. Upon the violation of any bond furnished as aforesaid, any creditor injured by such violation may

make written application to the governor for leave to sue said bond, and upon indemnifying the state from any loss, cost, damage or expense, in such sum as the governor may prescribe, not exceeding three hundred dollars, leave shall be given such creditor to bring suit against said bond, within such period of time as may be limited in such permission, in the name of the State of New Hampshire. Upon the forfeiture, by judgment or order of court, of any such bond, any creditor of the principal, whose claim is for milk, cream or butter, and which is overdue, may enter his name in said suit, as a plaintiff in interest, upon such conditions or terms as the court may order; and, upon proof of his claim, execution may be issued in favor of such creditor, for the amount of such claim, with interest for the overdue period, together with costs, against the principal and surety upon such bond.

SECT. 9. Whenever suit is instituted upon any such bond after permission first had and obtained, as aforesaid, service shall be made upon the secretary of state, as the resident agent of non-resident licensees and bonded resident licensees; and there shall be given to him, by the sheriff serving the same, an extra copy of the writ or document served, together with twenty-five cents for filing and docketing the same, and for conveying such additional copy to the department of agriculture. It shall be the duty of the secretary of state to forthwith, upon the service of any such process upon him, to enter the same in a docket, showing the name of the plaintiff and defendant, the term of court to which said process is returnable, the date when and the officer by whom the same was served, and to forthwith transmit the extra copy to the department of agriculture.

SECT. 10. Upon the reception by the department of agriculture of such process, it shall be the duty of such department to suspend the defendant's license, until the

licensee shall furnish such new security as the department may order.

SECT. 11. Any person, co-partnership, association or corporation making false statement to secure a license, or purchasing milk, cream or butter within, to be shipped and sold beyond this state, without first having obtained a license so to do, or who, having first obtained such license, shall continue to do such business after being notified by the department of agriculture that such license has been suspended, until permission to resume such business shall be granted by said department, shall be fined not exceeding five hundred dollars, and may be imprisoned not exceeding one year, or both.

SECT. 12. This act shall take effect September 1, 1913.

[Approved May 21, 1913.]

STATISTICS.

FARMS AND FARM PROPERTY.

Number of farms	27,053
Number of acres	3,249,458
Improved land	929,185
Acres per farm	120.1
Value of land	$44,519,047
Value of buildings	41,397,014
Value of implements	5,877,657
Value of live stock	12,624,494
Total	$104,418,212

1914.

NEW HAMPSHIRE'S DOMESTIC ANIMALS.

	Number.	Value.
Horses	61,117	$7,222,569.00
Cows	86,438	3,867,219.00
Oxen	3,527	323,026.00
Other cattle	17,550	609,686.00
Swine	4,522	63,267.00
Sheep	21,551	100,370.00
Mules	430	53,250.00
Fowl	179,091	137,377.00
		$12,376,764.00

NEW HAMPSHIRE'S COWS.

1900 TO 1914.

	Number.	Assessors' Valuation.
1900	110,327	$2,667,860
1901	104,003	2,510,952
1902	108,605	2,661,220
1903	113,897	2,813,937
1904	115,223	2,838,152
1905	113,712	2,784,621
1906	111,464	2,770,208
1907	119,624	2,750,434
1908	105,124	2,673,900
1909	98,312	2,560,133
1910	92,082	2,558,606
1911	94,467	2,842,324
1912	92,879	3,473,480
1913	89,510	3,561,461
1914	86,438	3,867,219

NEW HAMPSHIRE'S OXEN.

1900 TO 1914.

	Number.	Assessors' Valuation.
1900	5,567	$297,672
1901	4,680	245,345
1902	5,144	286,481
1903	6,575	355,550
1904	6,874	364,694
1905	6,202	326,504
1906	6,433	335,324
1907	5,793	313,588
1908	5,438	300,145
1909	4,681	269,256
1910	4,111	253,064
1911	4,286	285,277
1912	4,239	330,693
1913	3,830	330,450
1914	3,527	323,002

NEW HAMPSHIRE'S SHEEP.

1860 TO 1914.

	Number.	Assessors' Valuation.
1860	310,342	$850,337
1870	248,760	.....
1880	211,825	.....
1890	131,611	.....
1900	59,565	177,084
1901	52,576	155,394
1902	51,510	150,648
1903	48,366	142,397
1904	44,078	133,277
1905	40,367	124,989
1906	40,396	141,790
1907	40,142	149,614
1908	36,863	138,785
1909	31,081	114,325

	Number.	Assessor's Valuation.
1910	26,339	$104,467
1911	27,061	110,166
1912	27,438	123,538
1913	25,342	113,278
1914	21,551	100,370

1860.

NEW HAMPSHIRE'S SHEEP BY COUNTIES.

310,342.

County.	Number.	Value.
Belknap	12,275	
Carroll	12,194	
Cheshire	36,679	
Coös	15,115	
Grafton	100,465	Per head, $2.74
Hillsborough	14,835	$850,337.00
Merrimack	45,270	
Rockingham	11,697	
Strafford	6,897	
Sullivan	52,107	

1914.

NEW HAMPSHIRE'S SHEEP BY COUNTIES.

21,551.

County.	Number.	Value.
Belknap	1,658	
Coös	2,785	
Carroll	908	
Cheshire	1,825	
Grafton	4,714	Per head, $4.65
Hillsborough	1,475	$100,370.00
Merrimack	3,946	
Rockingham	825	
Strafford	810	
Sullivan	2,605	

FROM THE FIELDS.

	Tons.	Value.	
Hay	289,810	$4,755,116	
Alfalfa	97	1,387	
Millet	9,251	119,672	
Wild and Salt Hay	18,106	180,510	
Other Grasses	131,621	1,978,044	
Green Cut Grain	24,748	276,900	
Coarse Forage	108,821	534,514	
			$7,846,143

	Bushels.	Value.	
Corn	916,263	$621,306	
Oats	386,419	216,938	
Wheat	1,311	1,406	
Barley	20,764	17,292	
Buck Wheat	26,312	17,842	
Rye	4,534	4,680	
Beans	22,546	62,783	
Peas	934	1,955	
Potatoes	1,360,241	1,204,626	
			$2,148,828

FROM THE ORCHARD.

	Bushels.	Value.	
Apples	1,108,424	$637,990	
Peaches	23,218	37,884	
Pears	24,224	25,206	
Plums	7,542	14,039	
Cherries	1,403	4,133	
	Pounds.		
Grapes	375,164	10,926	
			$730,178

SMALL FRUITS.

	Quarts.	Value.	
Strawberries	638,057	$68,552	
Raspberries	86,558	11,821	
Blackberries	75,913	7,793	
Cranberries	30,304	2,686	
Gooseberries	5,841	683	
Currants	43,319	4,587	
Other berries	118,252	11,243	
			$107,363

DAIRY PRODUCTS.

Milk produced	35,033,153 Gals.
Butter produced	5,065,188 Lbs.
Cheese produced	180,996 Lbs.

Milk sold	21,132,268 Gals.	Value,	$3,613,676
Butter sold	3,510,593 Lbs.	Value,	1,052,226
Butter Fat sold	566,229 Lbs.	Value,	168,159
Cream sold	380,944 Gals.	Value,	273,714
Cheese sold	168,705 Lbs.	Value,	23,282

IMMIGRATION AND ADVERTISING.

Under an amendment to Chapter 12 of the Public Statutes of the State of New Hampshire, made in 1905, authority was given the Secretary of the Board of Agriculture to expend an amount not to exceed three thousand dollars annually in collecting and circulating information relative to the opportunities and advantages of immigration to our state. A work of inestimable value has been done in the past by compiling and distributing pictures, descriptive articles and statistics relating to the inducements accruing to those who seek summer homes in New Hampshire. Yearly, since the above amendment and for

some time previous, under a less appropriation, an artistic book embodying these features has been issued by the Secretary of Agriculture. So great has been the interest created by these books that it would seem the height of folly to discontinue them, yet so thoroughly has this particular field been covered that the present department found difficulty in acquiring material. Under the changed, and still changing, agricultural conditions, in a country whose population is ever on the increase and whose land suitable for agricultural practices is already nearly exhausted, it seems advisable to make public the fact that no small amount of reasonably smooth, fertile, and very cheap land is available, among other things, in the "Switzerland of America." With this idea paramount, plans are laid to issue a book entitled "New Hampshire Farms" without restricting, by title or otherwise, the use of the farms therein described to the maintenance of summer homes. Pictures depicting some of the valley lands, unexcelled for raising field crops; examples of rolling lands, affording ideal air and water drainage for orchard sites; and picturesque mountain and hill slopes, maintaining a sod of unequalled value for grazing purposes, will be incorporated in this book. We earnestly hope and believe that such an edition will be a most valuable and interesting sequel to the "Summer Homes" books already issued.

An excerpt of farms advertised for sale will also be printed in book form in accordance with the custom previously established.

SEVENTH ANNUAL REPORT

OF THE

NEW HAMPSHIRE HORTICULTURAL SOCIETY.

LETTER OF TRANSMITTAL.

Hon. Andrew L. Felker,

Commissioner of Agriculture,

Concord, N. H.

Dear Sir:

I have the honor to transmit herewith the seventh annual report of the New Hampshire Horticultural Society, being the report of its twentieth annual meeting and exhibition, held at Antrim, N. H., October 21, 22, 23, 1914.

Yours respectfully,

Stanley K. Lovell,
Secretary-Treasurer.

NEW HAMPSHIRE HORTICULTURAL SOCIETY.

OFFICERS OF 1914.

President,	C. W. Barker, Exeter
Vice-President,	J. T. Harvey, Pittsfield
Secretary-Treasurer,	Stanley K. Lovell, Goffstown

Executive Committee.

Joseph H. Gourley, E. B. Parker, A. C. S. Randlett, and the officers.

County Organizers.

Rockingham County,	George E. Gowen, Stratham
Belknap County,	F. A. Badger, Belmont
Hillsborough County,	E. B. Parker, Wilton
Carroll County,	Oscar E. Davis, Alton
Merrimack County,	E. N. Sawyer, Salisbury
Cheshire County,	Robert E. Faulkner, Keene
Grafton County,	O. M. Pratt, Holderness
Coös County,	J. A. Costello, Lancaster
Strafford County,	A. E. Durgin, Lee
Sullivan County,	Herbert W. Holmes, Charlestown

Membership.

All persons interested in horticulture are eligible to membership.

Annual membership fee,	$1.00
Life membership fee,	10.00

Fees should be remitted to the secretary-treasurer.

The fiscal year of the society begins on September 1 and ends on August 31 of each year.

For further information regarding the exhibition and for premium lists, write the secretary-treasurer,

Stanley K. Lovell, Goffstown, N. H.

SEVENTH ANNUAL REPORT OF THE NEW HAMPSHIRE HORTICULTURAL SOCIETY.

PROGRAM

OF THE

TWENTIETH ANNUAL MEETING

AT ANTRIM, N. H.

OCTOBER 21, 22 AND 23, 1914.

WEDNESDAY, OCTOBER 21, 2 P. M.

Prayer, Rev. W. J. B. Camell, Antrim

Solo. Mrs. Jameson

Address of Welcome,
First Selectman Warren W. Merrill, Antrim

Response, President C. W. Barker, Exeter

Duet, Mrs. Jameson and Mr. Arbuckle

Season's Lesson from the Orchard.
Prof. Joseph H. Gourley,
Horticulturist, N. H. College

WEDNESDAY EVENING, 7.30 O'CLOCK.

Musical Selections.

Duet, Mrs. Jameson and Mr. Arbuckle

The Value of Bees in the Orchard,
Prof. William H. Wolff,
Asst. Horticulturist, N. H. College

Solo. Mrs. Jameson

Causes of Unfruitfulness in the Orchard,
Wendell Paddock, B. S. A. and M. S.,
Professor of Horticulture, Ohio State University

THURSDAY, OCTOBER 22, 9 A. M.

BUSINESS MEETING.

Demonstration of Box Packing of Apples,
Prof. William H. Wolff

Address of the President.

Reports of the County Organizers.

Report of the Secretary-Treasurer.

Report of Committees.

Election of Officers.

Miscellaneous Business.

General Discussion and Question Box.

THURSDAY AFTERNOON, 2 O'CLOCK.

Solo, Mrs. Jameson

Winter Work Against the Bugs (Illustrated),
C. J. Hadley, Jr.,
Assistant Professor of Economic Entomology,
New Hampshire College

The Professional Man and the Farm,
Rev. Elvin J. Prescott,
Gloucester, Mass.

Benefits of Extension Work to the Horticultural Interests of the State,
Prof. J. C. Kendall, Director,
New Hampshire Agricultural Experiment Station

THURSDAY EVENING, 7.30 O'CLOCK.

Musical Selections.

Ladies' Quartette.

Solo, Mrs. Jameson

Activities of the Department of Agriculture of New Hampshire,
Hon. Andrew L. Felker,
Commissioner of Agriculture,
Concord, N. H.

The Grange in New Hampshire,
Wesley Adams,
Master N. H. State Grange

Duet, Mrs. Jameson and Mr. Arbuckle

Address, Hon. David H. Goodell, Antrim

Methods of Vegetable Production in Northern New York,
J. B. Sherrer.
Assistant in Vegetable Gardening,
New Hampshire College

FRIDAY, OCTOBER 23, 10 A. M.

Automobile Ride for Members and Guests.

Several orchards and other points of interest will be visited.

FRIDAY AFTERNOON, 2 O'CLOCK.

CHILDREN'S SESSION.

This session will be in charge of Prof. Joseph H. Gourley, Horticulturist, N. H. Experiment Station, assisted by Caroline A. Black, Ph. D., Assistant Botanist, N. H. College.

TWENTIETH ANNUAL MEETING

OF THE

New Hampshire Horticultural Society,

AT

ANTRIM, N. H.

OCTOBER 21, 22, 23, 1914.

ADDRESS OF WELCOME.

CHAIRMAN BOARD OF SELECTMEN, WARREN W. MERRILL.

Mr. President and Members of the Horticultural Society, Ladies and Gentlemen:

It is with mingled feelings of pleasure and satisfaction that we welcome you to our town. We are not a city. We cannot boast of a large population or great wealth, but we do claim to be a live, up-to-date town, and that the high moral tone of its people and the civic pride of its citizens are not surpassed by any community in the state, and we hope to show you, Mr. President and members of the society, that we are not lacking in the art of hospitality. In response to an invitation extended to you by the local Board of Trade and Antrim Grange, your executive committee came here and looked us over, and heard what we had to offer them. Some time later we were very much pleased to hear that you had decided to come to Antrim for your annual exhibit this year.

We had two objects in view when we invited you here. One was that we wished you to know that there was such a place as Antrim on the map, and the other reason was we thought that your meeting here with us would create

an interest in the growing of fruit in this section, for we believe there are great possibilities in this industry, and that no better fruit can be grown anywhere than right here in Antrim. Especially is this true of apples. There is considerable fruit raised here now, but how to raise more and better and how to obtain the best prices and the largest profit is what we want to know.

This meeting will be an inspiration and help to all interested in this industry. The splendid exhibition in yonder hall shows us what kind of fruit can be raised in New Hampshire. We cannot neglect our orchards and expect to succeed in the fruit industry. We must use up-to-date methods or get left behind in the race. Constant care and attention must be the price of success in the growing of fruit.

But you did not come here to hear me talk. So once more for, and in the name of the town of Antrim, I extend to you a cordial greeting. Our latch string is out, our doors are open. If there is anything you want do not be afraid to ask for it. You have the freedom of our town. We trust this will be one of the most profitable meetings in the history of the society.

RESPONSE.

PRESIDENT C. W. BARKER, OF EXETER.

We are assembled here at Antrim for the twentieth annual meeting of the New Hampshire Horticultural Society, and it gives me pleasure to thank you in behalf of the members for the hearty welcome extended to us through the kind words of your chairman, and by all the people of this interesting town.

The people of Antrim extended to us such a cordial invitation and offered such liberal inducements that it needed but one visit here to assure us that you are

awake to the possibilities of horticulture and the good these meetings will do you.

The objects of this society are to encourage the development of all lines of horticulture in New Hampshire, and to secure to those engaged in it such commercial rights as can only be obtained through coöperation, and also to bring about friendly relations between its members.

This is an organization receiving an appropriation from the state, and we try to distribute our work to cover all branches of horticulture, and to have the topics discussed in a way that will apply to local conditions. I hope we may have a large attendance from this and the surrounding towns at all our meetings, and that many will inspect the large exhibits of fruits and vegetables that are displayed in the hall across the road.

We have arranged a course of lectures for these meetings that will be instructive, and we invite all of you to ask of the speakers any questions that may occur to you during the lectures that all of the information possible may be presented.

If there is any branch of horticulture that you are in doubt about which is not covered by the lectures, we would be glad to have questions presented, and I will arrange to have them answered during the meeting.

I consider the packing and marketing of our crops as important as the growing, and to that end we try to arrange demonstrations and lectures to cover these points.

We want to make this meeting of the greatest possible help to all.

We should not be discouraged if the price of fruit is low this fall. Conditions will not be the same every year and I hope that some time in the future the producer will receive more of the consumer's dollar.

I want to extend a cordial invitation for all to become members of this society. It will benefit the society,

and I am sure it will be helpful to you, if you attend our meetings, and if you do not, the annual report you will receive is worth the expense.

The annual dues are one dollar per year, or ten dollars for a life membership. When we go from Antrim we hope to leave with you such a good impression of this society that you will want us to come again, and that you will also do all in your power to help us in our work at other places.

Again I thank you for the welcome you have given us.

THE SEASON'S LESSON FROM THE ORCHARD.

BY J. H. GOURLEY.

The past season has been interesting in many particulars and we can do well to recall the lessons it has to teach and, where possible, benefit from them in the future. Every season brings its lessons, some of them recurring from time to time, while in other cases new problems present themselves. Sometimes these new problems are entirely local with an individual and again they may arise over a whole district. We might say that we never get a normal season, each one is abnormal in some respect or other, and the one just closing is no exception.

In general, the growing season has been rather cool, with sufficient rain in the early part of the season and exceptionally dry in the latter part. The spring was about two weeks later than usual, which worked an inconvenience to the grower.

One of the first points which came to my notice this spring was the numerous cases of winter injury reported. This we had expected, as the winter had been very severe, accompanied by high winds, which usually causes injury

to fruit trees. It was common knowledge by mid-winter that the peach buds were all killed and the season testified to the accuracy of this observation, as there were no peaches in New Hampshire, and practically none in New England. But the injury to the wood itself becomes a much more serious matter and this form of injury often does not appear until after the growing season is well on its way.

Winter injury behaves in a variety of ways. With the peach tree, for instance, it is not uncommon to have the roots of the tree frozen, with the trunk and branches entirely unharmed. Again there may be the small collar injured near the crown of the tree where possibly water had settled and frozen; this may be only a few inches wide, but encircling the tree. In both cases, we would find the tree leafing out, possibly growing two or three inches, sometimes more, and suddenly about the last of June the leaves begin to wilt, and the tree dies in a comparatively short time, or it may live for a longer time than this and finally die rather suddenly. This has occurred time after time, and since it happens so late in the season a grower is disinclined to believe that it could be winter injury, for they think the tree could not have leafed out at all. But since the tree can start into growth from the reserve food stored in the branches and entirely independent of the roots, the results will become clear.

Again it is possible to get the peach winter injured by having the small twigs and branches frozen, while the trunk of the tree and roots are entirely uninjured. In this case you will usually find the twigs drying up and having a rather purplish black color and new growth will start out from adventitious buds from near the base of the trunk or crown of the tree. It is quite common with the peach to have the trunk break out with gum, looking almost like the work of the fruit bark beetle.

When we cut into the branch of a winter injured tree we find a peculiar blackish appearance of the heart wood

and so long as the green layer just under the bark is uninjured the tree will come along without injury. It is common in some sections of the west to find pear trees and apple trees that are entirely black-hearted and yet there is no apparent injury to the trees.

In the apple we usually do not find the flower buds alone killed, but rather the fruit spurs and twigs, and by the way the winter injury of apple trees is more common than is usually considered. For instance, it is entirely possible that a large amount of black rot canker, which is found on the Baldwin and other varieties in this state, may be the result of winter injury on the limbs where the bark dries and dies back, allowing the entrance of the spores of the disease. I have seen young pear trees, one, two and three years old, killed down to the ground during a severe winter. Where the injury is severe on young trees, the best recommendation would be to remove them and plant new trees.

The green apple aphis has been quite severe in many localities the past year. In some places they were much more numerous in cultivated orchards than in orchards standing in sod. This trouble was at its height about the middle of July; many found considerable trouble in controlling this pest with any kind of spray material. In the college orchard we were quite successful by using the commercial product known as "Black Leaf 40" at the rate of one-half pint to 50 gallons of water and including a pound of naphtha soap dissolved in each 50 gallons. The trouble is usually not so bad where lime-sulphur is used as a summer spray than elsewhere. The kerosene emulsion and soap solutions are not so popular for this treatment as they were formerly.

While apple scab was not serious throughout the state generally there were many places where even the Baldwin, which is not a bad scabbing variety, was badly affected. Sooty fungus seemed to develop badly just before picking time. Treatment for scab will be referred to later.

Throughout the latter part of the season it was quite common to find many broken limbs in the orchard, even where the crop was not especially heavy, and about picking time many growers realized that the apples were quite small and were dropping badly. We have been inclined to attribute this to the dry weather and the lack of elasticity in the limbs, so that instead of bending with their load of fruit they would break off. A recent publication from the Missouri Experiment Station has shown that during a severe drouth the leaves will take the moisture out of the fruit, and thereby cause the apples to run small, and even shrivel, and consequently mature early and drop off. This evidently was what we experienced on the very light soils this year.

Extension Work.

The Horticultural Department has been carrying on various lines of extension work for the past two years. The main lines of endeavor in this work have been a study of cover crops, a study of spray materials, thinning of fruit, and the effect of fertilizers on orchards standing in grass.

It is conceded by all good farmers that it is a beneficial practice to plow green crops in the soil, that it will keep the soil in better tilth, conserve moisture and as a result increase crop production. Just which cover crops would be best adapted to orchards in this state has been a question, and consequently we have tried out the following crops both in an orchard at Greenland and also at the college:

Winter vetch,
rye,
crimson clover,
buckwheat,
alsike clover,
red clover,

and a combination of these crops.

Up to date the one producing the largest amount of green material to plow under in the spring among the legumes was the winter vetch, and while there is a disposition on the part of many to object to this crop as a weed, making additional hand hoeing, etc., it is unquestionably a fine soil renewer and is especially well adapted to the cold sections of this state. Crimson clover is probably the finest of cover crops where it will winter over, but it has been our experience in the more exposed sections that it will winter through until about March, when it will heave out and die. Nevertheless it is a very valuable crop even though it be killed out each winter. The rye, of course, makes a large amount of green stuff to turn under, but is not a legume. Buckwheat, also, makes a good crop, and is preferred by some growers. Where it is so difficult to get manure, as it is in most sections in New England, the orchardist who wishes to cultivate should make a study of the cover crops best suited to his conditions, as we believe it is quite essential to keep up a supply of organic matter in the orchard.

In an experiment which we are conducting at the college, we find the nitrates run very much higher where we plow in a cover crop than where we do not, and inasmuch as plants take a large part of their nitrogen in this form, the economic importance of this matter cannot be ignored.

It is needless to say that the crops thus raised should not be harvested, but turned back in the soil. This is especially true on soils which are rather poor and need their fertility restored. I think that in many places we can safely say we are not plowing in enough of this organic material, even though we aim to plow in a little each year.

In the spraying demonstrations, we have used the following materials, which are being used by many growers:

The commercial lime-sulphur at the rate of one gallon

to 40 gallons of water as a summer spray, and another row at the rate of one to 50. In the first case we used three pounds of arsenate of lead paste to the 50 gallons, and in the second 2½ pounds of powdered lead which is equivalent to 5 pounds of arsenate of lead paste. Soluble sulphur ¾ of a pound to 50 gallons, used on two rows of trees; in the first, three pounds of lead paste, and the second 2½ pounds of powdered lead. Pyrox used at the rate of 1 to 7; Bordeaux, 3-3-50, with 5 pounds of lead paste; Sherwin-Williams powdered lead, 2 pounds to 50 gallons; Corona Dry, 2 pounds to 50; Pratt's powdered lead, 2 to 50; Hemingway's lead paste, 5 pounds to 50.

The commercial lime-sulphur has given us by far the best results, giving us absolutely perfect foliage and fruit and showing an invigoration to the foliage. This combination has entirely controlled scab, sooty fungus and insects. The soluble sulphur with lead has given us so much injury to the foliage that we have recommended that it be discontinued as a summer spray in the orchard. Unfortunately, the college has not tested it as a dormant spray, but hopes to do so the coming season. This material is made of sodium sulphide, and not lime and sulphur as is understood by some, and when the sodium sulphide is combined with lead arsenate there is a chemical change which becomes injurious to foliage.

Pyrox and Bordeaux have both given some injury and are usually not to be preferred to lime-sulphur. There are some sections, however, where Bordeaux is still being used to advantage, and if no injury has occurred, there is no objection to its use. The powdered leads have given us as good results as the lead paste in the control of insects, and apparently in the partial control of scab and sooty fungus. We also see an invigoration to the foliage of an apple tree where some kind of a fungicide is used in addition to the poison, either the lime-sulphur or Bordeaux. Just what the action is may be open to question, but it is ap-

parent enough that we would recommend its use for summer spraying for our state.

The third line of work which we have been doing the past season is demonstrations in the thinning of apples. Two years ago I showed this society the results of thinning Baldwins in the middle west, and showed where we were able to obtain from $1 to $7 increase per tree by thinning alone. In our results this year we obtained about twice as much money from a thinned tree as from an unthinned tree, or in other words from about 7,000 apples we got $4.75, and from a little over 4,000 we got about $8.25, as the following figures will show:

	Original number of apples.	After thinning.	No. bbls. 1st.	No. bbls. 2d.	No. bu. drops.	Gross receipts.
Unthinned tree,	6,782	....	2	7	2	$4.77
Thinned tree,	6,986	4,410	5 1/2	1 4/5	4	8.34
Thinned tree,	6,977	4,020	4	2 2/5	1 1/2	6.19
Thinned tree,	5,854	3,697	5	1 4/5	1 1/4	7.35
Unthinned tree,	5,485	....	1 1/2	5 1/3	6	4.09

We do not wish to over estimate the value of thinning, because by good cultural methods and proper pruning the amount of thinning can be very much reduced. There will also be years when there is not a heavy enough set, but for the man who is growing the fancy grades of fruit it is a necessary orchard operation, and even this year, when fruit has been so plentiful, the man who could produce the largest percentage of No. 1 fruit was very much ahead, provided he could do so at a reasonable expense. It cost us as much as a dollar in some cases, but it would average nearer 50 or 60 cents per tree, which is not too high, when we consider the results.

Some of the advantages in thinning are to prevent the

breaking of limbs, increase the size, color and quality of the fruit, decrease the amount of insect and disease injury, assist in bringing about an annual bearing of the trees in some cases, and by maintaining the vigor of the trees.

The last point which I wish to mention in this connection is the matter of water-core of fruit. This is a trouble which is seen practically every year in our state; it may be that just the one cheek of the apple will be somewhat water-cored or it may be that the whole apple is so affected. The King is one of the most susceptible varieties, but we have seen some Baldwins this year so affected, which is rather unusual. This trouble is to be found distributed all over the apple growing world, through Europe and America. It is not caused by any organism, but is a physiological trouble, it gives the apple a rather sweetish or fermented taste, and is first seen about the woody strands in the flesh near the stem of the apple.

There is no known method to definitely prevent it. It is caused by excessive growth in some cases; however, there is no one cause usually which produces it, but rather a combination of causes. High cultivation, which gives excessive growth, especially near the end of the season, oftentimes produces it; excessive rains just before maturity will often cause it to develop. This is sometimes seen in the irrigated sections where water is applied a little too heavily; it seems to fill up the apples with more water than they can care for, and the delicate vessels carrying it allow it to disseminate through the flesh. A defoliation of the trees or a heavy pruning just before ripening may cause this to develop. The same results would occur if a severe frost injured the leaves, thus reducing the amount of transpiration that the leaves can take care of. The exposed fruits well out towards the ends of the branches and on the sunny side of the tree will be more affected than others. It is possible, by carefully handling the fruit in a good storage, to have a large per cent. of this water

core disappear, provided the water has not filled the core cavities.

These matters which I have touched upon have been among the more important which have come to our attention during the past season.

Questions Following Professor Gourley's Address.

Question: I would like to ask if water cheeked apples are the same as water core apples?

Prof. Gourley: Yes, it is just the same thing.

Comment: My orchard of Kings has been like that all this year.

Question: I would like to ask if cover crops would have any influence in coloring the apples?

Prof. Gourley: Theoretically that is what ought to happen. I would not say definitely, but it certainly ought to tend to do it.

Question: On picking up an oak limb that looked as though squirrels had cut it up, I found a group of worms similar to the apple worm. I would like to ask the professor if he has heard of this at the college, and if he knows what it is?

Prof. Gourley: I do not know to what you refer. I would say that it isn't the apple worm, but we have not had this trouble over there.

Comment: I might say that I think this is probably the oak tree pruner, which works in the manner he describes.

Prof. Gourley: I think Mr. Richardson has had some experience in thinning apples, and I would like to have him tell us how he came out.

Mr. Richardson: I should say that there were little or no results from my experiment. We did only three trees at the Hayward orchard in Hancock, and the apples were picked and packed in the orchard without being counted. From general observation of the trees I should say that

there was no difference between the thinned and the unthinned trees. The trees were not thinned as thoroughly as should have been done to get good results.

Question: In regard to the remarks about the time taken to thin a tree, I would like to ask how large the trees were, approximately?

Prof. Gourley: They were not large—that is, not of excessive size; about twenty inches through and not high. They were easily accessible. I should estimate that it takes about three hours to thin an ordinary tree.

Question: I would like to ask what is the best time to seed in the cover crop?

Prof. Gourley: I think it depends a good deal on the weather, but I should say about the middle of July. Buckwheat should be seeded earlier; but such crops as vetch and crimson clover, about the middle of July. We tried to seed sweet clover in the early spring, but the weeds choked it pretty badly, and I am inclined to think I shall try it in the fall.

BEES IN THEIR RELATION TO FRUIT CULTURE.

PROF. WILLIAM H. WOLFF, ASSISTANT HORTICULTURIST, NEW HAMPSHIRE COLLEGE.

Mr. Chairman, Ladies and Gentlemen:

At Orchard Day at the New Hampshire College at Durham this past summer, your president of the Horticultural Society, Mr. Barker, who was among our visitors, became somewhat interested in a demonstration I was giving on the handling of bees. This led to Mr. Barker asking me to present to you at this time a paper on the subject of "Bees in their Relation to Fruit Culture."

Of course, I wanted to please Mr. Barker, but I had

more serious reasons, if I may say so, for presenting this topic at your meeting. First, I feel that the majority of fruit growers are not assigning to bee-keeping the importance it deserves. Too few appreciate well enough the close relation between bees and fruit. Second, I want to call your attention to the fact that there are fewer bees kept in New Hampshire than formerly. Altogether too few for best results. If we refer to the 1910 census we find that only 4 per cent. of the farms in the state keep any bees. In 1900 we find that 1,288 farms kept bees against 1,002 farms in 1910, a decrease of 22.2 per cent. During this same period we find that the number of colonies on farms in the state decreased from 5,520 to 4,644, a decrease of 15.9 per cent. Another point which I wish to bring out is that bees are often blamed for injury to fruit of which they are innocent, and finally I wish to emphasize and call to your attention the fact that there is a strong tendency to disregard the rights of the beekeeper by spraying trees while in bloom. The loss to the fruit grower indirectly, by the killing of bees, and directly by the disastrous effects of these sprays on the blossoms is mostly unappreciated.

Before we can understand the relationship of bees to horticulture, we must know something, in fact considerable, about both bees and flowers. First, then, let us look briefly into the organization and life of the swarm.

Some bright, warm morning in May or June, let us visit a good strong colony or hive of bees. Then by a little smoke from a smoker, a pipe or a cigar blown into the entrance of the hive, we frighten the bees a little, reduce their propensity for fighting, and incidentally cause them to fill up on honey which improves their disposition. Now, with slow, deliberate movements, and the avoidance of jarring the hive so as not to further alarm or excite them, we open the hive and begin investigations. As we take out the frames we find an enormous number of bees of one size

and shape; these are the workers, really undeveloped females. There may be twenty-five, thirty, or even fifty thousand of them in a very strong colony at the height of the honey season. As we look closer we observe a few bees larger than the rest, and with heavier bodies. These are the males or drones; there are perhaps two or three hundred of these scattered through the hive. Finally, if we look closely, we shall find a bee differing in appearance from all the rest. This is the queen. She has a much longer abdomen and shorter wings than workers or drones. She is not a queen in the ordinary sense of the word, but the bees do respect her, feed her and care for her, because they know that she is the great mother of the swarm and on her depends its continuance and prosperity. Laying eggs is her sole duty. Beginning by laying a few eggs a day in the center of the hive in early March, as the season progresses she will lay 200 to 500 a day and at the height of the season, with abundance of nectar and pollen coming in to feed the babies and plenty of young nurse bees to attend to them, she may lay as many as 3,000 eggs, aggregating more than the weight of her own body in each twenty-four hours. When doing this she does not even stop to feed herself, the workers bring to her specially prepared and pre-digested food. Eggs laid in worker cells require only twenty-four days to pass through the stages of grub or larva, pupa or chrysalis, and emerge fully developed. Another week spent in and about the hive and they are ready for field work.

Many more interesting facts might be stated in regard to the wonderful organization of the hive and the life history of the bees, but it is sufficient here that our examination inside the hive has shown us how our bees are able to develop in numbers so rapidly early in the season and are able to put 30,000 to 50,000 workers into the field from each colony just at the time, as we shall show, the fruit blossoms need them.

Having thus briefly examined a colony of bees, let us examine a typical flower, one capable of self-fertilization. On the outside are the protective organs; first the calyx, usually, but not always, green in color; next, inside, is the corolla, made up of the flower leaves or petals of various colors; inside these again are the essential floral organs, comprising the stamens and the pistil or pistils. At the head of each little thread-like stamen is a little double sack containing the pollen grains, usually yellow or red in color. Inside the row of stamens we find the pistil or pistils, each crowned at the top with a sticky receptive surface called the stigma and each leading down to the ovary or future seed vessel. In the ovary we may, with care and a hand lens, distinguish the ovules or rudimentary seeds.

The flower, let us assume, is now fully opened and ready to be fertilized. A pollen grain falls on the sticky tip or stigma of the pistil and remains attached. In a few hours this pollen grain starts to grow, much as a seed does in the soil, and it sends out a little root-like tube, which burrows down inside the pistil until it comes to the ovary which it enters. The male cell in the pollen grain follows down inside this pollen tube, through it enters the ovary, fuses with the ovule, and, this done, the real growth of the seed and fruit is begun. In the vast majority of cases, especially with our northern grown fruits, where fertilization is not accomplished, the fruit itself does not develop. A noted exception to this rule is the case of the long English hot-house cucumber which has been grown under artificial conditions for so long that it has become unnatural and will grow to normal size and shape without the stimulation due to pollen fertilization, although in such case it of course produces no seeds.

In describing a typical flower we spoke of one capable of self-fertilization. Now, as a matter of fact, this self-fertilization or fertilization by its own pollen, is seldom

possible, and probably never desirable. Darwin, after exhaustive studies, came to the conclusion that "Nature abhors perpetual self-fertilization, both in animals and plants," and to-day after further studies this statement stands unchallenged. The golden rule for flowers is "get fertilized, cross fertilized if you can, self-fertilized if you must."

Nature has taken many and elaborate means to prevent self fertilization, a few of which only may be cited here for illustration.

1. Male and female or staminate and pistillate flowers are sometimes produced on different plants. This is the case with all members of the willow family.

2. Male and female blossoms are often found on different parts of the same plant. Note the catkins or false flowers of the oak, chestnut and all northern nut trees, which fall off, and the other inconspicuous flowers which produce the fruit; also the male and female blossoms of the squash, cucumber and closely related plants. In this case, however, it should be borne in mind that should a pistillate blossom be fertilized by a staminate one on the same tree or plant, this is in effect self-fertilization, since the tree itself and not the flower is the entity.

3. Antheres and pollen ripen in some cases before and some cases after the pistils of the same flower. In the case of the Rosebay, Willow Herb, a fine honey plant, the antheres ripen first and after the pollen is gone the pistil, which, up to this time, was curved away out of sight, straightens into position and becomes receptive.

4. Pistillate varieties, or varieties producing pistils only, are common among strawberries; examples are the Bubach and Sample, two of the very best.

5. Sterility to pollen from the same flower or same plant is, however, probably the chief means nature has of preventing self-fertilization in plants. As is commonly known, Indian corn is self-sterile. A single plant growing

alone in the barn-yard will seldom set many grains on its ear.

Well known self-sterile varieties among our fruits are Gravenstein, Wealthy, Northern Spy, King, Bellflower, and Roxbury Russett apples; Anjou, Bartlett, Clapp's Favorite, Sheldon and Winter Nelis pears: Satsuma and Coe's Golden Drop plums. Burbank plum is usually classed as a self-fertile variety, but from our observations and experiments at the New Hampshire Station it has proven decidedly self-sterile. This is an important point, because it, with the Abundance, a good mate, is so largely grown and so well adapted to this state. Among grapes, Brighton is a prominent self-sterile variety.

Another long list of fruits is known to be partially self-sterile, and others apparently self-sterile some seasons and in some districts and self-fertile under other circumstances and surroundings. All who have investigated this subject have come to practically the same conclusion, which is that very many varieties are self-sterile in degree, and the further one goes the further self-sterility is discovered. Also, while some varieties of fruits, as the Baldwin apple, are apparently self-fertile, yet all are helped in abundance of crop, uniformity of shape and size and in quality by being cross-pollinated in the blossom.

Since then cross-fertilization among plants is so desirable and important, what are the means provided for insuring a transfer of pollen from one flower to another? Mainly two agencies which may be classed as animate and inanimate. Under the former we have wind, the downward force of gravity, and the splashing of rain. In plants like the Indian Corn and various species of Pine, where relatively enormous quantities of dry dust-like pollen are produced, there is room for great waste, and we find that wind and gravity are the two chief agencies for distributing this pollen.

In our deciduous forest trees and in fruit trees and

plants where pollen is produced more sparingly, nature permits no such waste, but takes a more certain and direct means of placing the pollen only where it is required. The chief agents for pollen transfer here are insects, and among the various insects which may be observed about the blossoms in the early spring the honey bee is the most important.

But some may question this statement of the honey bee being the most important, hence the recital of a few facts in support will be in order.

In the first place the honey bee has been shown to outnumber all other insects about blossoms ten to one. This is as we should expect, since it starts propagating very early in spring and it winters over in large numbers, which is not the case with other blossom-visiting insects. One bee will visit many hundred blossoms a day, and since each hive is able to put 30,000 to 50,000 workers into the field we can readily see what an immense number of fruits can be perfectly cross-pollinated.

Second, the bees need pollen for brood rearing, hunt it out, and are particularly adapted to carrying pollen on account of the special pollen baskets on their hind legs, and collecting and distributing it over the flower pistils from the brush-like hairs which cover the under side of their bodies.

Third, nature has so arranged it that not only can she well afford to give the bees a share of the precious pollen as pay for their work of carrying it where needed, that is, from blossom to blossom, but she even offers them extra inducements and rewards so as to make doubly sure they will do this very necessary work. She coaxes them with sweet stuff, much as one would coax a crowd of small children by offering candy or maple sugar. She provides the blossoms with minute special organs, the nectaries, the sole purpose of which, so far as botanists know, is to secrete nectar, a sweet liquid of no value to the flower

itself, but most enticing to bees and from which they make their honey. Nature places these nectaries, too, in the most remote corners of the flower that the bee may be obliged to twist itself into all possible shapes around and among the stamens until it is thoroughly dusted with pollen.

Since then the bees are so necessary for the fertilization of blossoms and the setting of fruit, it is to the interest of fruit growers especially, to give them all the encouragement and protection possible.

Under this heading I want to call to your attention first the fact that bees are sometimes blamed for biting into and destroying ripe fruit. This they cannot do, since they have no mouth parts which would enable them to cut through the tenderest skin of any fruit. Prof. N. W. McLain, formerly of the U. S. Department of Agriculture, a few years ago carried on some elaborate experiments by placing ripened pears, peaches, grapes and other fruits into hives of bees, some of these previously reduced to semi-starvation. In no case was sound fruit injured, although artificially punctured and cut specimens were sucked dry. In 1906, when I was a student at the Pennsylvania State College, I also saw this same experiment repeated by Prof. H. A. Surface, State Economic Zoölogist, with similar results, not a sound fruit was injured, although left in the hives five days. Let us then protect the bees from discredit from the ill-founded assertion that they destroy fruit. Our bees also need protection from the spraying of fruit trees while in bloom. This is of more common occurrence in New England than elsewhere, on account of the carelessness of many people in failing to spray for browntail moths in early August, when the eggs first hatch, or failing to pick the winter nests. The insects come out in spring, begin to eat both leaves and flowers, and the owner then persuades himself it is time to spray. A large part of this late blossom spraying we may also

place to the account of the so-called commercial sprayer, who, having more work than he can get through with in season, will keep right on spraying after the flowers are out, giving his word to the owners that it is just as satisfactory then as earlier. Such a fellow as this needs to be thoroughly discredited in his community, if not prosecuted by law. The damage done by such late blossom spraying is two-fold. First, the bees are killed off wholesale by the presence of arsenic in the nectar and on the pollen; and second, spraying while in bloom is injurious to the blossoms themselves. Some experiments at the Geneva, N. Y., Experiment Station, Bulletin 196, are very conclusive in showing that the salts of copper and of arsenic as ordinarily used are very harmful to the growth and development of the pollen, and again that the delicate organs of the flower (stamens and pistils) when coated with the spray are either killed or injured.

I have in these few remarks pointed out something of the close relationship and value of bees to fruit growing. The greater profit from bees for the fruitgrower will be the indirect results of more and better fruit, but the direct profit from the sale of honey alone may be considerable and is not to be despised. I know two members of this society whose bees this year have brought in over $5 per hive. Neighbor A. L. Littlefield, of Salem, has ten strong hives, each of which averaged over fifty pounds comb honey, which is worth fifteen cents to twenty cents per section. Those of us who do not have any bees, let us get one or two colonies of good Italians next spring, put them in modern movable frame hives, get a good book on bee keeping and read up on the subject. The fruit grower and the student of nature, after he has learned to avoid getting stung, will find working with bees a genuine pleasure.

CAUSE OF UNFRUITFULNESS.

WENDELL PADDOCK, B. S. A., M. S., PROFESSOR OF HORTICULTURE, OHIO STATE UNIVERSITY.

The question of making the most out of an orchard is one which is of interest to every progressive fruit grower. So long as fairly good crops are secured but little attention is given to principles underlying fruit production, but when, for any reason, our orchards fail to produce, the importance of a thorough understanding of the subject is apparent. That there are many orchard trees that are unfruitful the country over goes without saying and those that are now productive may reach the same condition; consequently, this subject of unfruitfulness should always be timely.

A study of the situation reveals the fact that there are a number of causes which may result in unfruitfulness if operating separately, but it often will be found that more than one are in evidence at the same time. We may consider the subject of the neglected orchard. In such orchards we will expect to find a number of adverse conditions present, which may be mentioned as follows,—injurious insects, plant diseases, lack of pruning, sod, drouth and starvation.

Injurious insects may be divided into two classes for our purpose, those which weaken the tree by sucking its juices or by defoliation during the growing season, and second, those which destroy the buds, blossoms and fruits. In the former case we have various forms of scale, plant lice, canker worm, tent caterpillars, and so on. In the latter case we have the bud moth, curculious, codling moth and the railroad worm.

Diseases may also be divided into similar classes. Apple scab and the brown rot of the stone fruits attack blossoms and cause destruction of whole crops before the fruit has

had a chance to set. It also attacks the growing fruit and may also cause many of them to drop. Pear blight is responsible for the destruction of many fruit crops by blighting the blossoms. Then these diseases may weaken the trees by defoliation, as is the case of apple scab, or by direct attack upon trunk and limbs, as is the case of various forms of cankers, pear blight, and so on.

In a number of orchard demonstrations in spraying, a great deal of attention has been attracted to cases where an old orchard that had been unfruitful for years was made to produce a large crop as a result of two or three timely sprayings. In this case the demonstrator probably understood the situation and knew what to expect in the way of insect and disease attacks. In some cases he probably prevented the destruction of buds and blossoms, then later sprays protected the growing fruits from attack as well as the expanding leaves.

Most neglected and unfruitful orchards are standing in sod. The herbage which grows may be put to various uses, such as pasturage, cut for hay, or it may be so scant as to be practically useless. This system may be styled one of neglect pure and simple and has but very little resemblance to the so-called sod-mulch. The latter is a legitimate scheme of orchard management under certain conditions, but it will be found to consist of much more than simply allowing an orchard to grow up to grass and weeds.

Such management usually makes trees more susceptible to drouth, and it exhausts the available supply of plant food as well as that of organic matter.

The breaking up of sod in neglected orchards will often show marked beneficial results. As this process helps to aerate the soil it also introduces organic matter which in its decay sets free plant food and the decaying sod also is very important in conserving the moisture supply. Starvation often overcomes trees in neglected orchards and

demonstration experiments have shown repeatedly the beneficial results which may come from applications of small amounts of proper fertilizing ingredients. This, of course, is usually nitrogen in some form at first, to be followed by others as tree growth and fruit production increases. Neglected trees are also unpruned trees and it does not take such a tree long to form a tangled mass of brush wood in its top. When this condition is arrived at, the multiplication of fruit spurs and the consequent attempt on the part of the tree to set a large quantity of fruit, no matter whether the attempt is successful or not, no matter whether the fruits mature or even set, is a drain on the vitality of the tree.

Numerous demonstration experiments have also shown the wonderful results that may follow the judicious thinning out of the wood from the tops of trees that have never been pruned. With most varieties a certain amount of renewal of bearing wood will usually be found to be advantageous.

Vigorous growth is a common cause of unfruitfulness, particularly in young trees. This, of course, can be controlled to some extent by withholding cultivation, moisture supply and plant food, and by refraining from too severe pruning in winter time. Heavy pruning of old trees may also induce a vigorous growth and so upset the bearing habit. Fruit spurs of apple and pear are only modified branches, and a heavy pruning resulting in lessening competition between buds causes the growing points of fruit spurs to make a very vigorous growth and so prevents them forming fruit buds.

Excessive growth may also be induced by improper use of the various forms of manures which contain nitrogen. This includes legumes, cover crops, barnyard manure, nitrate of soda, and so on. Then again some trees come into bearing late and unless handled just right this habit is difficult to overcome. However, we recently saw at

the Hitchings orchard near Syracuse six-year-old Spy apple trees that were producing a bushel and a half of fruit. For the most part this variety has the reputation of not bearing before it is fifteen or twenty years of age. At the Hitchings orchard, however, the trees were grown by the sod mulch system and were pruned and trained but little, consequently overgrowth, for which the Spy is noted when young, was prevented.

Winter injury is also responsible for unfruitfulness in some cases. This is particularly true of the stone fruits and unless such orchards are in favorable locations as regards frost protection one may look for variable crop returns.

Fruit buds of the apple are apparently seldom killed during the winter in the eastern states unless the spurs themselves are frozen back. However, this has been found to be a common occurrence in portions of the west. On the other hand the fruit buds of the stone fruits are often killed by severe winter weather, yet the wood upon which they are borne may not be injured. A form of winter injury common to all classes of fruit trees is common in all portions of New England. The effects of frost in this case results in a discoloration of the wood and for this reason such injury is commonly known as black heart. Very often black hearted trees will live as long and produce as much fruit as though they were perfectly sound. In such cases the only difference one can notice is that the smaller limbs on such trees are more brittle and so break down more easily when loaded with fruit.

Long continued cold rains at blossoming time is another common cause of trees failing to set fruit. Rains at this time of the year may result disastrously in a number of ways. First of all bees and insects, which are necessary to the setting of fruit, are prevented from working. The pollen in the anthers may be kept in such

a backward state that it fails to ripen until the pistils have shriveled. It may also so injure the pollen as to destroy its germinating power. It may also wash the pollen from the anthers or from the stigma after pollination has been effected. Such unseasonable weather at blossoming time is a more common cause of crop failures in New England than are late spring frosts.

Severe winds at blossoming time may also cause mechanical injuries to delicate flower parts and the least bruise will cause the pistils or stamens to wither. Winds also have a drying effect which may also produce similar effects.

This suggests that the protection afforded by windbreaks will be beneficial in most parts of the eastern United States where orchards are planted.

As has been suggested, damage from late spring frosts is more common in the southern portion of the eastern fruit belt than it is in the north. For this reason the Japanese plums are fairly sure croppers in New Hampshire, but they are very uncertain in Ohio. Should one be located in a state where damage from frosts is common, he should choose his particular location with care. An orchard situated on the leeward side of a considerable body of water usually will be amply protected from frost injuries. If one is away from the vicinity of water he should look for an elevated site so that good air drainage will be afforded. As is well known, frosts occur in the low places first. This is due to the fact that cold air is heavy and so settles or flows down to the lowest places, while warm air rises. If the orchard has sufficient elevation above surrounding land, the cold air will flow down into the valleys, even in the stillest weather, and if the location has been chosen with care such protection is usually ample.

For many years fruit growers have been familiar with the fact that certain varieties failed to set fruit in one

location and then the same variety has been known to be very fruitful in another place. The cause of such peculiar behavior was for a long time a mystery. A classic example of such a fruit is seen in the wild goose plum. This behavior on the part of some fruit trees remained pretty much a mystery until 1894 when Mr. Waite published his experiments. Waite was first engaged in the study of the means by which pear blight is distributed and in order to carry out his studies effectively it was necessary to cover a number of blossom clusters of pears with paper sacks while they were still in the bud. These sacks were left intact until the fruit was partially grown. He was at once struck with the fact that many varieties failed to set fruit entirely under these conditions, while others were as uniformly fruitful. This gave him a clue and naturally led to a number of hand pollination experiments which resulted in proving conclusively that many of our pear varieties are incapable of setting fruit when the blossoms of such a variety are dependent upon the pollen of that variety for fertilization. Since Waite's experiments these studies have been extended to many other fruits and we now know that this inability of varieties to produce a crop when planted alone is a common occurrence, and we have fairly large lists of varieties that are known to be self-sterile. Self-sterility has been found to be particularly common among grapes, and one of the most interesting findings that has recently come to notice is in regard to the sweet cherries.

An experiment conducted by the Oregon Experiment Station shows that under their conditions all of their sweet cherries are sterile and not only that but it was found that their three principal market varieties are also inter-sterile, that is, incapable of fertilizing each other.

We now have an explanation of one of the causes of unfruitfulness which was commonly thought to be mys-

terious. Wise orchard men are now taking advantage of this knowledge and are arranging their plantings accordingly. We now rarely find large blocks of land planted to any one variety of fruit, but rather the plantings are mixed, taking care to select kinds which blossom at the same time, thereby giving the varieties all possible chance, if there happens to be any tendency toward sterility. All varieties should be looked upon as suspicious in this respect, but it is not so easy to determine which kinds blossom simultaneously. However, many of the experiment stations possess this data and the prospective planter will do well to inform himself thoroughly in regard to his varieties before planting.

Questions Following Professor Paddock's Lecture.

Prof. Gourley: I have thought very many times of the feasibility of irrigating some of our orchard land where a stream could be dammed up and used. I would like to ask Professor Paddock if there would be a good deal of expense?

Prof. Paddock: There might. Of course the putting in of an irrigation ditch is something that requires skillful work. A good many people out our way are trying the Skinner irrigation system. In intensive farming it is barely possible that where you have such splendid streams as you have here, if you thought you did n't have to go to too great an expense it could be made to pay.

Prof. Gourley: Mr. President, I am going to ask Prof. Paddock what he would consider the best system of orcharding on these hills, sod mulch, fertilization or cultivation?

Prof. Paddock: I would adapt myself to circumstances. Now if there is any person for whom I feel sorry it is a man who is hidebound. When a man gets an idea into his head that the scheme he likes is the only

scheme there is, there is n't much hope for him. So, while I think the use of cover crops is the best scheme we have, yet if I had an orchard where the others would do better and I could get my mulch in addition, it is the scheme I should try. I believe on these high hills that sod mulch, if you wish to use a lot of augmenting matter in addition, would work out very well. You know that cultivation without augmenting matter added is one of the surest ways to kill out one's soil. You can so easily overdo the cultivation that it is best to qualify it.

Prof. Gourley: Can you run the sod mulch system without fertilizing?

Prof. Paddock: I don't think you can run any system without recourse to fertilization of some kind. You can help most if you use leguminous crops which will eventually find their way away down in the soil. Then if the trees show that the fertilizer is necessary, then would be the time to pay attention to it. I believe a man should exhaust every means at his command before he goes to the expense of buying chemical fertilizer. A man has got to run an experiment station on his own farm before he can tell.

BENEFITS OF EXTENSION WORK TO THE HORTICULTURAL INTERESTS OF THE STATE.

PROF. J. C. KENDALL.

Chairman and Members of the New Hampshire State Horticultural Society:

I am very glad of this opportunity to present to you some of the lines of work conducted by the extension service of New Hampshire College, and especially those activities which have a more direct bearing upon the interests of this society.

You are undoubtedly all aware of the provision made in the Smith-Lever law, by which there is alloted to each state the sum of $10,000 for the aid of extension work. Perhaps you would be interested to know in what ways it is proposed to spend this money in New Hampshire.

Naturally, the extension service, in considering ways in which to use this federal aid to the best advantage, has kept in mind the agricultural needs of the state, both from the standpoint of importance as compared with other lines and also the demands which are being made upon the extension service for the development of certain types of extension activities which seem capable of greatest encouragement and lasting benefit to the state.

That form of extension work which has to do with general agriculture within the counties as typified by the county agent movement naturally was suggested as a good point at which to make a beginning.

County Agricultural Agent Movement in New Hampshire.

The county agricultural agent or adviser, it matters little what official title we give him, acts as a local representative of the college and station. Through the county agent the citizens of the county may be more advantageously served by the extension service of the college, because he is privileged through personal daily contact with individuals and local conditions to know the needs and manner in which assistance can best be given. It is easy to understand that if each county within the state will have a local representative it will add materially to the effectiveness and efficiency of the extension service. To illustrate this point the following instance might be cited:

The station has received a large number of inquiries

regarding the growing of alfalfa in the state. While for a number of years the station has been making a study of the subject it seemed desirable to obtain further information and knowledge regarding the growing of alfalfa under a wider range of conditions, hence some seed of the most promising strain of alfalfa was purchased for making the test. The county agent and county demonstrators were acquainted with the plans and asked to coöperate in the work. Each one knew personally farmers who wanted to give alfalfa a trial and there was no difficulty in completing the arrangements to give the seed a test at a hundred and twenty-five different points in the state. This county representative rendered another valuable service in being able to personally visit the plots at the time of planting and secure the necessary information regarding type of soil, its condition at time of planting, drainage, and other factors which were necessary in order to make the work reliable and of value. Since the time of planting is short, it would have been impossible for the regular station force to have secured the necessary information regarding each of the one hundred and twenty-five plots.

Another reason why emphasis has been given to the county agent movement is that it has been given a trial by many states and has proven beyond question that it is capable of rendering a valuable service. Three hundred county agents are already at work and a large percentage of the states are planning to use a part or all of their Smith-Lever funds toward the support of the county agent movement.

It looks like a good business proposition to use a part of the New Hampshire allotment for county agent work since each county coöperating is expected to contribute toward its support. The extension office of the federal government also contributes financial assistance and cooperates in the movement, so that for each dollar of the

Smith-Lever money used for the county agent work three to four dollars are derived from other sources.

At as early a date as possible it is hoped that we may have a county agent in each county; plans have been made to have at least six counties organized for this work during the year.

A state leader of county agent work is employed jointly by the extension office of the federal government and the extension service of the college to take immediate charge of the details in the field.

State Leader of Dairy Cow Test Association Work.

Dairy farming represents one of the main lines of agriculture in New Hampshire, hence it is a subject of wide-spread interest, and it was but natural that some extension work along dairy farming lines should have been considered as highly important.

In considering ways of benefiting the dairy interests of the state, attention was directed to some of the work which has already been started, such as the dairy cow test association work. We have four dairy cow test associations in successful operation. We find there is an increasing demand for the organization of other associations. In fact, two of the associations now organized plan to divide and start two new associations, which is one of the strongest proofs that we could have of the value of the work to those whom these associations are intended to help. Four to six new dairy cow test associations should be organized within the coming year. A lot of valuable details is being accumulated by the associations already at work which should be made available to the respective associations as soon as possible after the completion of each year's work.

In order to put the dairy cow test association work upon a more permanent and efficient basis it was decided to place a competent man in charge of the field

work in connection with these associations, to work with the testers and see that they are making the most out of their opportunities, to unify the work and to make quickly available to the members of the association the information accumulated.

Orchard Demonstrations.

There has been an increased interest taken in orcharding in New Hampshire within recent years. The development of the orchard districts of the northwest have called attention in a striking way to the opportunities for orcharding in the east. Our cheap orchard lands situated near excellent markets have done much to stimulate renewed interest in the possibilities of fruit growing in New Hampshire.

In order to meet, in part at least, the many demands made upon the extension service for assistance along orchard lines an orchard demonstrator will be employed to work with the fruit growers of the state. Practical demonstrations in approved orchard methods will be given in the different orchard sections and in coöperation with practical fruit growers. It is hoped also that the fruit growers of the state will see fit to organize for the more effective buying of supplies, and marketing of their products, and to this end the orchard demonstrator should be of valuable assistance.

A demonstrator will also be available to answer some of the many requests for lecturers and demonstrators before granges, at fairs, and other gatherings where orchard problems are being considered.

Rural Study Clubs.

Ever since the establishment of the Department of Home Economics in connection with New Hampshire College the extension service has been unable to meet

the demands for speakers and demonstrators to handle home economics problems. There is a deep interest being taken throughout the state in the problem of the homes and the community.

With the aid of the Smith-Lever bill we shall hope to have a woman to devote her time to the organizing of rural clubs for furthering the interests of the women of the state. While we realize fully that it will be impossible for this woman to answer all of the many demands which will be made upon her time, it will be a beginning in this direction and it is hoped that as time goes on this deficiency will be rectified, because her services will be sure to gain recognition.

Movable Schools.

For the first time New Hampshire College will attempt to put a more definite form of instruction into operation through the medium of movable schools. It is planned to offer this winter three types of schools: a Dairy Farm School, an Orchard School, and a Soils, Fertilizer and Crops School. These schools will last for one week, and an attempt will be made to have the instruction given at these schools of a practical and helpful nature, and so planned that it will meet the special requirements of the community where the work is presented.

The enrollment in these schools will be limited to the capacity of the laboratory and those enrolled for the course will be expected to attend each exercise. Mornings will be devoted to lectures and discussions; the afternoons to practical demonstrations in which those enrolled will take active part and learn to do certain things with their own hands. In the evening, general lectures will be given which the public will be invited to attend.

Briefly, this gives the lines of work which we shall expect to emphasize with the aid of the Smith-Lever funds.

Farm Demonstrations.

Through the generosity of the General Education Board of New York City, New Hampshire College Extension Service is enabled to carry on certain lines of extension activities which would not be possible at the present time without this assistance. The work is of so much importance to the industrial development and interest of our state that I would like to just mention briefly what we are attempting to do with the aid of the General Education Board funds.

Diary Farm Demonstrations.

We have a man in Grafton county who is making a special study of the dairy conditions of that section and is engaged in demonstration work in coöperation with practical dairymen of the county. For the special demonstration work, Mr. A. G. Benner, the demonstrator in that county, has selected twenty-six dairy farmers with whom he is carrying on definite lines of work.

These dairy farmers are attempting to keep complete records of their dairy operations and cost of growing feed for their stock. They are also giving careful consideration to the maintaining of the fertility of their soils. In this work, which has been under way about a year, keen interest is being taken, and important results have already been attained.

Soil Fertility Work.

One of the most important and difficult problems associated with New Hampshire agriculture is the restoring

of the fertility in worn-out and neglected soils. Many of the soils of the state have been abused until they are not able to produce profitable crops under present management. The problem of bringing back these soils into a state of fertility such that they can be cropped at a profit, is a problem to engage the efforts and skill of our best trained man. It is a subject which is fundamental to all agriculture and hence of greatest importance.

A man has been placed in Rockingham county who is making a special study of this problem and attempting to demonstrate ways of restoring lost fertility to these soils. These worn-out soils may be made to produce good crops and their restoration may be brought about at a profit to the farmer. Fields which are now growing practically no hay and have not been plowed for years are taken for these demonstrations, and an acre or five-acres, as the case may be, are selected for the demonstration plots. Certain treatment is given to those areas and careful accounts are kept of each expense in connection with the work, so that at the end of the season or at the end of several seasons it is possible to point with definiteness to the results.

If this work is successful it needs no argument, and the methods will doubtless be followed in that section, since they have to do with soils with which the farmer is familiar and under conditions which are well known to him. It seems to be about the most effective way of attacking this problem, since occasional lectures and the sending out of bulletins seem inadequate. The farmer does not care on his own account to enter upon a long time experiment where final results might be in question. This soil fertility and crop rotation work is very promising and will undoubtedly be of immense value to Rockingham county.

Boys' Club Work.

Mr. L. A. Carlisle, a graduate of the college, has been placed in charge of the Boys' and Girls' Club work, as a part of the extension work of the college. This year 187 boys carried their crops of corn and potatoes through the season to a successful completion, each boy using the regulation size of plots. They have kept detailed records of expenses connected with growing the crops and marketing them, and have written essays describing how they grew their crops. Specimens of crops grown have been exhibited at the local fairs and will be shown at county institutes, and at the state institute at Durham. Yields of both corn and potatoes, the crops selected for the club work, have been large. In many instances they have been exceptionally large considering the conditions under which the crops were grown.

A lot of interest has been developed in the communities where these clubs have been organized. It has given the members of these clubs a new interest in agriculture and its possibilities have been more clearly and forcefully brought to their attention. It also teaches these boys that there is more in agriculture than they had understood; that farming rightly conducted would offer opportunities which would compare favorably with other lines of business, and should be an effective means of inducing them to desire to remain upon the farm and till it successfully.

Orchard Demonstrations.

An orchard demonstrator has been placed in Hillsborough county to make a special study of the orchard problems of that section of the state. He has made an orchard survey of the county and has become well acquainted with the problems confronting the practical grower. Since his field has been restricted to Hillsborough

county it has given him time to make a detailed study of the orchard conditions and to be better prepared to serve the orchard interests.

Pruning and spraying demonstrations were given by Mr. Richardson, the demonstrator, last spring, also in summer spraying; demonstrations in packing and marketing fruit are being given this fall. A number of demonstrations have been started in the orchards of practical growers in the county having to do with those phases of orcharding that seem to be of the greatest importance in that section and that promise the best results to the owner of the orchard. Some of the orchardists in the county have turned the management of their orchards over to the demonstrator, in other orchards blocks of trees have been selected on which to demonstrate certain methods of orchard management.

The demonstrator's services seem to be much in demand, and he has all that he can do to keep up with his regular work and answer the requests that are made for his services.

Time will hardly permit me to give in detail much of an idea of the general extension work which is being carried on by the college. Perhaps it is sufficient for me to say that an earnest endeavor is being made to meet all demands for assistance that come to the extension department whatever their nature.

Agricultural reading courses have been offered in nine subjects; 308 were enrolled for the work last year. Indications are that at least 500 will be enrolled this season. A test is being made of the value of lime on New Hampshire soils at about thirty different points. The growing of alfalfa is under trial at 125 places which are under careful observation. A test is being made of spray materials at the college and in commercial orchards. A trial of orchard cover crops is being carried on in cooperation with practical fruit growers, as well as fer-

tilizer tests in orchards. The use of chemicals in top dressing grass lands is being tested at six of our county farms and in coöperation with several farmers; a large number of publications are being issued by the extension service dealing with subjects of special interest and value to the farmer; and so we might go on and enumerate many more extension activities, but perhaps we have mentioned a sufficient number to give you a general idea of the scope of work which is now under way. As men and facilities are made available it will of course be the plan to extend and strengthen those lines that seem to offer the best opportunity to serve the interests of the state.

I will simply say in closing that the extension service will be largely what you may see fit to make it. In other words, as you make demands upon the service a determined effort will be made to meet those demands and the more efficient and effective it will become.

BUSINESS MEETING.

Report of the twentieth annual meeting of the New Hampshire Horticultural Society, held at Antrim, N. H., October 22, 1914, at 9 o'clock in the forenoon.

The president, C. W. Barker, of Exeter, called the meeting to order, and submitted the following report:

To the Members of the New Hampshire Horticultural Society:

In submitting to you my annual report I am obliged to say that the high ideals towards which we were striving have not quite been reached, yet some progress has been made.

As I said in my last report, we are handicapped for want of money, and that condition still exists. Were our resources much larger they could be used to good advantage.

Out of our state appropriation for the year ending September 1, 1914, we printed two annual reports as well as paid our running expenses, making an unusually large expenditure.

I am also glad to report at this time that a payment of one hundred dollars has been made on the outstanding note. It will be a great relief to the officers when this note is finally cancelled.

Much to my disappointment it seemed necessary to omit our summer meeting, but I hope in the future it may be continued and become a permanent feature of our work.

I am glad to say that our society shows an increase in membership during the year. The interest in our society and its work grows every year, and I look forward to the time when we shall have a much larger membership and more abundant resources.

I think that a general appreciation was felt this year that through the kindness of Professor Gourley we were able to issue a spray calendar for 1914 and send out with our annual report.

I wish that circulars on timely subjects could be sent out from our society every year, thus promoting the efficiency of our organization.

As you all know, our state legislature meets next January and it will be necessary that a committee be appointed to carry out the instructions and recommendations of this meeting, and I therefore recommend that a legislative committee be appointed at this session. Our state appropriation should be carefully looked after during the session of the legislature.

Among the various topics discussed by your Executive Committee during the year were those in reference to the advisability of recommending a suitable spray law for New Hampshire, and the matter of coöperative buying.

Prof. Gourley has corresponded with practically every state in regard to spray laws and his report on this subject will be presented at this meeting. He will also report as to the possibilities of coöperative buying.

As state vice-president of the New England Fruit Show, I have been able to do but little, as no money was available for that purpose.

Our last legislature would not give us an appropriation, as you know, and the advisability of asking for one this next session should be decided by you at this meeting.

A fruit show will probably be held at Boston next year, and New Hampshire should make a suitable exhibit. It is impossible to do this as a state without a generous appropriation by the legislature, and the advisability of this is a question for debate.

We are looked to for some premiums, and I have not felt it wise to appeal to private individuals, and as our resources are in such demand for our own society they could not be had from that source.

In considering the place for this meeting it seemed advisable that we ask for special premiums from the town in which we were to hold our fall meeting, and through the efforts of the Board of Trade and some of the generous hearted people of Antrim three silver cups were presented.

At our first visit here we found such an interest displayed that it seemed advisable to hold this meeting here.

Through the generosity of Professor Paddock we are able to have him with us at this meeting. He is sacrificing much valuable time in the interests of this society.

I want to express my appreciation of the assistance rendered by my associate officers toward the work necessary to the successful running of this organization. It will require faithful work by the incoming officers, supported by every member of the society, to do the work expected of this organization.

Let us put our shoulders to the wheel and work for a successful future.

Mr. Bass and Mr. Fairbank were appointed as auditing committee, and Mr. Harvey and Mr. C. J. Prescott were appointed as committee on resolutions.

Voted: To dispense with the reading of the last report.

Reports of County Organizers were submitted by the following:

Mr. E. N. Sawyer, Salisbury, for Merrimack county.
Mr. F. A. Badger, Belmont, for Belknap county.
Mr. O. M. Pratt, Holderness, for Grafton county.
Mr. E. B. Parker, Wilton, for Hillsborough county.

The following organizers were not present and sent no reports:

Mr. George E. Gowan, Stratham, for Rockingham County.
Mr. D. R. Slade, Center Harbor, for Carroll county.
Mr. A. C. Durgin, Lee, for Strafford county.
Mr. Robert Faulkner, Keene, for Cheshire county.
Mr. Herbert W. Holmes, Charlestown, for Sullivan county.
Mr. J. A. Costello, Lancaster, for Coös county.

REPORTS OF COUNTY DIRECTORS.

Merrimack County.

E. N. SAWYER, SALISBURY.

Mr. President and Members of the Horticultural Society:

For about twelve years previous to 1908, I bought and packed apples in Hillsborough and Antrim. I have not been through the county over the highway since that time, and I was very much surprised on my way to this meeting to see the changes. Conditions were very much better and improvements were very noticeable, except in one respect. The orchards from which years ago I bought the fruit, seem to be sadly neglected, and have no appearance of being cultivated or trimmed. These conditions were very much the same all the way up until I reached Hillsborough.

What is going to be done to remedy this, I am unable to say, but in my section I think the tendency seems to be to set young and larger orchards, and to take care of them. I set seven or eight hundred young trees this year, and I think another year I shall set more. Others in my section are doing the same thing.

We had good weather for trimming, and there was a great deal of it done. The weather conditions early in the year were good for fruit. The browntail moths some thought were killed entirely by the cold weather, but those who were skeptical enough to spray proved to be the winners, as there were many which were not killed. Tent caterpillars were the worst I have ever seen. My Greening orchard which has hard wood growing near it, was so badly infested with this caterpillar which came from the hard wood growth, that even although we sprayed with a strong spray, we got only seventy barrels where we should have gotten two hundred.

Apples have dropped badly this season. In August we had very dry weather, and a great deal of sunlight, and even the orchards which were the best mulched suffered. Possibly we did not mulch heavily enough. Dropping has been worse during the last few weeks, and the best cared-for orchards did not drop very seriously until about the first of last week. It seems to me that this condition must be owing to the drought.

In regard to disposing of the crop, I would like to tell you about a little union which was started over in our county this summer, called the Merrimack Fruit Union. I hope to give you a comprehensive report on the activities of this union another year. All I can say now is that it has worked very well so far. The only drawback seems to be that the members all want their fruit picked and packed on the same day. Inasmuch as the members are widely scattered over the county, this cannot easily be done. I am pleased to report that we succeeded in getting 25 cents per barrel more for our fruit in the open market, as a result of our organization. I held the entire lot for $1.50 per barrel, with the understanding that the same gang do the packing.

There are no small fruits raised in our section except strawberries. There are no large beds, but this was a good year, and we found a ready market at fair prices. The quality was surprisingly good. There were no peaches this year.

Question: How many barrels of apples did your Fruit Union handle?

Mr. Sawyer: 2,500 to 3,000 barrels.

Hillsborough County.

E. B. PARKER, WILTON.

Mr. President and Members:

Horticulture seems to be in a very flourishing condition in Hillsborough county. Although the fruit growers were up against a serious proposition at harvest time, brought on by European conditions, yet as the season advanced market conditions somewhat improved, so that good apples were marketed at fair prices.

If we had had a law compelling a uniform packing of apples this year, a great proportion of the crop which was marketed would never have been packed in barrels, and the growers would have received more for what was sold, if the product had only been guaranteed. This is the only way to bring New Hampshire apples up to the standard in the market—a uniform grade law.

With the exception of peaches, all fruits yielded abundantly. Our county was fortunate in securing the services of a county fruit adviser, or demonstrator, through the extension service of the State College. It has been our privilege to attend several local demonstrations during the season, and a great interest was shown by the public, and we feel sure much good will come from this source. A great deal of interest was shown in the boys' corn and potato clubs, and it was very gratifying to see the results as exhibited by the boys.

During the year an agricultural course was established at the Amherst High School, under the supervision of Prof. F. C. Bradford, formerly of Oregon. The course as outlined will give the boys a pretty general idea of horticulture, and will be of great benefit to those who cannot go beyond the high school, and will perhaps encourage some to continue their study at the State College —some, who, but for this early training, would have gone no further. We find in one high school outside the

county, every member of the horticultural course are attending college at Durham.

Antrim High School also has an agricultural course, which was established in 1913, now under the direction of Prof. A. G. Davis.

During the past year insect pests have been numerous —gipsy and browntail moths have been very destructive, and we learn of new outbreaks of San José scale. Only by thorough spraying were we able to control these pests. We think there should be some legislation whereby the Gipsy Moth Commission shall have more power, or else a crop pest commission appointed with the power to protect those who are laboring to protect themselves, by compelling all growers to spray at least once for a dormant spray and once after the blossoms drop.

We believe some recognition of Apple Day in October should be made—as is being done by some of our nearby states. It is so easy to look into the future, we can see where our society has great possibilities. All that is needed is the coöperation of the fruit growers themselves along the lines of horticultural work.

Belknap County.

F. A. BADGER, BELMONT.

Mr. President and Members of the Society:

General horticultural conditions in Belknap county are better as a whole this year. Although the general uncertainty caused by the war in Europe is felt by the farmers, the undertone is confidence. More farms have changed hands during the last year, being bought for permanent residence, than in any other year before since I have had knowledge of conditions. While we welcome summer people, we believe in making more effort to at-

tract year round men. Several of the farms have been bought by men who expect to combine fruit or vegetables in some form with stock, and the trend is toward the beef breeds, using the mountain pastures, for which the county is noted, for feed during the summer, while the owners give their time to the cultivation of the land. One of my townsmen who learned farming at the Hayward Farm in Hancock, puts up a strong combination of poultry, bees, and sheep, that seem to go well together.

Fruit trees are receiving better care, and the brown-tail moths and also tent caterpillars have received a check by parasites that are working on them, and while there are enough left for seed, we hope the worst of the nuisance is past.

This county has the largest farm in the state, owned by J. W. Sanborn, of Gilmanton, who grew 10,000 bushels of potatoes this year as a side line, and makes milk production the main thing, milking over one hundred cows the year round. W. J. Sanborn, who is a live wire on orcharding, is doing much to interest the people in this section by his orchard and methods of caring for it, under what seem to many people to be adverse conditions.

The lake region is settled largely by summer people, which fact makes it one of the finest markets for fresh fruit and vegetables, and an increasing number of farmers are catering to this growing trade.

Grafton County.

O. M. PRATT, HOLDERNESS.

Mr. President and Members of the Society:

As representative of Grafton county, I must report horticultural interests as not being in a very prosperous condition, owing perhaps more to climatic reasons than anything else.

I am pleased to note, however, an increasing interest in fruit growing, apples especially, although this crop is not grown to any great extent commercially at present. Some of the older orchards are being sprayed and better cared for than usually has been the case, and some new orchards have been set out, but with the increasing number of deer it is rather a doubtful undertaking, for it means if the deer once get to browsing on the young trees, as they almost invariably do in this section, it will be twice as many years before they will reach the bearing stage than it otherwise would.

The importance of spraying is being more generally understood and some public spraying outfits have been placed in operation, usually in the villages, and will, of course, show the advantages of this work and prove the benefits.

It is unfortunate that the idea so generally prevails that spraying is an expensive and complicated job and that an expensive outfit is required, when it is really simple work and an outfit need not be expensive to be efficient. Some orchards that might easily have been made paying propositions have been cut down rather than undertake to spray and care for, as would be required under present conditions.

REPORT OF THE SECRETARY-TREASURER.

Mr. President, Ladies and Gentlemen:

Another year has passed, and we are again meeting together for the purpose of discussing ways and means to further the interests of this society. In order that you may intelligently discuss its affairs, I have prepared a report, in considerable detail, of the condition of this organization, financially and otherwise.

Regarding membership, would state, that at the last annual meeting, you voted to suspend 55 members who were in arrears for their dues for two years or more, provided, after due notification, their dues were not received at the secretary's office on or before December 31st, last. These members were notified, as you directed, on November 4, 1913, and I am sorry to report that only one member thought enough of the society to remit. We therefore removed the names of the other 54 from our books, on January 1, 1914. This left us with 41 life members and 171 annual members.

During the year now closing, three annual and two life members have died. Ten annual members have paid up their dues and resigned. One annual member has paid his annual dues and the life membership fee of ten dollars. During this same period we have added 39 new annual members, ten of whom were enrolled from this beautiful town of Antrim, through the efforts of our enthusiastic member, Mr. Frank E. Bass.

We now have 196 annual members and 40 life members, all of whom are in good standing except 26, 13 of whom are in arrears for their 1914 dues only, and the other 13 for 1913 and 1914. While I have no doubt that each one of these members will pay up, I would recommend that you vote to suspend them if their dues are not paid by December 31, 1914, as is provided by our by-laws. Should you so vote, they will be immediately notified, and this will bring it very forcibly to their attention, and should bring about the desired result.

While these figures would seem to show that we have less members than we had a year ago, I wish to call your attention particularly to the fact that while we have suspended 54 non-paying members, we have added 39 interested members, who have paid their dues; so that we now have a total interested membership of 236, all in good standing except the small number now slightly in

arrears, which I have already mentioned. This is in spite of the fact that there has been no general effort by the members of this society to secure additional memberships. In my report last year your attention was called to the fact that it was up to you, as individual members, to see that your membership increased. Even though you have made no general effort to increase our membership, we have made a very creditable showing.

As you all know, the annual report for 1913, which we think was one of the best efforts of the society, was issued on March 20, and received numerous compliments. The spray calendar was issued and mailed with the report, and while this was somewhat of an innovation, it is only one of the many similar efforts that should be made by our society. The dissemination of useful information should be one of our chief aims, and we hope as we grow stronger financially to be able to publish much more information of this character for free distribution to our members and whomsoever may apply.

The by-laws which you voted to have printed and bound were sent out in January. The buttons we are to-day all wearing with so much pride, were manufactured during the summer, and were sent out in September, with the notices of this meeting.

In regard to the finances of the society, I have, for the sake of convenience, separated the money received from our state appropriation, and the money received from dues and other sources. I will give you the figures on the state appropriation first.

DEBIT.

October 23, 1913, balance submitted by T. E. Hunt	$720.85
September 1, 1914, 1914 appropriation	1,000.00
	$1,720.85

CREDIT.

Postage	$110.00
Premiums awarded at 1913 show	195.00
Printing and stationery	225.69
Clerical services	49.48
Speakers at 1913 show	85.70
Expenses at Laconia	107.74
Office supplies and expenses	25.26
T. E. Hunt, services as treasurer and expenses	12.75
Rapid Mailing Bureau	38.33
Traveling expenses of officers	3.94
One thousand society buttons	14.50
Engraving cups	12.50
Cost of reporting 1913 meeting	37.32
	$918.21
Balance of state appropriation on hand October 16, 1914	802.64
	$1,720.85

From other sources, the following figures:

DEBIT.

Dues received from October 15, 1913, to October 16, 1914	$288.60
Advertisements	148.00
E. N. Sawyer, barrel of Baldwin apples	10.00
	$446.60

CREDIT.

Postage	$12.50
Office supplies and expenses	7.98
Traveling expenses of officers	16.11

Express, freight and telephone	$4.06
Expenses at Laconia	37.55
Premium won at Laconia	1.00
Engraving trophies and express	3.95
Clerical services	14.14
Printing	219.35
Dues rebated to county organizers	6.00
Interest on note, and $100 payment on principal	123.30
	$445.94
Balance cash on hand	.66
	$446.60

At the last annual meeting, the winning barrel of Baldwins in the sweepstake class, became the property of the society. This barrel was owned by Mr. E. N. Sawyer, of Salisbury. Mr. Sawyer purchased this barrel of apples from the society for $10, and you voted to use this $10 as a nucleus of a fund with which to buy trophies to take the place of those won finally at our last annual exhibition. Owing to the fact that the citizens of the town of Antrim and the New Hampshire State Grange saw fit to present us with four beautiful silver trophies, the secretary-treasurer thought best to use this $10 for current expenses, which has been done. If this does not meet with your approval, we can set aside $10 at any time to cover this.

It gives me great pleasure to call your attention to the fact that we have paid the interest up to September 1, 1915, and $100 on the principal, of the note given by this society several years ago, to the Meredith Village Savings Bank. This leaves a balance of only $140, which we are owing this institution. It is to be hoped that by careful

and prudent management, this balance may be taken care of next year. I would recommend that this matter be brought strongly to the attention of your new officers to be elected to-day.

Owing to the fact that we were anxious to get the principal on this note reduced before the annual meeting, we have not set aside the 50 per cent. of life membership fees and 5 per cent. of annual membership fees which have been received during the year, and which amount to $18.93, toward our building fund. This, however, may be done within the next ten days, as there will be more than enough money received during that period to make up this amount.

Our poor little building fund does not grow very fast, but still is growing. With the money to be set aside from this past year's dues, together with that we had in the bank, the amount will be $68.10. There is also a small dividend which has not been entered on the bank book yet. Contributions to the building fund will be thankfully received to-day or any other day.

To sum up the financial situation of the society, we find the balance of our state appropriation, $802.64, will pay the expenses of this meeting, the expense of printing this year's annual report, and leave a balance sufficient, we hope, to hold a first-class summer meeting, and possibly take up some other work which this society should do during the coming year. We have on hand over fifty dollars' worth of postage stamps, which will very nearly take care of our postage for the balance of the fiscal year.

Respectfully submitted,

STANLEY K. LOVELL,
Secretary-Treasurer.

The following officers were elected for the ensuing year:

President—Charles W. Barker, Exeter.

Vice-President—John T. Harvey, Pittsfield.

Secretary-Treasurer—Stanley K. Lovell, Goffstown.

Executive Committee—Professor J. H. Gourley, Durham; E. B. Parker, Wilton; A. C. S. Randlett, Laconia.

County Organizers—Rockingham, Albert S. Littlefield, Salem Depot; Carroll, F. A. Badger, Belmont; Belknap, Oscar E. Davis, Alton; Strafford, A. C. Durgin, Lee; Hillsborough, E. B. Parker, Wilton; Merrimack, E. N. Sawyer, Salisbury; Cheshire, Robert E. Faulkner, Keene; Sullivan, Herbert W. Holmes, Charlestown; Grafton, O. M. Pratt, Holderness; Coös, J. A. Costello, Lancaster.

It was voted to suspend all members who were in arrears for their dues, providing the same were not paid by the 31st day of December, 1914.

Invitations were received from the Contoocook Board of Trade and the Derry Board of Trade, to hold our next annual meeting and exhibition in their respective towns. These invitations were referred to the executive committee for action at their next meeting. On motion of Mr. Harvey, the secretary-treasurer was instructed to thank the Derry Board of Trade and the Contoocook Board of Trade, for their kind invitations, and notify them that the executive committee would consider the matter.

An invitation was received from Professor Kendall, in behalf of the New Hampshire College, to hold a summer meeting at the college. It was voted that we accept this invitation.

A protest was made, in writing, by several exhibitors, in regard to the decision in the judging of the apples. This protest was read by the secretary, and Professor Paddock defended his position as follows:

Professor Paddock: About this question of score cards, if you want to use score cards, see that they are perfect. There were none ready, and the judges did n't feel like making up their own. Then if you want this score card business followed very closely, you will have to take more time to make out these reports. Had they been ready, the judge would certainly have filled them out. This question in regard to apples is simply a matter of interpreting what is written here. I interpret it one way and you interpret it another. As I understand the scheme of judging, it is QUALITY that counts. If you are going to go by the size, something should be specified in regard to it.

Another thing is that a man's exhibit is as good as the poorest thing in it, and a judge will always score a man on his poorest stuff as he happens to have it. These are counts in the exhibit.

Another thing: the names of the exhibitors should not appear on the cards. I don't know any of the names, of course, but the names should n't be on the cards. I would suggest that you appoint a committee, or else have your secretary and some one else arrange to have them go by numbers instead of names.

In the matter of the grape exhibit, it hinges along the same line. It might very easily be that there was one incorrectly named. It is simply a question of the interpretation of the rules.

Mr. Lovell: I think every member of the society here—and more particularly those who are exhibiting and to whom this protest has come—would be glad to learn anything as to what would be the best way to get good, clean competition between these classes of fruits, and we would thank you to give your opinion.

Professor Paddock: Say just exactly what you mean, and then don't leave any chance for argument. A judge is looking for defects and poor fruit more than he is for

the best fruit, and so we score pretty hard on a man who has an exhibit of poor fruit, blemished in any way. This is a quality show, not a commercial show, and big sized fruit doesn't count. We want normal size, of course, but we MUST have quality. If an apple is lacking in quality, even if not blemished, that is the thing to be noticed and that is the thing to score for. Your score card, if you will notice, makes that very clear. There are several other points on the score card, and whether the judge uses the score card or not, he has all these things in his mind when he is sizing up the exhibit. You will notice all the way through that stress is laid on uniformity in all respects and freedom from blemishes. I couldn't change my decision; but I would suggest that if the society thinks best, THEY may change.

President: Under Rule 26 it says that the judge shall state his reason for his decision and it shall then be final, so under that article I will make a ruling that the judge does not change his decision and in that way his ruling is final. If there are some varieties incorrectly named, he is willing to look them over.

REPORT OF PROFESSOR GOURLEY, CHAIRMAN OF THE SPRAY LAW COMMITTEE.

I have taken up this matter with the different states. I have written the secretary of state of every state in the country, and have gotten a statement as to whether they have a law, and, if so, a copy of it. I have found six states in the Union that have a compulsory spray law. Twenty-eight states have some kind of a law pertaining to the spraying of trees and nursery stock, while five states haven't any law whatever. In talking this matter

over with the executive committee it was the feeling of this committee that, as they understood it, a great many of our orchards were dying from browntail and gipsy moths where the orchards were not sprayed, and if there was anything this society could do to increase spraying and protect the fruit interests of the state, it was certainly the function and duty of this society to do it. We took under advisement as to whether we could recommend a compulsory spraying law for fruit trees.

The San José scale is the pest in most states at which the compulsory syraying laws are aimed, because it is carried from one orchard to another and does not damage forest trees. It is killing out the orchards in some states just as the browntail and gipsy moths are killing them in this state. All of the states that can are compelling the spraying of fruit trees because the orchards are liable to damage by the transmission of this insect pest. I understand that there are several sections in this state where this pest has developed, and there are men in this state who feel that they do not care to have this pest brought into their orchards and compel them to take up the fight against it and eventually kill out the trees. Some feel that they would like this society to recommend to the legislature that a law be passed compelling fruit trees to be sprayed some time during the season, in any section where this pest is known to exist. There are many sections where it does not exist. But it certainly seems that it would be well and proper to insure a law to keep this pest under control, for if it should ever develop it would be a very serious proposition.

Another thing is a law regarding the spraying of fruit trees when in blossom. I would like to know how common this is.

I am not going to make a definite recommendation. I would like to bring this before the society, and if it is

Box and Barrel Exhibit at the Antrim, N. H., Show, 1914.

thought best by them, to draw up a law to be presented this winter.

It was voted that the feasibility of asking for legislation on this subject be left to the executive committee.

Professor Gourley, who was chairman of a committee which was appointed to investigate the matter of coöperative buying by the society, made a strong recommendation that the society take action along these lines. Referred to the executive committee with power to act as in their judgment seemed fit.

The Committee on Resolutions, consisting of J. T. Harvey and E. J. Prescott, made the following report, which was accepted:

Be it resolved, That we, the members of the New Hampshire Horticultural Society, do extend our hearty appreciation and gratitude to the town of Antrim and its Board of Trade, and to all who have labored so willingly to make this meeting the success that it has been.

Resolved, That we also express our thanks to the able lecturers who have come to us from our own State College, and to those especially who have travelled long distances to give us words of knowledge and encouragement.

Resolved, That in consideration of the fact that we have listened to such excellent rendering of the musical program, that we do extend to our friends who have delighted us with their art, our grateful appreciation.

Resolved, That as the Great Ruler of the Universe has seen fit to remove from our midst five or more valuable members of the organization, we tender to their families our heartfelt sympathy and sincerely mourn their loss.

Resolved, That we especially desire to express our gratitude to all those who contributed towards the purchase of the beautiful silver cups that have been given as premiums at this meeting. We especially desire to express our thanks to Mr. Charles S. Abbott, for the hard work he has done to make this meeting such a success.

And be it further resolved, That this society wishes to express its sincere gratitude to the Presbyterian Church Corporation, through its pastor, the Rev. F. A. Arbuckle, for the use of that edifice for its meetings, and to Mr. Arbuckle personally for his untiring efforts in furthering the success of the exhibition.

It was voted to have a copy of the resolutions relative to the Antrim Board of Trade published in the Antrim Reporter.

The Auditing Committee, consisting of F. E. Bass and Alfred N. Fairbank, reported that they found the accounts regularly cast and supported by proper vouchers. This report was accepted.

Meeting adjourned.

A true copy of record. Attest:

Stanley K. Lovell,
Secretary-Treasurer.

WINTER WORK AGAINST BUGS.

C. J. HADLEY, JR., ASSISTANT PROFESSOR ECONOMIC ENTOMOLOGY, NEW HAMPSHIRE COLLEGE.

In a section of the country such as New Hampshire, where we have, every season, a rather large number of insects, all doing more or less damage practically every year, we sometimes wonder what becomes of all of these insects during the winter time. A few of them, of course, such as the browntail and gipsy moth, are rather conspicuous during the winter in some stage or another. But the greater number of our injurious insects are rather seldom seen during the winter, not because they are not to be seen, but generally simply because we do not know where to look for them.

In order to reduce the damage done by insects, it is not always necessary to use special machinery and expensive and dangerous insecticides, but quite often the common-sense way of making use of some of our ordinary every-day farming operations may take the place of these other more expensive ways.

One of the easiest ways of reducing injury by some of our most common pests, is by cleaning up around the fields, gardens and orchards. That is to say, by cutting out and burning the weeds that grow around, or by plowing up crop remnants, such as cabbage roots and similar plants.

For example, take the common green cabbage worm, the parent of which is the every-day white butterfly which we see until late in the fall and again very early in the spring. This insect spends the winter as a cocoon or chrysalis hidden away in the rubbish of the cabbage field or near by. If we take a cabbage head right now, which has been left in the field, we are quite apt to find that even the inner leaves are more or less eaten by the worms

and probably a number of the worms will be found tucked away between the leaves, under cover. They are getting ready to transform to the cocoon, the process of which consists merely of shedding their skin, snake-fashion. The underneath skin hardens and the insect is ready then to endure the winter. They may be found also in the old leaves which may be scattered around the field or perhaps in the little clumps of grass on the edge of the field or any place where there is some shelter from the rain and snow and ice.

Another insect which spends the winter in very much the same way is the squash bug. The squash bug hides away as a full-grown bug, so that when spring comes it is already to start right in as soon as there is anything to eat. It seeks out sheltered places in the field, such as in clumps of grass or clods or among the old vines, and similar places.

Along with this same class of insects we have the asparagus beetle, which does considerable damage to asparagus and similar plants.

Cleaning up the rubbish around the garden and fields is not going to entirely eliminate these pests the next year, but it may go a long way toward reducing the damage done by them. It is a simple matter generally to rake up the old leaves, dead grass, etc., in a pile in the fall or before snow comes and set a match to it. Even though it may not burn up all the bugs which are there, their natural hiding place is gone so that they are exposed to attacks of birds and chickens, and to the effect of the winter weather.

Another reason for getting rid of stalks of plants remaining in the ground is because of the danger of attack from the cabbage maggot. This insect, which is very well known as a serious pest of cabbages, onions, radishes and of similar plants, spends the winter either as a small, brownish colored cocoon about as large as an oat, or as

a small fly, somewhat smaller than the house fly. The cocoon is generally found very close to or among the roots of the plants in the ground and the flies themselves may be found there or in other sheltered places nearby.

Cutworms and white grubs also spend the winter in the ground. The cutworm during the winter is a small worm, from a quarter of an inch to three-quarters of an inch long and may be found just under the surface of the ground a short ways, curled up and apparently dead. As a matter of fact, it is very far from dead, and the first warm days of spring will bring it to life again, all ready with a tremendous appetite to eat up whatever plants there may be available. Wireworms also spend the winter as worms and come to life again in the spring as soon as the weather warms up. White grubs may be found just beneath the surface of the ground curled up in small hollowed-out cells or sometimes among the roots of plants, weeds or grasses of various kinds.

Injury the succeeding year from each of the last-named pests may be diminished by plowing up the fields and gardens in the late fall. This not only serves to disturb their chosen winter abode, by loosening up the soil so as to allow the cold and wet to get in, but also throws them up on the surface of the ground where they are exposed to the attacks of their various enemies. Among these enemies may be mentioned the common domestic hen and the hog. Apparently, at that time of the year, there is nothing which these animals prefer as an article of diet better than a nice, juicy cutworm or white grub. If you have ever noticed hens following along after the plow or placed in a freshly plowed field in the fall, you will have observed how eagerly they go around scratching and gobbling up whatever is to be found. Hogs, because of their natural tendency to root around, are also very useful in this way, because grubs of various kinds are very welcome to them. Even though a field is not plowed up, the hogs

will find and get rid of a large number of these pests in the ground. Such other worms as may be missed by either of these animals are quite apt to be destroyed sooner or later, either by birds or by the severity of the winter, so that by the time spring comes there are rather few of them left in the field that has been plowed up in the late fall, compared with what there would be if the field had not been touched.

There are a number of other insects which can be best handled during the winter time. For instance, take the gipsy moth. During the winter the gipsy may be found as clusters of eggs scattered here and there through the woodlands, on trees around the house, in the orchards, and especially in this state, on the old stone fences. The female gipsy moth, although it has wings, is unable to use them, because of the size of the body; consequently, wherever the moth emerges it must necessarily lay its eggs somewhere near that place. It is a common habit among all caterpillars to seek sheltered places at the time when they are about to transform from the caterpillar stage. Gipsy moths are especially apt to hide themselves away among rocks or in cracks and crevices of the bark of trees and in many of our old orchards in this state it is very common to find them in the old cavities where limbs have rotted out. It is just these places, too, which we are most apt to miss when we come round to destroy the egg-mass and which we must take especial pains to find. Creosoting the egg-masses during the winter is a very effective way of getting rid of the pest. For every egg-mass which you destroy in this way, you may expect to be getting rid of from one hundred to five hundred caterpillars which you otherwise might have on your place next summer. Right now is a good time, too, to suggest the advisability of filling up these old cavities in our trees, or, if the trees are not worth caring for to that extent, cut down the trees and destroy them. There are various

ways of filling up these cavities, such as by the use of cement, or plaster, or tacking a piece of tin or zinc across the hole.

Another one of our pests as well known as the gipsy moth is the browntail moth. At this time of the year we see them almost everywhere in their nests on the trees. Each of these nests may contain several hundred, more or less, young caterpillars, and we must take it for granted that most of these young caterpillars are not going to be seriously troubled by the winter. Of course, there are certain disadvantages about cutting off the nests from the trees. It is true that we do remove some of the living wood. If you were wise this last summer and sprayed your trees in August, it is not necessary for you to cut off the nests now or this winter, because you probably will not have any; but if you have the nests on your trees now, it is much wiser, safer and cheaper to cut them off and burn them this winter than to let them go and trust to getting rid of the caterpillars in the spring by spraying. It is very hard to get rid of them in the spring by spraying, because they emerge from the nest as soon as the leaves begin to unfold and generally can eat off the leaves about as fast as they appear, thereby not leaving you very much chance to apply a poison to the leaf surface. There are a number of different cutters on the market for getting rid of the nests. It is advisable in cutting off the nests to do it when there is snow on the ground, as then the nests will show up plainly on the ground; otherwise a number of them are apt to be lost in the grass, and there is no reason why the young caterpillars cannot hatch out from the nests on the ground just as well as on the trees.

We have some other common insects which it is almost out of the question to attempt to get rid of during the summer or growing season. The principle one of this group is the San José scale. A spray solution which is

strong enough to kill the scale during the summer is also strong enough to injure the foliage. Partly for that reason it is necessary that any spraying be done during the dormant season. Also, since these pests are on the bark of the trees it is much easier to get at them during the winter when there are no leaves to interfere with the spray. Lime sulphur solution, either the concentrated, which may be purchased from dealers, or any of the home-made solutions, is the best material to use for the San José scale. The materials on the market are generally used at the rate of one part concentrated solution to nine or ten parts of water. The home-made solutions are made according to various formulæ. Any time during the dormant season, that is, from late fall to early spring, is a satisfactory time for spraying for the scale. The one thing which must be spoken of is thoroughness. It is necessary that the tree trunk, limbs and twigs be thoroughly coated with the solution in order to do a good job. Where the trees are especially badly attacked by the scale in large numbers, it is often advisable to give two sprayings during the season—the first in the fall and the second in the later winter or spring.

The oyster shell scale is another scale which is quite abundant in New Hampshire, and, while not as serious a pest as the preceding, it is dangerous because of its increasing abundance. In orchards where there is regular winter spraying with lime sulphur, there is not apt to be very much danger from the oyster shell scale. Where there is not this spraying and occasionally on certain trees around the houses which are not generally as well sprayed, the oyster shell scale is quite apt to be found in very large numbers and often doing serious damage. Beside lime sulphur solution, the linseed oil emulsion is a very satisfactory spray for oytser shell scale. The formula for linseed emulsion is: 1 pound of soap, 1 gallon of water and 2 gallons of linseed oil. This material is made just

the same as any other emulsion, by dissolving the soap in the hot water and then adding to the water, while still hot, the oil. The mixture should then be thoroughly mixed, preferably by pumping it back and forth with a small bucket pump. This is then diluted, using one part of the concentrated solution to nine parts of water.

Other common insects in summer are plant lice. We have a number of different species of plant lice attacking almost all of our common fruit trees. During the winter these insects are generally found in the egg stage on the twigs and on the bark of the trees. They often appear as very small, shining black eggs, smaller than the head of a pin, scattered near the ends of twigs and commonly clustered around the leaf buds. Wherever an orchard is regularly and thoroughly sprayed with lime sulphur these eggs are generally destroyed by the spray material. Sometimes, however, the material seems to have no effect upon them. This may possibly be due to the weakness of the material, but more commonly to lack of thoroughness on the part of the operator. Of course, it is quite evident from the location of the eggs, that only a very thorough job will get rid of them.

There is another operation which ought to be done very much more in our orchards than is being done now, and that is pruning and scraping the trees. A number of our insects which are more or less common are in the habit of attacking generally limbs of trees which are weak from some other cause, such as breaking of limbs through excessive crops or attacks of various fungous diseases. Among these insects might be mentioned the shot hole borer. The pruning of trees so as to get rid of limbs which are dead or dying will go a long way toward preventing serious injury from this pest. Scraping the trees to remove the loose bark is very beneficial. There are lots of insects which are possibly not as serious as some of those already mentioned, but which year after year do

considerable damage, when taken all together. Many of these insects hide away during the winter under the loose bark. One of them, indeed, is a very serious pest in certain localities. This insect is the codling moth. Of course, where the trees are regularly sprayed in the spring for the codling moth we are not apt to have very much damage, but where this is not done, the insects may be found during the winter in small cells hidden away underneath the loose bark. Referring again to the San José scale, we shall see that the presence or absence of this loose bark has a great deal to do with the control of the scale. The scale is always found on the living wood and where a tree is rough and shaggy with the loose bark hanging to it, the scale is to be found underneath this loose bark fastened onto the living bark. Here it is securely protected from the spray material which does not get through or past the outside bark. It is also advisable, before starting the winter spraying with lime sulphur, to go over the trees and scrape off the bark. There are a number of tree scrapers on the market for this purpose. A very useful and effective home-made one is an old hoe, which has become rather dull. With its long handle it makes a very handy instrument for reaching up into the trees.

All of the foregoing recommendations, while very good each in itself, is not alone sufficient to entirely get rid of insect injury, but if made use of rightly and in conjunction with other methods to be employed against the insect at other seasons of the year, a great deal may be done toward getting rid of many of our most common pests.

ADDRESS BY WESLEY ADAMS,

MASTER OF THE STATE GRANGE.

Mr. President, Ladies and Gentlemen:

I realize that you are all brothers and sisters—or should be—in the Grange. We as members of the Grange realize, of course, that horticulture, or fruit growing, is one of the great industries of New Hampshire.

A short time ago the Chamber of Commerce, through its agricultural committee, held several meetings in New Hampshire, interesting themselves in trying to ascertain what it costs to produce a quart of milk. At this meeting all who attended could n't help being impressed with the fact that the dairy industry was practically the only industry in New Hampshire.

A day or two ago I was at a poultry day at Durham, and as the people assembled there you realized that the poultry industry was all there was in New Hampshire.

As I came over here to Antrim, and saw the beautiful exhibit in the hall across the way, and mingled with the people and heard the talk, I realized that the fruit industry was practically the only thing in New Hampshire.

So we might say that New Hampshire is a state of resources. I believe that is so. I don't believe there is another state in New England that offers such possibilities for fruit growing as New Hampshire. If you will go through the state and look about you, you will find apple trees growing wild, and practically every one of them bearing a crop of fruit. So I say that New Hampshire is one of the greatest states in the country, but I believe we lack one thing: I believe we lack the power of advertising among ourselves. I believe we should advertise our state and advertise its resources.

At the present time it is possible for us to raise better fruit than any other state in the Union, and it is possible

to get better prices. The Grange is interested along this line, because it is founded on agriculture. I believe that every farmer should be an interested, enthusiastic Patron of Husbandry, because it is the only order that is interested in the farmer. It is the only farmers' organization. There are trade unions for every class of people, and organizations for every profession; but when you come to the farmers the Grange is the only thing. So every farmer should be a loyal Patron, and realize that together we can do something for New Hampshire. Instead of looking into other states and realizing that they are raising better fruit and better vegetables, producing better cattle than we are, realize that WE, right here in our own state, have some of the most wonderful things; that we can raise the most wonderful apples anywhere to be found. I say that we should be loyal to our state.

I believe that, while the Grange is non-partisan in politics, that it should be interested in legislature,—that is, legislature pertaining to agriculture. I believe that we have allowed others to make laws for the farmers long enough. It is time that the agricultural bodies of the state looked after the agricultural interests of the state. I believe that Minnesota has something that we have n't got. I believe they have something there that we would do well to copy and work with other states to make it uniform. I refer to the apple law of Minnesota.

I had the pleasure recently of meeting a number of gentlemen, who were interested in fruit, at the Chamber of Commerce in Boston. This meeting was called by the Agricultural Committee to try and find out what they could do toward getting rid of the lot of apples in the Boston markets. As we listened to the different men from different states, we realized that Boston is full of second-class fruit. As you travel up and down the markets you will find a lot of fruit that should have been carried to the cider mill or fed to cattle. This is not right, and one of the great cries to-day is, "Standardize

your apples," and have a law in every state so that when a barrel of apples is shipped into Boston marked "Fancy" it will be just what it is marked.

One of the gentlemen at this meeting—he is a big commission merchant—went along to a barrel of apples supposed to be No. 1 quality, and right off the top he picked up a little bit of an apple with a big worm hole in it. He held it up and said: "This is the kind of thing the children get to eat." That was a facer on the barrel of No. 1 Baldwins. I am sorry to say that this was a New Hampshire apple. I believe that is the kind of thing that is spoiling our markets. I believe it is possible for almost anyone to raise a good crop of almost anything; but it takes quite a man to sell it. Mr. Hale said he believed that before the first of April good fruit would bring a fair price, and all the commission men there advised taking care of your good apples, as they thought you would be able to get a reasonable price for them before spring.

Now, ladies and gentlemen, there are others to follow me, and I am not going to take any more of your time except to ask you to interest yourselves in the Grange. Become loyal, enthusiastic Patrons of Husbandry, and help to raise the standard of agriculture and horticulture in New Hampshire.

ADDRESS.

HON. DAVID H. GOODELL, ANTRIM.

Mr. Chairman, Ladies and Gentlemen:

I am, as President Roosevelt used to say, "De-lighted!" I am proud to-night, I am glad, that such an occasion has come to Antrim. Who would have supposed that this great agricultural, horticural society of the state of New Hampshire, would have come to a little town like Antrim?

I was told when I was a young man that faint heart never won fair lady. We have some strong hearts in Antrim beating for the prosperity of this great old town of ours, and they wooed and won this fair organization, this great fair of apples and other things that I saw in the hall across the street. I am proud of it indeed. I am very grateful to you, gentlemen, for coming here, and I speak the sentiment of the people of this town when I say that we are exceedingly pleased to have you here, and we hope you will enjoy your stay as well as at any place in the state.

I am also exceedingly gratified because of another thing. I was a member of the Board of Agriculture in 1876-1877, and I was called upon, of course, to do considerable talking on these subjects. But I did n't talk much on those topics; I made up my mind it would do more good to teach the boys and girls to stay in New Hampshire. So I told them stories about what had happened to people who left home. One of these stories happened right here in my own town, in 1849. A man left his wife and several children and went out to California to get rich. He *did* get rich, and was getting ready to report to his wife and go home when he suddenly became poor again, and he did n't want to tell her about that. So he kept on, first getting rich and then getting poor, for years. Finally it had been thirty years since he had written to his family, and then he telegraphed to his son to know if he might come home. His son telegraphed for him to come, and met his father in Boston and brought him home. The next morning the man said: "This is the first time I have slept in a bed for thirty years."

I know of another man who went out to Kansas and prospered there. He got into office, and after awhile he came home and found that his people had moved to Concord. He went there with his wife and went to the door, and his mother met him at the door and did n't know him.

"Why," said the boy, "don't you know me? This is

Eddie." And just think of his mother's surprise at his wonderful appearance. Then he turned and introduced his wife, and she was still more of a surprise. They did n't remain long. His wife could hardly endure the civilization of this part of the country. They returned to the West soon after, and his cousin went out to visit him. When the cousin got out to Kansas he found the boy in his office (he was postmaster) in a hole in the ground.

Now, not all of the people who have gone out from this town have prospered in that way; but some of them have. And so I told that story and others in all parts of this state, and I am proud to-night of the fact that it seems to have taken root. What do we hear from the Commissioner of Agriculture to-night? He is doing something to induce the boys to realize that old New Hampshire is a good place to be born in, a good place to get a living in, and a good place to die in. I suppose this work will be continued from year to year.

I was pleased, also, when he said that the Commission of Agriculture had a great deal to do in building up neglected farms. It was under my administration that it was first suggested that something should be done to try to bring the beautiful farms that had been neglected by their original owners back into use; and I was charged with notifying the world that New Hampshire was decaying, but it was necessary to know defects in order to remedy them. This is being done more and more. Many of our neglected farms have been taken up and improved wonderfully, and much money has been expended in beautifying them.

I am glad to see him so enthusiastic. I have never met Mr. Felker before, but I was anxious to hear what he had to say. I have been exceedingly interested in all these things. Let me impress upon you that you have got as good a place to live in as there is anywhere on this broad earth. I want you to realize that New Hampshire can

raise not only potatoes, but men. We have had greater men in New Hampshire than there have been in any other state. Just think of Daniel Webster and Samuel Chase and all the other famous men who have come from New Hampshire. Nothing like it has ever been seen in any other state. One of them may be present now who will make New Hampshire greater than it ever was before, and make the cause you believe in and those in it, because you are faithful to your birthplace and your home.

MODERN METHODS OF VEGETABLE GARDENING IN CENTRAL NEW YORK.

BY J. B. SCHERRER.

(Illustrated lecture, the gist of which follows.)

The section about which I am going to speak virtually begins with Buffalo and extends in a straight line to Syracuse, this outlay being approximately ten miles wide and one hundred miles long.

The soil is a deep gravelly sand and on account of its sharpness and great depth is used by some in the manufacture of concrete blocks; so that the price of the land has risen to such an extent that much of it has been sold at two thousand dollars an acre.

New York state is, as we all know, the most populated state in the Union, and it is only natural that the vegetable demands would be great. It is to be supposed then that if conditions were favorable for growth this demand would be almost met. And so it is: New York state produced in 1910 $36,000,000 worth of vegetables, and to this section about which I am speaking goes the credit for the bulk of the products raised.

Rochester, the seat of population of this section, is sur-

Part of the Plate Exhibit of Apples at the Antrim, N. H., Show, 1914.

rounded by famous growers, and the men of nation-wide prominence are to be found there. The soil in many places is as flat as a table and the character a sandy one full of dark humus and reaching a depth of thirty-two feet.

The progressive men are well aware of the fact that in this business the growers can't afford to discharge their men at the close of each season and depend upon a new influx at the beginning of the next. In certain forms of agriculture this might work admirably, but to raise vegetables one must be skilled, and to become adept one must sacrifice years of time. So to avoid these complications, the greenhouse affords excellent quarters for the men during the winter. Besides it is one of the most remunerative branches of olericulture.

For convenience, I will divide my topic into two phases, namely: Vegetables Under Glass, and Market Gardening.

Contrasting the type of greenhouses in the New York section with those to be found in Ohio or around Boston, we find many marks of difference. Ohio is noted for its famous ridge and furrow or connected houses which sometimes cover ten acres in extent. Here we notice that the houses are well ventilated, not only at the top but also at the sides and bottom. Their principal crop is lettuce for the Pittsburgh market, and as lettuce is a cool crop, naturally, all the air possible is admitted to the crop. Boston is devoid of the ridge and furrow type because the heavy snows would not only, by lodging in the gutters, warp the roof, but would shade the house during this weather. Besides this difference, we find that the houses run east and west and have a long slope towards the south, with the north side boarded up. The reasons for such construction are quite obvious in that the southern exposure will give more sun during the greater part of the day and boarding up the north side will enable the grower to heat his house more easily. Throughout New York state the houses are

almost all even span, well built and on the whole cost more to construct, since the growers have let contracts to the prominent greenhouse construction concerns.

As a natural sequence, I will take up the lettuce crop first, as it is the first crop after the house has been thoroughly renovated. In the fall of the year after the houses have been rid of the old crops and then thoroughly painted, fumigated and sterilized, the land is spaded; the system is quite unique, in that the laborers spade to a depth of three feet. After reaching the required depth, one foot of manure is applied and the soil put back. While this preparation has been going on, the lettuce has been seeded at a corner of the house quite thickly, and after the crop has shown its first true leaves, the prickers are transplanted nearby, two inches by two inches. After a month's duration, they are planted into the permanent beds eight inches by eight inches. The variety grown is May King and it requires two and one-half months to take this crop from seed to maturity, six weeks of which is spent in the permanent bed. The growers aim to have the first crop in by Thanksgiving as that is the time when the high prices begin, and they keep up a succession till March. This means that each house will produce four crops of lettuce a season.

Tomatoes.—Immediately following the last lettuce crop, the ground is again spaded up and incorporated slightly with manure and then fitted for the next crop, tomatoes or cucumbers. Both crops are equally profitable and almost all the vegetable forcers aim to plant several houses to each crop.

While the last crop of lettuce is maturing the tomatoes are seeded in flats, which are small boxes 12″x8″x3″. After the tomatoes are about one inch high and are showing true leaves, they are transplanted into other flats of the same dimensions and spaced two inches apart. It is considered a good practice to put one inch of well tramped

rotted horse manure in the bottom of the flats and then fill with two parts of good rich loam, one part of rotted manure, one part of sharp sand. After the tomatoes have attained a good height and are beginning to show signs of crowding, they are transferred to clay pots. From there they go into the permanent beds. The distance apart varies with the variety, the opinion of the grower and the size of the house. Ordinarily, if the house is the usual size, 40′x180′, they are planted 18 inches apart between rows and eight rows to a house. These tomatoes attain a height of seven feet and then the terminal is pinched off so as to throw the top of the tomato into fruit by stopping the foliage growth of the plant. In order to grow this crop successfully an experienced man is employed to cut out all lateral growths which take place at the axels of the leaves and requires the work of a man going through the crop every week, from the time the crop is set in the house till it is removed, to see that the plant is grown to a single stem.

This crop will produce fruit from April to August and it is calculated that one plant will produce eight sets of fruit, each containing nine tomatoes and each tomato weighing 5 1/3 ounces. Totalling this up, we find that each tomato plant should bear 24 pounds of fruit. This will sell at an average price of 45 cents a pound, giving a grand total of $10.80 a plant. The varieties grown are mostly Bonny Best, Comet and Lord Roberts.

An interesting phase of the handling of this crop is that of pollinating the plants. Since the conditions are more or less unnatural, the wind cannot be depended upon to disseminate the pollen from plant to plant, thereby fertilizing the female blossoms and setting the fruit. So the growers go among their plants every day at noon when the pollen is driest, and by tapping each plant with a piece of rubber hose, scatter the pollen about in the air and in that way perform the functions which the air is naturally called upon to do.

Cucumbers.—As a companion crop in the greenhouse with the tomatoes or as a crop to be grown at the same period of the year, we find the cucumber grown by all the men who have glass available.

The seed are sown in small clay pots or paper pots and covered lightly. When the plants are about four inches high and manifest a healthy appearance, they are planted in the permanent beds. The plants are watered and cared for judiciously so that the tender vines will receive no check in growth. Two methods of training are in vogue: either using the A-shaped method or the overhead trellis system. The latter is more easily constructed and obviously affords easier pruning of the terminals.

After the newly planted cucumbers have made a growth of a few inches, a string is run from the ground to the overhead trellis, which is six feet high. By the use of raffia and a little energy spent in training these plants, the runners will soon make their way to the top and then spread themselves profusely over the trellis. After the runners have covered the upper surface and the lower leaves become yellow because of lack of sunlight, the lower leaves are cut off. One of the most interesting as well as adept schemes in prolonging life and increasing quality is the pruning of this cucurbit crop. As we all know, the cucumber is a monœcious plant, that is, it bears separate staminate and pistillate flowers. Naturally, the cucumbers are born on the female flowers and the practice is to cut off the runners two leaves beyond the newly formed pickle. In due time, growth forces out near the pickle and the plant produces runners as before. This method of reducing the growth is also efficacious in that it makes a more rugged, healthy growth.

The Italian bee is indispensable in the house in that it carries the pollen from the male to the female flowers, thereby fertilizing the ovules and making crop production possible.

Cucumbers are usually set in the permanent beds in March, bear fruit in April and continue to August, when the old vines are torn out, burned and the houses given a thorough renovation. The crop is picked every morning and packed in the characteristic bushel boxes and shipped to market. A house 40x183 feet will often produce 40 dozen a day and the price ranges from $4 a dozen in the beginning of the year to 30 cents a dozen in August.

The outdoor growing of crops is, of course, more important than the hothouse, because more men are engaged in it, since the expense of building large ranges of houses is no small one. Should the gardener be without greenhouses, he will have to resort to hot beds to start his early crops which must be transplanted to the field when atmospheric conditions permit. Running in conjunction with either the hot bed or greenhouse, we find the cold frame. To any grower, this is essential, for all crops must be hardened before planting in the field. Many of the growers have temporary cold frames for starting cucumbers. After frost leaves the ground, the frames are removed and the plant allowed to spread. This crop has proved very remunerative.

The soil being a sandy character, generous applications of manure are added. This is applied both in the spring and the fall of the year, and both fall and spring plowing is carried out on the same land. Manure is comparatively cheap and many of the growers have one team devoted to the hauling of this fertilizer from the cities. By contracting with the growers, the manure is bought as low as $1.75 for a three-ton load.

Earliness brings more money and gains dependable customers which can be held the rest of the year. This is always held in mind by these progressive business men, and their aim is to so plan their crop that they will know what they are going to plant long before the season comes; always remembering to plant the earliest and

quick-maturing crops first. Consequently, lettuce, celery, radishes, spinach, onion, etc., are planted as soon as they can get on their land in the spring. Not only do they plan for earliness, but for succession, so that three and four crops can be raised on the same soil every year. I remember a cabbage field which was cut in one week, and two days after the last cutting, roots and all were plowed under and the entire space planted to celery. Celery, by the way, is one of their most lucrative crops, and every gardener depends on putting at least two-thirds of his land to this crop after July 1. Time limits me from telling you about the vast amount of intercropping, the adept means of planning the crops and the artful schemes used in controlling conditions. Suffice to say that nothing is left undone which would enable the men to increase their profits.

Growing the crops and marketing are two distinct phases of the work, and it is the wise man who can handle both successfully. It seems, however, that these New Yorkers have mastered both. After the vegetables are brought from the field, they are thoroughly washed, assiduously sorted, and artistically packed. Attractive packages draw the eye and find ready sale. Every grower uses a one, two and three, heavy bushel box, all painted certain colors and labeled. These boxes are used to distribute the products and in due time come back to the owner.

Monday, Wednesday and Friday are order and packing days, and Tuesday, Thursday and Saturday market days. Most growers use heavy wagons or trucks and leave for the market, the store, the hotel, or what not, with their load on the last named days.

This, in brief, describes the methods the scientific gardeners pursued in central New York state, and while it applies to a state outside of New England, is applicable in most cases to conditions here.

QUESTIONS FOLLOWING MR. SHERRER'S ADDRESS.

Question: I would like to ask if the statement that the average price of tomatoes is 35 cents a pound is correct?

Mr. Sherrer: They will bring, beginning the first of March, more than 35 cents a pound; probably 60 cents. Up to around the middle of April they will bring around 35 cents, and then drop gradually about the first of June to about 15 cents or 18 cents. I would say that a good average price would be about 30 cents instead of 35 cents. You understand that they are sold to the large cities like Buffalo and Rochester.

Question: Didn't they sell some of the tomato crop to the colleges in Boston for 45 cents a pound?

Mr. Sherrer: Yes, I believe they did.

Question: Do you believe in tying up the tomato plants?

Mr. Sherrer: I certainly do. On many a day at the college we have gathered as much as $1 worth of fruit from a plant in July. This is quite remarkable, and shows that they should be tied up.

Question: What is the best method, stakes or wires?

Mr. Sherrer: Probably the best system is in use in New York state, posts at each end of the row, then small stakes about 15 inches apart and wires about 7 inches apart and about 6 feet in height. The man carries a ball of string in his pocket, and ties the plant to the wire and takes off some of the laterals so only one stem goes up. While cutting off the laterals they also select the best shaped fruit, bringing the number on a stem down to seven or nine.

Question: How heavy do they fertilize?

Mr. Sherrer: As high as fifty tons per acre of manure to the land. They produce four crops to the acre. They start with lettuce, spinach or radishes, following it up

with string beans or peas, and finally put it into celery. All the gardeners up there who don't plant tomatoes put all their land into celery by July 1. They will produce at least a thousand dollars to the acre. That is gross profit, and they should make five hundred dollars per acre on the celery alone. Manure must be applied heavily because it absorbs water and retains it.

LITTLE KNOWN PLANTS.

CAROLINE A. BLACK, PH. D., ASSISTANT BOTANIST NEW HAMPSHIRE COLLEGE.

When we think of a plant we recognize that it consists of roots, stems, and leaves, and that the typical color of the plant is green. Now there are a great many plants that do not have roots, stems, or leaves, and that are not green. These plants are very small and in spite of the fact that they are very numerous, we can not see them unless they are found in large numbers or colonies.

These plants are found riding on particles of dust in the air, on all kinds of objects, such as food, furniture, clothing, and in water and soil. They can be divided into three groups. The smallest forms are called the bacteria. They occur as little spheres, or very small straight rods, or curved rods. Many bacteria cause serious diseases if they succeed in successfully invading an individual. Some diseases caused by bacteria are typhoid fever, tuberculosis and diphtheria. Other bacteria may cause diseases in plants.

Some bacteria enrich the soil, such as the nitrogen fixing bacteria. This is a very important group as they add to the amount of nitrogen in the soil. They are found living in associations with various leguminous

plants. A few bacteria, and one in particular, cause the souring of milk. Another one helps to make vinegar.

The second group of these small plants is very familiar to you through one of its members, the well known yeast plant. You know what the yeast plant does in regard to bread making. The yeast plant in growing, changes sugar into carbon dioxide and alcohol. This gas, carbon dioxide, causes the dough to rise as you can see by the holes left in the bread by the small bubbles of gas. In baking, the carbon dioxide and alcohol are driven off by the heat. Yeasts are also used in the fermentation of plant juices, as in the manufacture of wines. Here the alcohol that is produced becomes a part of the wine.

The third form is larger than the bacteria or yeasts and consists of long threads which may become interwoven. These are called the molds, and are frequently found in little patches on preserved or fresh fruit or on old bread. The molds are perhaps the most familiar as we associate them with the spoiling of fruit, such as moldy apples, oranges, or grapes. They may be blue, pink, yellow, brown, etc., or colorless. Some molds are used in cheese making. The dark spots in Roquefort cheese are due to the presence of a bluish-green mold that imparts the characteristic flavor to this cheese that many people like. In Camembert cheese, another mold grows on the surface, but affects the interior of the cheese.

In conclusion, we find that there are many plants that do not resemble the typical green plant. These plants are very, very small, and are found practically everywhere. Some of these small plants are of immense benefit to us and others can do harm. We must learn to make use of the beneficial forms and to avoid the harmful ones.

PREMIUMS AWARDED AT THE TWENTIETH ANNUAL MEETING OF THE NEW HAMPSHIRE HORTICULTURAL SOCIETY, HELD AT ANTRIM, OCTOBER 21, 22 AND 23, 1914.

Class No.

Spl. 400. Best barrel Baldwin apples.—First, silver loving cup, E. N. Sawyer; second, A. C. S. Randlett, $5.

Spl. 401. Best barrel Northern Spy or Rhode Island Greening apples.—First, sterling silver loving cup, A. C. S. Randlett; second, J. T. Moore, $5.

Spl. 402. Best three boxes McIntosh or Gravenstein apples.—First, silver loving cup, E. B. Parker.

Spl. 403. Best general exhibit of apples by any New Hampshire Subordinate Grange.—First, silver loving cup, Granite Grange No. 7, of Milford; second, Mt. Livermore Grange No. 288, of Holderness, $5.

Spl. 404. Best general exhibit of apples.—First, silver loving cup, E. S. Walker; second, C. W. Barker, $5.

Spl. 406. Best bushel white potatoes.—Barrel spray pump valued at $15, C. A. Lamprey.

Spl. 407. Best box Rhode Island Greening apples.—Barrel spray pump valued at $15, Maplehurst Fruit Farm.

Spl. 408. Best box Baldwin apples.—100 Baldwin apple trees, one year, 5 to 6 feet, offered by Harrison's Nurseries, Berlin, Md., Maplehurst Fruit Farm.

Spl. 410. Best basket assorted fruit designed for retail trade, to contain one-half peck.—Hand grinding mill, offered by the Society, Harvey T. Corey.

Spl. 411. 30-gal. barrel Scalecide, given by B. G. Pratt Co., New York City, for best two boxes of apples of any variety, Maplehurst Fruit Farm.

Spl. 412. Abbott Barrel Press, valued at $5, offered by Goodell Co., Antrim, N. H., for most artistic display of fruit, E. B. Parker.

Spl. 414. Best display of Canned Fruit and Jellies shown by any citizen of Antrim.—Jelly strainer valued at $1, offered by the Goodell Co., Antrim, Miss Helen Stanley.

SPECIAL SWEEPSTAKE.

Person winning most first prizes in plate exhibits, Classes 3 to 37, complete emergency kit of veterinary instruments and remedies, three one-gallon cans disinfectant, three one-dozen packages of horse renovator, offered by Dr. A. C. Daniels, 172 Milk St., Boston, Mass., E. N. Sawyer.

APPLES.

No. 1. Best barrel of apples of any variety, except Baldwins, Northern Spy or Rhode Island Greening. —First, $6, E. B. Parker, McIntosh; second, C. C. Pettigrew, Gano, $4.

No. 2. Best box of apples of any variety, except McIntosh or Gravenstein, boxes of standard size, and correctly packed.—First, $5, Maplehurst Fruit Farm; second, Colburn Farm, $3.

PLATE EXHIBITS.

No. 3. Baldwin.—First, E. N. Sawyer, $1; second, F. B. Spaulding, 50 cents.

No. 4. Gravenstein.—First, E. N. Sawyer, $1; second, H. W. & H. L. Peaslee, 50 cents.

No. 5. Hubbardston.—First, C. C. Pettigrew, $1; second, E. B. Parker, 50 cents.

No. 6. King of Tompkins County.—First, A. C. S. Randlett, $1; second, E. S. Walker, 50 cents.

No. 7. McIntosh Red.—First, E. N. Sawyer, $1; second, Edson H. Tuttle, 50 cents.

No. 8. Northern Spy.—First, A. C. S. Randlett, $1; second, Harry R. Chase, 50 cents.

No. 9. Rhode Island Greening.—First, John T. Moore, $1; Second, C. W. Barker, 50 cents.

No. 10. Roxbury Russett.—First, Lewis E. Hodgeman, $1; second, W. F. Herrick, 50 cents.

No. 11. Wealthy.—First, E. B. Parker, $1; second, H. H. Joslin, 50 cents.

No. 12. Williams Favorite.—First, E. N. Sawyer, $1; second, E. B. Parker, 50 cents.

No. 14. Black Gilliflower.—First, W. H. Shoults, $1; second, C. J. Batchelder, 50 cents.

No. 15. Blue Pearmain.—First, Harry R. Chase, $1; second, E. N. Sawyer, 50 cents.

No. 16. Chenango.—First, E. N. Sawyer, $1; second, E. B. Parker, 50 cents.

No. 19. Esopus Spitzenburg.—First, H. H. Joslin, $1; second F. E. Bass, 50 cents.

No. 20. Fallawater.—First, E. N. Sawyer, $1; second, Harvey T. Corey, 50 cents.

No. 21. Fall Pippen.—First, E. N. Sawyer, $1.

No. 22. Fameuse.—First, E. N. Sawyer, $1; second, C. C. Pettigrew, 50 cents.

No. 23. Golden Russett.—First, E. B. Parker, $1.

No. 24. Grimes Golden.—First, A. I. Hall, $1; second, E. B. Parker, 50 cents.

No. 25. Jonathan.—First, A. I. Hall, $1.

No. 26. Maiden Blush.—First, E. S. Walker, $1; second, E. N. Sawyer, 50 cents.

No. 27. Newton Pippin.—First, C. L. Perham, $1.

No. 28. Nodhead.—First, E. N. Sawyer, $1; second, F. E. Bass, 50 cents.

No. 29. Pewaukee.—First, E. B. Parker, $1.

No. 30. Pound Sweet.—First, G. W. Hunt, $1; second, George P. Craig, 50 cents.

No. 31. Red Canada.—First, E. S. Walker, $1; second, Wilfred M. Davis, 50 cents.

No. 32. Sutton Beauty.—First, A. I. Hall, $1.

No. 33. Talman Sweet.—First, A. I. Hall, $1; second, E. B. Parker, 50 cents.

No. 34. Twenty Ounce.—First, E. S. Walker, $1.

No. 35. Wagener.—First, A. I. Hall, $1; second, Charles S. Abbott, 50 cents.

No. 36. Westfield Seek-no-further.—First, C. J. Batchelder, $1.

No. 37. Wolfe River.—First, E. B. Parker, $1; second, E. N. Sawyer, 50 cents.

SWEEPSTAKE PRIZES.

Section 1.—Best barrel of apples, any variety, packed for market.—First, E. N. Sawyer, $25. (Barrel of Baldwins.)

Section 2.—Best box of apples, any variety, packed for market.—First, E. B. Parker, $15. (McIntosh.)

CRAB APPLES.

No. 39. Siberian.—First, E. B. Parker, 50 cents.

PEARS.

No. 47. Buerre d'Anjou.—First, W. M. Davis, 50 cents; second, G. W. Hunt, 25 cents.

No. 49. Duchess.—First, W. M. Davis, 50 cents.

No. 51. Flemish Beauty.—First, George F. Higgins, 50 cents.
No. 55. Onondaga.—First, H. W. Peaslee, 50 cents.
No. 56. Seckel.—First, G. F. Higgins, 50 cents.
No. 57. Sheldon.—First, W. M. Davis, 50 cents; second, G. W. Hunt, 25 cents.

QUINCES.

No. 61. Orange.—First, C. L. Perham, 50 cents.

GRAPES.

No. 84. General exhibit of grapes grown by exhibitor, and not less than four varieties.—First, A. N. Fairbank, $3; second, Peaslee Brothers, $2.
No. 85. Brighton.—First, E. B. Parker, 50 cents; second, A. N. Fairbank, 25 cents.
No. 85. Campbell's Early.—First, A. N. Fairbank, 50 cents.
No. 85. Delaware.—First, H. W. Peaslee, 50 cents; second, A. N. Fairbank, 25 cents.
No. 85. Green Mountain.—First, A. N. Fairbank, 50 cents.
No. 85. Concord.—First, H. W. Peaslee, 50 cents; second, A. N. Fairbank, 25 cents.
No. 85. Moore's Early.—First, A. N. Fairbank, 50 cents.
No. 85. Niagara.—First, A. N. Fairbank, 50 cents; second, H. W. Peaslee, 25 cents.
No. 85. Worden.—First, H. W. Peaslee, 50 cents; second, A. N. Fairbank, 25 cents.

GRATUITIES.

Gratuities were awarded as follows:
A. I. Hall, 50 cents.

John Kimball, 50 cents.
E. B. Parker, 50 cents.
G. W. Hunt, 50 cents.
Wilfred M. Davis, 50 cents.
George F. Higgins, 50 cents.
Fred Moore, 50 cents.
C. L. Perham, 50 cents.

VEGETABLES.

Spl. 409. Best display of vegetables.—First, Oscar E. Davis, silver loving cup. This cup having been won by Mr. Davis for two years, it becomes his property.

BEETS.

No. 101. Turnip rooted.—First, C. P. Butterfield, $1; second, G. P. Craig, 50 cents; third, H. L. & H. W. Peaslee, 25 cents.

CABBAGE.

No. 102. Pointed.—First, Harvey T. Corey, 50 cents.
No. 103. Round or flat.—First, Harvey T. Corey, 50 cents.
No. 104. Savoy.—First, Harvey T. Corey, 50 cents.
No. 105. Red.—First, Harvey T. Corey, 50 cents.
No. 106. Brussells Sprouts.—Second, Frank E. Bass, 25 cents.

CARROTS.

No. 109. Danvers, one-half long.—First, C. P. Butterfield, 50 cents; second, G. P. Craig, 25 cents.
No. 110. Ox Heart.—First, M. D. Cooper, 50 cents.

CELERY.

No 111. Self-bleaching type.—First, W. E. Gibney, $1; second, A. G. Harris, 50 cents.

No. 112. Green.—First, William J. B. Cannell, $1; second, Frank E. Bass, 50 cents.

MELONS.

No. 116. Watermelon.—First, Henry Miner, 50 cents.

ONIONS.

No. 119. Yellow.—First, G. P. Craig, 50 cents; second, A. G. Harris, 25 cents.

No. 120. Red.—First, A. G. Harris, 50 cents.

PARSNIPS.

No. 122. Long.—First, W. E. Gibney, 50 cents.

No. 123. Intermediate.—First, J. W. Brooks, 50 cents.

POTATOES.

No. 127. Early Rose.—First, G. P. Craig, 75 cents.

No. 128. Green Mountain.—First, A. G. Brooks, 75 cents.

No. 129. Hebron.—First, G. P. Craig, 75 cents.

PUMPKINS.

No. 130. Sugar.—First, Wilfred M. Davis, 50 cents; second, Henry Miner, 25 cents.

No. 131. Large.—First, J. E. Tenney, 50 cents.

Part of the Vegetable Exhibit at the Antrim, N. H., Show, 1914.

SQUASHES.

No. 133. Summer.—First, W. M. Davis, 50 cents; second, A. G. Brooks, 25 cents.
No. 135. Turban.—First, J. E. Tenney, 75 cents; second, A. G. Brooks, 50 cents.
No. 136. Hubbard.—Second, J. E. Tenney, 50 cents.

TOMATOES.

No. 137. Scarlet.—First, H. L. & H. W. Peaslee, 75 cents; second, W. M. Davis, 50 cents; third, A. G. Brooks, 25 cents.

TURNIPS.

No. 140. Early Globe-Shaped.—First, J. E. Tenney, 50 cents; second, Frank E. Bass, 25 cents.
No. 141. Swedish.—First, H. T. Corey, 50 cents.
No. 142. Cranberries, one-half peck.—First, A. G. Brooks, 50 cents.
No. 145. Endive.—First, H. L. & H. W. Peaslee, 50 cents.
No. 146. Kohl Rabi.—First, H. L. & H. W. Peaslee, 50 cents.
No. 147. Parsley.—First, Frank E. Bass, 50 cents.

GRATUITIES.

Gratuities were awarded as follows:

Special collection of potatoes.—G. P. Craig, 50 cents.

Special collection of cucumber pumpkins.—A. G. Brooks, 25 cents.

Delicious Squash.—Harvey T. Corey, 25 cents.

Chinese Cabbage.—O. M. Lord, 25 cents.

Russian Horseradish.—O. M. Lord, 25 cents.

Mangel Wurzel.—Frank Bass, 25 cents.

General exhibit of corn.—O. M. Lord, 25 cents.

Large pumpkin.—George P. Craig, $1.

CANNED FRUITS DEPARTMENT.

No. 167. Best exhibit of fruit canned in glass, not less than six cans.—First, Helen Stanley, $5; second, Marjorie Brownell, $3; third, Mary Temple, $2.

No. 168. Best exhibit of jellies in glass, not less than six tumblers.—First, Mrs. Ella Roberts, $5; second, Mrs. H. W. Eldredge, $3; third, Mrs. George Miner, $2.

No. 169. Best exhibit of vegetables canned in glass, including pickles, not less than six cans.—First, W. M. Davis, $3; second, Mrs. G. W. Hunt, $2; third, Mrs. George Miner, $1.

GRATUITIES.

No. 170. Gratuities were awarded as follows:
Mrs. David H. Goodell, 25 cents.
O. M. Lord, 25 cents.
A. L. Littlefield, 25 cents.

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REPORT

OF THE

SUPERINTENDENT

OF

PUBLIC INSTRUCTION

BEING THE

FIFTY-EIGHTH REPORT UPON THE PUBLIC SCHOOLS OF NEW HAMPSHIRE

CONCORD
1914

Printed by Ira C. Evans Co., Concord
Bound by The Cragg Bindery, Concord

KEENE NORMAL SCHOOL BUILDING.

REPORT.

To His Excellency Samuel D. Felker,
Governor of New Hampshire:

I have the honor to transmit to Your Excellency the fifty-eighth report upon the public schools of the state, the same being the tenth biennial report and the thirty-seventh since the establishment of this office. It also marks the completion of a decade of service of the present superintendent of public instruction.

As required by law, the report includes:

1. An account of the doings of the superintendent between July 16, 1912, and July 15, 1914.

2. A report upon the condition and progress of popular education in the state.

3. A report upon the condition of the state normal schools.

4. Recommendations of the superintendent.

5. Appendices containing the essential facts of school board returns in statistical form and other reference material.

All of which is herewith

Very respectfully submitted,

HENRY C. MORRISON,
Superintendent of Public Instruction.

THE DOINGS OF THE SUPERINTENDENT.

CHAPTER I.

ACTIVITIES OF THE DEPARTMENT OF PUBLIC INSTRUCTION, JULY 16, 1912, TO JULY 15, 1914.

I have been continuously in the discharge of the duties of the office save four weeks in the summer of 1913 devoted to complete rest. I have occasionally been absent from the state for addresses and conferences in other states.

Appointment of Deputies and Assignments.

The General Court of 1913 created the office of deputy superintendent of public instruction and provided that the superintendent should appoint three such deputies, at least one of whom should be a woman, and that they should work under his direction.

I accordingly appointed Mr. George H. Whitcher, at that time superintendent of schools in Berlin; Miss Harriet L. Huntress, who had been for many years secretary to the superintendent; and Mr. Harry A. Brown, at that time district superintendent in the supervisory union composed of the towns of Colebrook and Errol. The deputies entered upon the duties of office on September 1, 1913, except in the case of Mr. Whitcher, who was unable fully to do so until November 1, being necessarily detained by the incidents connected with the choice of his successor in Berlin and with the transfer of the local school system.

I have assigned Mr. Whitcher to have general oversight and supervision of practical arts education throughout the public school system of the state. This includes: The inspection of practical arts work in the secondary schools approved as such by the department; the guidance and development of that work by conferences with principals, superintendents and executive boards; the similar guidance and development of related work in the elementary schools; the encouraging of new undertakings through conferences, lectures, etc.

Miss Huntress has been placed in complete charge of the office, handling the correspondence; directing the clerks; overseeing the printing; preparing, distributing and collecting the blanks for district and institutional returns; compiling statistics, and all the varied routine which the office must be organized to handle. Miss Huntress also has immediate charge of the relations of the department to the boards of medical examiners and to the board of nurse examiners.

To Mr. Brown has been assigned the division of inspection, examination and investigation. This includes: First, the inspection of secondary schools which are by law approved by the superintendent of public instruction, and of the normal schools upon which the superintendent is required by law to report; second, the examination of teachers, including the preparation of examination questions and the correction of papers (the registration of applicants, the transmission of papers to proctors and the collection of papers in return is the duty of Miss Seavey, a clerk in the office); third, the investigation of school systems when required and of current pedagogical problems.

I have retained for myself: First, general oversight of all the activities of the department; second, immediate oversight and direction of (1) the institute system, (2) the child labor and compulsory attendance service, (3) the visiting and inspection of the work of superintendents, and

(4) all the major current problems of the public school system, such as, the past year, the college question.

Public Lectures.

An old statute provides that the superintendent shall lecture on educational matters in as many different towns and cities in the state during his term of office as his other duties will permit. That this statute is still a response to a real need is evidenced by the fact that there have been more calls for such lectures during the past year than the superintendent and the three deputies combined could care for.

During the biennium I have personally spoken on educational topics fifty-five times in thirty-nine different towns and cities in the state. This is exclusive of institute lectures and occasional informal addresses.

During the same period Mr. Whitcher has similarly spoken eighteen times in seventeen different towns and cities; Miss Huntress seven times in seven different places; and Mr. Brown fourteen times in twelve different places. In addition to the above Mr. John Bishop, factory inspector, has acceptably represented the department, speaking on child labor and kindred matters.

Addresses have dealt with a variety of phases of educational work, lectures on school buildings and on the introduction of education in the practical arts being most frequently called for. Many of the lectures have been illustrated with the stereopticon.

School Inspections.

A much greater amount of inspection of actual school conditions has been possible during the past year than ever before, inasmuch as there have been three officers in the department available for that purpose. Nevertheless, there remains at the end of the year a large amount of territory unvisited. I feel that every school district in the

state ought to be visited and inspected at least once a year by a representative of the state education office. Schools are required by law to be maintained. Every school district is a corporation created for the purpose of putting in force the laws of the state relating to public education. There has thus been created a great piece of machinery known as the public school system, the main purpose of which is the preservation of true freedom in a democratic republic. The state requires all parents to send their children to school. Hence, not only good administration of a great public interest, but justice to those citizens who are parents, requires the state to inspect the working of her own creation and to enforce in letter and in spirit the laws which she has enacted for its government and management.

During the biennium I have personally visited about one hundred and sixty different elementary and eighteen different secondary schools. The bulk of this visiting has been done during the past year.

During the school year Mr. Whitcher has visited twenty-five different elementary and thirty-two different secondary schools. During the same period Mr. Brown has visited forty-three different elementary and sixty-six different secondary schools. In the cases of both Messrs. Brown and Whitcher the same school has also frequently been visited several times.

Mr. Brown has made during the past year six thorough visits of inspection to each of the normal schools. Mr. Whitcher and myself have each visited each institution several times.

School Surveys.

Under the head of inspection should be included several school surveys made at the request of local school boards, accompanied by report.

In the spring of 1913, at the request of the school board,

I made a careful study of the school system of the city of Rochester. A report was made to the school board and by them published in the local press.

In the fall of the same year, at the request of the school board of the Union School District, the department made a careful study and report upon the Concord High School, Mr. Brown being assigned to the work.

Less complete studies have been made and reports submitted to local school boards upon the schools of the following districts:

Enfield
Gilmanton
Landaff
Lebanon—Town
Lebanon—High School
Lebanon—West
Lisbon—Town
Lisbon—Special
Lisbon—Sugar Hill
Marlborough
Penacook
Walpole

Conferences with School Officers.

During the fall of 1913, I arranged and held sixteen conferences with school officers at different points throughout the state as follows:

Coos County, Lancaster, October 1.
Ammonoosuc Valley, Woodsville, October 2.
Pemigewasset Valley, Plymouth, October 3.
North Carroll County, Conway, October 7.
South Carroll County, Sanbornville, October 8.
Strafford County, Dover, October 9.
East Rockingham County, Exeter, October 10.
Mascoma Valley, Lebanon, October 14.
Sullivan County, Newport, October 15.
West Merrimack County, Concord, October 16.
Cheshire County, Keene, October 21.
Contoocook Valley, Peterborough, October 22.

East Hillsborough County, Manchester, October 23.
Belknap County, Laconia, October 24.
West Rockingham County, Salem, October 28.
East Merrimack County, Pittsfield, October 29.

The attendance at these meetings varied from a small group of a half dozen or less to a fairly complete representation from all school districts concerned in the gathering. The table of attendance at these meetings is a not unfair index of the interest in education prevailing in different communities and different parts of the state. See Institutes, chapter VI. Altogether, somewhat more than 25% of all the school board members in the state were present at these meetings. I was assisted by the deputies and by the principals of the state normal schools, Mr. Silver, of Plymouth, being present at eleven of the fifteen meetings. While this series of conferences was, I think, productive of good results in the direction of a better understanding of official duties and an enhanced spirit of co-operation between the local and the state authorities, it made large and perhaps unwarranted demands upon the time and energies of those taking part.

In the spring of 1914 a state wide conference was held at Concord. While naturally not so well attended as the fall series taken together, this conference more than made up by the greater interest aroused and by the better results. It is noteworthy that this meeting was attended by school board members from points as far remote from Concord as Pittsburg and Chesterfield.

In addition to the above, either the state superintendent or one of the deputies has met thirty-eight different school boards in their home towns for conference in regard to local problems. There should, of course, be added a still larger number of local boards which have journeyed to Concord to meet the state superintendent with regard to

local affairs. No mention is made of conference by correspondence which would include nearly all other boards.

Institutes.

The department has arranged for and conducted sixty-seven institutes of all classes.

Examinations.

Four teachers' examinations, four examinations for physicians and surgeons, and four examinations for the registration of trained nurses have been held.

Medical Inspection.

I have prepared the necessary blank forms for the administration of the medical inspection act passed by the last session of the General Court.

Hearings.

There have been during the biennium two cases requiring a public hearing by the superintendent of public instruction on appeal from decision of local school boards, to wit: *Bickford et als* vs. *School Board of Bow* and *Newton* vs. *School Board of Jefferson.*

Normal Schools.

I have attended twenty trustees' meetings and have acted as secretary of the board throughout the two years. I have also served as chairman of a special committee having charge of the oversight of Normal Hall at the Plymouth school, as chairman of the building committee in charge of new construction at Keene, and as chairman of a special committee on teachers.

Other Trusteeships.

I have also served as a member of the state committee for the award of Rhodes scholarships in Oxford University. In conjunction with the president of Dartmouth College, I have served as a committee for the nomination of state scholars in Dartmouth College.

Publications.

The following publications have been prepared and issued during the biennium:

Publication.	*Author.*
1. N. H. School Report for 1911-12,	Morrison
2. The School Laws compiled and brought down to date,	Huntress

The following institute circulars, series 1913-14:

1. Suggestions to Domestic Arts Teachers—Canning, Preserving, Pickling, etc.,	Whitcher
2. Summary of Course Requirements for Approval of Secondary School,	Morrison
3. Medical Inspection Act,	
4. Suggestions to Vocational Teachers for an Educational Exhibit,	Whitcher
5. Cooking as Means and End in Education,	Whitcher
6. Efficiency of School Systems as Measured by Proportion of Pupils in Higher Institutions,	Morrison
7. To Test the Eyesight,	Morrison
8. The Care of Children's Hair and Scalp,	Morrison
9. English Composition,	Morrison
10. Stock Feeding,	Whitcher

11.	Work Done in Secondary Schools for Year Ending July 15, 1913,	Morrison
12.	Transportation of School Children,	Morrison
13.	Need of Better High School Facilities for Some Towns,	Morrison
14.	Home Mixed Fertilizers,	Whitcher
15.	Prevention of Colds in Public Schools,	*Wallace
16.	School and Home Gardening for Grade Pupils,	Whitcher
17.	Garden Projects for High Schools,	Whitcher
18.	Insects That Destroy Farm Crops,	Whitcher
19.	Ten Serious Plant Diseases,	Whitcher
20.	Prices Paid for Supplies for School Year 1913-14,	Morrison

General Office Work.

The outgoing correspondence of the office has been of the following dimensions:

First-class pieces per working day,	45
Second-class pieces per working day,	28
Express pieces per working day,	2

The office has prepared, distributed, collected and arranged forty-six blanks for returns of local officers as required by law in each of the two years.

The office force has consisted of the following:

Harriet L. Huntress, secretary, and deputy state superintendent (from September 1, 1913), in charge.
Mabel L. Seavey, registrar and record clerk.
Marjorie C. Leavitt, stenographer and typist.
Priscilla A. Burbank, stenographer and typist, part time.

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CHAPTER II.

Child Labor.

The child labor act of the state is administered in the main by this department. That is to say, all blanks and documentary forms used in the administration of the law are prescribed by the superintendent of public instruction; certificates of employment are issued by the local superintendent of schools; factories and other places of employment are inspected by (1) the local truant officers and (2) by inspectors attached to the department of public instruction; and finally, violations of the act may be prosecuted by the agents of the department, employing special legal counsel for the purpose if necessary.

Amendments to Act of 1911.

The Child Labor Act of 1911 was summarized in my last biennial report. In two important particulars the act was amended in 1913, and a further amendment to the compulsory attendance law in 1913 operates substantially as an amendment to the Child Labor Act.

In my last report, I made the following recommendations:

I. Prohibit the employment of children in the specified industries at any time under the age of fourteen.

II. Prohibit the sale of newspapers, magazines, etc., by any child under the age of fourteen.

The first recommendation was enacted into law by the General Court of 1913, thus bringing our child labor legislation into line with that of the most enlightened states in this respect. Previously we had had a twelve-year minimum operative during the vacations of the public schools.

The second recommendation resulted in an amendment of the law which was satisfactory to the newspaper and

news agency people and was satisfactory from the standpoint of child welfare so far as it went, but it did not in any sense touch the root of the matter. The amended act allows boys fourteen years of age or over to deliver newspapers on delivery routes after five o'clock a. m. and boys twelve years of age or over to deliver on routes between four and eight o'clock p. m.

Newsboys.

The law still allows boys ten years of age to vend newspapers on the streets.

So far as the delivery service goes, no great amount of harm in the aggregate is done, unless you believe, as does the writer, that the legalized debauchery of even a single child is indefensible. The great mass of the delivery is made by boys who reach the residential sections of our cities and large towns and for these the law is probably all that can be desired. In fact New Hampshire has no cities large enough to have developed extensive systems of commercialized vice, and it is this element which is the peculiar menace of the whole messenger service. Nevertheless, the law does authorize the employment of boys of twelve in service which takes them into saloons in some of our cities and into resorts in which they become acquainted with vice at an age at which the evil results are well-nigh inevitable.

A much worse case is that of allowing little boys of ten to sell papers on the streets without restriction, and the lack of the systematic control in this section, which is applied by the other sections of the act, means practically that not only are boys of ten selling papers upon the street but boys of nine, eight, or any age at which they are able to get about.

Many citizens, I am aware, look upon attempts to regulate child labor of this sort as those of hypersensitive philanthropists, to put their condemnation mildly. They say

here as always, "Let the boy earn a little money." "Many of our ablest men have begun by selling papers." "It will teach the boy self-reliance." Such people are ordinarily well-meaning, but in this case apparently wholly unacquainted with the facts. Few if any such citizens could be persuaded to condone any practice the tendency of which they knew to be child abuse or the production of bad citizens. Yet both these things result in large measure from this lax condition of the law.

The following case, which is typical of many, will serve to illustrate the abuse growing out of this phase of child labor.

Early in April the writer was in attendance at the meeting of the State Conference of Charities and Corrections in the city of Nashua. The afternoon and evening were cold and stormy. At the supper hour two or three small boys were begging men in the hotel lobby to buy papers, usually receiving an indifferent or brutal response. I purchased papers of one of the little fellows and got his story. He was a child of foreign-born parentage, attending the public schools. He was required to sell papers and was punished at home if he did not. Here he was, cold and wet and weary and supperless, bound to sell those papers somehow before going home to supper and to bed. His pleas for patronage were pathetic but were probably looked upon by the patrons of the hotel as made up for the occasion. Later in the evening, a similar case turned up with a similar outcome. The next day Inspector Mitchell followed up the first case. He substantiated the child's story and ascertained that he was but little past nine years of age. He found a thrifty home with no evidence of poverty. The mother was in a word making the little fellow sell papers, and punishing him if he did not succeed, "for what there was in it." This case is no doubt strictly typical of many in the cities of the state. Regardless of its bearing upon the future of this boy as a

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citizen, he was in the present being made a child slave to an avaricious parent, a parent entirely without American ideas of justice and mercy and parenthood.

I may remark in passing, that this case is typical in another way. The case of this child might have been used, as many such have been, as an illustration of the poverty of homes and the necessary dependence of parents upon the earnings of their children. In most such cases the facts show a home which is getting along very well, but which is grasping and greedy to the last degree. The few cases in which parents really do need the help of their children are very apt to be those in which the parents are heroically struggling to keep their children in school and to give them a fair childhood.

It is quite possible that a considerable percentage of all these cases of ten-year-olds selling papers on the streets would show upon investigation a similar history. A large percentage, however, are simply manifestations of the roving and vagrant spirit characteristic of that period of child life. These boys are to be found in swarms upon the streets of every city except Manchester between the close of school in the afternoon and an indefinite period in the evening. They are exposed to all the corrupting influences of the streets, they easily become young rowdies and they carry the education of the street into the public schools the next day and communicate it to the children of the community. No doubt, if the local ordinance of Manchester were made law, the influence of the street upon young children would still continue, but a very important source of evil would be dried up.

A fitting legal restriction would be an amendment of the law so as to prohibit children under the age of fourteen from selling papers upon the street and to further require each newsboy to secure from the superintendent of schools a badge, due proof of age having been filed.

Bootblack.

The law is further lax in that it permits children ten years of age and over to work as bootblacks. It does not appear in practice, however, that any particular evil results. Few, if any, cases exist in the state in which children of this age are working as bootblacks. The reason probably is that this vocation has become a well organized industry carried on by adults, and minors, if they enter the industry at all, must do so as employes. The *employment* of children under fourteen years of age is prohibited.

In this connection, I wish to say that other states have had more or less trouble with the importation and employment of foreign-born children in the bootblack industry, in many cases the condition of such children amounting practically to slavery. I have several times caused special investigations to be made of the conditions of employment in the industry but never has any widespread violation or evasion of our law been disclosed.

Summary of Child Labor Laws of Other States.

The New Hampshire law is similar and in most respects identical with the child labor acts of most of the northern states. The exploitation of children in the industries has so thoroughly outraged the best sense of decent men and women throughout the nation that those states which still tolerate such exploitation or permit the existence of lax laws are in a sense pilloried by the principal publicity organs before the enlightened public opinion of the nation. For comparative purposes I here summarize the cardinal features of the existing child labor acts of the several states:

TABLE NO. 1.

Summary of Child Labor Laws.

REVISED TO INCLUDE ACTS OF 1913.

State.	*Min'm Age.*	*Hours per Week.*	*Proof of Age.*	*Remarks.*
Alabama,	12	60	Affidavit.	
Alaska,	12	..		
Arizona,	14	48	Uniform act requirement.	320 half-days required.
Arkansas,	14	60	Affidavit.	Many exceptions and exemptions.
California,	15	48	"Satisfactory evidence" —not affidavit.	
Colorado,	14	48	Affidavit.	
Connecticut,	*14	55		
Delaware,	14	54	Documentary proof.	320 half-days required.
Dis't of Columbia,	14	48	Uniform act requirement.	
Florida,	14	54	Satisfactory proof.	
Georgia,	12	60	Affidavit.	
Hawaii,	13	..	No provision.	
Idaho,	12	54	Affidavit.	
Illinois,	14	48	Certificate of birth.	
Indiana,	14	48	Affidavit supported.	
Iowa,	14	60	Satisfactory proof other than affidavit.	
Kansas,	*14	48	Certificate of birth.	
Kentucky,	*14	60	Uniform act requirement.	200 half-days required.
Louisiana,	14	60	Certificate of birth or baptism.	
Maine,	14	58	Signed statement of parent.	
Maryland,	12	10 hrs. day.	Uniform act requirement.	
Massachusetts,	14	54	Documentary evidence.	
Michigan,	14	54	Uniform act requirement.	
Minnesota,	14	48	Affidavit.	
Mississippi,	12	48	Affidavit.	
Missouri,	12	48	Affidavit.	
Montana,	14	48	Satisfactory proof.	
Nebraska,	14	48	Birth record.	¾ previous year at school.
Nevada,	*14	48	———	Must have completed 8th grade.
New Hampshire,	14	55	Uniform act requirement.	300 half-days required.
New Jersey,	14	55	Affidavit.	
New Mexico,	12	..	———	
New York,	14	48	Documentary evidence.	
North Carolina,	12	60	Written statement of parent.	
North Dakota,	14	60	Affidavit.	240-half days required.
Ohio,	15	48	Documentary proof.	
Oklahoma,	14	48	Affidavit.	
Oregon,	14	48	Uniform act requirement.	
Pennsylvania,	14	60	Affidavit.	
Rhode Island,	14	54	Documentary evidence.	
South Carolina,	12	60	———	
South Dakota,	15	10 hrs. day.	———	
Tennessee,	14	58	Affidavit.	
Texas,	15	No limit.	———	
Utah,	14	54	Satisfactory proof.	
Vermont,	*16	50	Certificate of parent.	Unless 8th grade completed.
Virginia,	14	10 hrs. day.	———	
Washington,	14	48	———	
West Virginia,	14	No limit.	Documentary proof.	
Wisconsin,	14	48	Documentary proof.	
Wyoming,	14	48	———	

* While school is in session.

Inspection.

There has been no change in the inspecting force. The factory inspectors are Robert J. Mitchell and John Bishop. The law authorizes the employment of three inspectors, but I have never seen reason to believe that two are not adequate to our needs, and, during the greater part of the past year, I have utilized the inspectors for compulsory attendance work as well. As the public has become more familiar with the law and as it has become an accepted part of the general scheme of things, inspection has become better organized, more complete, and needful of less time.

TABLE NO. 2.

Factory Inspection, July 15, 1912, to July 15, 1914.

Town or City.	Date.	Under 14.	Under 16.	14-16 cert.	14-16 not cert.	No. of establishments.
Alstead	May, 1914	0	0	0	0	2
Andover	April, 1913	2	0	1	1	1
	Jan., 1914	0	0	0	0	2
Antrim	April, 1913	2	0	2	0	6
	Nov., 1914	0	0	0	0	6
Ashland	Mar., 1913	5	0	5	0	15
	Dec., 1913	2	0	2	0	18
	Mar., 1914	4	0	4	0	23
Auburn	Jan., 1913	0	0	0	0	2
Bartlett	June, 1913	6	1	5	0	3
	Oct., 1913	4	0	3	1	8
	May, 1914	2	0	2	0	6
Bath	June, 1914	0	0	0	0	7
Belmont	Oct., 1912	6	0	6	0	2
	April, 1913	3	0	3	0	8
	Dec., 1913	5	0	5	0	9
	Mar., 1914	1	0	1	0	2
Bennington	May, 1913	3	0	1	2	5
	Oct., 1913	1	0	1	0	7
	Mar., 1914	0	0	0	0	6
Benton	Feb., 1914	0	0	0	0	0
Berlin	Nov., 1912	7	0	5	2	24
	April, 1913	14	0	14	0	64
	Oct., 1913	14	0	14	0	57
	May, 1914	5	0	5	0	53
Boscawen	June, 1914	0	0	0	0	0
Brentwood	Oct., 1913	2	0	0	2	7
	May, 1914	1	0	1	0	7
Bristol	April, 1913	1	0	1	0	10
Campton	June, 1914	0	0	0	0	3
Canaan	May, 1913	0	0	0	0	6
	Jan., 1914	0	0	0	0	4
Candia	Jan., 1913	0	0	0	0	2
Canterbury	Oct., 1912	0	0	0	0	..
Center Harbor	Oct., 1912	0	0	0	0	..
	Mar., 1914	0	0	0	0	..
Charlestown	May, 1913	1	0	0	1	4
	Feb., 1914	0	0	0	0	4

TABLE NO. 2.—*Continued.*

Town or City.	Date.	Under 14.	Under 16.	14-16 cert.	14-16 not cert.	No. of establishments.
Chesterfield	Sept., 1912	0	0	0	0	1
Chichester	Oct., 1912	0	0	0	0	..
Claremont	Mar., 1913	40	0	38	2	28
	July, 1913	54	2	45	7	35
	Nov., 1913	26	0	26	0	35
	Jan., 1914	16	0	16	0	39
	June, 1914	22	0	19	3	43
Colebrook	Nov., 1912	0	0	0	0	5
Concord	Dec., 1912	24	0	23	1	50
	Mar., 1913	37	0	37	0	61
	Aug., 1913	17	2	14	1	71
	Nov., 1913	31	0	31	0	74
	Mar., 1914	9	0	9	0	70
Contoocook	Mar., 1913	0	0	0	0	5
(Hopkinton)	Mar., 1914	0	0	0	0	5
Conway	June, 1913	6	0	4	2	17
	Oct., 1913	4	0	2	2	20
	May, 1914	0	0	0	0	13
Cornish	Oct., 1912	0	0	0	0	0
Croydon	Oct., 1912	0	0	0	0	0
Danbury	Oct., 1912	0	0	0	0	1
	April, 1914	0	0	0	0	2
Derry	May, 1913	0	0	0	0	5
Derry	Oct., 1912	50	0	47	3	18
	Mar., 1913	50	0	50	0	21
	Aug., 1913	69	0	65	4	31
	Oct., 1913	40	0	40	0	29
	Jan., 1914	32	0	32	0	31
	Mar., 1914	34	0	34	0	32
Dorchester	June, 1913	0	0	0	0	0
Dover	Aug., 1912	111	0	110	1	53
	Jan., 1913	82	0	80	2	43
	July, 1913	82	0	81	1	76
	Nov., 1913	70	0	70	0	73
	Feb., 1914	66	0	66	0	60
Dummer	June, 1914	0	0	0	0	3
Dublin	Sept., 1912	0	0	0	0	0
East Kingston	Oct., 1912	0	0	0	0	..
Easton	Jan., 1914	0	0	0	0	2
Enfield	April, 1913	4	0	3	1	6
	Jan., 1914	0	0	0	0	8
Epping	Sept., 1913	2	0	1	1	18
	Jan., 1914	2	0	2	0	15
Epsom	Oct., 1912	1	0	0	1	2
	April, 1913	1	0	1	0	3
Exeter	Nov., 1912	28	0	28	0	17
	Feb., 1913	20	0	18	2	23
	June, 1913	37	0	36	1	33
	Oct., 1913	24	0	23	1	36
	Jan., 1914	11	0	10	1	31
	June, 1914	14	1	12	1	36
Farmington	Feb., 1913	7	0	7	0	20
	Sept., 1913	1	0	1	0	19
	Jan., 1914	0	0	0	0	21
Fitzwilliam	Sept., 1912	0	0	0	0	5
Franklin	Mar., 1913	55	0	53	2	16
	June, 1913	75	0	72	3	24
	Nov., 1913	46	0	45	1	23
	Feb., 1914	39	0	39	0	26
	July, 1914	41	0	41	0	21
Fremont	Mar., 1914	0	0	0	0	5
Gilmanton	Oct., 1912	0	0	0	0	..
Gilsum	Sept., 1913	0	0	0	0	3
	May, 1914	0	0	0	0	2

TABLE NO. 2.—*Continued.*

Town or City.	Date.	Under 14.	Under 16.	14-16 cert.	14-16 not cert.	No. of establishments.
Goffstown	April, 1913	0	0	0	0	5
	Jan., 1914	0	0	0	0	3
Gorham	Nov., 1912	0	0	0	0	6
	April, 1913	0	0	0	0	16
	June, 1914	0	0	0	0	13
Goshen	Jan., 1914	0	0	0	0	1
Grafton	Oct., 1912	0	0	0	0	1
Grantham	Oct., 1912	0	0	0	0	..
Greenfield	Jan., 1914	0	0	0	0	0
Greenland	Sept., 1912	0	0	0	0	2
Greenville and New Ipswich	Jan., 1913	24	0	24	0	8
	May, 1913	37	2	32	3	9
	Sept., 1913	14	0	13	1	10
	Jan., 1914	16	0	16	0	12
Groton	June, 1913	0	0	0	0	2
Groveton	April, 1913	0	0	0	0	12
	June, 1914	0	0	0	0	18
Hampstead	May, 1913	0	0	0	0	4
Hampton	Nov., 1912	0	0	0	0	..
Hampton Falls	Nov., 1912	0	0	0	0	..
Harrisville	Sept., 1912	3	0	1	2	3
	Oct., 1913	5	0	3	2	3
Haverhill	June, 1914	0	0	0	0	13
Henniker	May, 1913	0	0	0	0	8
	Mar., 1914	0	0	0	0	8
Hill	Mar., 1914	2	0	2	0	4
	Oct., 1912	14	1	12	1	5
Hillsborough	April, 1913	14	0	14	0	9
	Oct., 1913	7	0	6	1	13
	Mar., 1914	3	0	3	0	9
Hinsdale	Sept., 1912	5	0	5	0	9
	Mar., 1913	8	0	4	4	10
	Oct., 1913	1	0	1	0	14
	April, 1914	2	0	1	1	16
Jackson	June, 1913	0	0	0	0	1
Jaffrey	Nov., 1912	11	0	11	0	5
	Mar., 1913	21	0	21	0	6
	Oct., 1913	15	0	15	0	15
	May, 1914	13	0	13	0	10
Keene	Sept., 1912	35	0	34	1	41
	Mar., 1913	45	0	37	8	41
	July, 1913	48	1	46	1	65
	Sept., 1913	22	0	22	0	55
	Jan., 1914	12	0	12	0	53
	June, 1914	18	0	16	2	70
Kensington	Nov., 1912	0	0	0	0	..
Kingston	Oct., 1912	0	0	0	0	4
Laconia	Oct., 1912	31	0	31	0	31
	Mar., 1913	45	0	43	2	47
	July, 1913	80	0	75	5	50
	Nov., 1913	37	0	34	3	43
	Mar., 1914	30	0	29	1	46
	July, 1914	55	0	52	3	47
Lancaster	Nov., 1912	0	0	0	0	6
Langdon	Sept., 1912	0	0	0	0	1
Lebanon	Nov., 1912	14	0	13	1	19
	April, 1913	23	0	21	2	24
	Dec., 1913	13	0	10	3	27
	May, 1914	15	0	13	2	31
	July, 1914	13	0	13	0	25
Lincoln	April, 1913	0	0	0	0	16
	July, 1913	1	0	0	1	9
	Mar., 1914	0	0	0	0	12

TABLE NO. 2.—*Continued.*

Town or City.	Date.	Under 14.	Under 16.	14-16 cert.	14-16 not cert.	No. of establishments.
Lisbon	April, 1913	0	0	0	0	16
	Oct., 1913	0	0	0	0	14
	June, 1914	0	0	0	0	20
Littleton	Nov., 1912	32	0	29	3	12
	April, 1913	37	0	37	0	30
	Aug., 1913	43	0	41	2	23
	Dec., 1913	27	0	26	1	37
	May, 1914	16	0	16	0	32
Londonderry	Oct., 1912	0	0	0	0	4
Lyman	Jan., 1914	0	0	0	0	1
Lyme	Feb., 1914	0	0	0	0	0
Lyndeborough	Jan., 1914	0	0	0	0	0
Manchester	Aug., 1912	920	0	905	15	118
	Dec., 1912	728	2	708	18	120
	May, 1913	762	0	755	7	190
	Aug., 1913	960	1	944	15	155
	Dec., 1913	536	0	527	9	151
	May, 1914	391	0	389	2	181
Marlborough	Sept., 1912	13	0	13	0	8
	Mar., 1913	13	0	13	0	7
	Oct., 1913	7	0	7	0	13
	May, 1914	8	0	7	1	11
Meredith	Oct., 1912	0	0	0	0	4
	Mar., 1914	3	0	0	3	8
Merrimack	April, 1913	3	0	0	3	6
	May, 1914	7	0	7	0	13
Milan	June, 1914	0	0	0	0	..
Milford	Nov., 1912	20	0	18	2	17
	May, 1913	18	0	15	3	32
	May, 1913	31	0	27	4	39
	Sept., 1913	16	0	16	0	45
	April, 1914	13	0	13	0	42
Milton	June, 1913	2	0	1	1	7
	May, 1914	0	0	0	0	18
Moultonborough	June, 1913	1	0	0	1	2
	Mar., 1914	0	0	0	0	2
Nashua	Nov., 1912	153	0	148	5	92
	Mar., 1913	154	0	153	1	115
	Aug., 1913	207	0	194	13	94
	Dec., 1913	110	0	110	0	155
	April, 1914	83	0	81	2	182
Newbury	Oct., 1912	0	0	0	0	..
Newcastle	Nov., 1912	0	0	0	0	..
New Durham	June, 1913	0	0	0	0	4
Newfields	Sept., 1912	0	0	0	0	4
	Jan., 1914	0	0	0	0	4
Newington	Nov., 1912	0	0	0	0	..
New Hampton	Nov., 1912	0	0	0	0	..
New Ipswich	Oct., 1913	4	0	3	1	5
New London	Oct., 1912	0	0	0	0	..
Newmarket	Sept., 1912	44	0	44	0	11
	Jan., 1913	54	0	51	3	9
	July, 1913	73	0	73	0	10
	Nov., 1913	49	0	48	1	27
Newport	Mar., 1913	10	0	10	0	14
	Nov., 1913	10	0	9	1	22
	Mar., 1914	2	0	2	0	14
	July, 1914	3	0	3	0	20
Newton	Sept., 1912	4	0	1	3	13
	Feb., 1913	1	0	1	0	13
	Sept., 1913	0	0	0	0	10
	Mar., 1914	1	0	1	0	14
North Hampton	Nov., 1912	0	0	0	0	..
Northwood	May, 1913	1	0	0	1	2
	Sept., 1913	0	0	0	0	7

TABLE NO. 2.—*Continued.*

Town or City.	Date.	Under 14.	Under 16.	14-16 cert.	14-16 not cert.	No. of establishments.
Orford	June, 1913	0	0	0	0	3
Ossipee	Sept., 1913	0	0	0	0	2
	June, 1914	0	0	0	0	3
Penacook	Nov., 1912	22	0	22	0	7
	Feb., 1913	27	0	24	3	7
	Dec., 1913	11	0	10	1	8
	April, 1914	11	0	11	0	11
Peterborough	Nov., 1912	2	0	2	0	10
	May, 1913	3	0	3	0	17
	Oct., 1913	2	0	2	0	15
	Mar., 1914	1	0	1	0	12
Piermont	June, 1913	0	0	0	0	3
	Feb., 1914	0	0	0	0	0
Pittsfield	Oct., 1912	24	0	23	1	6
	April, 1913	19	0	19	0	6
	July, 1913	24	2	19	3	7
	Dec., 1913	13	0	12	1	12
	July, 1914	14	0	13	1	9
Plainfield	Oct., 1912	0	0	0	0	0
Plaistow	Sept., 1912	0	0	0	0	5
	Mar., 1914	0	0	0	0	5
Plymouth	Nov., 1912	2	0	1	1	10
	April, 1913	2	0	2	0	11
	Mar., 1914	0	0	0	0	17
Portsmouth	Sept., 1912	67	0	47	20	87
	Feb., 1913	54	0	53	1	77
	June, 1913	52	0	51	1	113
	Nov., 1913	28	0	28	0	94
	Feb., 1914	24	0	23	1	96
Raymond	Sept., 1913	3	0	3	0	5
	Jan., 1914	1	0	1	0	7
	June, 1914	2	0	2	0	9
Richmond	Sept., 1912	1	0	0	1	1
Rindge	Sept., 1912	0	0	0	0	3
	May, 1914	0	0	0	0	2
Rochester	Aug., 1912	91	0	82	9	68
	Jan., 1913	73	0	71	2	59
	June, 1913	75	0	72	3	106
	Nov., 1913	55	0	54	1	68
	Feb., 1914	48	0	48	0	91
Rollinsford	Jan., 1913	17	0	15	2	9
	July, 1913	16	0	15	1	15
	Nov., 1913	10	0	10	0	13
	Jan., 1914	7	0	7	0	13
	June, 1914	10	0	10	0	13
Rye	Nov., 1912	0	0	0	0	..
Salem	May, 1913	1	0	0	1	9
	Sept., 1913	0	0	0	0	10
	May, 1914	0	0	0	0	10
Sandown	Mar., 1914	0	0	0	0	5
Sandwich	June, 1914	0	0	0	0	3
Seabrook	Nov., 1912	0	0	0	0	2
	Nov., 1913	0	0	0	0	6
	May, 1914	0	0	0	0	2
Somersworth	Jan., 1913	112	0	108	4	24
	July, 1913	130	0	124	6	66
	Nov., 1913	82	0	82	0	57
	Jan., 1914	73	0	73	0	50
	July, 1914	94	0	92	2	67
Springfield	Oct., 1912	0	0	0	0	..
Stewartstown	June, 1914	0	0	0	0	8
Stratham	Oct., 1912	0	0	0	0	..
Sullivan	Sept., 1912	0	0	0	0	1
Sunapee	Mar., 1913	2	0	2	0	11
	Mar., 1914	4	0	4	0	7

TABLE NO. 2.—*Continued.*

Town or City.	Date.	Under 14.	Under 16.	14-16 cert.	14-16 not cert.	No. of establishments.
Suncook	Feb., 1913	72	0	71	1	8
	June, 1913	94	0	93	1	9
	Nov., 1913	52	0	52	0	16
	Feb., 1914	11	0	11	0	12
	June, 1914	55	3	45	7	12
Sutton	Oct., 1912	0	0	0	0	..
Swanzey	Sept., 1912	3	1	1	1	4
	Mar., 1913	4	0	2	2	6
	Oct., 1913	4	0	3	1	9
	April, 1914	2	0	2	0	8
Tamworth	May, 1914	1	0	0	1	8
Thornton	June, 1914	0	0	0	0	3
Tilton and Northfield	Oct., 1912	4	0	4	0	16
	Feb., 1913	6	0	6	0	11
	Dec., 1913	2	0	2	0	36
	Mar., 1914	0	0	0	0	14
Troy	Mar., 1913	18	0	18	0	5
	Oct., 1913	3	0	3	0	5
	May, 1914	7	0	6	1	8
Unity	May, 1914	0	0	0	0	0
Wakefield	June, 1913	3	0	2	1	12
	May, 1914	1	0	0	1	20
Walpole	Sept., 1912	0	0	0	0	1
Weare	Jan., 1914	2	0	2	0	4
Westmoreland	Sept., 1912	0	0	0	0	0
	June, 1914	0	0	0	0	0
Wilmot	Oct., 1912	0	0	0	0	..
Wilton	May, 1913	3	0	3	0	11
	Sept., 1913	2	0	1	1	16
	April, 1914	0	0	0	0	18
Winchester	Sept., 1912	5	0	5	0	8
	Mar., 1913	10	0	9	1	6
	Oct., 1913	8	0	5	3	20
	April, 1914	6	0	5	1	15
Wolfeboro	June, 1913	3	0	2	1	19
	May, 1914	0	0	0	0	29
Woodsville	Feb., 1913	2	0	0	2	4
	Dec., 1913	0	0	0	0	15

Street Trades and Night Work.

On every factory inspection of a town or city an inspection of street trades and conditions of employment during the night and in the evening and early morning hours is made. Very few instances of violation have been found, and a large proportion of those found have been prosecuted.

Prosecutions.

The prosecutions for violation of the law have been more numerous the past year than heretofore, although the violations have been growing steadily less. As the

employers of labor have become more familiar with the law, there has been less and less excuse for violation and therefore more reason for prosecution. We have not, however, prosecuted for purely technical violations. In every case, conviction has been secured. The record of cases follows:

Alstead.

Walpole District Court: O'Neil, J.
Defendant: Warren A. French.
Complaint: Illegal employment of Clarence H. Shelley, Surry.
Plea: Guilty. Sentence: $10 fine and costs of $4.62.
Represented by Orville E. Cain, Esq., County Solicitor.

Claremont.

District Court, Johnston, J.
Defendant: Frank Burke.
Complaint: Employing Dana Greenwood, 15, after 7 p. m. in a bowling alley.
Plea: Nolo. Sentence, $5 fine and costs of $4.62.
Represented by Inspector Bishop.

Derry.

Derry Police Court: Abbot, J.
Defendant: Daniel Casey.
Complaint: Illegal employment of Joseph Oulett in bowling alley.
Plea: Nolo. Sentence: $5 fine and costs of $4.62.
Represented by Robert Jackson, Esq.

Derry Police Court: Abbot, J.
Defendant: Charles Huson.
Complaint: Illegal employment of Henry Philip Paris in shoe factory.
Plea: Nolo. Sentence: $5 fine and costs of $4.62.
Represented by Robert Jackson, Esq.

Derry Police Court.
Defendant: Ephraim Martin, Jr.
Complaint: Illegal employment of Heliodore Boucher.
Plea: Nolo. Sentence: $5 fine and costs of $4.62.
Represented by Robert Jackson, Esq.

Franklin.

District Court: Welch, A. J.
Defendant: Zepherin Houle.
Complaint: Allowing minor to work on fraudulent certificate.
Plea: Guilty. Sentence: $10 fine and costs of $5.62 and 30 days in jail—jail sentence suspended.
Represented by Inspector Bishop.

Keene.

District Court: Wolfe, A. J.
Defendant: Mrs. Rosabel B. Hunter.
Complaint: Employing girls as waitresses out of hours after being warned.
Plea: Guilty. Sentence: $5 fine and costs of $5.30.
Represented by Inspector Bishop.

District Court: Wolfe, A. J.
Defendant: Eldridge L. Campbell.
Complaint: Employing two boys under 16 at a theatre after 7 p. m.
Plea: Guilty. Sentence: $10 fine and costs of $5.75.
Represented by Inspector Bishop.

District Court: Wolfe, A. J.
Defendant: Eugene M. Keyes.
Complaint: Employing Blanche Dimanche without certificate required by law. Factory.
Plea: Nolo. Sentence: $15 and costs of $5.30.
Represented by Inspector Bishop.

Laconia.

District Court: Peaslee, J.
Defendant: Alexander Benard.
Complaint: Allowing minor son to work on a fraudulent certificate.
Plea: Not guilty.
Finding: Guilty. Sentence, $5 and costs of $4.62.
Represented by A. A. Tyler, Esq.

Manchester.

Police Court: Lovering, J.
Defendant: Walter Sullivan.
Complaint: Employing minor without certificate. Store.
Plea: Nolo. Sentence, $10 fine and costs of $4.62.
Represented by Davis, Truant Officer.

District Court: Senter, J.
Defendant: Vincent and Vadnais.
Complaint: Employing Dana Benoit, 14, after 7 p. m. Bakery.
Plea: Nolo. Sentence: $5 and costs of $4.62.
Represented by Inspector Bishop.

Portsmouth.

District Court: Torrey, J.
Defendant: George W. McCarthy.
Complaint: Employing David W. Kiley after hours contrary to law. Store.
Plea: Guilty. Sentence: $5 fine and costs of $5.36. Fine suspended and costs paid.
Represented by E. L. Guptill, Esq., County Solicitor.

Suncook.

District Court: Fowler, J.
Defendant: William Boisvert.

Complaint: Illegal employment of Goldie LaBonte after hours. Moving pictures.

Plea: Nolo. Sentence: $5 and costs of $3.62.

Represented by Inspector Bishop.

SPECIAL CERTIFICATION OF DEFECTIVES.

The statute provides that in case a child has reached the age of fourteen and has been in school for three full years preceding, and has manifested inability to learn to read understandingly and write legibly simple sentences in the English language, then upon proof of the facts the superintendent of public instruction may issue a special certificate authorizing the employment of such child.

I have issued nine such certificates between the dates of July 16, 1912, and July 15, 1914, as follows:

Name of Child.	*School District.*	*Certificating Officer.*
Oscar Foisy.	Claremont.	Putnam—acting.
Wilfred Langtang.	Lisbon.	Gilman.
Anthony Duval.	Jaffrey.	McDonald.
John Boucher.	Franklin.	Slayton.
Joseph H. Genest.	Manchester.	Davis.
Marie Mativier.	Somersworth.	Sutcliffe.
Henry L. Fish.	Keene.	Keith.
Joseph A. Theriault.	Nashua.	Fassett.
Diana Hebert.	Dover.	Butterfield.

I have denied four applications, two on the ground that the children had not attended an English-taught school and two on the ground that the cases did not come within the contemplation of the law.

INSTRUCTIONS TO INSPECTORS AND TO CERTIFICATING OFFICERS.

I publish here all general instructions issued to inspectors and to certificating officers during the two years ending July 15, 1914.

INSTRUCTIONS TO INSPECTORS.

CIRCULAR 1, 1912-1913.

Children Apparently Less Than Sixteen.

There seems to be a marked inclination for foreign born children less than sixteen years of age to get into mills, representing themselves to be more than sixteen years of age. These children commonly are in possession of alleged birth records in a foreign tongue, which in most cases do not belong to the children holding them. Instructors are instructed to be especially vigilant in connection with this matter and attention is called to the following particulars.

1. In case the inspector is reasonably confident that the child in question is, as a matter of fact, not of the age represented, he should order him out of the mills. In fact, the inspector should regard all such minors not holding certificates as being presumably under the age represented unless there is every reason to suppose that as a matter of fact they are over sixteen years of age. In other words, every child not holding a certificate should be taken up by the inspector unless the latter feels sure that the child is actually over sixteen.

2. In case either the child or the employer makes objections, then the inspector should take the child to the nearest medical officer for a physical examination and should observe carefully how thorough the examination seems to be. Some medical officers will probably be vigilant in such cases and some will probably be the opposite.

3. Finally, if the employer is still unsatisfied, then a ten-day notice of proof should be filed, but *note,* that no proof need be accepted unless it is in the form of well authenticated document in the English language.

In most cases it is presumed by the department that the employers will gladly co-operate and in case children of this type are found will drop them without any particular trouble.

CIRCULAR II, 1912-1913.

Hours of Labor for Girls in Service Employments.

It has come to the knowledge of the department that the hours of labor of women employed in hotels and restaurants in greater parts of the state are in some places excessive, amounting to seventy or eighty hours per week, or even more. The department has no direct information that girls under eighteen years of age are employed, but if there is any extended employment of women in these establishments, it is altogether probable that girls under the age of eighteen are employed to a greater or less extent.

Inspectors are therefore instructed to carefully investigate every restaurant, eating house, boarding house and hotel in the communities visited with a view particularly to ascertaining whether or not girls under the age of eighteen are employed in violation of section 6 of the Child Labor Act.

CIRCULAR III, 1912-1913.

Vacation Certificates.

As already noted in recent bulletin, vacation certificates of the type heretofore in use will cease to be issued. It appears that several of the superintendents had issued a few prior to receiving the bulletin above noted. Inspectors will honor these certificates if found during the summer months, provided that the child is more than fourteen years of age and provided the date of the certificate is not later than June 15.

CIRCULAR NO. I, 1913-1914.

Inspectors are instructed to make special investigations and special reports upon employment positions in bootblack stands and parlors carried on by Greeks in each

school district in their respective territories. It has transpired that there is an extensive commerce in young boys for use in the bootblacking industry in various parts of the country, notably in Chicago. It appears that young Greek boys are enticed to this country by men who are essentially padrones, either with or without the consent of the parent. In a good many cases, it apparently happens that the parents are persuaded to practically bind out the boys to these American Greeks with the idea that the boys will get an education in this country and will be carefully looked after by a good, kind master. It seems that the boys are kept in practically a state of slavery after reaching here, being worked long hours, provided with scanty food, insufficient clothing for our climate, and unsanitary sleeping quarters.

It is not known to what extent this traffic has extended to this state. The department came on the track of similar traffic several years ago in boys destined for the cotton mills. It will be remembered that at that time the ordinary device was to make affidavit before a justice of the peace to the effect that the boys were more than sixteen years of age and therefore not amenable to the old law. Inspectors are instructed to rigidly investigate the age and apparent age of all minors found employed in bootblack stands and parlors, particularly by Greeks or Mediterranean peoples,— in short, to treat the matter precisely the same as if inspecting a factory, falling back upon the doubtful age clause of the law in all cases of doubt. So far as possible, the general working conditions, health, nutrition, and so forth, of these boys should be investigated and detailed reports made to the department.

In case any developments occur of interest or significance, inspectors are requested to come to Concord and report in person. The superintendent will ordinarily be found in Concord, during the month of October, on Mondays. On most other days he will be holding school board conferences.

New Lafayette School, Portsmouth.

CIRCULAR NO. II, 1913-1914

General Instructions to Inspectors.

General instructions to inspectors issued in May, 1911, are continued except so far as inconsistent with the following:

On and after January 1, 1914, no assignments will be issued from this office until further notice. General assignment of the entire field in accordance with the tables which follow below are hereby made that each inspector may cover his territory according to his own best judgment as to the needs of the service, subject to the following observations.

1. Wherever possible a school district should be completed without entering upon inspection in another school district. This rule should not be regarded as absolute but only to be observed wherever possible. The main reason is to prevent confusion accumulating through having several districts on hand at the same time and in order to make it possible for the office to keep track of the work of the inspectors. It is undesirable, too, for the office to be obliged to keep several sets of report cards on hand at the same time. On the other hand, whenever it is deemed expedient to the end of better inspection to leave one district incomplete, the inspector should do so.

2. All reports should be made as heretofore, observing carefully that the last report filed should always be Form No. 8 and immediately prior to that Forms Nos. 4 and 6. The receipt of these cards will be considered by the office notice that the inspection in the district concerned is completed.

3. In addition to the school districts listed below, the inspectors will hold themselves responsible for school districts not listed, to wit, country towns, and be expected to keep themselves posted as to the conditions of child employing industries in these towns. Inspections should be so arranged that, if possible, during the year 1914 each inspector shall be able to get into as many as possible of the

country towns and investigate conditions there. It is not, however, considered necessary that ordinary country towns should be surveyed more than once in three to five years, depending somewhat on the character of the town.

4. In addition to the assignments listed below, the inspectors will consider the state divided into two districts as follows:

Inspector Mitchell will be in charge of Rockingham, Strafford, Carroll, Belknap and Coos counties, including unincorporated townships.

Inspector Bishop will be in charge of Merrimack, Hillsborough, Cheshire, Sullivan and Grafton counties.

5. School districts listed below are divided into three classes:

Districts in Class I will be regularly inspected three times annually, including one inspection during the summer vacation.

Districts in Class II will be inspected twice annually without regard to vacation.

Districts in Class III will be inspected once annually without regard to vacation. These districts are especially assigned as follows:

CLASS I.

Mitchell.	*Bishop.*
Berlin,	Claremont,
Derry,	Concord,
Dover,	Franklin,
Exeter,	Keene,
Littleton,	Laconia,
Milford,	Manchester,
Nashua,	Newport,
Newmarket,	Pittsfield,
Portsmouth,	Suncook,
Rochester,	Winchester.
Rollinsford,	
Somersworth.	

CLASS II.

Mitchell.	*Bishop.*
Ashland,	Belmont,
Conway,	Bennington,
Epping,	Enfield,
Lincoln,	Hillsborough,
Lisbon,	Hinsdale,
Merrimack,	Hooksett,
Newton,	Jaffrey,
Plymouth,	Marlborough,
Raymond,	Penacook,
Sandown,	Peterborough,
Wilton,	Sunapee,
Wolfeboro.	Swanzey,
	Tilton,
	Troy.

CLASS III.

Mitchell.	*Bishop.*
Bath,	Andover,
Bartlett,	Antrim,
Brentwood,	Bristol,
Farmington,	Canaan,
Gorham,	Charlestown,
Groveton,	Contoocook,
Milton,	Epsom,
Wakefield,	Goffstown,
Woodsville.	Harrisville,
	Henniker,
	Hill,
	Rindge.

CIRCULAR NO. III, 1913-1914.

Instructions to Inspectors.

Inspectors are instructed to report to the office all cases coming under their knowledge in which industries formerly established in towns have removed so as to practically eliminate child labor in a given town, and all cases coming within their knowledge in which industries likely to employ children have moved into town.

CIRCULAR NO. IV, 1913-1914.

Newsboys.

Inspectors are instructed to give special attention to newsboys and to follow up all suspicious cases, especially in the cities. It is apparent that there are a good many young boys getting by under the ten-year limit, and in some of these cases at least the children are unquestionably abused, the parents taking advantage of their having children for the purpose of adding to the family income.

It is suggested that in case such children are found, a few convictions of parents under section 20 of the act will be productive of good results.

INSTRUCTIONS TO CERTIFICATING OFFICERS.

BULLETIN NO. 1, 1912-1913.

Originals of Translations.

Attention is called to the matter of records in foreign tongues. See page 15 of the manual, 1912. Superintendents and others authorized to issue certificates are requested invariably to file the original of a translation with the translation itself. It should also be observed that the original document must bear the marks of official character. It should be such as to satisfy reasonable men that it is

presumably authentic. Official documents, especially from European countries, ordinarily are under a seal of some kind and are apt to have printed official headings and to possess various other marks which would have a tendency to distinguish them from spurious documents made up in this country.

BULLETIN NO. 2, 1912-1913.

Foreign Birth Records.

The attention of certificating officers is urgently called to the matter of identification of children with foreign born records, especially those coming from Greeee.

It has been demonstrated that in not a few instances, while the birth records themselves may be genuine, they do not correspond to the children for whom they are presented. It has also been demonstrated that the children are carefully coached as to what to say. An illustration is the following case:

It was claimed for two Greek boys that they were in the vicinity of seventeen years of age. Birth records bearing all the marks of authenticity were presented and filed and age-only certificates issued. These boys were found at work in a mill and their appearance led the inspector to be very doubtful of their age. The records behind the boys were perfectly straight. They were, however, taken to two different physicians and examined, and the physicians both give it as their opinion that the boys are not over twelve years of age. They have been removed from the mill and will be put in school.

It should be observed that section 10 of the Child Labor Act requires that all the certificates upon the basis of which employment certificates are issued shall be APPROVED by the certificating officer. Now while the certificating officer cannot arbitrarily refuse to grant an employment certificate, on the other hand he must refuse if he is satis-

fied that in the minds of reasonable men the candidates would not appear to be of the age specified.

It will be recalled that most cases of serious violation of the child labor act are those in which foreign born children are imported into this country and put to work under some form of documentary evidence certifying them to be more than sixteen years of age, although as a matter of fact they may be less than fourteen years of age.

In cases in which the certificating officer feels in serious doubt as to the child being of the age represented, the department will be very glad to co-operate in any way it can with reference to securing the facts, and, if necessary, in proceeding against persons guilty of fraudulent practices in the courts.

BULLETIN NO. 3, 1912-1913.

Christmas Shopping.

The attention of superintendents and truant officers is called to the special need of vigilance with reference to child labor enforcement during the season of holiday trade. Experience justifies the opinion that more actual harm is liable to occur through the employment of immature girls and boys at long and unseasonable hours in messenger service and in retail establishments than in the factories themselves, especially during the stress of the Christmas shopping period.

Especially should the sections of the Child Labor Act relating to messenger service and to hours of labor be observed.

It is recommended that copies of the law be furnished to all employers of labor who are likely to take on extra help during this season. Any infractions of the law should be prosecuted by the local authorities, bearing in mind that, while ignorance of the law excuses nobody, there is less excuse for ignorance this year than last and there should be no excuse whatever.

BULLETIN NO. 4, 1912-1913.

Employers on Interstate Railroad Runs.

The question has several times arisen as to what is the extent of the child labor act as applied to newsboys and others traveling on trains which cross the state boundary.

We are advised by the attorney-general that the New Hampshire law certainly applies to employers of such boys whether their runs cross the state line or not, provided the employers are residents of New Hampshire. Apparently the law could not be applied to a child residing in another state employed by parties in another state who enters or crosses the state on an interstate run.

BULLETIN NO. 5, 1912-1913.

Messenger Service.

The attention of school boards, superintendents and truant officers is respectfully called to certain features of the messenger service, particularly in the cities and larger towns, which seem to merit special consideration.

Attention is called especially to sections 1, 4, 5 and 6 of the Child Labor Act.

The bulk of the messenger service in this state is found in the delivery of newspapers and in the work of errand boys for retail stores, but particularly the former.

The distribution of newspapers involves sending boys through the residential sections of the cities, but it also involves, we find, sending them to a greater or less extent into saloons, billiard rooms, and in other places which young boys, not to speak of older men, should not frequent.

Furthermore, the exigencies of the service are in some cases such as to call for very early hours in the morning, with the result that children, who particularly need plenty of sleep, are to a greater or less extent deprived of their sleep, with harmful results both to themselves physically and to the quality of their school work.

To the casual observer to whom the sight of boys of high school age delivering their papers during the early evening is a familiar sight, it may well seem that such work is a benefit to them rather than an injury. I am inclined to agree that they are perfectly right. But it must be remembered that the law bears equally upon all and that the delivery of papers by boys of a given age at reasonable hours in the residential portions of a city is likely to involve also deliveries by boys of the same age at unreasonable hours and in portions of the city with which boys should not be familiar.

The law authorizes the employment of boys for this purpose at fourteen years of age and upward, with the proviso that boys under eighteen years of age shall not be allowed to distribute papers or merchandise before the hour of 5 a. m. or after the hour of 10 p. m. For the reasons cited above, it may appear that it is somewhat captious to make a distinction between boys of ten or twelve and boys of fourteen. Some reasons have been pointed out why this is not so. It should be said in addition that there is a distinct difference, as a matter of justice, in most of our New Hampshire communities, between boys of high school age whose education not infrequently depends upon their being able to earn some money, and boys of grammar school age whose education is compulsory up to the fourteen year limit.

It is hoped that during this school year the local authorities will give special consideration to these matters.

BULLETIN NO. 1, 1913-1914.

Foreign Born Children Less Than Sixteen Years of Age.

The department is advised that the United States Immigration Service requires of all persons, other than parents, having the custody and control of children arriving in this country under the age of sixteen, a guarantee that such children will be kept in school until they are sixteen years of

age. The department is also advised that the Boston office of the United States Bureau of Immigration has an authentic record of the age of all children entering this country. Local authorities are therefore instructed that a close watch should be kept of all foreign born children under the custody and control of other than their parents, and in all cases in which children suspected to be under sixteen years of age are not attending school, either this office should be notified or communication should be addressed directly to the United States Commissioner of Immigration, Boston, Mass., reciting the facts. He will then be very glad to send an inspector to deal with the case.

This applies also to the cases of such children about whose age there is a doubt.

BULLETIN NO. 2, 1913-1914.

Record of Certificates for Incapables.

Section 2 of the Child Labor Act provides that in certain cases children deemed to be hopelessly illiterate can be granted a certificate by referring the case to this office.

Such employment certificates are issued upon papers filed by the local superintendent, certifying that the necessary records are on file in his office. The superintendent's papers dealing with the case then go on file in this office and a certificate is issued and forwarded to the local superintendent. Before being turned over to the applicant, this certificate should be recorded in the superintendent's record book with reference to the folio in which the original proof of birth and proof of health are filed. The employment certificate will also bear the serial number of the state superintendent's book of blanks and the stub, of course, will be at this office.

In a word, these certificates are issued through the local superintendent's office and a complete record should be made of them on his book for every certificate on and after this date.

BULLETIN NO. 3, 1913-1914.

Child Labor Act as Modified by the Fifty-five-hour Law.

Section 6 of the Child Labor Act appears to be the only section of that act in conflict with the provisions of chapter 156, Laws of 1913, the so-called fifty-five-hour law. We are instructed by the attorney-general that "the provisions of chapter 156 of the Laws of 1913 must control and that to the extent that the provisions of this statute conflict with the provisions of chapter 162 of the Laws of 1911, the last named statute is repealed by implication."

The situation would, therefore, seem to be as follows:

1. No female and no minor can be employed or permitted to work in any manufacturing, mechanical or mercantile establishment, laundry or restaurant or confectionery store or by an express or transportation company more than ten and one quarter hours during any one day nor more than fifty-five hours in any one week.

2. Furthermore, if any part of a female's daily employment is performed between the hours of eight o'clock p. m. and six o'clock a. m. of the following day no such female can be employed more than eight hours in any one day nor more than forty-eight hours in any one week. If, however, any such female is employed in this way not more than one night in the week, then she may work fifty-five hours in the week instead of forty-eight.

3. No boy under the age of sixteen and no girl under the age of eighteen can be employed at any gainful occupation, other than the employments enumerated above and other than domestic service or work on a farm, more than fifty-eight hours in any one week, nor more than eleven hours in any one day; nor before the hour of half-past six o'clock in the morning, nor after the hour of seven o'clock in the evening, except that minors sixteen years or over may work in telephone exchanges until ten o'clock in the evening.

4. Boys fourteen years of age or over may deliver newspapers after five o'clock in the morning and boys twelve years of age or over may deliver newspapers between four and eight o'clock in the evening.

The views expressed above have been submitted to the attorney-general and they meet with his approval in detail.

EFFECT OF LEGISLATION OF 1913.

Raising the Minimum Age to 14.

The law of 1911 came from the House Committee on Labor of that year with a flat 14-year minimum, in conformity with the child labor acts of most of the states. Section 1 of the bill as thus reported was amended on the floor of the house so as to permit the employment of children who had reached the age of 12 when the public schools were not in session, and in that form the bill became law. The effect was unfortunate. In the first place there was left in the law a recognition of the principle that the act was primarily intended to keep children in school to the obscuring of the real purpose of all child labor legislation, to wit, the protection of children in the right to a childhood. In the second place, it led to needless friction and opposition to the law itself. Employers and exploiting parents were desirous of giving this section a strict interpretation and putting children in to work before and after the daily sessions of the public schools as well as during vacation time. Such an interpretation this office declined to admit and the matter was never tested in the courts. A great deal of opposition followed and for some months vigorous denunciation of the law and of this office appeared in the press of the state. Such is usually the fate of incongruous compromises; neither side is satisfied and the element of incongruity leads to failure to recognize the essential purpose of the measure. If the purpose of child labor laws is simply to keep children in school, that

is one thing. If the purpose is to protect children and labor, from the premature employment of the former in the trades and industries, that is quite another thing. A workable act cannot be based simultaneously upon both principles.

The raising of the minimum age to 14 years flat was accomplished with little opposition, and during the fourteen months which have elapsed since the legislation was enacted the opposition to the act as a whole has practically disappeared.

The effect of the act in concrete terms may be seen in the following comparative statement:

SUMMER VACATION EMPLOYMENT.

CHILDREN BETWEEN 12 AND 14.

1911	512
1912	236
1913	6

The six children found employed in 1913 were of course illegally employed. The figures for 1911 and 1912 refer to children legally employed. The figures are for the twenty-nine towns and cities which possess industries in which children are at all likely to be found employed.

The reduction of the figures for 1911 by more than one-half in 1912 is significant. It is undoubtedly due almost entirely to a factor which we have often observed, to wit: Many of the large employers of labor do not as a matter of fact find the employment of children profitable, though there are exceptions to the rule, and no doubt child labor agitation has caused many broad-minded and foreseeing employers to reflect upon its significance with the result that they have eliminated it from their establishments. The most persistent and irreconcilable employers in this

state are, as a class, the proprietors of stores, bowling-alleys, moving picture shows, and small shops who employ children because they can get them cheap. For instance, we are constantly finding boys employed on the delivery teams of traders because they can get them for two or three dollars a week where a young man would cost at least nine. These boys are sent out into the more or less congested traffic of city streets, bringing upon that traffic, both vehicles and pedestrians, all the perils of irresponsible boyhood.

The Attendance Law of 1913.

An amendment to the compulsory attendance law of 1901, enacted in 1913, provides that children must attend school regularly until sixteen unless they shall have earlier completed the course of study prescribed for the elementary schools. The measure was brought forward simultaneously by two representatives, Mr. Davis of New Ipswich and Mr. Richardson of Chesterfield. The bill introduced by Mr. Richardson became the act as it stands.

This measure had not been recommended by this office, but it received my cordial support. A similar measure had been sought by school boards as early as 1905, to my knowledge, and probably earlier. It is based upon sound educational principles and is in accordance with what we know scientifically of child nature. With the approach of adolescence, at about twelve years of age, there is apt to arise in children a restlessness born of their increasing feelings of independence which seeks freedom from restraint. From that age, during several years, especially in the case of boys, this restlessness is prone to take the form of a vague desire to leave school. In the cases of those families in which there is small restraint upon the children or indifference to education, the result is a loss of interest in school and a

lapse into an attitude of listless waiting for the age of fourteen to arrive, bringing to an end the period of statutory restraint. The new act applies a salutary corrective. It brings prominently into the minds of both children and parents the knowledge that the former must complete a real educational task or else remain in school two years longer. The effect is that children tend to apply themselves during the critical period thereby gaining an interest which often carries them beyond the period of restlessness, with the result that they do not leave school at all but go forward and complete their education.

Of course, the schools have a duty in this connection, namely to so adjust their programs and their methods as to seize upon the dominant interests of adolescence and arouse in the children a desire to remain in school without regard to constraint.

The act has had important implications upon the side of child labor and has been effective in greatly reducing the extent of the employment of children between the ages of fourteen and sixteen. The following table will indicate the extent of this reduction, though it should be remembered that the tendency of the larger employers to eliminate the employment of children under the age of sixteen has been simultaneously at work. It is difficult, if not impossible, to say just what proportion of the reduction shown is to be charged to each cause. There are doubtless other factors involved such as shifting industrial conditions, but in the twenty-eight places listed these should largely balance themselves.

Table No. 3.

NUMBER CHILDREN EMPLOYED BETWEEN 14-16.

Town.	1911.	1912.	1913.	1914.
Berlin,	7	9	14	5
Claremont,	32	35	40	16
Concord,	8	25	37	9
Derry,	30	34	50	34
Dover,	79	78	82	66
Exeter,	34	22	20	11
Franklin,	61	43	55	39
Greenville,	31	25	37	16
Hillsborough,	13	14	14	3
Jaffrey,	22	11	21	13
Keene,	37	35	22	12
Laconia,	40	31	45	30
Lebanon,	26	26	23	15
Littleton,	31	26	37	16
Manchester,	694	722	762	391
Milford,	29	20	31	13
Nashua,	256	250	154	83
Newmarket,	38	39	54	20
Newport,	24	12	10	2
Penacook,	19	22	27	11
Pittsfield,	20	24	19	14
Portsmouth,	12	22	54	24
Rochester,	60	57	73	48
Rollinsford,	32	25	*17	7
Somersworth,	98	117	112	73
Suncook,	59	57	72	11
	1792	1781	1882	982

* Strike in progress.

The inference seems to be justified that approximately seven hundred children at least in the twenty-eight chief manufacturing towns alone have been kept in school who would otherwise have gone to work, and that this effect has been brought about by the amendment of 1913 to the compulsory education act. It is impossible to say how many children in the state at large have been affected, but probably considerably in excess of one thousand. Taken in connection with the original effect of the Child Labor Act of 1911 it is probable that nearly or quite three thousand children have been kept in school, either public or private, during the past year who would not have been in school had it not been for the legislation of 1911 and 1913. The effect upon the average intelligence of the next generation can hardly be otherwise than marked.

The Mothers' Relief Act.

Another act of the General Court of 1913 which is closely related to the Child Labor Act is an act providing such relief for destitute women, mothers of children under the age of sixteen, as will enable them to keep a home for the children. The act provides in substance that such women shall receive not exceeding ten dollars per month for one child under the age of sixteen and not exceeding five dollars per month for each additional child. The further provision is made that such payment shall be made out of the county treasury upon the recommendation of the school board of the district in which the mother resides.

The theory of the act evidently was to draw a distinction between the destitute mother who would need poor relief anyway and the mother who is economically independent so far as earning power is concerned, but who must give up her home in order to earn enough to support her family. In other words, it deals with a border-line class of cases. The theory underlying the act evidently further has the

New High School, Keene.

education of the children chiefly in mind and not the relief of the mother as such. It recognizes the importance of the home as the primary educational institution and endeavors to preserve the good and efficient home, under certain conditions which it attempts to prescribe.

Many school boards at once seized upon the act as meeting a need long felt by them. Recommendations at once began to be made to the several boards of county commissioners, but the county commissioners met in state convention and agreed to make no payments under the act, and few payments were made for the fiscal year 1913. The commissioners called attention to the clause providing that payments should be made "out of moneys not otherwise appropriated," and alleged that there were no moneys not otherwise appropriated. Applying a very strict construction to the law, this position may have been sound. In view of the balances reported unexpended in the several county treasuries at the end of the fiscal year, it is a little hard to acknowledge the reason given as having any real weight.

In some cases, the commissioners have rather vigorously opposed the law and have balked at its administration on the ground that, although responsible for the expenditure of the county money, they have no reviewing power upon the recommendations of the school boards. The law certainly makes no provision for such review. Whether the power to review is a fair implication from the general terms of the act or not is, of course, a court question, and no case has been found and referred to the court. However that may be, the commissioners have in several cases exercised the power.

The history of the administration of the act is shown by the following summary. The same is gathered in part from the reports of the commissioners for the fiscal year 1913, and in part from letter addressed to the different boards.

SUMMARY OF ACTS OF COUNTY COMMISSIONERS IN MOTHERS' RELIEF ACT.

Belknap.

No distributed appropriation, but balance reported at end of fiscal year less than at beginning.

Three cases recommended. Aid granted in two.

Carroll.

County delegation voted that any balance be applied to reduction of county debt. Plainly in this case, there could be no "moneys otherwise unappropriated."

Cheshire.

No distributed appropriations, but balance on hand increased $2,471.47 during year.

No report of aid granted.

Coos.

No distributed appropriations, but balance on hand increased $5,175.15 during year.

Aid granted in four cases. No recommendations of school boards refused.

Grafton.

Appropriations properly distributed. Balance on outpoor account $75.80 December 31, 1913.

Three grants of relief up to July 15, 1914. Between that date and September 12 following, three additional grants made. Commissioners have devised form for systematic treatment of applications.

Hillsborough.

Difficult to analyze report, but aggregate balance for fiscal year 1913 of $11,884.92.

Aid granted in fourteen cases, Three recommendations refused.

Merrimack.

No distributed appropriations, but balance on hand increased $3,123.07 during the year 1913.

Aid granted in three cases. No recommendations refused.

Rockingham.

Appropriations distributed. Balance on out-poor account $3,436.10.

Strafford.

Appropriations undistributed, but balance of $2,556.02 on commissioners' recommendation and allowance for out-poor.

Three applications made, but none granted. "No funds for such purpose."

Sullivan.

Appropriations distributed. Balance of $4,307.81 in out-poor account.

Aid granted in one case up to July 15, 1914, and none refused. One case granted and one application withdrawn since July 15.

It thus appears that in the seven counties answering our inquiry, aid has been granted in an aggregate of twenty-eight cases, and denied in seven instances. Whether the commissioners have been unable under the law to refuse to grant aid in cases recommended by school boards or not, it appears that they have done so at the rate of about one case in five.

The operation of the law has been far from satisfactory from any point of view. Its central purpose has largely

been lost sight of. The statute itself involves administrative incongruities. It may well be doubted whether there is proven to have been any sufficient reason for its enactment.

The county commissioners are boards charged with the general conduct of the business of the county. They are not educational officers, and, although they are called upon to exercise the functions of boards of charity, they are not trained social workers. They labor at great disadvantage in trying to do well the work of placing out children, for instance, although in most cases they make a sincere effort to do the work well. In their normal sphere, namely the business administration of the several counties, their work has perhaps been the best class of public administration we have seen, in this state at least. But, with some notable exceptions, their minds have been centered upon saving money for the county and not centered upon constructive social welfare work. And even so it is well, for they are performing their main task and are not responsible for incongruities thrust upon them.

Laying aside the charities and corrections side of the question for which another department of the state government is responsible, let us deal with the specific question at issue so far as it affects the children.

We may also lay aside the theory that the modern state owes a compensation to the woman who has borne citizens as a basis for mothers' pension or relief legislation. It may be so or it may not. We at least know this much: every modern state has found that all constructive dealing with social problems must begin with the rising generation. To that end we maintain public schools. To that end all rational social programs endeavor to preserve the home. And to that end alone a mother's relief act is justified apart from the ordinary course of poor relief. As poor relief no separate act is called for. Such an act is warranted only in the cases of mothers who are economically capable of wage earning, but who must break up their homes in

order to earn enough to support their minor children. In a word, mothers' relief as such should apply, as the New Hampshire act evidently intends, only in those cases where it will make the difference between a wholesome, capable home and no home at all. It should not apply in those cases where the mother must have help anyway. It should not apply unless the mother is all which that term applies.

Many such acts were placed upon the statute books of the different states by the legislatures of 1913. Many, if not most, of them were simply poor relief acts with some words reciting that poor relief in this case would not be considered poor relief. Of course, all such acts were administered as poor relief and as such were unnecessary, for they dealt with a need already provided for. Whatever its defects, the New Hampshire act avoided this inconsistency; it was mothers' relief outright, and educational rather than charitable in its purpose.

It may well be doubted whether there are as a matter of fact a sufficient number of cases to which mothers' relief, as distinguished from general poor relief, applies to justify a statute devoted to that end. I have not investigated in detail the cases upon which relief has been granted, but judging from conversation of the officers concerned, I doubt very much that the cases relieved would not have been relieved under the general poor laws anyway. In any case we have but thirty-five cases in the seven counties reporting, and nearly one-half of them come from the city of Manchester alone. The counties not reporting are Carroll, Cheshire, and Rockingham. Investigations of the effect of child labor laws in this and other states do not reveal anything like the resulting hardship often claimed. Reported cases usually turn out on investigation to be due to greed on the part of parents, to drink on the part of one or both parents, or to general economic incompetency. That is to say, hardship charged to the operation of child labor laws in most cases would have been hardship, or destitution, or

pauperism anyway. The facts just cited would tend to confirm the opinion that it is doubtful if there has been any extensive need of a mothers' relief act as such.

Perhaps it will be well to carry the act upon the statute book until further experience is accumulated.

If the General Court shall conclude to retain the act, I suggest that the incongruities of its present form be removed. The logic of the situation, as it seems to me, requires that the act should be administered by the school department and that the necessary funds should be appropriated along with other school money. The act doubtless partakes of the nature of charity, but its predominant purpose is the welfare and education of the children.

OBJECTIONS TO THE CHILD LABOR ACT.

There have been in this state as elsewhere many objectors to the whole principal of legislation restraining and controlling the labor of minors. Vigorous, if not savage, attacks have been made upon the law itself and upon its enforcement. Such objections and attacks were especially numerous in the summer and fall of 1911 and they have continued, although dwindling in volume and acrimony down to the present date.

Prior to the legislative session of 1913, confident predictions were made that the General Court would repeal the whole act. A bill was introduced at that session purporting to eliminate the "drastic" and "unreasonable" features of the act of 1911. In reality the bill was cunningly drawn to make possible the employment of children of any age at any time. The representative who introduced it, as soon as he learned its true nature, wholly repudiated the measure. It was warmly supported in committee by a prominent editor and by the superintendent of schools in one of our larger cities. The House Committee on Labor refused to report the bill and nothing more was heard of attempts to

open the mills to children at that session. On the contrary, further restrictions were made.

In its session of 1913 the Legislature of Massachusetts enacted a measure similar in its intention to our act of 1911, but broader in scope. Precisely similar attacks were made there. The metropolitan press published column after column of denunciations of the law as drastic, unreasonable, and calculated to work great hardship upon poor parents. Hearings were had in the mill towns. In the end the act stood as did ours.

What is the nature of the objections? So far as possible, I have caused them to be followed up and the facts ascertained. Certain groups of facts stand out clearly.

I. The Law Itself Has Been Misrepresented.

Perhaps no act was ever more woefully and systematically misrepresented. The result was that for a time many impartial observers thought that unwise legislation had been enacted. There is yet to be found, in my own experience and that of the inspectors, anybody, unbiased by personal interest, who has not agreed that the law is a good and salutary measure, once he has been truly informed of its provisions. The following cases are typical of misrepresentations:

Several newspaper men in the state gave wide publicity to the statement that nobody could legally employ a child to run an errand or hold a horse, or sweep the snow from the sidewalk; that parents would be liable to fine who allowed their daughters to bake a loaf of bread or sweep a room, or their sons to clean up the front yard or assist in the duties of the field or the barnyard, and much more of the same sort. Many good people believed these statements to be true and probably many still do. It would be natural to brand such plain misstatements as malicious falsehoods, if it were not more natural, and more charitable, to

recognize in them familiar evidences of editorial sloth. In one community a member of the school board desired that the writer address the people for the sake of correcting wrong impressions and gave directions that the public should be invited to the high school hall for that purpose on a nearby evening. I was there for the purpose on the date appointed, but either by accident or by design the meeting had been forgotten by those having it in charge to make the arrangements.

In many instances particular cases were written up for the papers and stories of great pathos made out. Here are three which are perfectly typical.

In Manchester some young girls were employed in a restaurant as musicians after the hours prohibited to girls of their years. The management and the girls were notified, and both acquiesced. The incident, however, became locally famous and indignation ran high. Inspector Bishop, however, found that the family accepted the situation as just and were much more concerned over the publicity than over the loss of that particular employment.

Another "famous case" was in Franklin. In this case, a boy had been denied his employment papers. The local paper seized upon the incident as an example of the unreasonableness and barbarity of the law. Inspector Bishop found that the local certificating officer, during an interregnum in the superintendency, had blundered and that the case could easily have been straightened out, as it was.

At about the same time, a Nashua paper made much of the case of a boy "struggling for an education" who was not allowed to work during vacation.

Inspector Mitchell found this case to be a myth pure and simple. There was no such case.

In three communities in the state the law has been systematically misrepresented by the local certificating officers and in two cases especially these officers have at times so administered their offices as to deprive children of the cer-

tificate who were legally entitled to it, thus making the law obnoxious.

In other cases, public officers and untrained charity workers have misrepresented the law, unintentionally, no doubt, but without taking the trouble to properly inform themselves. The printed report of the Commissioners of Hillsborough County contains a case in point. It says, page 7, "Another factor is the compulsory educational laws enacted by our last legislature, prohibiting children working before they were sixteen years of age and prohibiting anyone from working over a certain number of hours before they are twenty-one years of age. There are men who have families to support before they are of that age." As a marvel of misstatement the quotation is entitled to honorable mention. In the first place it groups two measures together as "educational laws," only one of which has any reference to education or child labor. The other is the "Fifty-five hour act." In the second place it states that some law prohibits children from working before they are sixteen. Of course there is no such law. In the third place, it misstates the "Fifty-five hour act," which, like the Child Labor Act, is confined to specified industries and does not prohibit "anyone from working over a certain number of hours before they are twenty-one years of age."

II. Honest and Intelligent Criticism.

Setting aside the objection which comes from misrepresentation and lack of understanding, there is a comparatively small amount of criticism which comes from honest objectors, who have no pecuniary interest at stake, and who are well informed. The position of these people is usually summed up in the statement that children ought to be put to work, if their families need their help. They will usually admit that there ought to be some age restriction but omit to specify where it ought to be. Very commonly they have overlooked that point, but, when the flat

minimum of fourteen is mentioned, protest that it is too high.

Their argument is entitled to respectful consideration as the argument of a man who knows what he is talking about always is. The one best answer is that the laws of forty states, territories and the Federal District, place the age at 14 or higher.

III. Criticisms Which Are Probably Justified.

A few cases do occur every year in which under the circumstances it is peculiarly desirable that the child should be allowed to work, though if the local school and correctional authorities did their full duty, such cases would be so rare as to be negligible. In fact the number of such cases which are genuine is so small as to be almost negligible as it is. I know of but two instances during the past year and this office is pretty apt to be consulted on all such cases. It must be remembered that the Child Labor Act itself and the general charity and correctional laws offer many means for the meeting of peculiar situations.

It has been proposed that such cases be referred to this office for special certificate as in the case of children incapable of learning to read and write. Of course this might be done. If it were done, however, a flood of applications for special certificates would at once appear and it would become almost impossible to separate the genuine cases from the spurious without the services of a special worker in that department. Under existing conditions, I should expect that a very considerable proportion of all cases refused certificates by the local authorities would be taken up with this office on appeal. In the end, I have no doubt that the amount of injustice done to children would immeasurably exceed any which is possibly done in a very few cases under the present act.

CHAPTER III.

Attendance and Related Child Welfare Questions.

This office is empowered to enforce the laws relating to the attendance of children at school. This power is concurrent with similar powers and duties imposed by law upon the local school boards and truant officers.

I have employed for this purpose Mr. Joseph H. Rolfe until the fall of 1913; Mr. Lewis W. Phillips until his lamented death in the early part of 1914; and the regular factory inspectors assigned to the child labor service.

The chief part of the work of this division has been in response to the calls of local school officials for assistance, and in response to complaints of deprivation of school privileges. When the assignments have disclosed immoral conditions in connection with school attendance, or abuse of children, I have directed such cases to be followed up and so far as possible punished or corrected. More and more does it become clear that poor attendance at school is in a large proportion of cases, especially in country towns, connected with immoral relations of the sexes, either on the part of parents, with associated destruction of the home, or on the part of the children themselves; or to abuse and neglect of children.

There follows a list of the school districts visited for attendance or related purposes, during each of the two years which this report is made.

YEAR ENDING JULY 15, 1913.

Atkinson.	Investigation on complaint. Case of "ugliness." Boy sixteen unable to read and write from non-attendance. Younger children sent to school.
Auburn.	General inspection. Truant officer appointed.

Bartlett.	General inspection. Found chairman of school board keeping a boy of thirteen, not his own, out of school to work for him. Secured promise of amendment.
Bedford.	Investigation on complaint. Complaint without adequate foundation.
Bridgewater.	General inspection. One of the most sparsely settled towns in the state but conditions good.
Candia.	General inspection. Conditions extremely lax. Majority of board runs schools as cheaply as possible. One member in opposition to policy. Truant officer instructed by board to do nothing.
Chester.	General inspection. Conference with local officers.
Concord. (Town District.)	Investigation on complaint. Found one man with "placed out" boy of thirteen, keeping boy out of school to work in the field and "pay his board." Prosecuted and convicted. Boy had not had school privileges for some time. Boy in school. Also another man had systematically deprived daughter of school privileges. Prosecuted and convicted. Girl in school.
Cornish.	General investigation on complaint. No action. Beyond jurisdiction.
Croydon.	Investigation on complaint. No ground for action.
Danville.	General inspection.
Deerfield.	General inspection and instructions to local officers.

Dorchester.	General inspection.
	Investigation on complaint. Filthy home and probably defective mother. Incomplete.
Dummer.	General inspection. One filthy and unsuitable home. Secured attendance.
Easton.	General inspection.
Eaton.	Investigation upon complaint. Trouble adjusted.
Ellsworth.	General inspection.
Fitzwilliam.	Investigation of lax attendance as revealed by school census. Advice and instruction to school board. No direct power to settle.
Grantham.	General inspection. Conditions lax.
Greenfield.	Consultation at request of school board. Immediate problem settled. Investigation discloses general lax conditions.
Greenland.	General inspection.
Groton.	Investigation on complaint. Settled.
	Investigation on complaint. Grossly immoral conditions found. Advice and instruction given. No power for direct action. Nothing done.
	Followed up child labor case. Boy had been committed to Industrial School. Up to thirteen years of age had never been in school.
	Investigation of conditions. Still bad. Little accomplished.
Hampstead.	General inspection. Secured appointment of truant officer.
Hampton.	Disagreement over transportation. Adjusted.
Hanover.	General inspection and conference with board.

Jackson.	General inspection. No truant officer.
Kingston.	General inspection.
Langdon.	General inspection and conference.
Livermore.	General inspection. Good conditions.
Lyman.	General inspection. Capable of excellent conditions. Dissension in town and nepotism in the schools.
Lyme.	Transportation trouble. Settled. Investigation on complaint. Neighborhood quarrel. Neglect on part of officials and at least one grossly incompetent teacher. Conditions subsequently much improved.
Madbury.	Investigation of lax conditions. Promised to take census and appoint a truant officer.
Middleton.	Investigation on complaint. Complaint found to have little foundation. Party politics disrupting the schools.
Milan.	General inspection. Excellent conditions.
Moultonborough.	Investigation on call of school board. Very lax attendance and general child welfare conditions. Local political situation dominates school interests.
Newbury.	General inspection. Conditions lax.
New Durham.	General inspection. Almost impossible conditions in one instance on account of remote steam sawmill.
Newton.	General inspection.
Northwood.	General inspection and conference.
Nottingham.	Complaint over failure of a school to open for business by October 1. Confusion and other duties of board cause. Instructions to local officers, and promise to open school.
Orange.	October 1. Follow-up case left over from last year. Settled.

Orford.	General inspection and conference.
Piermont.	General inspection and conference.
Plainfield.	Investigation on complaint. No jurisdiction.
Raymond.	Investigation on complaint of superintendent. A vile home, and two roving, uncontrolled boys. Both committed to State Industrial School.
Rollinsford.	Investigated sanitary condition of school buildings. Made strong representations to the district. Appropriation made to abate conditions.
Rumney.	General inspection and conference. Transportation problem occasioned by steam sawmill. Conferred with and advised board.
Sandown.	General inspection. Extremely bad conditions, both educationally and morally, in some sections. Conference with and hopefully some assistance to a particularly earnest school board.
Springfield.	General inspection. Conditions good.
Stark.	Investigation on complaint. Complaint unfounded. Politics.
Stratham.	General inspection. Conditions good.
Wentworth.	General inspection. Schoolhouses in bad sanitary condition. Secured promises of attention from school board.
Westmoreland.	General inspection. Conditions rather lax. Hampered by reduction of appropriation.
Wilmot.	General inspection. Investigation on complaint. Results not decisive.
Woodstock.	Investigation on complaint. Peculiar case requiring sympathetic handling. Apparently straightened out.

YEAR ENDING JULY 15, 1914.

Alstead.	Investigation on complaint. Complaint unfounded. Followed up child abuse and found case in hands of Keene society.
Atkinson.	Assistance to superintendent.
Bartlett.	General inspection and assistance to superintendent.
Bedford.	Bad conditions beyond control of local board. Too late (June 11) to do anything this year.
Benton.	Investigation on complaint. Case had already been adjusted.
Bethlehem (Town District.)	Investigation on complaint. Secured promise of attendance.
Boscawen.	County farm. No children of school age.
Brentwood.	County farm. No children of school age.
Campton.	Investigation on complaint. No ground. Feud between families.
Candia.	Investigation on complaint. Prosecuted and convicted.
	Investigation on complaint. Transportation and "placed out" case. Easily adjusted.
Danbury.	Investigation on complaint. Situation beyond control of board. Too late in term to do more than admonish. Faithful and industrious school board.
	Follow up assignment. Adjusted as well as home and general local conditions permit.
Dover.	County farm. Two children of school age ill.
Dummer.	Investigation on complaint. Old case. Child in school.

New Brown School, Manchester.

Easton.	Reprehensible action on part of majority of board in not opening school. Compelled settlement and opened school.
Epsom.	Investigation on complaint. Case adjusted. Member of school board wholly to blame.
Grafton.	Transportation trouble. Advised course of action for board.
Goffstown.	County farm. Three children of school age at farm. Secured their removal to Orphans' Home, Franklin.
Goshen.	Investigation on complaint. Case adjusted.
	Investigation on complaint. Secured promises of attendance.
Hampton.	Conference with board on request.
Haverhill.	One boy of school age at county farm. Attending school.
Jefferson.	Transportation trouble. Intervened at request of board. Case not settled but children in school.
	Statutory offense on school girl. Secured evidence. County solicitor refused to take action.
	First case above. Watching development. Case finally settled by force of circumstances.
Laconia.	Criminal abuse of girl of school age.
	Same case continued. Securing evidence.
	Same case continued. Evidence secured and placed in hands of county solicitor. Offender arraigned and bound over in $1,000. Case called in court, March term, and continued by state.
	County farm. No children of school age.

Livermore.	General inspection. Chaotic conditions. Met and advised school board, teacher and parents and addressed citizens' meeting. This is an unorganized district.
Lyman.	General investigation on complaint, following personal complaint to state superintendent. See also 1912-1913. A condition of fierce personal quarrels, combined with political animosity between two locally prominent men both of whom are hard drinkers. Ignorance, corruption and lawlessness on part of majority of board. No actual attendance issue involved, and no departmental jurisdiction. An "educational receiver" would be the only present solution of the question in this town. October.
	General inspection. Conditions somewhat improved by elimination of political member from board. Extensive truancy found. Board and truant officer ignorant of latter's duty. Left explicit instructions. Schoolhouses in bad sanitary condition, and outhouses unspeakable. Board profess ignorance, but promise to see that conditions are improved.
Lyme.	Conference on request and explained laws to board.
Lyndeborough.	Conference on request. Lawlessness and defiance of school board. Moral conditions among pupils in some schools very bad. Situation beyond control of board. Left instructions, and secured promise to appoint competent truant officer.

Manchester.	Following special child labor and school attendance case. Allowed girl to work.
	Industrial School and Mercy Home. Following up cases committed to care of these institutions.
Milan.	Investigation on complaint. Transportation trouble. Case adjusted.
Moultonborough.	Case reported by agent of S. P. C. A. Case of unspeakable treatment of girl of school age. Prosecuted with great difficulty in face of obstacles. Girl secured and placed in custody of Industrial School by court. No action against wretched father and pseudo-husband.
Nashua.	Following up alleged white slave case in conjunction with New Hampshire Children's Aid and Protective Society. Fraudulent working papers. Unable to secure sufficient evidence to warrant prosecution.
	Investigation on complaint. Transportation trouble. Complaint unfounded.
New Durham.	Assistance to board in case of some boys with incipient criminal tendencies. Without much doubt a case for special treatment, naturally not well understood.
New Ipswich.	Investigation on complaint. Personal considerations found to be involved. Adjusted temporarily and advised board.
Ossipee.	Three assignments. Private school irregularly approved. Teacher unfit and majority of board unfit persons to have charge of children. Collected evidence and laid matter before law authorities. No action.

Piermont.	Investigation on complaint. Lawless parent instigates son to break and enter schoolhouse and encourages him in non-attendance. Case adjusted.
Rollinsford.	Investigation on complaint. Misunderstanding. Case adjusted.
Rumney.	Investigation on complaint. Case adjusted.
Sanbornville.	Investigation on complaint. Children infected with contagious skin disease. Unsuitable home. Gave advice to parents and called matter to attention of board.
Sandown.	Investigation on call of board. Conditions extremely lax. Some destitution. Secured promise of selectmen to provide for one family.
Sandwich.	Investigation on complaint. Home deserted by mother. Three children, fourteen, three and six, left in miserable shack alone nights. Insufficiently clothed and had been insufficiently fed. Made such arrangements as inspector could to have children removed and cared for.
Seabrook.	General inspection. Truant officer refused to obey school board. Adjusted that phase. Visited school and interviewed parents in non-attendance cases.
	Follow-up assignment. Conditions much improved.
Stewartstown.	County farm. No children of school age.
Suncook.	Reviewing school census.
Tamworth.	Investigation on complaint of teacher. Case adjusted.

Temple.	Transportation trouble. Met board and citizens, explained situation, and recommended course of action.
Unity.	County farm. Three children of school age. Attend school regularly.
Warner.	Investigation on complaint of teacher. Two boys of fourteen had secured hunters' licenses and absented themselves. No action by local authorities. Case adjusted.
Westmoreland.	County farm. No children of school age at present.
Wilmot.	Transportation trouble. Case adjusted.

It will be observed by readers of earlier reports that it is about the same list of towns visited year after year. The list is larger for the biennium just closed, but that is due chiefly to somewhat more systematic visiting and probably to some extent to the fact that citizens and local school officers are learning more every year to use the state education office. The inspectors have made one hundred and ten different investigations in seventy-six different towns and cities during the biennium. Twenty-five towns and cities are responsible for fifty-nine assignments. Of course, in many instances a single investigation covers several cases.

It is probable that in most cases the visit of the inspector has been salutary. Indeed, we know that to be true. But after ten years' experience in administering this section of the law, the most conspicuous disclosure is the essential futility of attempting to control the situation in this way. The statute was enacted in 1901 and the motive behind the legislation was a desire to effectively control the growth of illiteracy, which the census of 1890 and again that of 1900 had shown to be present in alarming measure. It was felt to be necessary to compel the education of every child. The method employed is destructive and negative. That is to

say, it aims to deal directly with the matter by punishing truancy and by punishing parents for not sending children to school. It could be made constructive and positive by seeking out and removing the causes of non-attendance. It is unusual to read the report of a case in which some cause, other than juvenile depravity, is not to be clearly seen lying at the root of the difficulty. Among the causes may be cited those which are discussed below.

I. Poor Schools.

A very large proportion of all the truancy in the state, possibly the bulk of it, is caused by poor schools. For this purpose the term "poor school" would include all kinds, from the mechanical and formalistic school of the city, without adaptation to childish needs and interests, to the bare and squalid rural schoolhouse in which presides an ignorant girl with no more education than the children she essays to teach. Many boys, especially, rebel at school-days under either of these conditions and play truant when parental authority fails and sometimes when it does not. The local truant officer may arrest such cases and put them in school or the parent may be brought into court and prosecuted. The semblance of a cure is often in this way affected, but the real malady is still there.

The positive method of dealing with this class of cases would be to remove the cause, to replace a poor school with a good one. This means among other things more trained teachers, universal professional supervision, and standards of buildings and equipment and instruction fixed by law and enforced.

II. Remote Homes.

The next largest factor in non-attendance is the remote home and the avaricious parent. Given a home two to four miles from the nearest school and a parent beset with the

idea of compelling the school board to pay him for carrying his own child or children to school, you have a situation in which loss of schooling to the children is usually the net result and often the only possible result. Most of our school boards work industriously and faithfully at the problem and often with praiseworthy results, but with a multitude of private affairs demanding their attention they more often have neither the time nor the ability nor the means to deal with the question in the comprehensive manner required.

III. Social Disorder.

A very large class of cases originate in social disorders,—destitution, incompetent homes, immoral and otherwise unfit homes, juvenile immorality, feeble-mindedness, in many cases the use of girls of school age by adult men for immoral purposes. To this list should be specially added a considerable amount of child neglect and abuse which follows upon the "placing out" of children by some agency and failure to follow up the case.

Prosecutions, warnings, threatenings, and similar methods, do little good here. The situation calls for constructive child welfare work by agents duly trained and legally empowered for the work. This class of cases is more likely to occur in rural towns than in urban communities, but no community is wholly exempt and in some instances the cities are as bad as any hill town.

The inspectors have done what they could, but they have of course touched only the outer rim of the circle at a few points. In several particularly vicious cases, Inspector Bishop has at my direction entered prosecutions for offenses against children, when apparently nobody else would. Three of these cases involve details which are unprintable.

Investigations disclose an amount of child abuse, juvenile immorality and criminality, and neglect both moral and physical, which in the state at large must reach very large terms. I don't know that we have any reason to think

that this sort of thing is on the increase. On the other hand, there is certainly no evidence tending to show that it is decreasing. The simple fact is that there are hundreds certainly, and probably thousands,* of children in the state below the age of eighteen who are living lives of horror, and no man raises his hand in their defence. The regularly appointed officers who are, in the eyes of the law, responsible for their care, are usually well-meaning men or women burdened with many cares and at the best amateurs at a task which to them is a side issue. In many cases there is conflict of jurisdiction between school boards, boards of health, selectmen, county commissioners and perhaps others; and while each points to the other the children pass beyond help. We have several small philanthropies dealing with children,—not a circumstance, however, to those dealing with dumb animals,—but they cannot touch more than a small part of the problem. A most encouraging movement in this direction is the establishment of the New Hampshire Children's Aid and Protective Society with headquarters at Manchester.

Suggested Remedies for Child Abuse and Neglect.

The experience of the department leads me to think that the following steps would tend to ameliorate and improve conditions.

I. Create a Children's Bureau in some existing department of the state government,—either the department of Public Instruction, or the department of Charities and Correction, or the State Board of Health. Charge this bureau with the duty of administering and enforcing all laws relating to child welfare throughout the state, in much the same manner as this office is now charged with the duty of en-

*The secretary of the N. H. Children's Aid and Protective Society reports 220 cases between April 1 and October 17. In most instances these cases involve several children each.

forcing the child labor laws. Especially should the bureau be charged with the duty of supervising the work of local officers and holding them up to their duty.

II. Particularly should such a bureau be charged with the oversight of local probation officers. We have had for seven years a juvenile court act with provision for probation officers, but like all laws which are left to enforce themselves, it is largely a dead letter. I suggest that such a probation officer should be attached to each district court and that he should perform also the duties of truant officer for the whole jurisdiction of the court. He should also be immediately responsible for the placed-out children in his district. Of course in the larger jurisdictions he should have assistants. In the smaller, he could combine several jurisdictions. He should be a person naturally fitted and qualified for modern social work, and every possible precaution should be taken to prevent the appointment of mere political hangers-on.

III. It should by law be made the duty of every teacher to report cases of child abuse or neglect coming within her knowledge.

There are, as I see it, three essential needs in the organization of state-wide child protection work,—first, responsible reporters of cases; second, a central co-ordinating agency; third, qualified workers in the field.

I, therefore, report that there is pressing need of a reorganization of our whole process of enforcing the attendance of children at school on a basis of systematic, constructive, positive methods.

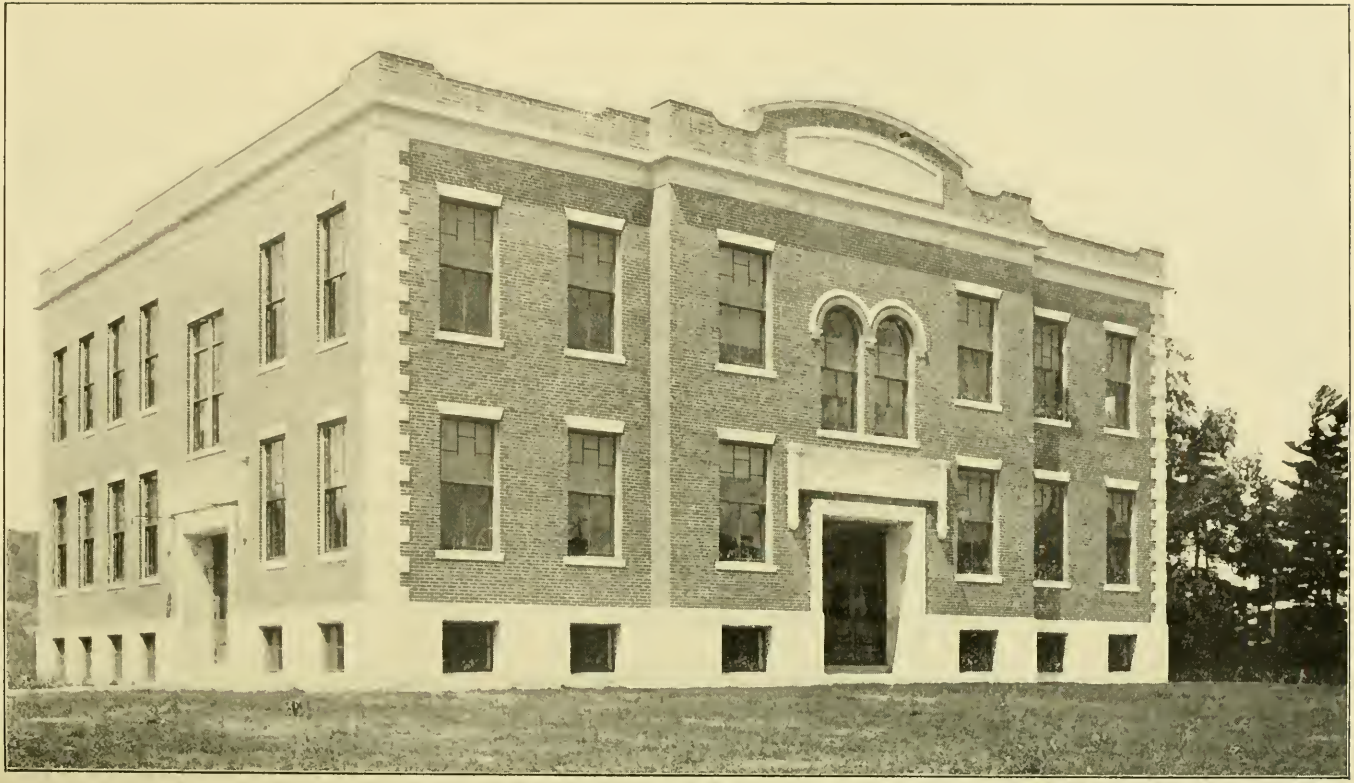
CHAPTER IV.

Appeals from Decisions of School Boards.

The General Court of 1911 enacted an amendment to section 14 of Chapter 93 of the Public Statutes as follows:

"*Provided, however,* that any person having the custody and control of a child may apply to the state superintendent of public instruction for relief whenever such person deems it to be against the moral or physical welfare of such child to attend the particular school required by law, and thereupon, after notice to the school board of the district in which such child is required to attend school, the state superintendent of public instruction may order such child to attend another school in the same district if such school is available; may order such child to attend school in another district, in which case the district in which such child resides shall pay to the district in which such child attends school tuition not to exceed the average cost per child of instruction for the regularly employed teachers and the cost of text-books, supplies and apparatus for such time as such attendance shall continue; may permit such child to withdraw from school attendance for such time as he may deem necessary or proper; or make such other order or orders with respect to the attendance of such child at school as in his judgment the circumstances require."

Two such appeals have been heard. Decisions are here reported:



New Woodsville High School.

New Hampshire

Department of Public Instruction.

In the case of Fred A. Bickford, et als., complainants against the School Board of Bow.

The complainants recite that children are required to attend school in Bow taught by Edwin A. Colby. They allege that said Colby has a harsh and ungovernable temper and that his methods of discipline have been such as to imperil the moral or physical welfare of the children required by law to attend such school. They petition the superintendent of public instruction for relief in accordance with Chapter 139 of the Laws of 1911.

It was ordered by the superintendent that a public hearing be held upon the complaint at the Town Hall in the school district of Bow, on April 28th, at 2.30 in the afternoon, and the school board and complainants were duly notified.

At the hearing so ordered, Fred A. Bickford, Warren E. Merrill, Charles O. Mills were duly sworn and testified. The witnesses were cross-examined by Mr. Colby and several witnesses were introduced to testify as to their knowledge of the general character of the school under Mr. Colby's instruction. Nothing in the testimony tends to show that the allegation of the complainants is founded upon fact, but that on the contrary such corporal punishment as has been administered has been well deserved and not excessive in character and that the teacher has exercised due vigilance in the protection of the moral and physical welfare of the children under his charge.

It is therefore found that no action of the said Edwin A. Colby, teacher, has been such as in any way to imperil the moral or physical welfare of children attending the school under his instruction.

The petition is denied and no order will issue.

New Hampshire

Department of Public Instruction.

In case of A. H. Newton, Appellant from Decision of the School Board of Jefferson.

In the matter of the petition of A. H. Newton of Jefferson and others requesting a hearing under Public Statutes 93:14 as amended, etc., and claiming relief from the action of the Jefferson Board of Education in closing the so-called Valley School in Jefferson and providing for the transportation of pupils to the Meadows School, so-called, this relief being asked for on the ground that the petitioners deem "it to be against the moral and physical welfare of (these children) to attend the particular school (designated)," a hearing was ordered for October 4, 1913, at 9.30 a. m., at the "Valley School House."

After hearing all interested parties who desired to be heard, and after careful consideration of all of the facts and circumstances, the request of the petitioners was denied and the interested parties present were verbally notified of the decision.

The petitioners in this petition claim among other things that the carriage provided is unsuitable, the horses too old; that the school at the Meadows is rude and boisterous. That at some past time, within a few years, one child was injured, as they say, by rough usage by other and larger scholars, etc.

At the hearing on Saturday, October 4th, many, if not most, of the petitioners were present as was the Board of Education and Superintendent of Schools.

The attention of the petitioners was called to the fact that boards of education may close schools and transport pupils, and that the Department of Public Instruction may interfere only when it is shown that the "moral and

physical welfare'' of such pupils is jeopardized by the the change.

The evidence presented falls under two heads, namely, first, that going to show or intended to show that the *physical* welfare of the children is threatened by transportation and association with the pupils at the Meadows, and, second, that the moral welfare is jeopardized by reasons of the moral tone of the Meadows school.

Conclusions.

The carriage is undoubtedly a good one, safe and comfortable. The driver is young but by common report reliable. The road is an excellent one in summer but no doubt is cold in winter. But these pupils must walk over one-half mile of this road in case they have a school at the Valley and it is hard to see how two and one-half miles riding in a comfortable covered wagon can be worse than one-half mile of walk in wind and rain, snow and mud.

The probability of injury either physical or moral at the Meadows is neither more nor less than at the Valley, for, while there are more children in attendance, there are two teachers there to look after them, and Superintendent Jackson states that these teachers take their dinners with them and remain in charge of the school during the noon hour.

There is no warrant for overruling the board's decision to close this school at the Valley and transport the pupils, as they propose to do, to the Meadows, *so far as the physical or moral welfare* of the pupils is concerned.

CHAPTER V.

Approval of Secondary Schools.

Chapter 96 of the Laws of 1901 makes provision for the higher education at public expense of youth residing in towns in which no high school is maintained. For this purpose, the law defines an high school to be an institution capable of preparing students for college, technical school or normal school, and provides that all such schools shall be certified as such by the superintendent of public instruction.

In effect, this provision of law makes the superintendent of public instruction the judge of secondary standards.

I have discussed the principles by which the office has been governed in the application of this statute in earlier reports. In general, I have endeavored to ascertain the standards applied by competent educational authority throughout the nation. I have given especial weight to the recommendations of the Educational Council of New Hampshire, since this body seems to be able to express most authoritatively the competent educational opinion of this state.

The conditions under which schools have been approved are herewith outlined:

Approval of high schools and academies under the law of 1901, by the superintendent of public instruction, is in substance a certification by that officer that the schools approved are of the standard specified by law. The law prescribes that they shall be of college-preparatory grade, that is, that they shall teach those subjects commonly accepted as college admission requirements, and teach them with that degree of efficiency which will adequately prepare students for admission to college.

Schools will not ordinarily be approved which fail to fulfill the following minimum requirements for approval:

1. The teachers of the school must have received an education qualifying them to prepare others for higher institutions, that is to say, teachers in approved secondary schools must hold a bachelor's degree, or for purpose of the school the full equivalent. This requirement will not be held to apply to teachers who were in service in approved schools prior to July 15, 1905.

2. A sufficient corps of teachers must be employed so that no teacher will be obliged to teach more than eight periods per day. This is regardless of the number of curricular approved.

3. A regular program of studies calculated to fulfill the intention of the law must be adopted by the school board or the trustees of the institution, and, after approval, such program may not be changed without express approval in writing of the state superintendent. A deviation from the adopted program will be considered by the superintendent as a change in program.

4. The program of the approved school may not include subjects which belong essentially to the elementary school. Just in so far as it does include such subjects, it tends to become a common school and not such a school as is contemplated by the law.

5. Reasonable instruction in the constitution of the United States and in the constitution of New Hampshire is required by law. Such a course is required of every pupil. The superintendent will consider a year's work in the history and government of the United States and of New Hampshire to be reasonable instruction. Such a course may well be given in the senior year when pupils have gained a desirable maturity. It would then be a course regularly accepted by the colleges for admission.

6. The law requires that such school shall be properly equipped. The school must possess:

(1) An adequate supply of suitable text-books.

(2) An adequate supply of reference books. This may be taken to mean at least:
   (a) One or more good unabridged English dictionaries.
   (b) One or more good unabridged lexicons for each foreign language offered.
   (c) Either a good encyclopedia, or a good advanced treatise for each course in history and science offered.
(3) A sufficient supply of wall maps for each course in history, geography, etc.
(4) A sufficient laboratory equipment for individual work by pupils in each of the sciences, physics, chemistry and biology, if offered.

7. The school must establish and maintain an adequate standard of admission requirements. All pupils entering from beyond the district limits, from without the jurisdiction of the governing body of the school, that is to say, those commonly known as "tuition pupils," may be admitted only upon written examination in spelling, English composition, English grammar, history of the United States, arithmetic, geography, and physiology and hygiene, the last with special reference to the effects of the use of narcotics and alcoholic stimulants. The governing body must establish and maintain some regular and adequate rules of admission for pupils coming from schools within its own jurisdiction, as, for instance, pupils entering a high school from a grammar school.

8. The governing body must establish and maintain some regular and adequate rules of promotion from class to class within the school.

9. The governing body must maintain a proper state of discipline within the school. A school cannot fairly be said to be capable of preparing for college except it be conducted in good order.

Remodeled Lisbon Public School, High and Grades.

10. For more detailed information see standard program of studies for the secondary schools of New Hampshire, or write to the department.

For the school year 1913-1914, the following schools were approved:

First Class. (Program of four or more years.)

Alton High School,
Andover, Proctor Academy,
Antrim High School,
Ashland High School,
Atkinson Academy,
Bath High School,
Berlin High School,
Bethlehem High School,
Claremont, Stevens High School,
Colebrook Academy,
Concord High School,
St. Mary's School,
Derry, Pinkerton Academy,
Dover High School,
Enfield High School,
Epping High School,
Exeter, Tuck High School,
Robinson Seminary,
Farmington High School,
Franconia, Dow Academy,
Franklin High School,
Goffstown High School,
Gorham High School,
Groveton High School,
Hampstead High School,
Hampton Academy,
Hanover High School,
Haverhill Academy,
Henniker High School,
Hillsborough High School,
Hinsdale High School,
Holderness School for Boys,
Hollis High School,
Hopkinton High School,
Jaffrey (*East*), Conant High School,
Jefferson High School,
Keene High School,
Kingston, Sanborn Seminary,
Laconia High School,
Lancaster High School,
Lebanon High School,
Lebanon (*West*) High School,
Lincoln High School,
Lisbon High School,
Littleton High School,
Manchester High School,
St. Anselm's College,
Marlborough High School,

First Class—Continued.

Meriden, Kimball Union Academy,
Merrimack, McGaw Institute, *Reed's Ferry,*
Milford High School,
Milton, Nute High School,
Nashua High School,
New Boston High School,
New Hampton Literary Institution,
New Ipswich, Appleton Academy,
New London, Colby Academy,
Newmarket High School,
Newport High School,
Northwood Centre, Coes Academy,
Pembroke Academy,
Penacook High School,
Peterborough High School,
Pittsfield High School,
Plymouth High School,
Portsmouth High School,
Rochester High School,
Somersworth High School,
Strafford Center, Austin-Cate Academy,
Stratford (*North*) High School,
Tilton Seminary,
Walpole High School,
Warner, Simonds Free High School,
Whitefield High School,
Wilton High School,
Winchester High School,
Woodsville High School.

Third Class. (Program of two years.)

Bristol High School,
Canaan High School,
Conway High School,
Danville, Eaton High School,
Errol High School,
Hancock High School,
Meredith High School,
North Conway High School,
Sunapee High School,
Troy High School,
Warren High School,
Woodsville High School.

Fourth Class. (Program of one year.)

Charlestown High School.

For the school year 1914-1915, the following schools were approved:

First Class. (Program of four or more years.)

Alton High School,
Amherst High School,
Andover, Proctor Academy,
Antrim High School,
Ashland High School,
Atkinson Academy,
Bath High School,
Berlin High School,
Bethlehem High School,
Claremont, Stevens High School,
Colebrook Academy,
Concord High School,
St. Mary's School,
Derry, Pinkerton Academy,
Dover High School,
Enfield High School,
Epping High School,
Exeter, Tuck High School,
Robinson Seminary,
Farmington High School,
Franconia, Dow Academy,
Franklin High School,
Goffstown High School,
Gorham High School,
Groveton High School,
Hampstead High School,
Hampton Academy,
Hanover High School,
Haverhill Academy,
Henniker High School,
Hillsborough High School,
Hinsdale High School,
Hollis High School,
Hopkinton High School,
Contoocook,
Jaffrey (*East*), Conant High School,
Jefferson High School,
Keene High School,
Kingston, Sanborn Seminary,
Laconia High School,
Lancaster High School,
Lebanon High School,
Lebanon (*West*) High School,
Lincoln High School,
Lisbon High School,
Littleton High School,
Manchester High School,
St. Anselm's College,
Marlborough High School,
Meriden, Kimball Union Academy,
Merrimack, McGaw Institute,
Reed's Ferry,
Milford High School,
Milton, Nute High School,
Nashua High School,
New Hampton Literary Institution,
New Ipswich, Appleton Academy,

First Class—Continued.

New London, Colby Academy,
Newmarket High School,
Newport High School,
Northwood Centre, Coes Academy,
Pembroke Academy,
Penacook High School,
Peterborough High School,
Pittsfield High School,
Plymouth High School,
Portsmouth High School,
Rochester High School,
Somersworth High School,
Strafford Center, Austin-Cate Academy,
Stratford (*North*) High School,
Sunapee High School,
Tilton Seminary,
Walpole High School,
Warner, Simonds Free High School,
Whitefield High School,
Wilton High School,
Winchester High School,
Woodsville High School.

Third Class. (Program of two years)

Bristol High School,
Canaan High School,
Charlestown High School,
Conway High School,
Eaton High School, Danville.
Errol High School,
Fitzwilliam High School,
Hancock High School,
Meredith High School,
North Conway High School,
Troy High School,
Warren High School.

Fourth Class. (Program of one year.)

Piermont High School.

CHAPTER VI.

Teachers' Institutes.

The law has for many years required the superintendent of public instruction to hold at least one institute in each county in the state during the year. The law has been complied with and more than complied with.

The institutes held have been of four distinct types:

I. Day institutes for teachers, largely in unsupervised territory. At these meetings the programs have been made up entirely of lectures dealing practically with the problems of the school room.

II. Institutes held in connection with Teachers' Associations as follows: Ammonoosuc Valley, Cheshire County, Merrimack Valley, Rockingham County, Strafford County, Winnepesaukee Valley. These meetings are designed to be primarily discussion of new movements and new methods in educational science.

III. Superintendents' and principals' institutes, two meetings each year, in December and August, respectively. The December meeting usually consists of morning, afternoon and evening sessions continuing for two days. The subject matter of discussion is the administrative interests of the state and local school systems. The August meeting continues for one week and is devoted to the serious discussion of current problems in the field of educational science. It has been customary also to call for the week's work upon some man of national reputation in his chosen field. At the August meeting of 1914, this lecturer was Dr. Henry H. Goddard, director of the Research Laboratory at the Vineland, N. J., School for Feeble-minded. There was no August meeting in 1913.

IV. School Board Conferences and Convention.

During the past year it has been possible to return to the practice of calling school boards together for conference, a practice which was inaugurated in 1908, continued for two years and then dropped because of lack of available time. These meetings have been of undoubted value. Necessarily, no such proportion of school boards can reach the meetings as is true of teachers attending the institutes. A long journey is necessary, considerable expense and loss of time. The number of members of boards in attendance has been gratifying and most encouraging. I suggest that every school district in the state should pay the expenses of its school board at an annual convention in Concord.

As the tables which follow will show, the several school districts of the state are every year very generously represented at the institutes. I estimate that in excess of four-fifths of the entire teaching force of the state is represented at some institute during the year.

Of the towns unrepresented at any institute during the two years, Chatham and Wentworth's Location would seem to be the only ones remote enough from any institute to justify their lack of representation.

TABLE NO. 4.

STATISTICS OF TEACHERS' INSTITUTES FROM SEPTEMBER 1, 1912, TO AUGUST 31, 1913.

Number.	Location.	County.	Date.	Districts represented.	Teachers in attendance.	School board members in attendance.	Cost.
1	Walpole	Cheshire	Oct. 11	12	62	2	$43.79
2	Rumney	Grafton	Oct. 25	10	29	1	55.82
3	Reed's Ferry	Hillsborough	Oct. 25	5	27	3	51.56
4	Whitefield	Coos	Nov. 1	16	123	1	122.61
5	Lempster	Sullivan	Nov. 8	4	12	4	43.60
6	Groveton	Coos	Nov. 15	13	94	3	63.16
7	Hampton	Rockingham	Nov. 15	11	38	1	50.29
8	Plaistow	Rockingham	Nov. 22	14	43	1	48.63
9	Ossipee	Carroll	Nov. 22	11	57	6	36.76
10	Warner	Merrimack	Dec. 6	10	39	5	83.25
11	Derry	Rockingham	Dec. 6	9	59	6	55.68
12	Haverhill Corner	Grafton	Jan. 17	7	37	5	59.96
13	Franklin	Merrimack	Jan. 24	13	114	2	54.43
14	Dover	Strafford	Jan. 24	13	107	2	88.89
15	West Lebanon	Grafton	Jan. 31	10	77	8	65.97
16	Concord	Merrimack	Feb. 7	25	255	2	77.69
17	Keene	Cheshire	Feb. 14	22	192	7	119.29
18	Portsmouth	Rockingham	Feb. 21	18	112	2	33.22
19	Alton	Belknap	May 2	10	57	10	34.42
20	Nashua*	Hillsborough	May 9	6	46	..	51.54
	Total,			239	1580	71	$1,240.56

* Kindergarten teachers only.

TABLE NO. 5.

STATISTICS OF SUPERINTENDENTS' INSTITUTES FROM SEPTEMBER 1, 1912, TO AUGUST 31, 1913.

No.	Location.	County.	Date.	Dist's represented.	Attendance.	Cost.
1	Plymouth	Grafton	Aug. 26, 27, 28, 29, 30, 31	54	37	$234.95
2	Plymouth	Grafton	Dec. 26, 27, 28	63	40	105.25
	Total,			117	77	$340.20

TABLE NO. 6.

Statistics of Teachers' Institutes from September 1, 1913, to August 31, 1914.

Number.	Location.	County.	Date.	Districts represented.	Teachers in attendance.	School board members in attendance.	Cost.
1	Fremont	Rockingham	Sept. 12	10	35	11	$30.39
2	South Acworth	Sullivan	Sept. 19	7	29	4	54.61
3	New Boston	Hillsborough	Sept. 26	7	37	7	31.69
4	Wilton	Hillsborough	Oct. 3	13	64	6	57.70
5	Henniker	Merrimack	Oct. 3	10	49	4	23.07
6	Marlborough	Cheshire	Oct. 10	16	84	1	61.37
7	Andover	Merrimack	Oct. 10	7	32	4	37.38
8	Bradford	Merrimack	Oct. 24	7	29	4	38.43
9	Cornish	Sullivan	Oct. 24	3	28	2	50.48
10	Bedford	Hillsborough	Oct. 31	4	25	5	30.96
11	Gilsum	Cheshire	Nov. 7	6	18	7	37.48
12	Woodsville	Grafton	Nov. 7	14	111	4	63.40
13	North Stratford	Coos	Nov. 14	13	64	2	50.92
14	Warren	Grafton	Nov. 20	5	22	3	28.78
15	East Alstead	Cheshire	Jan. 16	5	14	4	44.70
16	Hillsborough†	Hillsborough	Jan. 16	8	25	1	48.60
17	Lancaster†	Coos	Jan. 23	8	46	1	38.34
18	Lebanon	Grafton	Jan. 30	8	80	8	54.20
19	Lisbon	Grafton	Feb. 6	15	105	4	58.60
20	Tilton	Belknap	Feb. 13	13	105	4	45.34
21	Manchester	Hillsborough	Feb. 20	21	336	5	53.23
22	Keene	Cheshire	Feb. 27	12	105	3	91.07
23	Epping	Rockingham	Mar. 6	14	119	5	50.68
24	Dover	Strafford	Mar. 13	12	107	2	59.69
25	Derry	Rockingham	Mar. 20	8	33	6	39.73
26	Ossipee	Carroll	May 1	11	63	5	48.96
27	Manchester*	Hillsborough	May 8	5	37	..	55.78
	Total,			262	1802	112	$1,285.58

* Kindergarten teachers only.
† Secondary teachers only.

TABLE NO. 7.

Statistics of School Board Conferences from September 1, 1913, to August 31, 1914.

No.	Location.	County.	Date.	Districts represented.	School board members in attendance.	Cost.
1	Lancaster	Coos	Oct. 1	6	9	*
2	Woodsville	Grafton	Oct. 2	8	15	
3	Plymouth	Grafton	Oct. 3	10	13	
4	Conway	Carroll	Oct. 7	3	6	
5	Sanbornville	Carroll	Oct. 8	2	3	
6	Dover	Strafford	Oct. 9	10	18	
7	Exeter	Rockingham	Oct. 10	11	16	
8	Lebanon	Grafton	Oct. 14	9	17	
9	Newport	Sullivan	Oct. 15	6	11	
10	Concord	Merrimack	Oct. 16	15	17	
11	Keene	Cheshire	Oct. 21	15	23	
12	Peterborough	Hillsborough	Oct. 22	5	8	
13	Manchester	Hillsborough	Oct. 23	11	20	
14	Laconia	Belknap	Oct. 24	5	8	
15	Salem	Rockingham	Oct. 28	5	10	
16	Pittsfield	Merrimack	Oct. 29	4	8	
	Total,			125	202	$132.89

* The cost of each conference averaged $8.30.

TABLE NO. 8.

Statistics of State School Board Conventions from September 1, 1913, to August 31, 1914.

No.	Location.	County.	Date.	Districts represented.	School board members in attendance.	Cost.
1	Concord	Merrimack	May 6, 7	69	94	$108.68
	Total,			69	94	$108.68

TABLE NO. 9.

Statistics of Superintendents' Institutes from September 1, 1913, to August 31, 1914.

No.	Location.	County.	Date.	Districts represented.	Attendance.	Cost.
1	Plymouth	Grafton	Dec. 29, 30, 31	83	38	$12.00
	Total,			83	38	$12.00

TABLE NO. 10.

Summary for 1912-1913.

Teachers' institutes	20
Attendance	1,651
Cost	$1,240.56
Superintendents' institutes	2
Attendance	77
Cost	$340.20
Total:	
Institutes	22
Attendance	1,728
Cost	$1,580.76

TABLE NO. 11.

Summary for 1913-1914.

Teachers' institutes	27
Attendance	1,914
Cost	$1,285.58
Superintendents' institutes	1
Attendance	38
Cost	$12.00
School board conferences	16
Attendance	202
Cost	$132.89
State School board conventions	1
Attendance	94
Cost	$108.68
Total:	
Institutes and conferences	45
Attendance	2,248
Cost	$1,539.15

TABLE NO. 12.

Districts Represented at Institutes.

Towns.	Number of Institutes.	Towns.	Number of Institutes.
Acworth,	3	Carroll,	1
Albany,	1	Charlestown,	1
Allenstown,	1	Chester,	1
Alstead,	5	Chesterfield,	3
Alton,	2	Chichester,	1
Amherst,	3	Colebrook,	3
Andover,	2	Columbia,	3
Antrim,	3	Concord,	6
Ashland,	3	Penacook,	1
Atkinson,	3	Conway,	2
Auburn,	3	Cornish,	1
Barnstead,	1	Dalton,	3
Barrington,	2	Danbury,	2
Bartlett,	2	Danville,	3
Bath,	4	Deering,	2
Bedford,	3	Derry,	3
Belmont,	2	Dorchester,	1
Bennington,	2	Dover,	3
Benton,	3	Dublin,	3
Berlin,	2	Dunbarton,	2
Bethlehem,	3	Durham,	3
Boscawen,	2	East Kingston,	4
Bow,	2	Easton,	1
Bradford,	3	Effingham,	2
Brentwood,	4	Ellsworth,	1
Bristol,	1	Enfield,	2
Brookfield,	2	Epping,	3
Brookline,	1	Epsom,	1
Campton,	1	Errol,	1
Canaan,	2	Exeter,	4
Candia,	2	Farmington,	3
Canterbury,	2	Fitzwilliam,	4

Towns.	Number of Institutes.	Towns.	Number of Institutes.
Francestown,	1	Kensington,	1
Franconia,	1	Kingston,	3
Franklin,	5	Laconia,	2
Freedom,	1	Lancaster,	6
Fremont,	4	Landaff,	3
Gilford,	2	Langdon,	2
Gilmanton,	1	Lebanon,	2
Gilsum,	3	Lee,	5
Goffstown,	2	Lempster,	2
Gorham,	2	Lincoln,	1
Goshen,	2	Lisbon,	4
Grafton,	1	Litchfield,	4
Greenfield,	1	Littleton,	3
Greenland,	1	Londonderry,	3
Greenville,	1	Loudon,	1
Hampstead,	2	Lyman,	1
Hampton,	3	Lyme,	3
Hampton Falls,	2	Lyndeborough,	3
Hancock,	4	Madbury,	1
Hanover,	2	Madison,	2
Harrisville,	2	Manchester,	4
Haverhill,	5	Marlborough,	4
Woodsville,	3	Marlow,	1
Henniker,	4	Mason,	1
Hill,	2	Meredith,	2
Hillsborough,	2	Merrimack,	4
Hinsdale,	3	Milford,	3
Holderness,	3	Milton,	2
Hollis,	3	Mont Vernon,	1
Hooksett,	2	Monroe,	1
Hopkinton,	4	Nashua,	4
Hudson,	3	Nelson,	2
Jaffrey,	3	New Boston,	2
Jefferson,	4	Newbury,	2
Keene,	6	Newcastle,	1

Towns.	Number of Institutes.	Towns.	Number of Institutes.
New Durham,	3	Somersworth,	2
Newfields,	3	South Hampton,	1
New Ipswich,	1	Stark,	3
New London,	2	Stewartstown,	2
Newington,	2	Stoddard,	3
Newmarket,	1	Strafford,	3
Newton,	5	Stratford,	3
Northfield,	1	Stratham,	3
North Hampton,	2	Sullivan,	3
Northumberland,	3	Sunapee,	1
Nottingham,	1	Surry,	2
Orford,	1	Sutton,	2
Ossipee,	2	Swanzey,	4
Pelham,	1	Tamworth,	2
Pembroke,	2	Temple,	1
Peterborough,	2	Thornton,	1
Piermont,	2	Tilton,	2
Pittsfield,	3	Troy,	3
Plainfield,	2	Tuftonboro,	2
Plaistow,	1	Unity,	2
Plymouth,	3	Wakefield,	2
Portsmouth,	4	Walpole,	4
Randolph,	1	Warner,	4
Raymond,	1	Warren,	2
Richmond,	2	Washington,	1
Rindge,	1	Weare,	3
Rochester,	2	Wentworth,	2
Rollinsford,	1	Westmoreland,	4
Rumney,	3	Whitefield,	4
Rye,	3	Wilmot,	2
Salem,	4	Wilton,	3
Salisbury,	3	Winchester,	3
Sanbornton,	2	Windham,	2
Sandown,	2	Wolfeboro,	4
Seabrook,	1	Woodstock,	1

TABLE NO. 13.

DISTRICTS REPRESENTED AT NO INSTITUTE DURING TWO YEARS.

Alexandria,
Bridgewater,
Center Harbor,
Chatham,
Claremont,
Clarksville,
Croydon,
Deerfield,
Dummer,
Eaton,
Grantham,
Groton,
Hebron,
Jackson,
Middleton,
Milan,
Moultonborough,
New Hampton,
Newport,
Northwood,
Orange,
Pittsburg,
*Roxbury,
Sandwich,
Sharon,
Shelburne,
Springfield,
Webster,
Wentworth's Location,
Windsor.

* No schools.

TABLE NO. 14.

DISTRICTS REPRESENTED AT NO INSTITUTE DURING:

I. Last four years.

Bridgewater,
*Chatham,
Orange,
Roxbury,
Sharon,
Springfield,
Wentworth's Location,
Windsor.

II. Last six years.

Bridgewater,
*Chatham,
Orange,
Roxbury,
Springfield,
Wentworth's Location,
Windsor.

III. Last eight years.

*Chatham.
Wentworth's Location.

* Probably represented at Maine institutes.

TABLE NO. 15.

Districts Represented at School Board Conferences and Conventions, 1913.

District.	Number Present.	District.	Number Present.
Alexandria,	1	Danbury,	1
Allenstown,	1	Derry—Town,	1
Alton,	1	Dorchester,	3
Amherst,	2	Dover,	3
Barnstead,	2	Dublin,	2
Bath—Town,	2	Eaton,	2
Bath—Special,	2	Enfield,	1
Bedford,	2	Exeter,	2
Belmont,	3	Farmington—Town,	1
Bennington,	1	Farmington—Special,	3
Benton,	1	Fitzwilliam,	3
Boscawen,	1	Francestown,	1
Bow,	1	Franklin,	1
Bradford,	1	Gilmanton,	1
Brentwood,	2	Gilsum,	1
Bristol—Town,	1	Goffstown—Town,	1
Brookfield,	1	Grafton,	1
Campton,	1	Greenland,	1
Canaan—Town,	1	Groton,	2
Canaan—Special,	1	Hampton,	1
Candia,	2	Hampton Falls,	3
Canterbury,	2	Hancock,	1
Charlestown,	2	Hanover—Town,	2
Chesterfield,	1	Hanover—Special,	4
Concord—Town,	1	Harrisville,	1
Concord—Union,	2	Haverhill—Town,	2
Conway,	3	Henniker,	1
Cornish,	2	Hillsborough—Town,	1
Croydon,	1	Hinsdale,	1

District.	Number Present.	District.	Number Present.
Holderness,	1	New Ipswich,	3
Hooksett,	1	New Hampton,	1
Hopkinton,	1	Newport,	2
Hudson,	3	Newton,	1
Jackson,	1	Northfield,	1
Jefferson,	1	Northumberland,	1
Keene,	2	Nottingham,	2
Kingston,	1	Pelham,	2
Laconia,	2	Pembroke,	1
Lancaster—Town,	2	Penacook,	1
Lancaster—Special,	1	Peterborough,	1
Landaff,	2	Piermont,	3
Lebanon—Town,	2	Pittsburg,	2
Lebanon—H. S.,	2	Pittsfield,	3
Lee,	2	Plainfield,	2
Lempster,	1	Plaistow,	1
Lincoln,	1	Plymouth,	1
Lisbon—Town,	2	Richmond,	2
Lisbon—Sugar Hill,	1	Rindge,	2
Littleton,	1	Rochester,	1
Londonderry,	2	Rollinsford,	1
Loudon,	1	Rumney,	2
Lyme,	2	Rye,	1
Lyndeborough,	3	Salem,	3
Madbury,	1	Sanbornton,	1
Marlborough,	1	Sandown,	1
Mason,	2	Seabrook,	1
Meredith,	1	Shelburne,	1
Merrimack,	1	South Hampton,	1
Nelson,	2	Springfield,	1
Newbury,	1	Stoddard,	1
New Boston,	3	Strafford,	2
New Durham,	3	Stratford,	2
Newfields,	1	Stratham,	2

Dormitory, Keene Normal.

District.	Number Present.	District.	Number Present.
Sullivan,	2	Warner,	1
Sunapee,	3	Warren,	2
Sutton,	1	Weare,	2
Swanzey,	1	Wentworth,	1
Temple,	1	Westmoreland,	3
Thornton,	1	Whitefield—Town,	2
Tilton—Town,	1	Whitefield—Special,	1
Tilton—Union,	1	Wilmot,	1
Troy,	1	Wilton,	1
Wakefield,	2	Winchester,	1
Walpole,	1	Woodstock,	1

TABLE NO. 16.

SHOWING SUPERINTENDENTS AND PRINCIPALS PRESENT AT CONFERENCES, DECEMBER, 1912, DECEMBER, 1913, AUGUST, 1914.

Numeral indicates number of institutes attended.

Superintendents.		*Principals.*	
Adams—Raymond,	1	Armstrong—Henniker,	1
Averill—Hinsdale,	3	Bisbee—	
Bacon—Milford,	2	Robinson Seminary,	2
Best—Contoocook and		Buker—Farmington,	1
Walpole,	3	Clayton—	
Blaisdell—Laconia,	3	Proctor Academy,	1
Breck—Tilton,	2	Cummings—Claremont,	2
Butterfield—Dover,	2	Davis, A. G.—Antrim,	1
Carpenter—Littleton,	3	Davis, C. O.—Wilton,	1
Coggins—Franklin,	1	Dunfield—Portsmouth,	1
Cutts—Derry,	3	Dunham—	
Gilman—Lisbon,	3	Pembroke Academy,	1

Superintendents.

Holman—No. Stratford, 2
Jackson—Whitefield, 3
Kendall—Hillsborough, 2
Knowlton—Conway, 2
Landman—Wolfeboro, 1
Lane—Hampton, 2
Libbey—Contoocook, 1
MacDonald—Jaffrey, 2
Michels—Milton, 2
Moore—Berlin, 1
Morrison—Wilton, 1
Page—Woodsville, 3
Pringle—Portsmouth, 3
Record—Walpole and Somersworth, 3
Rich—Marlborough, 2
Roberts, H. S.—Suncook, 1
Roberts, T. A.—Lebanon, 3
Rundlett—Concord, 1
Sanborn—Pittsfield, 3
Slayton—Claremont, 2
Sumner—Penacook, 1
Tuttle—Rye, 2
Williams—Colebrook, 2
Winslow—Salem, 3

Principals.

Elwell—Hampton, 1
Harmon—Warner, 1
Harris—Winchester, 1
Hess—Lebanon, 2
Hobbs—Portsmouth, 1
Howard—West Lebanon, 2
Jesseman—Jefferson, 1
Johnson—Epping, 1
Kemp, C. W.—Colebrook, 1
Kemp, Z. W.—Kingston, 1
Marrinan—Pinkerton Academy, 1
MacLean—Berlin, 1
McGaw—Hillsborough, 1
Merry—Hanover, 3
Morrison—Peterborough, 1
Noyes—Nashua, 2
Orcutt—Woodsville, 2
Preston—New Hampton, 1
Shanor—Whitefield, 1
Smith—Lancaster, 1
Speare—Littleton, 1
Walker—Exeter High School, 2
Wallace—Plymouth, 1
Welch—Coes Academy, 1
Wiggin—Contoocook, 1
Wilder—Bethlehem, 1
Young—Hinsdale, 1
Zarmon—Meredith, 1

Principals Silver and Mason of Plymouth and Keene Normal Schools were in attendance at each meeting.

It should be understood that in the case of many of the men whose names are listed above, sickness, or other unavoidable causes, has kept them from one or more meetings. Others are new to the state, and still others are just beginning to realize the duties and opportunities connected with these meetings. Still, a scrutiny of the list and a notation of the names which never appear, will indicate where a spirit of progress and interest in New Hampshire's educational advancement lies and where it does not.

It is noteworthy that, while these meetings are arranged particularly with reference to the needs of superintendents and secondary principals, a goodly number of ambitious and studious teachers are also to be found in the number of regular attendants. Further, of late a considerable number of citizens, coming from different parts of the state, who are interested in the study of education, are also usually to be found in attendance.

TABLE NO. 17.

Showing Topics of Discussion at Institutes.

Elementary.

Topic.	Number of Periods.	Topic.	Number of Periods.
Arithmetic,	29	Daily Time Table,	5
English,	28	Manual Training,	5
Reading.	26	Schoolhouse Sanitation,	4
Nature Study,	26	Spelling,	4
History,	21	Domestic Arts,	4
Physiology and Hygiene,	10	Discipline,	3
Geography,	9	Medical Inspection,	3
Penmanship,	8	Practical Arts,	3

Topic.	Number of Periods.	Topic.	Number of Periods.
Elementary Agriculture,	7	Civics,	2
Music,	5	School Playgrounds,	2
Plays and Games,	5	Drawing,	1

SECONDARY.

Practical Arts,	8	Modern Language,	2
Mathematics,	7	Physics and Chemistry,	2
Latin,	6	Biology,	2
English,	5	Agriculture,	2
History,	2	Physiology and Hygiene,	1
Civics,	2	Domestic Arts,	1

GENERAL.

General Pedagogy,	46	School and Library,	2
Rural Schools,	18	Kindergarten,	2
Administration,	8	Plays and Games,	1
Principles of Education,	7	Ethics of the Profession,	1
Teachers' Pensions,	6	Human Education,	1
School Management,	4	High School Education at Home,	1
General Psychology, including Genetic,	3	The Efficient Home,	1
Hygiene and Sanitation,	2		

INSTITUTE EVENING PUBLIC ADDRESSES.

The Forward Movement in Agriculture.

Industrial and Agricultural Education in New Hampshire.

Industrial Education in New Hampshire.

A High School for an Industrial Community.

The Practical Arts in New Hampshire Schools.

Essential Needs of Our Schools.

Domestic Arts in the High School—Illustrated.

TABLE NO. 18.

Showing Topics of Discussion at School Board Conferences.

The Attendance and Child Labor Laws.

Consolidation and Transportation—The Laws, Limitations, and Advantages.

Medical Inspection.

High Schools and Academies and Tuition Charges.

Teachers' Institutes and Visiting Days.

The State Normal Schools and the Trained Teacher Supply.

Accounts and Financial Matters.

General School Board Duties.

Topics of Discussion at the State School Board Convention.

Routine Duties of the School Board.

Annual Statistical and Financial Returns.

Recent Educational Measures in Maine.

Practical Arts Work in New Hampshire Schools—Illustrated.

Modern New Hampshire School Buildings—Illustrated.

Relation of Superintendents to School Board.

- From the Viewpoint of the District Superintendent.
- From the Viewpoint of the City Superintendent.

The Need of State-Wide Supervision of Schools.

Medical Inspection.

- Its Need and Methods of Administration.
- A Preliminary Medical Inspection of the School Children in Berlin.
- Suggestions in Relation to Administration of Medical Inspection Act.

CHAPTER VII.

Examination and Certification of Teachers.

Teachers' examinations have been held and results recorded as shown by the following tables:

TABLE NO. 19.

State Teachers' Examinations.

Date. August 30, 31, 1912.

Where held.

Colebrook, Concord, North Conway, Groveton, Keene, West Lebanon, Manchester, Portsmouth, Rochester, Whitefield, Woodsville.

Proctors.

James N. Pringle, George A. Keith, Norman J. Page, O. H. Holman, C. W. Bickford, Thomas A. Roberts, A. J. Knowlton, Jessie W. Payne, E. A. Pugsley, Nellie Young, F. W. Jackson.

Examiners.

Henry C. Morrison, all papers of candidates for supervisory certificate.

John Bacon,	W. H. Slayton,	Channing Folsom,
Pedagogy.	Geography,	Arithmetic,
	History of Education,	Civics,
	Literature,	History,
	Physiology.	Grammar,
		School Law.
H. A. Brown,		Channing Sanborn,
Psychology.		School Management.

Number candidates for supervisory certificate...		5
Number passed.....	3	
Number failed.....	2	
Number candidates for secondary certificate....		15
Number passed.....	7	
Number failed.....	8	
Number candidates for elementary certificate...		53
Number passed.....	34	
Number failed.....	16	
Number not completing.....	3	
Total number of papers.....		229
Number complete sets of professional papers....		54
Number complete sets of academic papers.....		10
Number incomplete sets of papers.....		3

Date. June 27, 28, 1913.

Where held.

Concord, North Conway, Groveton, Keene, West Lebanon, Portsmouth, Woodsville.

Proctors.

Jessie W. Payne, Alonzo J. Knowlton, Orin M. Holman, George A. Keith, Thomas A. Roberts, James N. Pringle, Norman J. Page.

Examiners.

Henry C. Morrison,
Grammar,
Literature,
Physiology,
Geography,
History of Education,
Pedagogy and Psychology.
Program of Studies.

Channing Sanborn,
School Management.

Channing Folsom,
School Law,
Civics,
Arithmetic,
History.

Number candidates for supervisory certificate...		0
Number passed.....	0	
Number failed.....	0	
Number candidates for secondary certificate....		4
Number passed.....	0	
Number failed.....	2	
Number not completing.....	2	
Number candidates for elementary certificate....		24
Number passed.....	4	
Number failed.....	11	
Number not completing.....	9	
Total number of papers.....		124
Number complete sets of professional papers....		17
Number complete sets of academic papers.....		5
Number incomplete sets of papers.....		11

Date. August 29, 30, 1913.

Where held.

Concord, North Conway, Keene, West Lebanon, Plymouth, Portsmouth, Whitefield, Woodsville.

Proctors.

Jessie W. Payne, Alonzo J. Knowlton, George A. Keith, Thomas A. Roberts, Ernest L. Silver, James N. Pringle, F. W. Jackson, Norman J. Page.

Examiner.

H. A. Brown.

Number candidates for supervisory certificate...		4
Number passed.....	2	
Number failed.....	1	
Number not completing.....	1	

Number candidates for secondary certificate		15
Number passed	1	
Number failed	12	
Number not completing	2	
Number candidates for elementary certificate		33
Number passed	11	
Number failed	15	
Number not completing	7	
Total number of papers		241
Number complete sets of professional papers		41
Number complete sets of academic papers		5
Number incomplete sets of papers		10

Date. June 26, 27, 1914.

Where held.

Concord, North Conway, Keene, West Lebanon, Portsmouth, North Stratford, Whitefield, Woodsville.

Proctors.

Priscilla A. Burbank, Alonzo J. Knowlton, George A. Keith, Frank Y. Hess, James N. Pringle, Orin M. Holman, F. W. Jackson, Norman J. Page.

Examiner.

H. A. Brown.

Number candidates for supervisory certificate		1
Number passed	0	
Number failed	0	
Number not completing	1	
Number candidates for secondary certificate		6
Number passed	3	
Number failed	3	
Number candidates for elementary certificate		44

Number passed	26
Number failed	13
Number not completing	5
Total number of papers	255
Number complete sets of professional papers	46
Number complete sets of academic papers	8
Number incomplete sets of papers	6

TABLE NO. 20.

	Number Passed.			Number Failed.			Number
	Elem.	Sec.	Supt.	Elem.	Sec.	Supt.	papers.
August, 1912	34	7	3	16	8	2	229
June, 1913	4	0	0	11	2	0	124
August, 1913	11	1	2	15	12	1	241
June, 1914	26	3	0	13	3	0	255
Total,	75	11	5	55	25	3	849

Total number passed, 91.

Total number failed, 83.

Total number applicants, 174.

Total outstanding certificates of all grades, *917.

As will be seen from the summary of the results of four examinations, but little more than one-half the whole number of candidates succeed in passing the examinations. The percentage of successes distributed by groups of teachers is as follows:

Elementary	58%
Secondary	31%
Supervisory	63%

The percentage of successes of the whole number taking the examination is 52%.

The papers are not difficult. The questions set for the academic portion of the examinations for elementary teachers especially are ridiculously simple. The bad showing made by teachers in the secondary group is wholly due to the unfamiliarity of this class of teachers with the whole

* Exclusive of service certificates.

matter of the study of education as a science. In this connection, however, it is noteworthy that the candidates taking the examination for the secondary certificate in August, 1914, not reported in this chapter, completely reversed the record of their class. Instead of only 31 per cent. of successes there were in this recent examination less than 20 per cent. of failures. And not only were the papers submitted worthy of an high examination mark, but they were of a degree of excellence in their content and treatment of the questions asked which cannot be given a numerical equivalent in the form of an examination mark.

When we recall that the great majority of the people who fail in these examinations are teachers still, and that there are hundreds of persons in the schoolrooms of the state who would not venture to take the examinations at all, it must be evident, I think, that the scholarship of the teaching force of the state is still lamentably low. The simple fact is that our laws, and the laws of other states as well, permit people to teach school who are woefully ignorant of the very subjects they propose to teach. Proposals for adequate statutory protection of the schools in this regard are pretty uniformly defeated by the representatives of the people, and the people acquiesce. Meantime, press and pulpit and platform resound with complaints of the poor scholarship of the product of our schools. The surprising thing is that the scholarship of our graduates is as high as it is, not that it is deplorably low.

Service Certificates.

In accordance with the act of 1911, I have granted 127 certificates without examination upon proof of successful service. I have denied several applications from young teachers who present evidence of three or more years' successful service, believing that the act was intended to apply only to teachers of long experience, at least three of which have been in this state, and who were so far removed in

point of time from their school days as to make the examination process meaningless and a hardship. The majority of the service certificates granted since the enactment of the law have been in favor of teachers of long service in the cities of Concord, Dover, Manchester, Nashua and Portsmouth.

Twenty-nine applications have been denied. Of these, 20 were denied on ground of youth; 3 for lack of evidence; 1 for lack of statutory qualification of three years' service in the state; and 5 for evidence of unfitness.

List of state certificates granted from November 1, 1912, through August 1, 1914:

* Supervisory. † Secondary

Italics denotes Service Certificates.

Adams, Alice C.,	Boscawen.
Adkin, Ethel F.,	Lakeport.
Ames, Bertha B.,	Milford.
Arnaud, Flora E.,	Hillsborough.
Atwood, Mrs. Mary C.,	Hillsborough Lower Village.
†*Averill, Elizabeth,*	Concord.
Ball, Mrs. Belle C.,	Concord.
Barker, Grace M.,	East Sullivan.
Barnett, Florence E.,	Newbury, Vt.
Barney, Grace A. S.,	Canaan.
Barry, Margaret E.,	Wilton.
Batchelder, Sarah L.,	Gilmanton.
Bickford, Lillie M.,	New Durham.
Blake, Jennie D.,	Hill.
†Blake, Verne,	Haverhill, Mass.
Blood, Bertha L.,	Wilton.
Book, Zaida M.,	East Washington.
†Brady, Marietta,	Milton, Mass.
Brown, Mrs. Eva C.,	Danbury.
Brown, Mabel E.,	Nashua.

Browne, Blanche A.,	Keene.
Burns, Katherine A.,	Nashua.
Campbell, Clara E.,	Winchester.
Cantlin, Doris E.,	Hinsdale.
†*Carlisle, Lawrence A.,*	Jefferson.
Cate, Fannie A.,	Somersworth.
Colley, Mrs. Edith J.,	Canaan.
†Chaplin, Fred W.,	Marlborough.
Chase, Beatrice H.,	Nashua.
Church, Mary L.,	Pittsfield.
Cilley, Mildred I.,	Concord.
Clark, Gladys J.,	Lancaster.
Clement, Mary E.,	Plymouth.
*Coggins, William L.,	Franklin.
Cogswell, Mabel M.,	Henniker.
Colby, Edwin A.,	Bow.
†*Cornell, Edward B.,*	Haverhill.
Curtice, Mabelle A.,	Bristol.
Daniels, Isabelle R.,	Manchester.
†Day, Florence A.,	West Kennebunk, Me.
Deering, Lilla A.,	Somersworth.
DeGross, Mary E.,	Bath.
†*Dickerman, Luella A.,*	Concord.
Doherty, Ellen C.,	Wilton.
Donnelly, Marguerite C.,	Manchester.
Dow, Shirley C.,	Woodsville.
Downing, Stella,	Somersworth.
Drew, Lizzie M.,	Somersworth.
†Durfee, Helen M.,	Burlington, Vt.
Dutton, Ida M.,	Bennington.
Dyke, Lila V.,	Lisbon.
Earley, Margaret M.,	Nashua.
Farrington, Martha M.,	Portsmouth.
Fenton, Viola M.,	Westminster, Vt.
Forbes, Jennie A.,	Wilton.
Forbush, Belle E.,	Center Sandwich.

Freeman, Bessie L.,	Somersworth.
Gallagher, Margaret E.,	North Walpole.
Graves, Mrs. Nellie T.,	Wolfeboro.
Green, Mildred E.,	Chester.
†Hall, Alice P.,	Turner Center, Me.
Hall, Mrs. Caroline D.,	Nashua.
†Hall, Myrta A.,	Colebrook.
Hanson, Florence M.,	Moultonborough.
Hartnett, Anna C.,	North Walpole.
Hartshorn, Ina P.,	Colebrook.
Hartshorn, Marion M.,	Wilton.
Harvey, Lottie C.,	Antrim.
†Hayes, Mabel L.,	Hanover.
*Hayward, Frederick D.,	Newport.
Hennessey, Anna M.,	North Walpole.
Herbert, Louisa,	Concord.
Hildreth, Doris T.,	Winchester.
Hobbs, Ellen E.,	Pembroke.
Hodsdon, Alice M.,	Somersworth.
Houston, Bernice A.,	Plymouth.
Hoyt, Alice A.,	Chester.
Hudson, Annie L.,	Somersworth.
Jackson, Inez M.,	North Conway.
Jarvis, Alice L.,	Malden, Mass.
Johnson, Dorothy M.,	Nashua.
Jones, Cecilia P.,	Concord.
Kavanaugh, Anna F.,	Somersworth.
Keating, Abbie G.,	Somersworth.
Kelley, Mary F.,	Somersworth.
Keniston, Edna B.,	Rumney.
Kennedy, Nona F.,	Rumney Depot.
Kimball, Annie M.,	Dover.
Kimball, Blanche J.,	Lancaster.
Kimball, Una M.,	Suncook.
Knapp, Mary F.,	Lebanon.
Knight, Emma L.,	Derry.

†Knight, Frank W.,	Gorham.
Knight, Mary E.,	Peterborough.
*Landman, Fred U.,	Wolfeboro.
Lang, Katherine,	Woodsville.
Lawlor, Alicia,	Somersworth.
Leyland, Carrie E.,	Gilmanton Iron Works.
Little, Susan M.,	Concord.
Locke, Susan A.,	Somersworth.
Lothrop, Fannie B.,	Concord.
Lovejoy, Grace M.,	Lempster.
McAfee, Elizabeth M.,	Concord.
McCarthy, Julia A.,	Somersworth.
McCarthy, Mary C.,	Nashua.
†*McClure, Elizabeth M.,*	Nashua.
McClure, Nellie G.,	Nashua.
McClure, Sara E.,	Concord.
†*McGaw, G. Hampton,*	Hillsborough.
McGuire, Mary A.,	Concord.
McQuesten, Gara E.,	Concord.
McQuestion, Ruth E.,	Bedford.
†Mann, Edna W.,	Miller's Falls, Mass.
Mann, Mrs. Mary M.,	Woodsville.
Marshall, Minnie L.,	Lancaster.
Martin, Dora G.,	Wolfeboro Falls.
Martin, Ethel M.,	Grafton.
Melifant, Julia M.,	Concord.
Melifant, Mary E.,	Concord.
Merrill, Nellie E.,	Epsom.
Moulton, Anna E.,	Nashua.
†Moulton, Louisa,	Center Sandwich.
Muzzey, Myra M.,	Lancaster.
Nay, M. Eckless,	Antrim.
Noble, Leola C.,	South Lee.
Northrup, Amy K.,	Manchester.
Palmer, Bertha L.,	North Salem.
Palmer, Doris,	Plymouth.

Parker, Bertha F.,	North Woodstock.
Parker, Marjorie W.,	Nashua.
Pattee, Mary A.,	Milford.
Pearson, Lottie E.,	Concord.
Penfold, Eva A.,	Gorham.
Perkins, Susie I.,	Warner.
Pettengill, Fannie M.,	East Alstead.
Pettengill, Warren L.,	Enfield.
Philbrick, Bertha W.,	Milton Mills.
Philbrick, Grace S.,	East Kingston.
Pickard, Susan E.,	Penacook.
†Pierce, Edna W.,	Augusta, Me.
Pike, Mina E.,	Franklin.
Piper, Bentha L.,	East Candia.
Prescott, Annette,	Concord.
Rines, Mrs. Edna F.,	Dover.
Rogers, Ellen H.,	Newport.
Rogers, Mabel E.,	Nashua.
†Rowell, Etta M.,	Concord.
Rowland, Mrs. Grace,	Wilton.
Sargent, Alice M.,	Concord.
Savage, Ethel R.,	Plymouth.
Shaw, A. Della,	Concord.
Shaw, Mary E.,	New Hampton.
Shea, Anne G.,	Nashua.
Shedd, Emma E.,	Peterborough.
Shepard, Belle E.,	Concord.
†Shepardson, Carl W.,	Athol, Mass.
Sherburne, Eva F.,	Pittsfield.
Sleeper, Ida B.,	Loudon Ridge.
Small, Sarah E.,	Lakeport
Smith, Ida J.,	Franklin.
Smith, Mabel L.,	Exeter.
Smith, Ruby M.,	Bethel, Me.
Smith, Sadie B.,	New Hampton.
Stearns, Clara M.,	Hinsdale.

Stetson Schoolhouse, Lyme.
Showing How a Rural School can be Well Lighted.

Stebbins, Zoe E.,	Keene.
Stiles, Marion A.,	Brookline.
Stimson, Jessie N.,	Concord.
Southgate, Helen L.,	Concord.
†Stoughton, Ellen,	Montague, Mass.
Straw, Addie F.,	Concord.
Sullivan, Grace E.,	Suncook.
Sweeney, Mayme A.,	Littleton.
Taggart, Alice C.,	Manchester.
Tandy, Eva H.,	Concord.
Taylor, Maude M.,	North Walpole.
Taylor, Nancy A.,	Milford.
Thayer, Bernice J.,	Woodsville.
†*Thurston, Frank H.,*	Colebrook.
Tragansa, Mabel T.,	North Haverhill.
Trow, Alice E.,	Nashua.
Valcour, Ella G.,	Nashua.
*Waldron, Harry C.,	Epping.
Wallace, Ida F.,	Nashua.
Watson, Edna F.,	Concord.
Webster, Nellie E.,	Derry.
Webster, Ruth N.,	Chester.
Weeden, Lillian M.,	Somersworth.
Wheeler, Ella F.,	Nashua.
White, Annie W.,	Hinsdale.
Whitehouse, Maud M.,	Alton.
Whittemore, Ida M.,	Bristol.
Willand, Alta C.,	Manchester.
Willand, Hattie O.,	Manchester.
Willand, Maud E.,	Manchester.
Willey, Edna B.,	Portsmouth.
*Williams, S. Horace,	Colebrook.
Woodbury, Agnes McD.,	Manchester.

CHAPTER VIII.

Supervision.

This chapter has been an important one in a succession of reports which has now run to considerable length. It has repeatedly been pointed out that the whole question of scholastic efficiency centers upon effective supervision. In nearly all other lines of activity most people take it for granted that there must be a responsible directing head and that he must be armed with extensive powers to enforce efficiency. But in this and other states, many people are strangely unable to see that the same principle applies to schools as in the case of any other enterprise. In our supervised territory, it is probable that most citizens believe that the superintendent is charged with the duty of administering the local system and given powers sufficient to make him in reality responsible. Such is not, however, the case.

In discussing the question of supervision in this state, we have usually had reference to the superintendency union authorized by the act of 1899, which applies to school districts other than those of cities. The problem, however, just as truly belongs to the largest city as to the smallest hill town.

The Law of 1899.

The union superintendency act in substance provides that, whenever two or more town school districts will unite for the purpose of employing a certificated superintendent of schools, the state will pay one-half his salary. The other half is, of course, divided for payment between the districts constituting the union by mutual agreement of the constituent school boards. A school district may vote at any annual meeting to withdraw from the supervisory union.

Summary of the History of the Movement.

The law has been in force for fourteen full school years, the present year being the fifteenth. Altogether it has at one time or another affected 130 of the 245 present school districts not counting the cities. At the present time, fall of 1914, there are under supervision 96 school districts, or including the cities, 107. As will be seen by the following table, the districts under supervision, beginning with 1906, have included the majority of the larger towns of the state. At present, nearly four-fifths of all the school children of the state are in schools which are under supervision.

TABLE NO. 21.

SHOWING DISTRICTS UNDER SUPERVISION, FALL OF 1914.

District.	*Superintendent.*
Manchester.	Charles W. Bickford.
Concord.	Louis J. Rundlett.
Nashua.	James H. Fassett.
Portsmouth.	James N. Pringle.
Keene.	George A. Keith.
Dover.	Ernest W. Butterfield.
Laconia.	Joseph H. Blaisdell.
Rochester.	Everett A. Pugsley.
Berlin.	Harry L. Moore.
Franklin.	William C. Coggins.
Somersworth.	Louis DeW. Record.
Troy.	
Fitzwilliam.	
Rindge.	
Jaffrey	William L. McDonald, P. O. East Jaffrey.
Pittsfield.	
Loudon.	
Chichester	Channing T. Sanborn, Pittsfield.

District.	*Superintendent.*
Walpole.	
Westmoreland.	
Langdon	Everett J. Best, Walpole.
Wolfeboro.	
Alton.	
Farmington	F. U. Landman, Wolfeboro.
Claremont.	
Charlestown	William H. Slayton, Claremont.
Lebanon.	
Enfield	Thomas A. Roberts, Lebanon.
Newport.	
New London	Frederick D. Hayward, Newport.
Milford.	
Amherst.	
Hollis	John Bacon, Milford.
Derry.	
Londonderry	Charles W. Cutts, Derry.
Greenland.	
Newington.	
Durham.	
Rye	Carl Cotton, P. O. Portsmouth.
Peterborough.	
Antrim.	
Hillsborough	Frederick L. Kendall, Peterborough.
Penacook.	
Bradford	George W. Sumner, Penacook.
Stratford.	
Northumberland.	
Columbia	Orin M. Holman, P. O. Coos.
Hopkinton.	
Weare.	
Bedford	Fred S. Libbey, P. O. Contoocook.
Salem.	
Atkinson.	
Hudson.	
Plaistow	Howard L. Winslow, Salem.

District.	*Superintendent.*
Woodsville.	
Haverhill.	
Bath	Norman J. Page, Woodsville.
Tilton.	
Belmont.	
Gilmanton	Charles A. Breck, Tilton.
Hinsdale.	
Swanzey.	
Dublin.	
Winchester	Andrew P. Averill, P. O. West Swanzey.
Conway.	
Madison.	
Bartlett	Alonzo J. Knowlton, P. O. North Conway.
Colebrook.	
Errol.	
Stewartstown.	
Wentworth's Location	S. Horace Williams, Colebrook.
Franklin.	
Hill	William C. Coggins, Franklin.
Whitefield.	
Jefferson.	
Bethlehem Special	Frank W. Jackson, Whitefield.
Marlborough.	
Harrisville.	
Hancock	Frank M. Rich, Marlborough.
Lisbon.	
Landaff	John S. Gilman, Lisbon.
Somersworth.	
Newmarket	Louis DeW. Record, Somersworth.
Hampstead.	
Raymond.	
Lee.	
Hampton	Albert T. Lane, Hampton.

District.	*Superintendent.*
Pembroke.	
Allenstown.	
Merrimack	Henry S. Roberts, P. O. Suncook.
Littleton.	
Bethlehem Town	David F. Carpenter, Littleton.
Wilton.	
Temple.	
New Ipswich	Leonard S. Morrison, Wilton.
Gorham.	
Randolph.	
Shelburne	Jacob E. Wignot, Gorham.

TABLE NO. 22.

Showing Percentage of Enrollment Under Professional Supervision by Years.

Year.	*%*	*Year.*	*%*
1892	23	1904	42
1893	26	1905	48
1894	28	1906	57
1895	28	1907	62
1896	29	1908	63
1897	31	1909	64
1898	32	1910	67
1899	31	1911	72
1900	33	1912	72
1901	35	1913	75
1902	35	1914	77
1903	37		

Prior to 1900, professional supervision was confined to the cities.

At the present time, school year 1914-1915, 77 per cent. of all the school children in the state are attending schools which are under supervision. Sixty-three per cent. of all the children outside of the cities and the towns of Claremont and Exeter are in schools which are under supervision. Fifty-six per cent. of the teachers and 42 per cent. of the school districts of the state belong to the supervised area.

It is often felt to be desirable to answer the question, "What per cent. of the *rural towns* are included in this class or that?" It is difficult to find a working definition which will make the desired distinction between rural and non-rural territory. The method, employed by various bureaus of the federal government, which sets up a population standard, is obviously unsatisfactory, for a town of 500 population might conceivably be really urban in its characteristics, while, as we know, towns of 2,500 to 3,000 population are occasionally found which are purely rural in character. Knowing the characteristics of the several towns of the state, I have segregated all those which have no villages of any size and no industries of importance other than agriculture and scattered sawmills. I find that there are 155 such school districts, which can be called strictly rural. This list might vary somewhat, as others equally well informed of the distribution of population and industrial activity of the state would disagree with me as to the placing of a few towns in the rural or semi-rural class; but the difference could not amount to much. In these 155 school districts but 30 per cent. of the enrollment is attending schools which are under professional supervision.

It therefore appears that in general the larger and more compactly settled towns are under supervision, while the smaller and sparsely settled towns are not. Though the law was originally directed toward the improvement of

conditions in this last named group of towns, more than two-thirds of their enrollment is still unsupervised.

Of the 130 towns referred to as having been at one time or another under supervision a large number have shifted ground several times. Several towns have once voted for supervision and then failed to form a supervisory union. Many have been forced out by action of their neighbors.

Reasons for No Supervision.

I have discussed this question at length in several preceding reports, so that it is perhaps unnecessary to do more than summarize the situation in this.

I. Lack of Individual Interest on the Part of Citizens.

I judge this to be the chief and fundamental reason. In towns in which there is a large and active interest in schools, supervision is usually to be found. In cases in which towns have rescinded their votes and withdrawn from supervisory unions, the main reason usually has been that only a disgruntled minority has attended the annual school meeting.

II. False Economy.

In every town and city there is always an element which is mainly bent on saving money. Wherever this element is sufficiently active and numerically strong, niggardly appropriations are made and school boards elected which will keep down expenses. In not a few such towns, public education would probably be given up entirely were it not for laws compelling towns to maintain schools. In such towns $100 to $250 seems an enormous sum to pay out annually for supervision.

In this connection, the following letter received from a young school teacher is quoted. The town in question is amply well able to support the best of schools. At the

average rate of assessment, it would have had $3,864.67 for the year in question. It actually raised $1,960.34.

My first experience as a country school teacher was very discouraging, for these reasons. The schoolhouse was dirty and disorderly. The books were in a poor condition, and the school committee was either too busy or uninterested to pay any attention to the school.

One can little imagine my surprise to find that the schoolhouse had been open all summer and was very dirty, in fact, it had n't been cleaned for more than a year.

The books had not been collected at the close of the previous school year, some had been loaned to children during the summer vacation and consequently were soiled, torn and many lost. On distributing the books I found there were not enough to go around. It was more than two weeks before a member of the school committee came with the supplies and a register.

At Thanksgiving time two boys from another state entered the school. We were again delayed for books longer than before. The boys were in the seventh and ninth grades and needed advanced books. It was a month before any books were sent to us and then were not proper books for such grades. It seemed unfortunate that these boys, who had brought fine reports from their other school, should have been so handicapped by an uninterested school committee.

After Christmas vacation, broken windows and a supply of ice-covered wood made it impossible to heat the schoolhouse. At the end of the week so many of the children and myself were sick that the school had to be closed until a substitute teacher could be found.

The reason for these conditions was due to lack of interest and supervision on the part of the school committee. The town had plenty of money appropriated for school funds.

The year before three or four hundred dollars remained in the treasury instead of repairing the school and furnishing new supplies. One member of the school committee made this statement, when I asked for some kindergarten materials, that he was on the school board in the interest of the taxpayers and that the children were a secondary matter. How preposterous it is that the education of bright, healthy-minded children should be left in the hands of three incompetent men, who furnish as few books as possible, a poorly heated schoolhouse and very often an inefficient school teacher?

III. Confusion of Issues.

Superintendents, like teachers, preachers, lawyers, physicians, business men and farmers are occasionally failures, and known as such of all men. In most cases the local public is apt to confuse supervision with the superintendent and conclude that supervision is a failure. Frequently, the word will go out to surrounding towns, "We have tried it once and don't want any more of it," when, as a matter of fact, no sufficient trial had been made.

IV. Local Politics.

I have observed that the local political leaders of all parties, particularly in the smaller towns, are apt to be found arrayed against supervision and of course they wield great influence. With one striking exception I know of no town of any size where this is so. I presume that these men, being for the most part of narrow vision, fancy that they see in the coming of a superintendent peril to their own influence and standing. Sometimes their fancies are fully justified.

V. Disgruntled Citizens.

Every superintendent who does his duty is bound to offend some people. Occasionally it is the school board itself, or influential citizens. During the past school year a town has withdrawn from supervision and a supervisory union has been given up wholly or in part because the superintendent refused to tolerate a drunken, insubordinate spendthrift as a teacher. The chairman of the school board, who is known to this office to be a hard drinker and was found by one of our representatives in a state of intoxication, was able to start an opposition which ended in the discontinuance of an entire union. Of course such cases as this are not numerous, but they are far from being unknown.

A very common type of case under this fifth class originates with negligent, incompetent or insubordinate teachers. I am glad to say that the great majority of the teachers in districts which are under supervision maintain an attitude which is loyal and entirely praiseworthy. But there is not infrequently found, of course, especially in newly organized unions, one or more teachers in middle life who have always done pretty much as they please,—taught school or not, in some cases. Naturally, any superintendent who is fit to be a superintendent comes in conflict with such people at an early date in his local career. The result is nearly always an effort on the part of her friends to vote the district out of supervision at the next meeting.

Defects in the Act of 1899.

It is not surprising that experience of a decade and a half has disclosed defects in the legislation of 1899. The act was the second of its kind in the country, it was not presumed to be perfect when enacted, and, after all, schools and their administration have seen advances in various directions since the law was first applied. An experience of ten years in administering the statute has made the defects enumerated below stand out conspicuously in the mind of the writer.

I. Powers and Duties of the Superintendent Not Defined.

Very likely this was an element of strength with an untried measure. It has become perhaps its most evident defect.

The law leaves it to the school board in each school district under supervision to decide what the superintendent shall do or whether he shall do anything at all. In the majority of instances, the school boards have acted wisely. In a considerable minority they have acted unwisely and at times capriciously. It is with this minority, who are nevertheless

entrusted with the welfare of several thousand children, that we have to do.

Several instances have come to my notice in which majorities of local school boards have positively forbidden the superintendent to exercise his functions, even in some cases visiting the schools and notifying the teachers to pay no attention to his instructions.

Still more common is the practice of leaving to the superintendent only such duties as visiting of schools, the delivery of books and supplies to the teachers, looking up truants, etc. The essential means by which the superintendent can actually superintend, such as the selection of the teaching force, the dismissal of incompetents, the selection and purchase of the educational material of the system, are denied to him. Thus he is unable to maintain discipline and efficiency in the teaching force.

More common still is the assumption of routine prudential matters by single members of boards. A stove must be bought for a country school, tables for a new course in household arts, some prescribed library equipment for an otherwise empty bookcase; a member of the board announces that he will attend to it. He does not, puts it off, forgets it. September arrives and with it teachers and pupils, but also serious gaps in the equipment they must have to work with. I have seen one secondary school completely ruined and its doors closed for this and no other reason. As I pen these lines, I have been obliged to place two high schools on special probation because, with a full month of the year gone, negligent and careless boards have refused to let their superintendents install the necessary equipment, which the said superintendents could have done promptly and to better advantage than the boards. Very often, in the place of the needed inexpensive equipment, a glib agent meantime unloads upon the board a set of utterly worthless encyclopedias, or some fantastic piece of apparatus designed to make the pathway of learning easy to the

stupid. Not infrequently we find an expensive microscope or microtome, beyond the capacity of pupils to use. Or it may be an expensive, but needless and useless, chemical balance, or set of drawing instruments. Investigation usually discloses an over-solicitous physician, chemist, apothecary, surveyor or the like usurping the functions which the superintendent of schools could perform intelligently and competently.

Not infrequently, we find the annual statistical report returned to this office by a member of the school board, who collects pay for doing the same, while it should be a part of the superintendent's duty for which he is paid. There follows a waste of the state's money while this office is endeavoring to correct by mail the errors which incompetent hands have made.

The law should plainly assign to the school board the general government of the local school system and in equally plain terms to the superintendent its executive administration.

II. Present Examination Method Not a Sufficient Test.

Under the law as it now is, a man comes before the superintendent of public instruction for examination. If he can pass the examination, he is entitled to a permanent certificate to act as superintendent of schools. There are several weaknesses here.

First of all, experience shows that a candidate can cram himself so as ultimately to pass any written examination that we can give. To be sure, we aim to make the examinations as difficult as possible for the mere crammer, but a second or third trial usually serves to "get the man by" if his papers receive just marking. He may in reality have very little real insight into the principles of education. I am glad to say that in not a few such instances the experiences of examination seem to stimulate the candidate to further personal study.

On the other hand, a perfectly competent man, so far as his theory of education goes, is not infrequently only a qualified success in the field. As we all know, theory is one thing and practice another. These cases show that the written examination should be followed by inspection of field work. The candidate should be required to pass both.

There is at present but limited means by which a certificate may be revoked. A man may receive an unqualified and unlimited license to superintend schools and then reveal qualities which show him to be personally unfit for his place. There ought to be a clause in the law providing for the revocation of a license for cause.

Finally, the superintendent of schools, like the lawyer, preacher, physician or any other professional worker, must be a constant student of the literature of his profession. A man may be to-day perfectly competent, both in theory and in practice, to superintend a system of public schools; but, unless he is a faithful student, he at once ceases to grow and within a decade is loafing along patiently waiting for the people to discover his incompetency. Yet, he can continue to draw state money so long as he can find anybody to employ him. I am glad to say that we have but few of this class; we do have some, and we may have more. The appropriate remedy here would be a reëxamination say once in five years.

III. Need of Closer Supervision by the State.

Experience has certainly demonstrated that, so long at least as the state pays a large proportion of the superintendent's salary, the state should exercise a much closer supervision of the work of local superintendents. The great majority of the superintendents themselves desire such supervision by the state. They realize that any man is a poor judge of his own work. They wish their faults and oversights pointed out. On the other hand, I find that

the great majority of citizens think this office has such powers. I am frequently accosted by a citizen with the remark, "Your man who is acting as our superintendent is loafing on his job. Why don't you do something about it?" Surprise is usually expressed when I reply that the law gives me no such power nor imposes any such duty. As a result, the state's money is sometimes, though I hope rarely, largely wasted.

While the great majority of our superintendents are conscientious and faithful workers we do occasionally find a man who in reality is anything but that. Two types of such men are prominent in my mind.

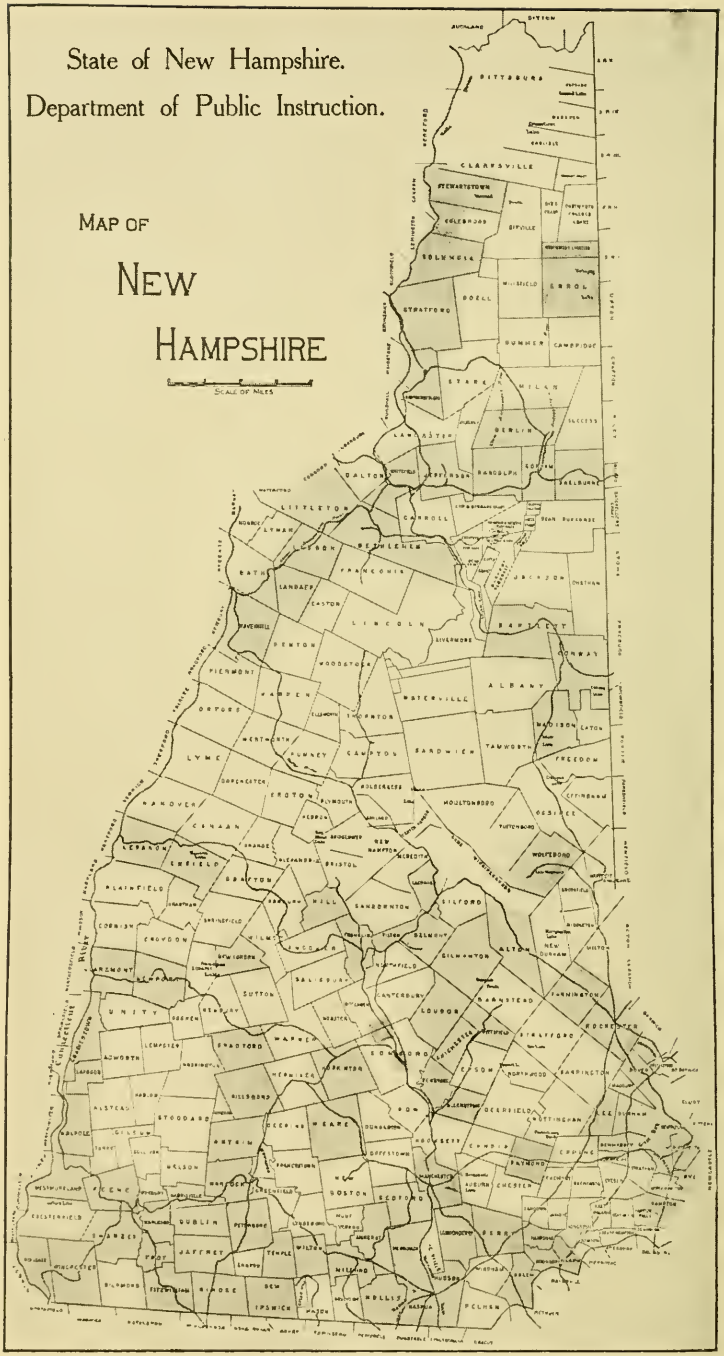
First, there is the "scatter-brain." He is prominent in every local enterprise, is hail fellow well met, is an ardent and zealous worker for everything but schools. He naturally seems to many to be a most useful man. "Something is the matter with our schools," people say, but they don't stop to analyze and point out the difficulty. The superintendent is prominent in several secret orders, he is a great help in the church and Sunday School and the Y. M. C. A., he is secretary of some business organization, he is called upon to do the drudgery of every local organization for social betterment which comes up. Naturally he is popular. Some of this work it is in every way desirable that the superintendent should do, for it is important that he should be positively as well as negatively a good citizen. But he cannot be a part of everything unless the schools are to suffer. The state pays a part of his salary as superintendent of schools, not as a general social secretary. There is no superintendent of schools in this state who will not find his time fully occupied from Monday morning till Saturday night, from September 1 to August 31, with a brief vacation, if he does his work efficiently and well.

Secondly, there is the fellow who is long on what he calls "tact." The small politician is apt to be his tutor and mentor. In his mind, "tact" is synonymous with "avoid-

ance of disagreeable duty.'' Now we must have truly tactful superintendents, and teachers, and school boards and citizens generally, but we ought to remember that ''tact'' means much the same thing as ''courtesy.'' It is an abuse of the language to make it mean ''chicanery.'' This superintendent, who is well-meaning as a usual thing, when he finds a disagreeable duty to perform meets the matter by ignoring the duty. He is very expert in keeping out of trouble. If he must face a situation, he tends to try to carry his point by underhand trickery instead of standing out four-square and stating the situation fairly and temperately and exactly as he sees it. His schools show much visiting but little superintending. A wilful and insubordinate teacher is simply allowed to have her own way regardless of the rights of the children and the rights of taxpayers and the public generally. Now, I don't by any means intend to imply that the state is over-run with such men, for the great majority of our superintendents have decidedly been quite the reverse. I can recall perhaps ten men, not more than that, of the seventy-five superintendents whom I have known as workers in this state who were distinctly of the type.

Men of these two classes usually succeed in commending themselves to a local majority although a shrewd minority usually sees through them. In the end they are of course discredited, as insincerity usually is ultimately discredited. Meantime, the children and the schools suffer. Now, I am sure that all will agree that the people of the state as a whole should not be taxed for the maintenance of such superintendents. The state should exercise more supervision over its own expenditures.

On the other hand, there are of course the occasional do-nothings. Local supervisory boards usually let these men drift along until an enraged public rises and votes a town out of supervision. Here, too, the state should intervene and give the men the choice of making good or seeking some other avenue for their talents.



Showing Distribution of Districts Under Supervision,
September, 1914.
Figure I.

But vastly more than these are the conscientious, faithful, hard-working men who are doing, as I believe, a work for the state the value of which is exceeded by none. These men earnestly desire the kind of constructive oversight and guidance and advice which personal visits by a representative of the department alone can give. In the past I have done as much of this work as I could find time to do. I have had urgent calls for more than the many duties devolving upon the state superintendent would permit.

During the past year, I have endeavored to test the matter to see how much time would be required to give each superintendent at least one visit in the year. I find that to give the kind of help which is of value and at the same time to form a just judgment how the superintendent is carrying his work requires about a week to each man. This would mean that one man attached to the department and qualified to do this work could reach about thirty-six superintendents in the year. I think that Mr. Brown, in connection with his secondary school inspection, and Mr. Whitcher, in connection with his practical arts work, and myself could perhaps carry the visiting and inspection of the remaining fourteen men necessary to put the whole state under supervision.

SOME TYPICAL REPORTS.

From a Teacher.

Superintendent Morrison,
Concord, N. H.

Dear Sir:—

Perhaps I should have written before, but still believing that my wants would be recognized after writing to the school board and also seeing them personally I have delayed this important fact.

The supplies which I have needed I have been obliged to get and take them to the school myself. Then I was obliged to call for the second or third time.

The committee is not obliged to visit the school but twice a term by the laws in the register, but I do not think it necessary for them to wait until the latter part of the first month of school or the last week of school to see whether or not I am conducting the school in the manner that I should.

From Superintendents.

Mr. H. C. Morrison,
Concord, N. H.

Dear Mr. Morrison:—

You will be sorry to learn that * * * * , at a school meeting held yesterday, voted to give authority to the school board to withdraw from the supervisory union. So far as I can learn this action is taken solely upon the initiative of a member of the school board who does not like to be disturbed in his sleep. The circumstances are as follows: Mr. * * * *, who had previously had long experience upon the school board, was elected by the board some time last year to take the place of a member who resigned. He is also chairman of the selectmen and always moderator of the school meeting. The district last year voted $800 additional, an unprecedented sum for * * *, on estimates of a 36 weeks' year. Some time ago Mr. * * * took it into his head to close the schools, as unprofitable at this time of year. He convinced the chairman, and announced to the teachers that school would close Friday. When the chairman telephoned me of the decision I protested strongly, and said there ought to be a board meeting. This was finally called, and I protested more strongly yet, urging that we were just about to realize our ideals for a good school year, that these children were in the midst of a profitable year's work, under good teachers, that we ought at least to be sure of an average of thirty weeks, etc., etc. The last argument was conclusive, at least with the other two members, and it was agreed to run them long enough to make up the average. I could see that all this went down hard with Mr. * * *. I think he then and there decided to get rid of such a nuisance, for when the warrant was posted it included, "by request," an article on supervision. How he likes to run things is illustrated by a later incident. He informed the chairman that he should not have time to meet for making estimates for the new year, but that he would figure them out and send to her for approval. I characterized this as preposterous, for a school board which had not only to make out

estimates, but to have propositions ready for the building of a new schoolhouse, and finally, after I had given up hope, got such a meeting appointed. Mr. * * *, with characteristic business-like method, appointed a meeting of the selectmen at the same hour and place, and kept both boards waiting an hour and a half while he visited the barber shop and did other errands.

Dear Mr. Morrison:—

In * * *, I found the schools bady demoralized. The school board with one exception was giving no time to the schools, teachers were untrained and, with absolutely no guidance, were doing their work along the lines of least resistance. In some schools a favorite subject was being given the major part of the time while other studies were almost entirely ignored, neither the state course of study nor any other was used as a guide, with evident results, supplies were entirely inadequate and bought without judgment, and the supply of text-books was so small that there was barely three-fourths enough copies to stock the school, while in reading one book a year was the rule except in grades four and five. I found but three first grade readers, but after the alphabet was learned in a year or two, the children were being put directly into a reader altogether too difficult for them. Many scholars are now in school two and three years behind their grades solely from lack of proper adjustment of their time and work in the schools.

A considerable amount of money had been spent for readers evidently at the behest of some agent for the surplus is great of single kinds. The whole matter of purchasing and distributing supplies was entirely unbusinesslike.

Supt. H. C. Morrison,
Concord, N. H.

Dear Mr. Morrison:—

In my recent report to you I omitted one item which I think will interest you. I found none of my school boards in this district who know how to purchase school books and supplies to advantage. Old books had been allowed to accumulate, worn out and worthless, so that in * * * * I collected between 1,600 and 2,000, in * * * * about 1,200 and in * * * * from 350 to 500. I have systematically sold these either in exchange or for second-hand books so that the three towns have realized from this source alone approximately $125.

Supplies were costing too much, as *e. g.*, ink in * * * *, $0.75 per quart. They bought Stafford's best of local dealer. I have paid four cents per package for ink powder making one quart. Many other cases, but not with such difference in cost, I have helped to rectify.

From a Published Report.

To the Citizens of * * * * :—

I wish to call your attention to the last annual school report and to other relevant matters.

As is well known, the schools have had no adequate supplies of books or other materials during the past year, and the same condition is still partly in effect. There are classes of children who have been in the schools nearly a year, and who have no books, although request has been made for them. The scarcity of other things is also beginning to be felt, and it looks as though we shall have to renew our request to parents and friends to send in clean wrapping paper for practice work. Even paper bags might do.

It should be remembered that this shortage is not due to any lack in the appropriation. Last year there was an appropriation of $350 for books and supplies. This is not a part of the school money, but is a special assessment by the selectmen to pay for the books and supplies, as required by law. It is not to be used for any other purpose. If you will examine the school report, you will find that only $89 is accounted for as having been spent for books and supplies. The treasurer's report shows $195.54, but evidently includes something different. In any event, it is plain that the money was on hand for all that was needed, but has been spent for some other purpose.

SUPERVISION OF SCHOOLS SHOULD BE REQUIRED BY STATUTE THROUGHOUT THE STATE.

Many of our clearest headed citizens have believed from the beginning that professional supervision of schools should be required in all towns throughout the state. It has been my view, as it was that of my predecessor, that the principle itself should be allowed time to become under-

stood by the people; and also that a sufficient body of experience of its workings should first be acquired. I have never believed that, under our system of government, any legislation is wise until it accords with the prevailing views of the public. It has also been doubtful if the whole state could effectively be put under supervision at once, even granted the legislation and granted public approval. It has been doubtful if the right kind of men could be found in sufficient numbers to man say thirty or forty or more new unions.

I think the time has come when valid arguments against statutory universal supervision as such have ceased to have any weight. As is shown below it would require not exceeding twenty superintendents additional to the thirty-nine we already have in service to put the entire state under supervision. Supervision has been tried long enough to convince the majority of the people more than three to one, of its value and necessity, in principle. I am personally convinced that the majority of our people are to-day decidedly in favor of statewide compulsory supervision. I know that many who are opposed to having their districts enter a supervisory union under the present law are in favor of universal supervision.

I recommend the enactment of legislation requiring professional supervision of schools throughout the state for the reasons which are here given.

I. Justice to Parents and Children.

The state by law requires every person having the custody and control of a child between the ages of eight and fourteen to cause such child to attend school. The state ought in justice to guarantee to parents and children a good school. Ample grounds can be shown and have been shown for the belief that schools which are not under professional supervision very rarely are good schools.

II. Especially, Justice to Rural as Compared with Urban Communities.

One hundred per cent. of the children in our cities are attending schools which are properly supervised. Only 30 per cent. of the children in our 155 strictly rural towns are in schools which are in any true sense supervised at all.

III. Inadequacy of the Present Law.

Experience has shown that, while the present law has done a great deal of good, unions formed under its provisions are apt to be ropes of sand. Districts go in and out of supervision according to the prevalence of local factions. Meantime, the schools are thrown into chaos and the children suffer. Compulsory and universal supervision is, I believe, the only adequate remedy.

IV. Remove the Schools from Politics.

Our New Hampshire schools are almost never made the football of party politics, but they frequently are made the football of local personal politics or of factional politics, which is just as bad. Professional supervision required by law, with the duties of the superintendent prescribed by law, would do much to steady the situation and to save the schools from the violent occasional upheavals due to local differences which are not essentially concerned with schools.

V. Economy.

The state can be supervised as a whole at less cost in proportion than it can be under the local option plan. Approximately 50 per cent. of the teachers outside the cities are under supervision, requiring thirty superintendents.

At this rate the supervision of the whole state would require sixty superintendents, or, including the cities which are not in unions, sixty-nine.

Now, there are in round numbers 2,400 teaching positions in the public schools of the state, 1,000 of which are in one-room schools. A prolonged test shows that an efficient superintendent can make on the average four visits per day or twenty visits a week in one-room schools and still under ordinary circumstances have time left for necessary office work. In urban communities in which schools are classified, the superintendent can about double that rate. Let us allow 25 per cent. as a margin of safety, and assume that a superintendent can make 15 visits a week in rural, and 30 in urban territory, in addition to other routine duties. This would mean that one man could effectively supervise at least 30 teachers in rural and 60 in urban territory, allowing a visit to each teacher at least once in two weeks on the average. Accordingly, it would require the equivalent of 33 men to supervise the rural one-room schools and 23 to supervise the urban and classified schools, or combining the two it would require 56 superintendents to handle the state as a whole, including the cities which are not in supervisory unions, or 47 superintendents outside the cities. This is only 16 more than are already employed.

In the thirty supervisory unions at present in force, the number of teachers per superintendent varies from 14 to 49. Two superintendents have less than 20 teachers each; thirteen have between 20 and 30 teachers each; twelve have between 30 and 40 each; and three have between 40 and 50 each. Obviously such discrepancies point to great lack of economy, for either some superintendents have altogether too many schools to look after or some have altogether too few. As a matter of fact, in the typical supervisory union,—half urban and half rural,—45 teachers is a fair working unit.

But, under the present law economical supervision is impossible, for unions have to be formed as school districts vote and the possibilities of economical distribution of superintendents' term are small indeed when left to chance in this way. The only way in which economical results can be secured is through rational and intelligent districting of the whole state.

Now there are some few sections of the state in which the geography is such that not even thirty rural schools could be combined into a supervisory union without making a union impossibly large territorially. There are not, however, more than three such areas in the state, or rather such areas could not increase the number of superintendents more than three over what would otherwise be required. In short, after making due allowances, I estimate that 50 superintendents would be sufficient to supervise the entire state were the districting intelligently done with an eye to the most economical arrangement, or 59 including the cities not now in supervisory unions.

In making a study of the state, town by town, it will be observed that towns differ greatly in area. For instance, a large number of towns in the southeastern part of the state are only one-fifth to one-third the size of those in the central and northern portion. In making an independent study of the state from this angle I again find 50 to be the number of superintendents needed for the economical supervision of the entire state.

Thus there would be a proportionate saving over the present plan of 10 superintendents whose salaries would amount to at least $15,000 annually, half paid by the state and half by the towns. Such a saving would amount to enough in twenty years to pay for all needed buildings at the present and at two additional normal schools. It would pay interest and sinking fund on a new $160,000 high school building every year. Or it would finance the build-

ing of three new eight-room buildings for elementary schools, or 33 model rural schools every year.

In other words it would cost but little more to supervise the whole area of the state than it does now to supervise less than half the area.

VI. Above All, Concentrate Responsibility Where It Cannot be Shirked or Evaded.

Let the law state plainly the superintendent's duty and give him adequate and commensurate powers. No man can be responsible for that over which he has no control. The great thing, the important thing in public, as in private, administration is the placing of responsibility. Any board or commission of whatsoever description can, and usually will, divide up responsibility so that the burden which falls upon any one will be very light and ineffective. If one man is held responsible for efficiency and the penalty for failure is loss of earning power and a damaged career, he is pretty likely to do his best.

SUPERVISORY BILL OF 1913.

The following bill was introduced in the legislative session of 1913 which seems to me to embody most of the desirable features of such an act, though no doubt a different bill might be drawn which would meet the situation equally well. This bill, after prolonged hearings, was unanimously and favorably reported by the House Committee on Education, and by the Committee on Appropriations, without recommendation. Apparently the sentiment of the House was decidedly favorable and the measure received the cordial support of the governor. It failed of passage by a narrow margin, more, as I believe, because of misrepresentation on the floor of the House than because of disbelief in the bill or the principle involved.

AN ACT

For More Efficient Supervision of Schools.

Be it enacted by the Senate and House of Representatives in General Court convened:

SECTION 1. SUPERVISORY UNIONS. (1) On or before July 15, 1913, the governor and council shall combine all the several school districts in the state into unions for the purpose of employing a superintendent of the public schools therein who shall perform in each district the duties prescribed by law and the regulations of the school boards. Such supervisory unions may be dissolved by the governor and council for the purpose of more advantageous combinations.

(2) The school boards of the several districts forming a supervisory union shall organize themselves into a joint supervisory board, which for all purposes of this act shall be the agent of each district therein represented. The joint supervisory board shall elect a chairman, secretary and treasurer, who shall perform the duties usually pertaining to those offices and shall hold office for such terms as the joint supervisory board shall determine.

(3) The joint supervisory board shall elect as superintendent of schools a person holding a permanent state teacher's certificate of supervisory grade, and he shall hold office during the pleasure of said board and shall be paid such salary as they shall determine. The superintendent shall devote to all schools in the supervisory union as nearly as practicable equal parts of his time and attention.

(4) The school board of each school district shall annually on the sixteenth day of July set apart from the school money the sum of twenty-five dollars for each teacher regularly employed during the preceding school year; and in case one or more teachers shall have been regularly employed for a part of the school year, a proportionate sum

for such teacher or teachers. The said sums shall constitute a supervisory fund for the ensuing school year and shall forthwith be paid to the treasurer of the supervisory union. Upon the sworn statement of the superintendent of public instruction, certifying the amount to which each supervisory union is entitled, the state treasurer shall, in the month of December of each year, pay to the treasurer of each supervisory union such sum as when added to the supervisory fund aforesaid shall amount to fifteen hundred dollars and shall also pay to said treasurer of each supervisory union one-half of whatever part of the superintendent's salary is in excess of fifteen hundred dollars. No part of the supervisory fund or of the amount paid by the state treasurer for supervisory purposes shall be used for any other purpose whatsoever. The salary of the superintendent shall be paid monthly by the treasurer of the supervisory union.

SECT. 2. POWERS AND DUTIES OF SUPERINTENDENT. (1) The superintendent shall have the following powers and duties:

(a) He shall direct and supervise the work of all teachers and shall be presumed to have all powers necessary to make such direction effective.

(b) He shall nominate all teachers and employees subject to such regulations governing salaries and the qualifications of teachers as the school board shall determine.

(c) He shall select text-books and all other scholastic apparatus when the school board shall have authorized the purchase of the same.

(d) He shall enforce or cause to be enforced all regulations of the school board and all laws relating to public schools.

(e) He shall keep a faithful and accurate account of the financial standing of the district and he shall report monthly in writing to each member of the several boards of the supervisory union, a concise statement and summary of

his doings and of the condition of the schools, including an accurate statement of the financial standing of the district to date.

(f) He shall see to it that all necessary apparatus and supplies are seasonably distributed to each school and accurately accounted for and economically used.

(g) Under such regulations as the school boards of the several districts shall make he shall make all purchases of text-books, scholars' supplies and other apparatus used in the schools.

(h) He shall see to it that all schoolhouses and outbuildings are kept in a clean and sanitary condition.

SECT. 3. POWERS AND DUTIES OF SCHOOL BOARDS. (1) The duties and powers of school boards shall be as follows:

(a) They shall determine the salary of and elect all teachers and employees upon nomination of the superintendent, and if they reject any nomination they shall require him to make another nomination or nominations in its place.

(b) They shall determine the subjects of study to be pursued in the schools, subject to laws appertaining thereto.

(c) They shall authorize all purchases and may prescribe regulations relating thereto not repugnant to law.

(d) They shall inform themselves of all acts of the superintendent and shall see to it that he faithfully performs the duties of his office.

(e) They shall seasonably make suitable assignments of the school money to the various needs of the schools.

(f) All powers and duties of the school board not herein committed to the superintendent by law or expressly delegated to him by them, the school board shall perform.

SECT. 4. This act shall not effect municipalities having a city charter unless the school board of a city school district shall petition the governor and council to be made a part of a supervisory union. Restriction as to cities shall not apply to the town school district, so called, of Concord.

SECT. 5. APPROPRIATION. (1) All money required by the terms of this act shall be paid from the general appropriation for the encouragement of common schools as provided by chapter 158 of the Laws of 1909, or amendments thereto.

SECT. 6. All acts and parts of acts inconsistent with this act are hereby repealed. This act shall take effect upon its passage.

Needed Additions.

I am convinced that there should be added to the bill as it stands provision for an additional field worker in this department whose duties would be to oversee the work of the superintendents. I have already discussed at length the reasons why I believe that money which is expended by the state for the purpose of supervision should carry with it the oversight of the State Education office. I am not unconscious that such a recommendation will be viewed by some as an unwarranted attempt to increase the field force of a department with which the state has already been generous. I cannot help that. I do not believe that state-wide supervision should be undertaken at all unless every possible effort is made to make it really effective. These are the facts and the reasons as I know them, and I cannot do less than lay them before the lawmaking body for consideration.

I further recommend that provisions be incorporated in the bill, making all future supervisory certificates revocable for cause, and making such certificates depend upon satisfactory service in the field as well as upon examination.

Cost of State-wide Supervision.

The cost of supervision for the current year is $52,265 of which $26,132.50 is paid by the state. The tendency of school boards in recent years has been to pay larger salaries,

six of our thirty men receiving $2,000 or more, out of which they must pay their traveling expenses. The average salary is $1,742.17.

Assuming that the twenty additional men would be paid in like ratio we should have the total cost outside of the cities $87,108.50. This evidently an outside estimate for the reason that men would be new and consequently lower paid, and the towns not now under supervision would as a class pay lower salaries.

The supervisory fund would amount to $47,400 using the teachers in service last year as a basis.

Hence we have the following tabulation:

Cost of supervision,		$87,109.00
Income from supervisory fund,	$47.400.00	
Balance on 50 salaries of $1,500 paid by state,	27,600.00	
Excess over $1,500.	12,109.00	
		$87,109.00

Appropriation required:

Balance on 50 salaries of $1,500.00 each,	$27,600.00
One-half excess over $1,500.	6,054.00
Cost of departmental man. salary and expenses,	3,200.00
	$36,854.00

The cost to the state of supervision for the current year is $26,132.50. It will therefore be seen that an additional appropriation of $10,721.50 would be amply sufficient to finance the whole plan as it should be carried out.

CHAPTER IX.

The Training of Teachers.

The reports of local school boards for the school year 1913-1914 give data for the following exhibit as to the training and other qualifications of teachers in the elementary schools:

	1913-'14	1911-'12
Total number of different teachers employed in the elementary schools including substitutes and changes,	2,682	2,539
Number with no education beyond that of common schools,	142	173
Number with some work beyond that of common schools but not secondary graduates,	383	No data
Number secondary graduates but with nothing more,	1,035	1,084
Number full normal graduates,	816	712
Number city training school graduates,	256	No exact data
Number college graduates,	50	72
Number holding permanent state certificates other than graduates of normal schools,	316	No data
Number teaching first time,	374	344

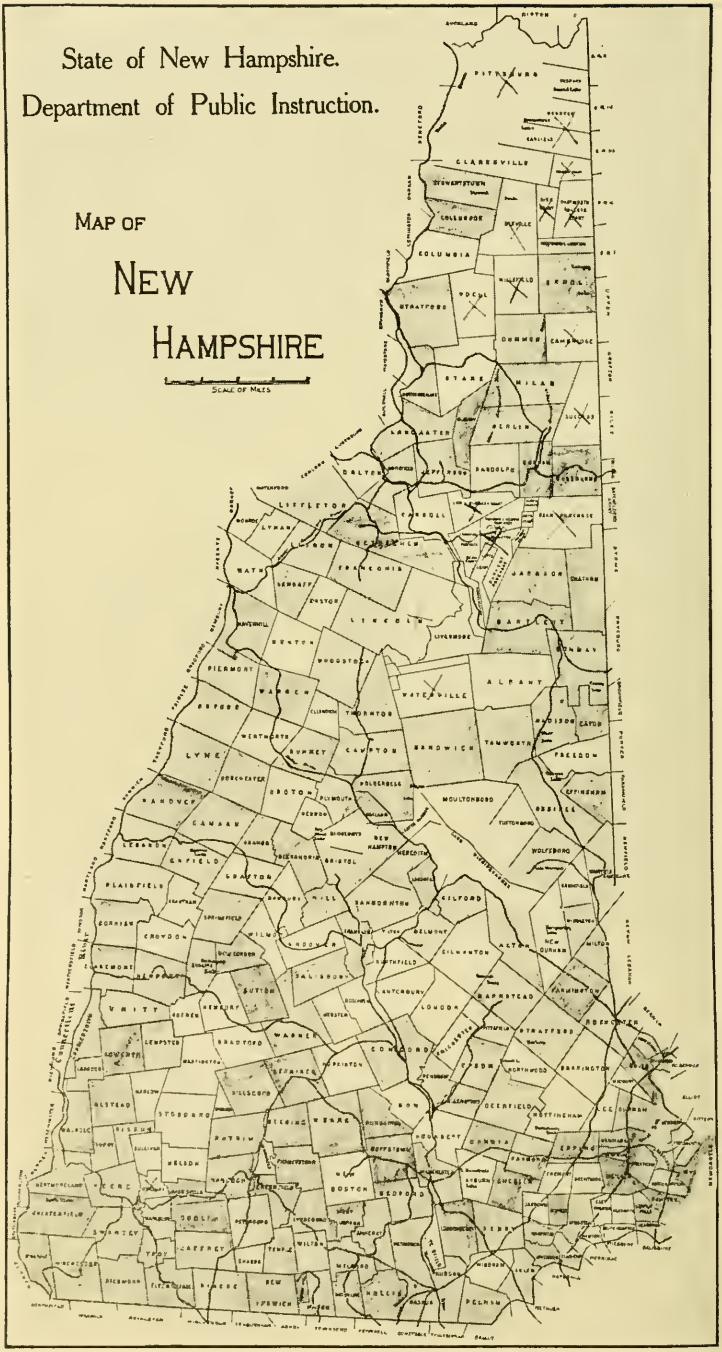
It thus appears that about 40% of the total number teaching in the elementary schools during the year were trained teachers, that is to say, graduates of normal schools or city training schools. The absolute increase in the number of normal school graduates amounts to something over one hundred, although the ratio of the number of graduates to the whole number teaching is less than last year, owing to the greater number of different persons

teaching. During the two years next preceding the school 1913-1914. It would thus appear on the face of the reninety-one, nearly all of whom should appear as teachers in 1913-1914. It would thus appear on the face of the returns that we have been able in the two years to graduate enough to make good the losses from the ranks of the trained teaching force and have about one hundred new graduates to apply to the reduction of the untrained mass of teachers. We of course draw a considerable number of normal graduates from other states, probably more than enough at present to make good the loss of our own experienced trained teachers to other states.

We graduated from our two normal schools in June, 1913, one hundred three teachers. We needed three hundred seventy-four recruits to fill the ranks. This number remains nearly constant and will probably continue so. It, therefore, appears that we need to graduate nearly four times as many trained teachers annually as we now do, in order to fill vacancies with trained teachers which would otherwise be filled with inexperienced and untrained teachers.

The number of graduates of 1913 is somewhat larger than that of 1914 and larger than that of 1915 will be, for it includes graduates of the one-year teachers' course, which is gradually being abolished. Two years hence, that is to say, in June, 1916, we may expect about one hundred graduates from our two normal schools. I estimate that this number will increase to about one hundred seventy by 1919, and that that will be about the limit of the capacity of Plymouth and Keene. We shall then have rather less than half as many graduates annually as we need.

The map, Figure 2, shows the distribution of trained teachers. The towns which are shaded on the map have at least one trained teacher each.



Towns shaded have at least one Trained Teacher. Towns marked with cross have no schools.

Figure II.

TABLE NO. 23.

Showing Proportion of Trained Teachers—Elementary Schools.

Class I (80%-100% trained teachers).

	'13-'14	'11-'12		'13-'14	'11-'12
Franconia,	100	67	Nashua,	88	90
Laconia,	100	67	Seabrook,	87	14
Madison,	100	44	Littleton,	83	55
Newington,	100	50	Pembroke,	82	40
Berlin,	94	95	Rochester,	82	80
Plymouth,	92	91	Manchester,	80	79
Rollinsford,	90	60	Plaistow,	80	83
Portsmouth,	89	80	Rindge,	80	25
Concord Union			Salem,	80	50
District,	88	83	Westmoreland,	80	33

Class II (50%-80% trained teachers).

	'13-'14	'11-'12		'13-'14	'11-'12
Peterborough,	77	67	Windham,	60	37
Langdon,	75	50	Londonderry,	58	50
Whitefield,	75	82	Rye,	57	14
Bartlett,	73	67	Penacook,	55	55
Walpole,	72	50	Jaffrey,	55	50
Alton,	71	25	Allenstown,	50	25
Lisbon,	71	50	Durham,	50	50
Stratford,	71	83	Greenville,	50	50
Franklin,	70	88	Hill,	50	33
Ashland,	67	50	Keene,	50	30
Errol,	67	50	Kingston,	50	25
Mont Vernon,	67	14	New Ipswich,	50	16
Richmond,	67	25	Northumberland,	50	50
Rumney,	67	63	Orange,	50	0

Claremont,	66	86	Pelham,	50	0
Conway,	65	41	Randolph,	50	50
Amherst,	64	69	Troy,	50	16
Charlestown,	60	75	Woodsville,	50	17
Hollis,	60	0			

Class III (10%-50% trained teachers).

	'13-'14	'11-'12		'13-'14	'11-'12
Dover,	49	44	Dublin,	40	0
Winchester,	48	23	Goffstown,	40	30
Haverhill,	44	38	Gorham,	40	44
Fitzwilliam,	43	67	Greenfield,	40	25
Harrisville,	43	50	Greenland,	40	0
Jefferson,	43	30	Hampstead,	40	25
Marlborough,	43	50	Hanover,	40	34
Woodstock,	43	43	Jackson,	40	11
Enfield,	42	31	Pittsfield,	39	44
Derry,	41	60	Milford,	37	40
Lancaster,	36	33	Epping,	20	60
Lyme,	36	0	Hillsborough,	20	30
Epsom,	33	16	Landaff,	20	38
Hampton Falls,	33	0	Milan,	20	10
Newfields,	33	50	Milton,	20	22
New London,	33	33	Stratham,	20	28
Newmarket,	33	44	Warren,	20	40
North Hampton,	33	33	Meredith,	19	10
Raymond,	33	83	Plainfield,	19	6
Swanzey,	33	46	Alexandria,	18	0
Tilton,	33	50	Farmington,	18	13
Colebrook,	32	40	Lyndeborough,	18	30
Somersworth,	32	37	Orford,	18	0
Exeter,	31	35	Chesterfield,	17	0
Hinsdale,	30	30	Francestown,	17	0
Lebanon,	30	23	Hampton,	17	14
Tamworth,	29	16	Lempster,	17	16

Wilton,	29	27	Dorchester,	14	0
Holderness,	28	0	Eaton,	14	0
Alstead,	25	20	Strafford,	14	16
Atkinson,	25	25	Bedford,	13	10
Bethlehem,	25	25	Hancock,	12	28
Bristol,	25	18	Salisbury,	12	0
Gilsum,	25	0	Campton,	11	27
Mason,	25	16	Candia,	11	0
Sunapee,	25	11	Deering,	11	0
Surry,	25	0	Lincoln,	11	14
Temple,	25	0	Sutton,	11	0
Newport,	24	12	Barnstead,	10	10
Antrim,	22	57	Chester,	10	12
Hudson,	22	11	Gilford,	10	0
Wakefield,	22	6	Henniker,	10	30
Wolfeboro,	21	40	Stewartstown,	10	0
Brookline,	20	0	Thornton,	10	22
Chatham,	20	20	Unity,	10	20
Danville,	20	33	Warner,	10	12

Class IV (less than 10% trained teachers).

	'13-'14	'11-'12		'13-'14	'11-'12
Effingham,	9	18	Weare,	8	12
Sandwich,	9	15	Ossipee,	7	10
Springfield,	9	0	Piermont,	7	8
Acworth,	8	0	Canaan,	6	0
Belmont,	8	25	Cornish,	6	5
Sanbornton,	8	7	Deerfield,	6	0

Class V (no trained teachers whatever).

	'13-'14	'11-'12		'13-'14	'11-'12
Albany,	0	0	Freedom,	0	0
Andover,	0	10	Fremont,	0	0
Auburn,	0	10	Gilmanton,	0	0

Barrington,	0	15	Goshen,	0	0
Bath,	0	0	Grafton,	0	0
Bennington,	0	0	Grantham,	0	0
Benton,	0	33	Groton,	0	0
Boscawen,	0	25	Hart's Location,	0	0
Bow,	0	0	Hebron,	0	0
Bradford,	0	10	Hooksett,	0	22
Brentwood,	0	0	Hopkinton,	0	10
Bridgewater,	0	0	Kensington,	0	0
Brookfield,	0	0	Lee,	0	33
Canterbury,	0	0	Litchfield,	0	0
Carroll,	0	0	Loudon,	0	8
Center Harbor,	0	0	Lyman,	0	0
Chichester,	0	28	Madbury,	0	33
Clarksville,	0	0	Marlow,	0	0
Columbia,	0	10	Merrimack,	0	0
Concord—Town,	0	0	Middleton,	0	16
Croydon,	0	0	Monroe,	0	12
Dalton,	0	0	Moultonborough,	0	0
Danbury,	0	0	Nelson,	0	0
Dummer,	0	0	New Boston,	0	11
Dunbarton,	0	0	Newbury,	0	0
East Kingston,	0	0	Newcastle,	0	50
Easton,	0	0	South Hampton,	0	0
New Durham,	0	0	Stark,	0	0
New Hampton,	0	0	Stoddard,	0	0
Newton,	0	0	Sullivan,	0	0
Northfield,	0	67	Tuftonboro,	0	16
Northwood,	0	14	Washington,	0	0
Nottingham,	0	0	Webster,	0	33
Pittsburg,	0	0	Wentworth,	0	13
Sandown,	0	0	Wentworth's Loca-		
Sharon,	0	0	tion,	0	0
Shelburne,	0	0	Wilmot,	0	16
Ellsworth,	0	0	Windsor,	0	0

The following districts during the past year had neither a trained teacher nor a certificated untrained teacher in their schools; Canterbury, Carroll, Clarksville, Concord-Town, Croydon, Dummer, Dunbarton, Easton, Freedom, Grantham, Groton, Hart's Location, Hebron, Hooksett, Kensington, Lee, Litchfield, Loudon, Lyman, Madbury, Marlow, Merrimack, Middleton, Moultonborough, Nelson, New Boston, Newbury, Newcastle, New Durham, Newton, Northfield, Nottingham, Pittsburg, Sharon, Shelburne, South Hampton, Stark, Washington, Webster, Wentworth, Wentworth's Location, Windsor.

The following tabulation shows the distribution of gain and loss as between classes of districts. The percentages referred to are the percentages of the whole number of districts in the class.

	Gain.	*Loss.*	*No change.*
Class I,	84%	16%	0
Class II,	70%	11%	9%
Class III,	54%	37%	9%
Class IV,	50%	50%	0
Class V,	0	31%	69%
Total,	42%	30%	28%

Several things stand out clearly from a study of the foregoing tables.

First, it is evident that on the whole these districts which have the largest percentage of their teaching forces composed of trained teachers are the ones which are making haste to complete the task and employ an exclusively trained force.

Second, it is clear that the majority of the districts would employ trained teachers only if they could get them, since 68% of the districts of the state have some teachers of this class.

Third, in view of the large number of the smaller and weaker districts which appear in Classes I and II, it is evident that this class of school districts is employing trained teachers when they can get them.

Distribution by Counties.

The county unit in this state is not a very reliable basis as a study of distribution problems of any kind, for the counties are not homogeneous within themselves. Still, each county does stand for a geographical division of the state, and to a degree each county has a character of its own. For instance, there is a marked difference between Hillsborough on the one hand, and Coös, Carroll, Grafton, or Sullivan on the other.

TABLE NO. 24.

SHOWING DISTRIBUTION OF TRAINED TEACHERS BY COUNTIES, 1913-1914.

County.	*Percentage Trained Teachers.*			
Belknap,	31%	Outside of	Laconia.	15%
Carroll,	26%			
Cheshire,	42%	"	" Keene,	40%
Coös,	28%	"	" Berlin,	22%
Grafton,	30%	"	" Lebanon, Littleton, Plymouth,	25%
Hillsborough,	57%	"	" Manchester, Nashua,	27%
Merrimack,	32%	"	" Concord, Franklin,	14%
Rockingham,	38%	"	" Portsmouth,	30%
Strafford,	40%	"	" Dover, Rochester, Somersworth,	23%
Sullivan,	28%	"	" Claremont, Newport,	17%
Total,	40%	"	" Districts above.	28%

The segregation of the returns into urban and non-urban territory is of course arbitrary. I have taken out the cities and the towns in each county where I know the conditions to be such that these communities somewhat overtop the rest of the county. Of course, such segregation might be carried indefinitely. I give below for comparative purposes a similar study of conditions in the school year 1908-1909. This year is selected because it was the last school year before the State Aid Act of 1909 began to be operative. The Keene Normal School graduate students who come into the schools for the first time in the year 1909-1910.

TABLE NO. 25.

SHOWING DISTRIBUTION OF TRAINED TEACHERS BY COUNTIES, 1908-1909.

County.	*Percentage Trained Teachers.*		
Belknap,	27%	Outside of Laconia,	18%
Carroll,	11%		
Cheshire,	18%	" " Keene,	17%
Coös,	24%	" " Berlin,	18%
Grafton,	22%	" " Lebanon, Littleton, Plymouth,	17%
Hillsborough,	50%	" " Manchester, Nashua,	19%
Merrimack,	32%	" " Concord, Franklin,	14%
Rockingham,	25%	" " Portsmouth,	17%
Strafford,	38%	" " Dover, Rochester, Somersworth,	11%
Sullivan,	28%	" " Claremont, Newport,	15%
Total,	29%	" " Districts above,	16%

TABLE NO. 26.

SHOWING RELATIVE GAIN IN PROPORTION OF TRAINED TEACHERS IN FIVE YEARS.

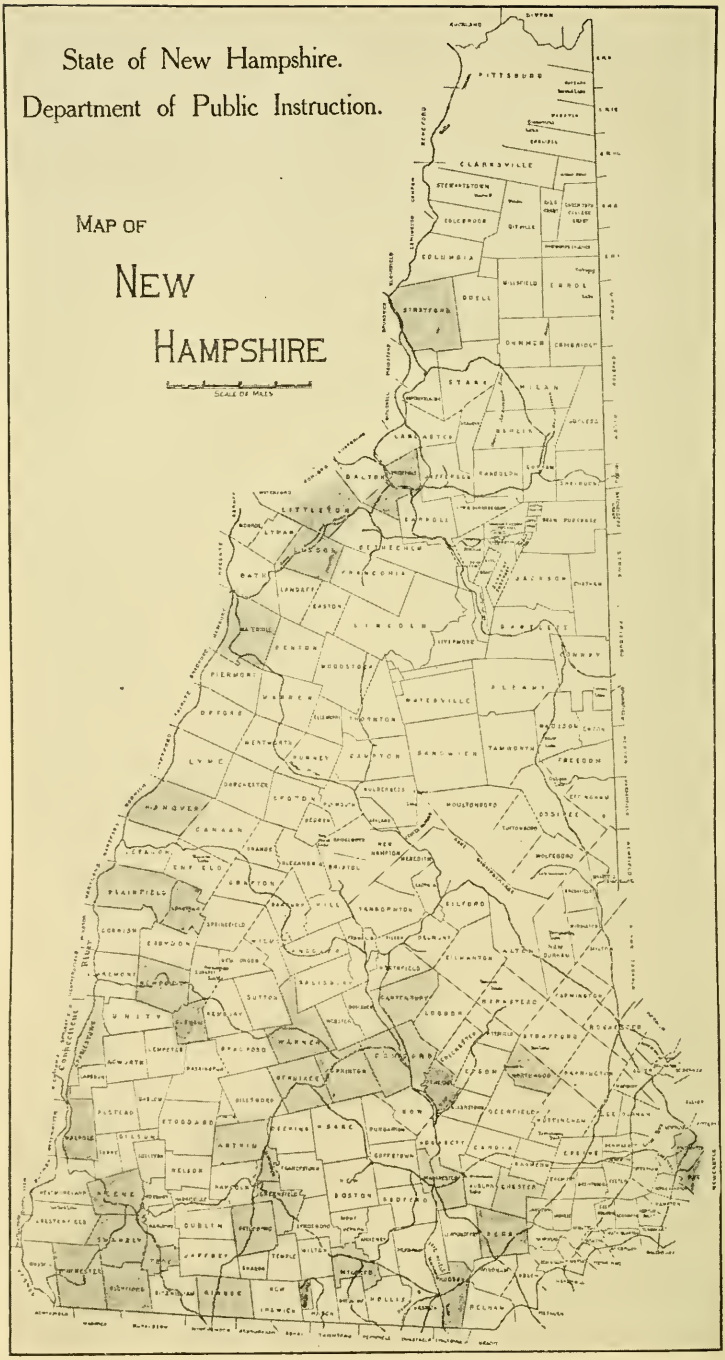
County.	*Gain.*	*Gain in Non-Urban Territory.*
Belknap,	15%	17% Loss
Carroll,	136%	136%
Cheshire,	133%	135%
Coös,	15%	24%
Grafton,	37%	47%
Hillsborough,	14%	42%
Merrimack,	0	0
Rockingham,	52%	77%
Strafford,	5%	55%
Sullivan,	0	13%
Total,	38%	75%

It will thus be seen at once not only that we are gaining very appreciably in our percentage of trained teachers, but that the gain is chiefly outside of the larger centers.

It will also be noted that two counties, Carroll and Cheshire, have far outstripped the others in rate of gain. This is evidently due in the first place to the fact that there was more room for gain in these counties than in any others. It is also probably true that the establishment of the Keene Normal School had much to do with the gain in Cheshire County.

Distribution of Students and Graduates of the Two State Normal Schools.

I discussed at length the territory from which normal schools tend to draw their students in my last report. Observation of the geographical distribution of the students, and graduates of the Keene Normal School especially, during the biennium, tends to confirm the views set forth



Distribution of Keene Enrollment, 1914-1915.
Figure III.

in that report. Similar causes seem to be at work at Plymouth, although the effect is not so marked as at Keene.

Keene Students.

It appeared from a study made and published in the report referred to that 74% of the Keene enrollment came from a territory southwest of a line drawn from Nashua to Claremont, sufficiently convex to include the town of Warner, and including the city of Nashua, but not including the cities of Concord and Manchester. The percentage of the students enrolled at Keene in the fall of 1914, who come from the same territory, is 58%, while the homes of the remaining 42% are scattered from Strafford to Rye. If we include in the Keene territory the students hailing from Manchester we find the percentage referred to be raised to 72%. If we include as Keene territory all towns which are nearer by rail to Keene than to Plymouth, we find that the percentage rises to 77%. See Figure 3.

Keene Graduates.

As will be seen from the distribution plate, Figure 4, graduates of Keene Normal School in the classes of 1913 and 1914 have done their first teaching at least, for the most part, in the same territory as that from which students are drawn, the percentages being 75% for the class of 1913 and 63% for the class of 1914, or 71% for two classes combined.

The geographical distribution of both the student body and the graduates is tending to become somewhat more widely distributed, but the portion which is concentrated is still in the southwest portion of the state.

It is especially important to study the tendencies of this new normal school in order to obtain light for guidance in the establishment and location of future schools.

Plymouth Students.

There are 108 New Hampshire students enrolled in the Plymouth Normal School during the present fall term. Sixty-one per cent. of these are drawn from the territory distributed along the line of the railway running north from Nashua through Concord to Groveton. See New Hampshire School Report, 1911-1912, page 145. The homes of the remaining 39 % are widely scattered.

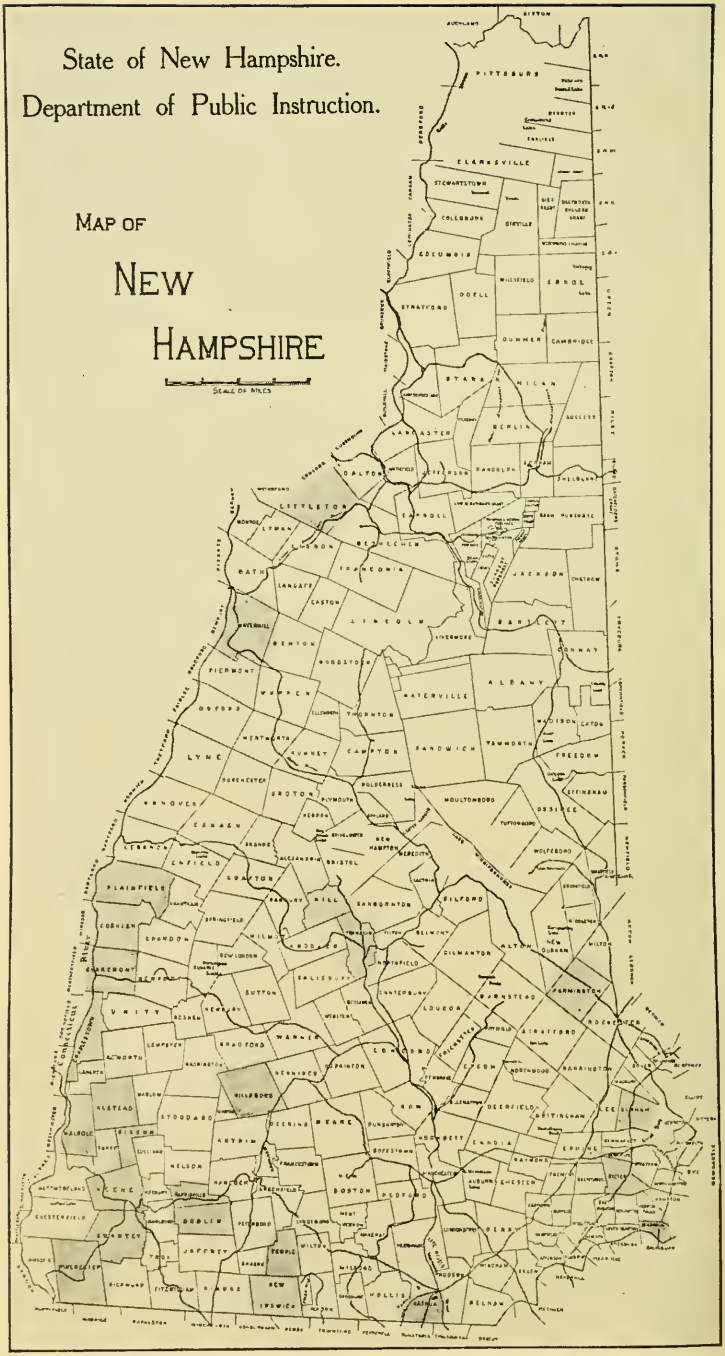
Plymouth Graduates.

The graduates of Plymouth in the classes of 1913 and 1914 are more widely scattered than is true in the case of Keene, but still 61% of the graduates whose addresses are known are concentrated in the zone from which Plymouth this year draws 61% of her students. It will further be noted that the area which I think naturally tributary to Keene sends very few students to Plymouth and draws very few graduates from Plymouth.

Natural Training Divisions.

The bulk of the attendance at any educational institution tends to come from the territory within the easiest lines of transportation. The tendency is marked, as we have seen, in the case of our state normal schools. The natural tendency will undoubtedly be at times interfered with, as some one institution gains temporarily a popular ascendency over another or others, but in the long run the natural tendency will prevail. I have therefore prepared the map, Figure 7, showing the territory most accessible to each of four normal schools, assuming that the policy of eventually establishing two new normal schools, one in the southeastern and the other in the northern section of the state, is carried out.

A study of the needs of these several sections based upon



Distribution of Keene Graduates, Classes of 1913 and 1914.
Figure IV.

the number of inexperienced recruits required annually is summarized in the following table:

TABLE NO. 27.

Showing New Teachers in Different Sections.

	1909-'10	1910-'11	1911-'12	1912-'13	1913-'14	Ave.
Keene,	115	129	109	130	138	124
Plymouth,	72	76	69	62	69	70
Southeast,	111	111	106	112	97	107
North,	66	56	60	66	70	64
	364	372	344	370	374	365

Perhaps the most striking thing about the above table is its disclosure of a narrow range of variation. It shows that we can expect in the state as a whole about the same number of inexperienced teachers every year, and what is true of the state as a whole is true of any considerable section of the state.

The table indicates that the several normal schools, when the state's equipment of such schools is complete, would need to graduate annually the following classes:

Plymouth, 70; Keene, 124; Southeastern School, 107; Northern School, 64.

Now, owing to losses of students during progress through school, the several enrollments in two-year schools would be somewhat larger than twice this, how much larger we cannot tell in advance of experience. The following approximate enrollments are suggested:

Plymouth, 175; Keene, 300; Southeastern, 250; Northern, 150; or 875 in all.

The elementary school enrollment in Plymouth is not an adequate training basis for 175. It is sufficient for 100, only by reason of a specially constructed building. Probably contracts with other school districts than Plymouth

could eventually be arranged, so as to take care of a full enrollment, though in practice the enrollment normally belonging to Plymouth would probably in part be drafted to other schools.

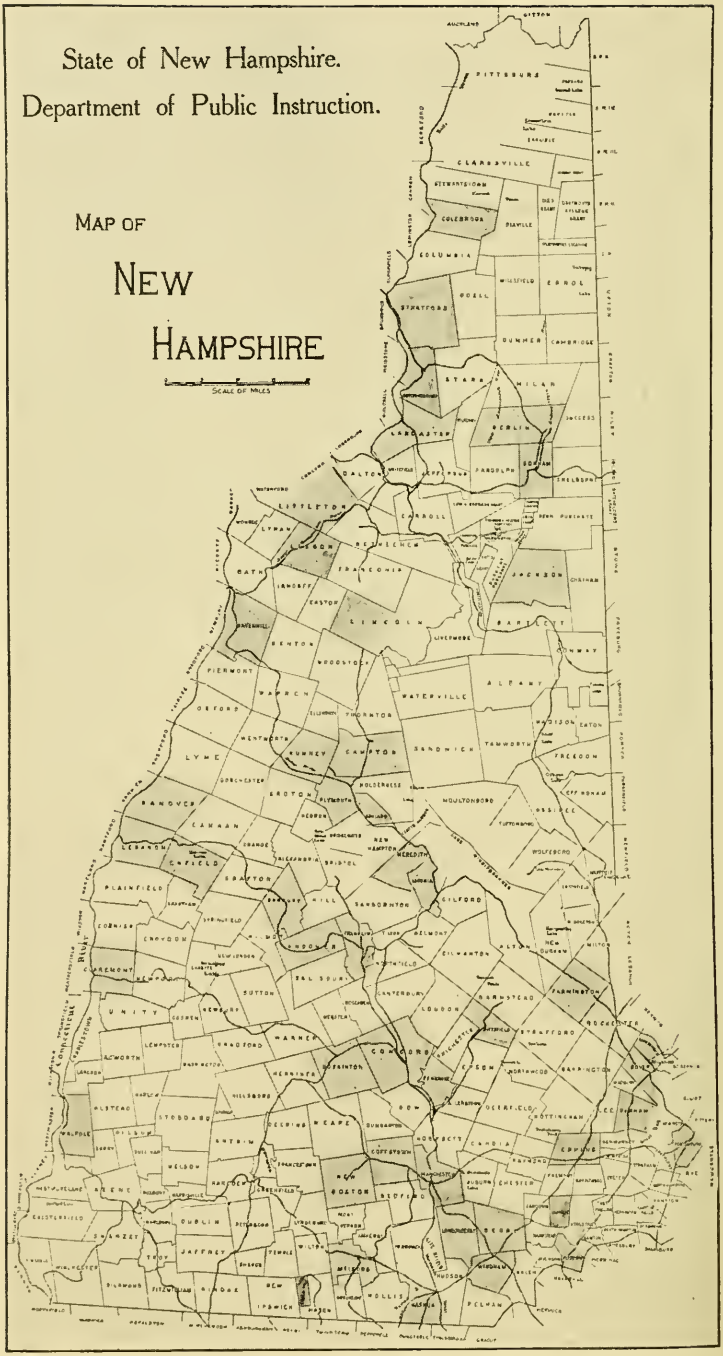
The elementary school system of Keene is adequate as a training basis for a normal school of 300, provided contracts are made for rural school training with surrounding districts similar to that now in force between the trustees and Swanzey.

Either Dover, Portsmouth, or Rochester has an elementary school system sufficiently large for use as a training basis for a school of 250, but no other district in that section of the state has.

Either Berlin or Lancaster has an enrollment sufficient for training purposes for the northern section, but in the case of Lancaster either a special type training school building would need to be constructed or else contracts made with surrounding school districts. However, the Lancaster enrollment would suffice for several years.

NEED OF HIGHER TRAINING FOR SECONDARY TEACHERS AND SUPERINTENDENTS.

Of the thirty-nine superintendents now in service in the state only six have ever had any kind of professional study in residence at a school of education. Of the five school men in the Department of Public Instruction and the principalships of the two state normal schools, but one has ever had such preparation. Of the seven men thus enumerated, only two hold degrees from schools of education. This is not in any sense to be understood as a criticism of the professional attainments of our higher educational officers. Many of them by long experience and by assiduous personal study of their profession are men of higher attainments than any existing professional degree in the United States indicates. Many of them are older in experience than any existing first class school of education.



Distribution of Plymouth Enrollment, 1914-1915.
Figure V.

All of them are graduates of colleges or possessed of equivalent education. Of the whole number, twelve hold degrees from Dartmouth and two from New Hampshire College. In the long run it is not desirable that this condition should continue. We should make arrangements at once for the higher professional training of our educational officers, to the end that we may eventually have a body of men broadly educated and specially trained as well as characterized by habits of diligent personal study.

The college graduates in our secondary schools for the current school year hold degrees as follows:

Bates,	43	Brown,	15
Boston University,	40	Tufts,	14
Mount Holyoke,	34	Colby,	12
Smith,	29	Harvard,	11
Wellesley,	26	Bowdoin,	8
Dartmouth,	19	Clark College,	7
Radcliffe,	18	Wesleyan,	7
Simmons,	16	Massachusetts Agricult'l,	5
Middlebury,	16	University of Vermont,	5
New Hampshire,	16	University of Maine,	4

Amherst, Columbia, Vassar, Acadia, Holy Cross, St. Lawrence, Rhode Island Agricultural, Trinity, Norwich—two each.

Clark University, Elmira, Colgate, McMasters, Rochester, Wheaton, Alfred, Lincoln-Jefferson, University of Minnesota, Syracuse, Purdue, Cornell, William Smith, Stanford, Michigan Agricultural, Yale—one each.

Total—379.

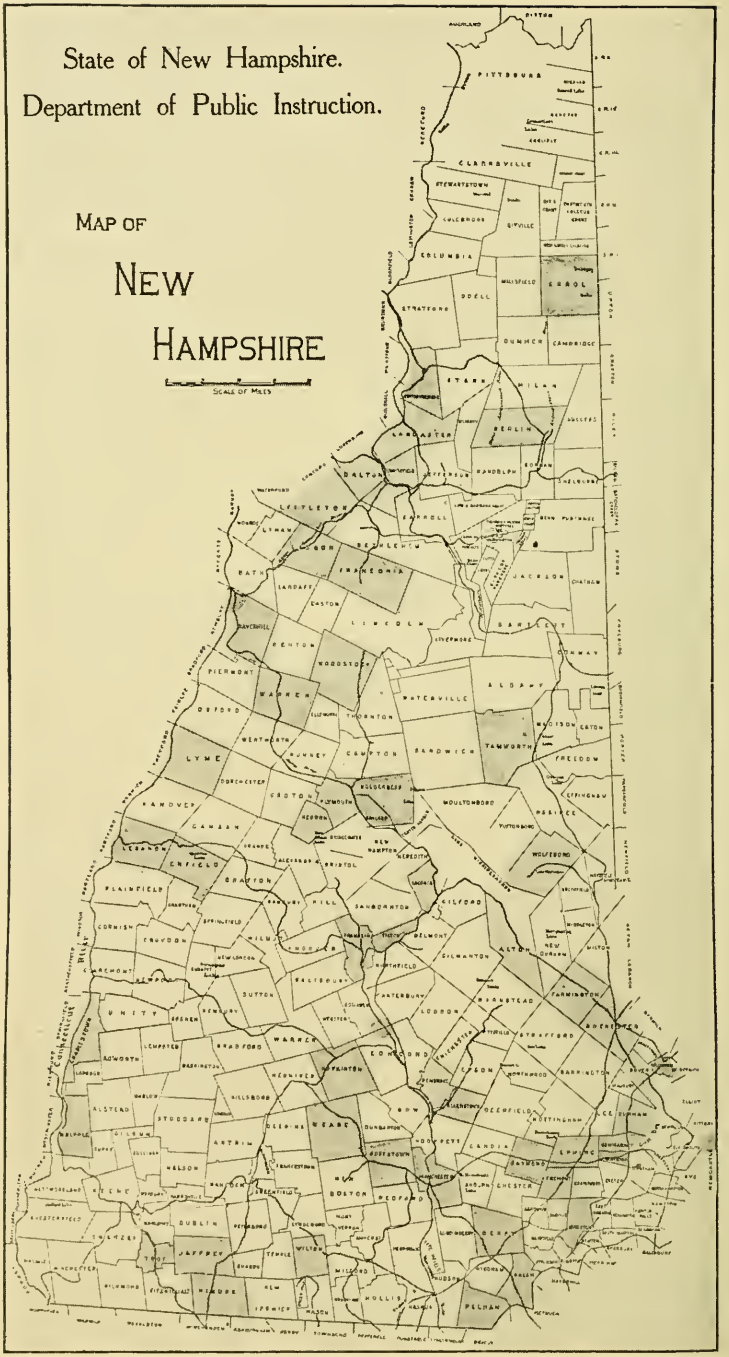
Of the 379 college graduates in service, a negligible number has had any preliminary professional preparation. Of the whole number only 35, or 9%, hold degrees from either of the New Hampshire Colleges.

We have reports showing in what years 477 of the

teachers of all grades in secondary schools of all classes in the current year 1914-1915 were appointed to the schools in which they are now teaching. The following tabulation shows the distribution:

Appointed in	1914,	178 or	37%
"	" 1913,	95 or	20%
"	" 1912,	53 or	11%
"	" 1911,	31 or	6%
"	" 1910,	24 or	5%
"	" 1909,	7 or	2%
"	" 1908,	13 or	3%
"	" 1907,	11 or	3%
"	" 1906,	6 or	2%
"	" 1905,	17 or	4%
"	" 1904,	7 or	2%
"	" 1903,	2 or	0.5%
"	" 1902,	6 or	2%
"	" 1901,	2 or	0.5%
"	" 1900,	4 or	1%
"	" 1899,	3 or	1.5%
"	" 1898,	2 or	0.5%
"	" 1897,	3 or	1.5%
"	" 1895,	4 or	1%
"	" 1893,	2 or	0.5%
"	" 1892,	2 or	0.5%
"	" 1891,	3 or	1.5%
"	" 1886,	1 or	0.25%
"	" 1880,	1 or	0.25%

It thus appears that more than one-third of the teachers in our secondary schools for the current school year began their services in those schools with the beginning of the present year in September, and more than two-thirds of these teachers have completed but two years of service in the schools.



Distribution of Plymouth Graduates, Classes of 1913 and 1914.
Figure VI.

Here are two questions which in the judgment of the writer are closely related and both of which point to the need of a school of collegiate grade for the professional preparation of our own young people to teach in the schools of New Hampshire. The questions at issue are: lack of professional preparation and brevity of service.

Need of Professional Training.

During the past year our high schools and academies have been inspected as never before in the history of the state, and we are able to form a more accurate opinion as to the quality of the teaching done, though not nearly so accurate as I could wish. The following statements seem to be justified.

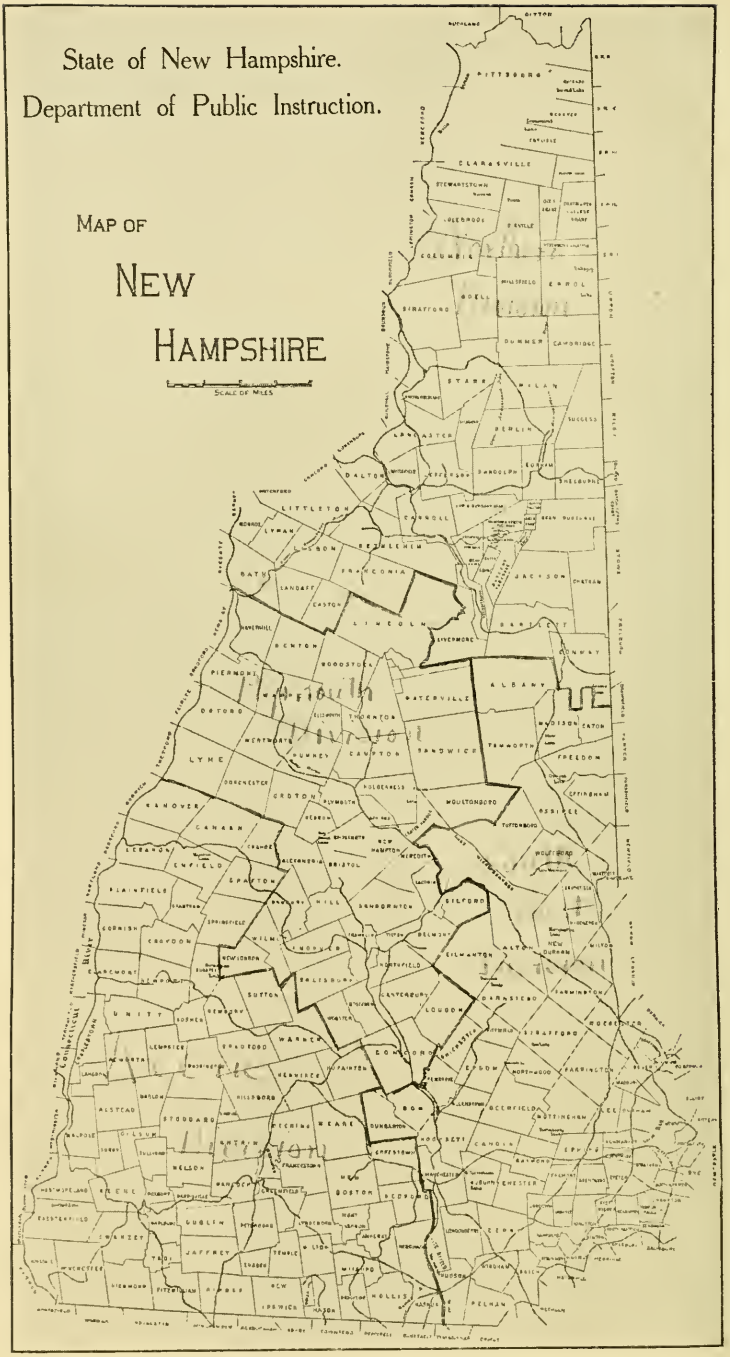
In the first place, the academic preparation of our secondary schools is relatively high. It is much higher on the whole than that of our elementary teachers, and I think the force as a whole compares favorably with that of other states. It is not, however, as good as the needs require. The percentage of teachers who are thoroughly well grounded in the subjects which they teach is low, much lower than four years of collegiate study can justify. The need here is not more study but better study, and better teaching on the part of college faculties.

The teaching is on a whole inferior to that of the better half or two-thirds of the teaching done in the lower schools. It is an uncommon experience to find a high school teacher who has any adequate conception of teaching as teaching. Failure is almost invariably laid to the door of the pupil or to "poor preparation." The young college graduate comes to his task, or more often to her task, with a conception of teaching derived from the college classroom. Whatever may be its value in college, it is certainly very much out of place with young people of high school age. Inefficiency follows, as inevitably it must.

There is, of course, the occasional young teacher of native pedagogical ingenuity and address who fits admirably into the teacher's office and succeeds. Others, after several years of service, "learn how" after a fashion, but with a teaching force which is one-third new every year not much can be expected from the lessons of experience. Many more of those who remain tend to become formalists, vainly wearing themselves out year after year in attempting to accomplish the impossible.

Now, in the above statements, I do not wish to seem unduly severe or pessimistic. It is true that many, perhaps most, of the teachers in our high schools and academies are earnestly conscious of their own limitations as teachers and trying their best to improve themselves by private study. The large attendance at our winter high school institutes is witness to this fact. It is only a minority who still feel a sense of superiority and look with indulgence tinctured with contempt upon suggestions looking toward self-improvement. Still, there is such a minority. One of our larger high schools, during the past year, declined to suspend its sessions while an high school section of an institute was being held in its own building. In many individual instances, high school teachers have in the last few years developed good professional spirit and have shown marked improvement in professional capacity. This is especially true of teachers of the modern languages.

But, after all, no occasional addresses and no amount of private study can supply to the state as a whole the class of secondary teachers which it needs. We must have a basis of preliminary professional study and such study must be supplemented in after years by constant private study. We need at least a four-year college course for every secondary teacher, with professional study emphasized in every year.



Teacher Training Divisions.
Figure VII.

Need of a More Permanent Force.

There are two chief causes behind the lack of permanence in our secondary teaching force. These are the predominance of women, or rather of young women, and the fact that only a very small proportion of our teachers claim a home residence in New Hampshire.

Marriage is the great interrupter of continuity in the schoolroom and always will be so long as the bulk of the teachers are young women. Women ordinarily give up teaching after marriage. Men ordinarily do not. A much greater proportion of strong and virile men is needed in the classrooms of our secondary schools. Laying aside the absurd question as to whether men or women make the better teachers, the fact remains that you cannot have a permanent teaching force, even a moderately permanent one, unless two-thirds to three-quarters of the teachers are men. And the further fact remains that boys of high school age need the influence of men in far greater measure than they get that influence to-day. More men teachers means much better salaries, more assurance of protection in service, and provision for old age. That, however, is another matter.

The other great interrupter of continuity in our teaching force in the secondary schools, greater in our state than marriage, is our economic geographical position.

The three northern New England states are bounded by states which can always pay much better salaries to teachers than can they. So long as nine-tenths of our secondary teachers are drawn from other states, just so long will New Hampshire be a mere training ground for teachers waiting here until they can get calls to other states, to the south and west, and in the long run the tendency will be for the weaker and less efficient to remain behind with us. I have frequently pointed out that in the long run every section of the state must raise, educate and train as many ele-

mentary teachers as it needs. Just so, the state as a whole must raise, educate and train as many superintendents and secondary teachers as it needs. A New Hampshire youth educated and trained in New Hampshire for a position which New Hampshire is ready to give him will tend to stay in New Hampshire. An outsider will tend to return to the home state or else move on to states offering better remuneration. Instead of less than ten per cent. of our force being New Hampshire trained, less than ten per cent. ought to be trained anywhere else. A college of education in our own state would, I believe, do much to solve this question of permanency in the teaching force.

What Is Needed.

Even if we had such a school in active operation this year, it would be a long time before its effects would begin to be felt. Such a school should be established at once.

I earnestly recommend, therefore, that provision be made for a school of education in connection with the State College at once. The cost of carrying on such a school, additional to the regular appropriation for the college, would not be great.

Such a school should provide:

(1) For the general education of collegiate grade of young people who expect to teach in our secondary schools.

(2) For special academic preparation of such students for the specialties which they propose to teach.

(3) For four years of special educational and pedagogical training, with practice teaching in some nearby high school. Dover, Newmarket, Rochester, Exeter, Somersworth and Portsmouth ought to furnish ample ground for such training. It would be desirable to establish a model small high school in Durham itself.

(4) For postgraduate work in education for prospective superintendents.

Such a school should be safeguarded in some respects.

In the first place, it should not be a place in which instructors with a mere book knowledge of education may air that knowledge. Schools of education of that type are not uncommon. We find in such institutions, not infrequently, a young man all but wholly innocent of any actual teaching experience engaged in trying to teach young people how to teach, "out of a book."

In the second place, it should be a school in which the theory of education is closely and intimately tied up with the art and practice of teaching. Schools of education are not difficult to find in which in the school itself every principle which the school endeavors to inculcate is daily and hourly violated in its own practice.

On the other hand, its instructors should be men of recognized standing in the field of education and psychology. The mistake should not be made of attempting to be "practical" by the device of simply calling in some successful high school teacher as professor of education. This has at times been done.

So far as possible the school of education should be related to our general state school system in much the same manner as the normal schools.

Why Not the Normal Schools?

The question will perhaps naturally suggest itself, "why not train high school teachers in the state normal schools?" There are several good reasons why this is not practicable.

In the first place, the normal schools have enough and more than enough to do in the training of teachers for the elementary schools.

Secondly, teachers in the secondary schools need four years of academic as well as professional preparation, and they need the ripening process which comes out of four years of study. The normal school program calls for two years of strictly professional training. To provide for

the academic training of high school teachers would necessitate the duplication of every existing normal school faculty with an academic faculty.

Finally, even were this done, the normal schools thus enlarged could not hope to offer the general advantages of the larger institutions and the result would necessarily be an inadequate enrollment of inferior material.

RECOMMENDATIONS.

I. We need two additional normal schools as soon as we can get them. I should be glad to see the beginnings of two such schools made by the legislature of 1915. Realizing, however, that we have much to do and funds must be found for many needed enterprises, I do not urge the establishment of such schools at this time.

I do, however, recommend the appropriation of money to complete the dormitories at Keene and at Plymouth.

II. I recommend provision for a school of education at the State College and in connection with that institution.

CHAPTER X.

Condition of Normal Schools.

"The superintendent of public instruction in his annual (biennial) report, shall state the condition of the school (schools), the terms of admission and graduation, the times of the commencement and close of the sessions." P. S. 95:10; 157 Laws of 1909, section 5.

In obedience to the law, I submit the chapter which follows.

It would be easy to repeat the whitewashing old report and simply say, "We think our schools have made marked progress during the year." I hope that the growth of both schools has been healthy and promising during the biennium. It is difficult to obey the law and paint a true word picture of the real condition of the two state normal schools. I think we know more about the schools than ever before, but it is still difficult to bring out in a written report the defects of the schools without unduly condemning or their excellencies without unduly praising. I shall, however, try to set forth the condition of each of our normal schools as it is revealed to the superintendent of public instruction through competent inspection and through personal visitations.

PLYMOUTH.

Buildings and Material.

The last legislature made provision for the partial replacement of the old wooden building known as Normal Hall with a modern brick structure. The Board of Control has carried out the legislative provision, although the new structure is not as yet completed and occupied.

The new building is a brick structure of two stories

and a half and is of mill construction, that is to say, slow burning. It is roomy and its interior gives promise of affording comfortable and agreeable quarters for the students rooming there. While not fireproof, it undoubtedly will furnish safe quarters for the students, as the old building did not, and at the time of this writing still does not. It has rooms for forty-six students and instructors and the third (half-story) can readily be furnished so as to provide rooms for perhaps twenty more. It has dining and living rooms and kitchens sufficient for the whole student body.

The building is, however, only half done. Nor is the portion completed a unity in itself. It is not a main structure and a single wing, but is a wing and half a main building. The effect is that of a building obviously incomplete. The accommodations which it affords are sufficient for less than fifty per cent. of the student body. It is located in a space behind the old dormitory and behind a row of residences.

Clearly the legislature should appropriate money to finish what has been begun. The old building should be torn down and removed. In this connection, I wish to point out that the location of this building and the spacing of the grounds will be grotesque until the building stands in a free space of its own. Land should be acquired to the east of the new building and existing buildings removed so as to afford a clear space between the new Normal Hall and the school buildings. In that case, the completed building with its wide lawn sweeping downward to the schoolhouse would become a noble feature of the school and of the village of Plymouth.

The main school building in which the normal faculty and the administration are housed is in good repair and serves its purpose well. During the second half of the school year 1913-1914, the Plymouth High School has been housed in this building, the use of the same having

been granted to the school district of Plymouth during the process of replacing the high school building which was destroyed by fire in the latter part of February, 1914.

The practice school building is a new structure built in 1910 by the school district of Plymouth and specially designed for the purpose which it is intended to serve. It would be the better for some suitable tinting of the interior rooms in the interest of that good hygiene and artistic treatment which a model school building should show. In the main, it serves its purpose excellently well.

The school owns a central heating and lighting plant which furnishes heat and light to the entire set of buildings at lower rate than it can otherwise be purchased. The power plant is not, however, of first-class construction, and it is doubtful if it is as economical as such plants should be.

The only remaining building is the principal's residence. This is a story-and-a-half cottage in the last stages of decreptitude and is kept in repair only at a cost out of keeping with the value of the structure.

The scholastic material equipment of the institution is adequate and the school has sufficient funds to make good the wear and tear and to extend its equipment. A suitable greenhouse is the most needed additional equipment. Nature study is now an accepted and vital part of the curriculum of the elementary school and our normal schools must give the subject adequate attention. Such attention is hardly possible in a normal school during six and one-half months of the nine months of the school year, in the latitude of New Hampshire.

Financial.

So far as I have been able to ascertain, the finances of the institution have been well managed, and they certainly are properly supervised. The bookkeeping is

modern in type and is properly kept up, so far as relations with the state auditor's office and the purchasing agent will permit.

Instruction.

It is difficult to give a final estimate of the character of the instruction, for the final test of the normal training of these students is their achievements as teachers. Six careful surveys of the school during the year, the same being checked by visits of Deputy Superintendent Whitcher and myself, seem to justify the following statements:

(1) The character of the professional instruction as a whole, apart from practice teaching, has been adequate rather than excellent. In some respects such instruction has been fully abreast of the scientific educational thought of the day.

(2) The practice teaching has, especially during the past year, been remarkably well organized. The methodology of the teaching has been fully abreast of the best modern pedagogy. The students have had good and liberal opportunity for practice, and those students who on trial have shown no adaptability to the teacher's calling have been quite generally eliminated. If the graduates of Plymouth in the class of 1914 fail in practice, I shall hesitate to believe that such failure is chargeable to the school.

The Practice Schools.

The practice schools are also the elementary schools of the village of Plymouth, and the state is under obligation to keep them at an efficient level.

These schools are of necessity provided with a program which is as extensive as that of any school system in the

state. Consequently, the children have advantages exceeded by none.

During the past school year, inspection shows that the quality of the teaching was particularly good, even making due allowances for the effect of much student-teaching. That is to say, the schools should produce good results compared with other school systems which we know.

The effect of the practice schools as measured by the success of their graduates in the Plymouth High School, compared with that of graduates of other Plymouth schools and with that of pupils coming from other towns, is shown by the following table:

TABLE NO. 28.

Comparison of Records of Pupils in Plymouth High School.

1911.	Model School.	Other Plymouth Schools.	From Other Towns.
Entered,	19	5	11
Failed,	2	0	2
Honors,	3	1	3
1912.			
Entered,	13	5	9
Failed,	1	2	3
Honors,	7	0	4
1913.			
Entered,	14	5	19
Failed,	0	1	4
Honors,	7	3	3
Combined.			
Entered,	46	15	39
Failed,	3	3	9
Honors,	17	4	10
Per c't failed,	6.5	20	23
Per c't honors,	37	26.6	25.6

It should be remembered that the record shown in the above table is based upon conditions obtaining in the practice schools prior to 1913, 1912 and 1911, respectively. The conditions existing at present in the practice schools cannot be revealed for at least another year. Nor is the standing of pupils in any higher institution conclusive upon the work which has gone before, for the quality of work in the higher institution is a factor which enters the result.

Discipline and Student Welfare.

The discipline of the school has been self-government for many years, and the plan seems to show excellent results. To the best of my knowledge and belief the discipline of the school is excellent.

The welfare of the student body has not been looked after during the two years as it should have been.

In the first place, the student body has been obliged to live in an old ramshackle building which is, and long has been, a bad fire risk. The legislature of 1913 appropriated money enough to half replace this old building, and the new building as I write (early November, 1914) is not ready for occupancy. The students are crowded into rooms intended for half the number, and the fire risk which was bad before has been doubled.

The food furnished at Normal Hall during a part of the last year was found to be poorly cooked and not nutritious, and unnecessarily so. The board took the matter in hand and conditions in this respect have been remedied.

KEENE.

Buildings and Material.

The legislature of 1913 appropriated the sum of $100,000 for the erection of a dormitory, a school building and a heating plant in connection with the Keene Normal

School. The Governor appointed a committee of the board of trustees consisting of Messrs. Morrison, Foster and Vaughan to supervise the construction of the buildings. Inasmuch as the writer has been chairman of this committee, any criticism of the results, favorably or otherwise, is plainly out of place.

The dormitory is a three-story brick and concrete building of semi-fireproof construction, designed to accommodate fifty-nine students and teachers. It also has rooms for the matron and for attendants. In the building is a large living-room and a beautiful dining-room. Kitchen space has been provided to take care of 250. The plans call for a central portion and for two wings. The central part and one of these wings has been completed. Appropriations should at once be made for the remaining wing, for, although the building, as it stands at present, is not crowded, there will certainly be lacking quarters for the whole student body by the fall of 1915.

The school building is a semi-fireproof structure of brick and concrete with a normal capacity of 200. It seems to serve its purpose well, and should be entirely sufficient for this side of the school until the fall of 1918 at the earliest, judging from the present rate of growth in the school.

The heating plant consists of a brick structure with brick chimney, housing two large boilers; and a system of tunnels reaching the schoolhouse, the dormitory, the Hale House, the greenhouse and the stable building which has been used for school purposes. These tunnels contain all steam mains and other pipes and are large enough for all pipes and wires connecting the several buildings.

The other buildings on the campus are six, to wit: the Hale House, the Penelope House, the principal's residence, the greenhouse and two well-built stables.

The Hale House is a substantial mansion house of brick which was used as the main school building until the new

school building was finished. It will now be used as an administration building and library. For the latter purpose, some remodeling will be necessary.

The Penelope House is a small frame cottage left to the normal school by the former owners and now used as a laboratory by the household arts department. It contains some rooms for students.

The principal's residence is a substantial mansion house of brick in good repair.

The greenhouse is a large structure left on the grounds by the former owner and now devoted to the uses of nature study and elementary agriculture. It is larger than is needed for this purpose and has cost as much in repairs and moving as a new building better adapted to the purpose would have cost.

The two stables are also of the heritage left by former owners. Both are substantial wooden buildings too good to throw away and can probably be put to good use for many years to come. The larger could probably be remodeled into a serviceable gymnasium at a small outlay.

Altogether, the state has done well by this new school and good work for the state ought to follow, as it doubtless will.

Financial.

The finances of the school have not been as well managed as they should have been during the past two years, although I believe the school to be at present, 1913-1914, on a sound economic basis. As pointed out in my last report, the teachers were in some cases paid much more for their services than their training, ability or attainments would warrant. In some instances, more teachers were employed than is warranted in this type of school. Finally, during the last fiscal year, serious miscalculations were made which resulted in the discontinuance of the summer school

and a deficit of several hundred dollars at the end of the fiscal year.

The bookkeeping is uniform with that at Plymouth and the financial statements to the board are the same.

Instruction.

As pointed out above, it is difficult to give a final estimate of the effect and results of the instruction. Six thorough inspections have been made by Mr. Brown of this office and these have been checked up personally by both Mr. Whitcher and myself. The following statements seem to be justified as to the work of the past two years:

(1) The professional instruction in the normal school proper, while in places it has been adequate, has not on the whole during the biennium been characterized by either a high grade of efficiency or by a thoroughly modern conception of pedagogy and methodology. In the last respect, it has followed the views prevalent in an earlier part of the modern period which have to-day been extensively modified. Changes have been made which, I think, promise to correct this defect.

(2) The practice teaching has suffered, necessarily, from the defects of the normal instruction. The methodology has not been fully abreast of the times, nor has the academic side of the work been as efficient as could be desired.

On the other hand, it must be understood that the students have received an amount of practice which is approximately adequate, and no person of native ability can practice at any calling long without showing growth in the same. I, therefore, report that, in spite of some rather conspicuous defects both in normal instruction and in practice teaching, the students under training have undoubtedly acquired the capacity to teach a school.

As in the case of the normal instruction, the practice

teaching has been thoroughly and advantageously reorganized during the present year.

The school is a new and a growing school, the work of the past biennium has been on the whole an improvement on what has gone before.

(3) A portion of the practice teaching has been in what has been called *model rural schools*. Now, so far as the introduction of this new feature of training is concerned, it is clear that it fills a long felt need. No doubt, too, the young ladies in training have distinctly profited from their experience in these one-room schools. It cannot, however, be truly said that the rural schools are in any true sense the *model rural schools* which they purport to be. They have some admirable features and they foreshadow a very useful future, but in this biennium they have not been the equals of many rural schools to be found scattered about the state. I have found them very insufficiently supervised, in some cases with work illy adapted to the end in view, and in one case in a state of demoralization which was far from being a model for any country town.

In common with the rest of the system, a distinct improvement appears to have been made with the current year.

Discipline and Student Welfare.

In this respect, the condition of the school leaves little to be desired. To the best of my knowledge, the discipline of the student body is excellent. The students are characterized by a fine spirit of loyalty to their school and to their work, and I believe are acquiring the attitude toward their profession which is most to be desired.

On the side of physical welfare, the conditions surrounding the student body are now excellent. They are housed in a safe, comfortable and agreeable home. Their home life is overseen by a woman of education and refinement

who is a graduate physician. They have an abundance of well-cooked food at low cost. They have opportunity for abundant physical exercise in the open, except during the cold season. Apparently about all that remains to be done for this side of the school life is to provide facilities for gymnastic exercise in the winter months when opportunities for physical exercise in the open are cut off.

The Practice Schools.

During the biennium, the Normal School has used ten rooms of the city school system for practice purposes, beside two rural schools.

Inspection seems to justify the following statements:

(1) As compared with schools in other cities the practice schools have been about average. They have been presumed to have as broad advantages as any school system in the state. As a matter of practice, this has not been true. Of nature study, they have had but a small amount and that of an inferior type. The equipment and the instructor and the management have been there, but the instruction has not reached the children to any adequate extent. Of manual training and cooking and sewing, in the upper grades, the children have had an adequate amount, and this has been true of music and drawing. The ordinary school subjects have been taught according to the State Program of Studies, but in reading, and in geography, there has not been nearly the content value which many of our best schools now show.

(2) The methodology of the schools has been of an obsolescent type. I am speaking now of the practice schools as a whole. There have been some conspicuous exceptions in individual rooms. The work of the period in these schools has not been as efficient as that of normal practice schools ought to be, it has not been equal to the best similar work to be found in the state, it has been as good as elementary school work in the cities will average, it has not

been what the money outlay would justify us in expecting. I think that work has been greatly improved since the beginning of the present school year.

In contrast with the above, it ought to be said that the everyday life of the children in the practice schools has been wholesome, that they have had an unusual amount of the open-air freedom with oversight which ought to be the portion of all school children, and that the extra-scholastic life of the schools in general has been characterized by a fine spirit and by an whole-souled oversight and care.

TABLE NO. 29.

Comparison of Records of Pupils in Keene High School.

Entered from	Average rank for entire year of class entering high school fall of 1912.	Average rank for two terms of the class which entered high school in fall of 1912.	Average rank for two terms of the class which entered high school in fall of 1913.
Practice Schools.	80	76	76
Keene City Schools.	79	78	78
St. Joseph's School.	76	86	78
Other Towns,	81	82	82

The above table is subject to the same limitations as the similar table for Plymouth. It is subject to further limitations: First, because "average" is not so good a measure as distribution; and second because the pupils entering from the practice schools and from St. Joseph's and from other towns are highly selected as compared with those entering from the city schools, so that the figures are unfair to the latter. The latter is especially true of the practice schools and St. Joseph's. The respective numbers considered were: 1914—Keene, 37; practice schools, 5; St. Joseph's, 3; other towns, 19. For 1913—Keene, 44; practice schools, 5; St. Joseph's 2; other towns, 15.

TWO-ROOM SCHOOL BUILDING, STRATFORD HOLLOW.
Accommodates Sixty Pupils.

Comparative Rating of Schools by Superintendents.

During the past school year, superintendents were asked to return to this office their estimates of the graduates of the normal school classes of 1912 and 1913 as teachers. They were instructed to rate teachers as A, B, C, D. On this scale, a rating of A was to stand for excellence, D for incompetency and B and C for points between. D teachers in general are those who would have to be dismissed; C teachers are those who might be retained until they could be replaced: B teachers are what we should call "good average."

TABLE NO. 30.

Showing All Schools Represented in Returns.

	1912				1913			
Name of School.	A	B	C	D	A	B	C	D
Bridgewater,	1	..	1	..	..	..	..	..
Farmington,	..	..	..	..	..	1	..	..
Fitchburg,	3	3	..	..	1	15	3	1
Framingham,	..	1	1	..	..	..	..	..
Keene,	1	6	8	..	1	8	5	1
Lowell,	1	3	2	2	2	8	3	..
Mansfield, Pa.,	..	..	..	..	..	1	..	..
Plymouth,	7	15	12	1	9	8	6	4
Salem,	2	2	1	..	..	2	..	..
Mass. Normal Art,	..	..	..	..	..	1	..	..
Westfield,	..	..	1	..	..	..	..	1
Worcester,	..	..	1	..	..	..	..	2

TABLE NO. 31.

Showing Percentage from Principal Schools in Each Rating.

Name of School.	*1912 Graduates.*				*1913 Graduates.*			
	A	B	C	D	A	B	C	D
Fitchburg,	5%	95%	0%	0%	5%	75%	15%	5%
Keene,	6	40	54	0	7	53	33	7
Lowell,	12	38	25	25	15	60	25	0
Plymouth,	20	43	33	4	33	29	22	16
Salem,	40	40	20	..	..	..	..	..

The above table, of course, must be referred to the *normal school conditions of 1910-'12 and 1911-'13,* respectively.

Financial Reports.

As I have stated above, the bookkeeping of the two schools is uniform, as is that of the two boarding halls connected with the schools. The same is under the oversight of Mr. Frank H. Foster, of the Board of Trustees. Mr. Foster has given liberally and without price of his time and energy to the oversight of the bookkeeping and other financial machinery.

The financial standing of each school and of each boarding hall is reported monthly to each member of the Board of Trustees on blanks devised by Mr. Foster for the purpose, and copies of which I reproduce at this point.

New Hampshire State Normal School at _____

Principal's Financial Report for the month of _____ 191_

DEBITS

	1st of Month	1st of Year
Unexpended appropriations and other credits with State Treasurer		
Accounts receivable		
Cash		
Total		
Less accounts payable		
Net available resources		

	Income for Month	Income for Months
Tuition		
Normal Hall (Plymouth)		
Rents		
Miscellaneous		
Total income		
Total Debits		

CREDITS

	Expenses for Month	Expenses for mos.	Trustees' Apportionment.
SALARIES			
Teachers			
Clerk			
Engine room force			
Janitors			
MAINTENANCE AND OPERATION			
Books and Scholastic Supplies, viz.:			
Text books, renewals			
Text books, additions (includes periodicals)			
Apparatus, renewals			
Apparatus, additions and repairs			
Furniture			
Supplies			
Fuel and Engine room costs, viz.:			
Fuel			
Supplies			
Repairs and replacements			
Additions to equipment			
Repairs and depreciation, buildings			
Repairs on principal's residence			
Water			
Light			
Building supplies			
Grounds			
Printing, except advertising and report			
Commencement			
INCIDENTALS			
*Office expenses			
Advertising			
†Miscellaneous			
PRINTING REPORT			
TRUSTEES' EXPENSES			
Resources at close of month, viz.:			
Unexpended appropriations and other credits with State Treas.			
Accounts receivable			
Cash on hand			
Total			
Less accounts payable			
Available balance			
TOTAL CREDITS			

(Signed)

_____ Superintendent.

NOTE. *_Office Expenses_—Includes postage, telephone and telegraph and office supplies.
†_Miscellaneous_—Includes traveling expenses, freight and carting express, lectures and entertainments.

Normal Hall, Plymouth, N. H.,

Steward's Financial Report for the month of _____ 191__

Debits

	1st of Month		1st of Year	
Cash on hand				
Accounts receivable				
Total				
Less accounts payable				
Balance				
	Income for Month		**Income for Months**	
Boarders				
Normal school				
Miscellaneous				
Total				
Totals		$		$

Credits

	Expenses for Month		Expenses for Months	
Provisions				
Office and administration (including Steward's salary and traveling expenses)				
Employees				
Water				
Light				
Heat				
Repairs and depreciation (building)				
Equipment (repairs and renewals)				
Equipment (additions)				
Laundry				
Rents				
Miscellaneous				
Totals				
	At close of Month			
Cash on hand				
Accounts receivable				
Total				
Less accounts payable				
Available balance				
Totals				

(Signed) _____ Steward.

BOARDING HALLS.

The trustees now have under their charge two boarding halls, one at each school. Each hall is in full charge of a steward, who reports directly to the board and who is responsible for the conduct of business. These officers are Mr. Ernest B. Hardy at Plymouth, and Dr. Sue L. Koons at Keene.

The hall at Keene was not in operation during the biennium for which this report is made.

A charge of $4.50 per week is made at each school for board, room, heat, light, service and a limited amount of laundry. Prior to the present term, the charge had been $150 for the year of 36 weeks, or $4.17 a week. This price was found to be too low in view of the steadily rising cost of provisions, and the price was accordingly advanced to $4.50 per week.

Normal Hall is wholly self-sustaining, as is the corresponding hall at Keene. It pays the whole cost of provisions and other supplies, repairs, salaries, water, heat, light, and other items of upkeep. It is furnished heat and light from the central heating plant. Both are metered and are charged to the hall, as is also an annual charge for depreciation of power plant.

During the fiscal year ending August 31, 1913, Normal Hall ran behind as a business enterprise to the extent of $1,178.01. A committee was appointed to confer with the steward and certain changes were made which were in the interest of both economy and better service. The fiscal year ending August 31, 1914, was handicapped by a lowered attendance, but the year showed a net saving of $323.60. There is on deposit in the Plymouth Savings Bank a surplus of $1,064.27.

Government.

The government of the state normal schools is vested in a Board of Trustees consisting of the Governor and the Superintendent of Public Instruction, *ex-officio*, and five members appointed by the Governor and Council for terms of five years each. During the biennium the board has consisted of:

His Excellency Robert P. Bass, July 15, 1912, to January, 1913.

His Excellency Samuel D. Felker, January, 1913, to July 15, 1914.

Henry C. Morrison, July 16, 1912, to July 15, 1914.

Charles R. Corning, July 16, 1912, to February 4, 1914.

Benjamin F. Dame, July 16, 1912, to February 4, 1914.

James H. Fassett, July 16, 1912, to July 15, 1914.

Frank H. Foster, July 16, 1912, to July 15, 1914.

George H. Whitcher, July 16, 1912, to July 15, 1914.

True L. Norris, January 16, 1914, to July 15, 1914.

Charles W. Vaughan, February 6, 1914, to July 15, 1914.

The following tabulation shows the meetings held and the attendance.

Time and Place.			*Present.*
Plymouth,	Aug.	28, 1912.	Foster, Morrison, Whitcher.
Concord,	Oct.	4, 1912.	Corning, Morrison, Whitcher.
"	Oct.	10, 1912.	Corning, Foster, Morrison, Whitcher.
"	Dec.	12, 1912.	Corning, Fassett, Foster, Morrison, Whitcher.
"	Dec.	30, 1912.	Bass, Corning, Foster, Morrison, Whitcher.
"	Jan.	24, 1913.	Corning, Foster, Morrison, Whitcher.
"	Apr.	4, 1913.	Fassett, Foster, Morrison.
"	May	6, 1913.	Felker, Foster, Morrison, Whitcher.

Time and Place.	*Present.*
Plymouth, June 13, 1913.	Morrison.
Keene, June 19, 1913.	Fassett, Foster, Morrison.
Concord, June 26, 1913.	Felker, Fassett, Foster, Morrison, Whitcher.
Keene, Sept. 3, 1913.	Foster, Morrison.
Concord, Oct. 3, 1913.	Fassett, Foster, Morrison, Whitcher.
" Jan. 2, 1914.	Morrison, Whitcher.
" Apr. 3, 1914.	Morrison, Whitcher.
" Apr. 9, 1914.	Felker, Fassett, Foster, Morrison, Vaughan, Whitcher.
" June 5, 1914.	Foster, Morrison, Whitcher.

TERMS OF ADMISSION AND GRADUATION.

Students are admitted to the regular two-year course who are graduates of first-class secondary schools approved as such by this office, or of equivalent institutions.

Experienced teachers are admitted to a special course of one year. Beginning with the school year 1913-1914, all such persons must have had an experience of at least three years; this will be raised to four years for the year 1914-1915; to five years for the year 1915-1916: and thereafter the teachers' course will be abolished.

Students are admitted in September only.

Students who have fulfilled the requirements of the several courses are granted the diploma of the school.

COMMENCEMENT AND CLOSE OF SESSIONS.

Plymouth.

1912-1913. September 10. Opening of First Term.
December 21 to January 7. Christmas Vacation.
January 25 (noon). End of First Term.
January 28. Opening of Second Term.
March 29 (noon) to April 15. Spring Vacation.
June 8 to 13. Commencement Week.
1913-1914. September 9. Opening of First Term.
December 20 to January 5. Christmas Vacation.
January 24. End of First Term.
January 27. Opening of Second Term.
March 28 (noon) to April 13. Spring Vacation.
June 7 to 12. Commencement.
July 7 to August 28. Summer Term.

Keene.

1912-1913. September 17. Opening of First Term.
December 21 (noon) to January 7. Christmas Vacation.
February 1. End of First Term.
February 4. Opening of Second Term.
March 15 (noon) to April 1. Spring Vacation.
June 19. Commencement.
1913-1914. September 16. Opening of First Term.
December 20 (noon) to January 6. Christmas Vacation.
January 31. End of First Term.
February 3. Opening of Second Term.
March 14 (noon) to March 31. Spring Vacation.
June 18. Commencement.

CHAPTER XI.

Teachers' Pensions.

In connection with the whole matter of the recruitment and training of the teaching force of the state the matter of teachers' pensions has come to be one of vital importance to New Hampshire. It is of vital importance to every state, but, as will appear hereafter, it is of especial importance to this state by reason of our geographical location.

Not only in the United States but in all civilized nations, not only with respect to the public service but with respect to private service in the great industrial corporations, not only in the case of teachers but in the cases of workers of all classes, the principle of retiring allowances in old age has been found to be not only a part of social justice but still more very profitable to the community.

I have at various times taken occasion to point out that there are three great fundamental causes why the profession of teaching in the public schools does not command the services of the ablest and best in society, nay more, does not command its fair share of such. These are:

(1) Teaching in the public schools is one of the worst paid callings.

(2) It is one of the poorest protected. The teacher is so far from being assured of retention and promotion during competency and good behavior that he or she is ordinarily subject to an annual election like any holder of a political office, and a livelihood much more often depends upon skill in the unlovely art of pleasing everybody than upon skill and strength in the art of teaching.

(3) Teachers very rarely earn a salary sufficient to enable them to support life, keep up a reasonable social and professional standard and still accumulate a competency for the support of old age. Furthermore, old age comes early in teaching. So far as the experience of the writer goes, the

one greatest deterrent acting upon capable persons who are naturally well qualified and well disposed to the profession of teaching is the dread of a poverty-stricken old age.

Now, it would be well if we could increase the salaries of teachers sufficiently to live suitably and put by provision for old age, but we cannot or at least will not. If the state were willing to add a million dollars a year to its expenditures for teachers' salaries, there would be little justification for pension legislation. But we know the state will not and, so far as we can see, cannot. It is not too much to say that an annual appropriation of $10,000 for teachers' pensions would be the equivalent of many hundred thousand added to the salaries of teachers in its effect upon the strengthening of the teaching force. If our teachers were all permanently engaged in teaching so that in general nearly as many retired each year from age as enter the profession, then the above statement would not be true. But the number retiring from age annually is much less than one per cent. of the number annually entering the calling. The ninety-nine per cent. and a large fraction drop out long before reaching retiring age.

An adequate pension law therefore finds its one great justification in the fact that it will inevitably greatly strengthen the teaching force of the state by making it possible for a much larger number of the able and the strong in years to come to enter and remain in the ranks of teaching in this state.

Furthermore, Maine, Vermont, Massachusetts, Rhode Island and New York already have pension laws, and Connecticut will soon have. It needs no prophet to predict that the ablest and strongest teachers of our state who expect to remain teachers will tend to gravitate early in their careers to those states which provide retiring pensions, unless this state enacts similar legislation. Conversely, given a good pension act in this state, our best teachers will tend to remain with us lest they lose their pension status altogether.

At present, the following states have outright statewide pension laws: Arizona, California, Maine, Maryland, Massachusetts, New York, Rhode Island, Vermont and Virginia. Fourteen others have pension laws of less than statewide scope. The approaching sessions of the state legislatures will undoubtedly add others to the list.

College professors, including the faculties of both our New Hampshire colleges, are paid generous retiring allowances by the Carnegie Foundation for the Advancement of Teaching.

The employees of many railroad companies and other industrial organizations are paid pensions upon retirement, *because it is good business policy so to do.*

State Teachers' Association Bill.

A committee of the State Teachers' Association has had drafted by a competent attorney a measure which I am glad to recommend. The proposed bill is thought to be within the restrictions of the state constitution. I quote the measure in full:

AN ACT TO INCREASE THE EFFICIENCY OF THE PUBLIC SCHOOLS OF THE STATE BY GRANTING PENSIONS TO RETIRED TEACHERS OF LONG SERVICE.

Be it enacted by the Senate and House of Representatives in General Court convened:

SECTION 1. Any woman who, being on the first day of September, 1915, or thereafter, of the age of fifty-five years, and who for thirty years shall have been engaged in teaching as her principal occupation and have been regularly employed as a teacher in the public schools of this state or in such other schools in this state as are supported wholly or in part by state or town or school district appropriation and are under public management and control, fifteen years of which employment, including the ten years preceding her ceasing to teach, shall have been in some of the before-men-

tioned schools of this state, and who shall have been retired or shall voluntarily have retired, from active service, shall, upon her formal application directed to the State Superintendent of Public Instruction, and upon the certification by the said superintendent to the Governor and Council as hereinafter provided, receive from the state for the year ending August 31, 1916, or for such part of said year as she may be so retired, a pension at the rate for the full year of sixty per cent. of the average annual salary of such teacher for the five years last preceding her ceasing to teach. In figuring such average, deductions from the teacher's pay for absence or other cause during said five years' period shall be considered as a part of the teacher's salary.

SECT. 2. Retired male teachers shall receive pensions upon the same terms as those set forth for women in this act; *provided, however*, that any man, to be entitled to receive the full pension, must be of the age of sixty years and must have taught thirty-five years. Service as superintendent of any school district organized under the laws of this or any other state shall be considered as service in teaching under the provisions of this act.

SECT. 3. No person actually teaching after the first day of September, 1915, shall receive a pension upon retirement subsequent to that date, unless such person shall from and after that date hold a state teacher's certificate or a service certificate issued under the authority of the State Superintendent of Public Instruction.

SECT. 4. Any retired teacher of the required age who shall before ceasing to teach have taught fifteen years in this state, including ten years immediately preceding such ceasing to teach, but shall not have taught in all for thirty-five years in the case of a man, or thirty years in the case of a woman, shall be entitled to such proportion of the full pension herein provided as the actual total number of years taught bears to thirty-five in the case of a man, or thirty in the case of a woman.

SECT. 5. Any teacher forced to retire because of disability before reaching the age of sixty, if a man, or fifty-five, if a woman, shall, if otherwise entitled to a pension under the provisions of this act, receive a pension based upon the proportion of the full pension which the total number of years taught, plus the number of years of enforced retirement, bears to thirty-five, in the case of a man, or thirty, in the case of a woman, not exceeding, however, the full pension.

SECT. 6. In computing the number of years of actual service of any teacher before retirement, no deduction shall be made for leaves of absence during sickness or disability, *provided,* after such sickness or disability, the teacher resumed teaching, but deduction shall be made for time the teacher is engaged in some other gainful occupation.

SECT. 7. The State Superintendent of Public Instruction shall, on or before the first day of August, 1915, formulate rules and regulations for carrying into effect the provisions of this act, and shall give such publication to the same as he may deem desirable.

SECT. 8. The State Superintendent of Public Instruction shall investigate all applications received for a pension under the provisions of this act and shall, on or before the 30th day of November, 1915, and quarterly thereafter, certify to the Governor and Council the names of the persons who are entitled to pensions under the provisions of this act, and the Governor and Council shall draw warrants on the State Treasurer for payment of the pensions in favor of said persons. Said payments shall be made in quarterly installments.

SECT. 9. The payment of any pension shall be suspended whenever the person to whom said pension has been granted resumes teaching in any private or public school.

SECT. 10. All pensions granted or payable under the provisions of this act shall be and are hereby made exempt

from levy upon execution and from attachment upon trustee process.

SECT. 11. The sum of thousand dollars is hereby appropriated for the fiscal year ending August 31, 1916, to carry out the provisions of this act.

SECT. 12. This act shall take effect upon its passage.

Probable Cost.

We cannot wisely enter upon any public policy, however urgent the need, without pausing to count the cost. To this end I have collected the essential data called for by the measure above quoted, in the hope that the data may be of service to the members of the lawmaking body. It has been impracticable to secure returns from every teacher in the state. I have, however, secured such returns from 1,166 different teachers in service the current year 1914-1915. It appears that there were all told in all classes of public and semi-public schools affected by the act 3,177 different teachers in service last year. I therefore conclude that the 1,166 teachers referred to above are a fair "sampling" of the state, with this qualification: they must contain a relatively larger proportion of "retirable" teachers and higher salaries because they are in service chiefly in the cities and in the larger towns. That is to say, any estimates based upon the returns which we have we shall know to be "outside" estimates.

The following table shows the distribution of teachers according to years of service. Column I shows the years of service. Column II shows the number of teachers belonging to each year as shown by the returns. For instance, there were 11 teachers who had been teaching for 25 years or more than 24 years. Column III shows the corrected numbers for the state as a whole assuming that the 1,166 instances are a fair sampling.

TABLE NO. 32.

NUMBER OF TEACHERS BY YEARS OF EXPERIENCE.

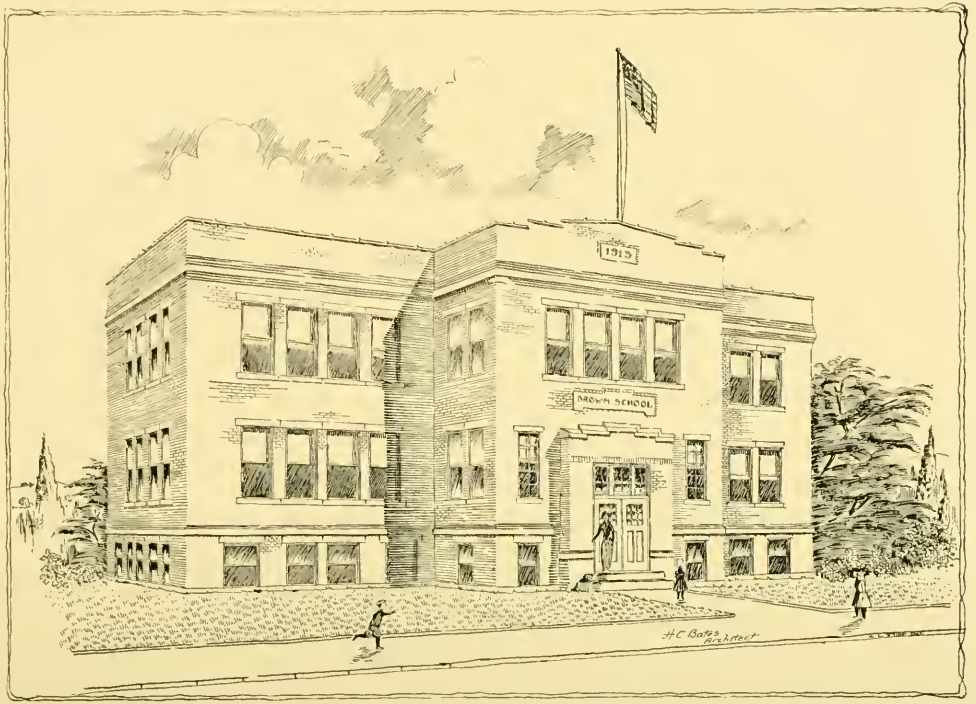
Years Experience.	Number Returned.	Corrected for Entire State.
I.	II.	III.
54	1	2
43	1	2
42	1	3
41	1	3
40	6	16
39	2	5
38	3	8
37	4	11
36	2	5
35	4	11
34	9	24
33	6	16
32	4	11
31	10	27
30	7	19
29	8	22
28	10	27
27	11	30
26	4	11
25	11	30
24	11	30
23	16	43
22	16	43
21	11	30
20	21	57
19	19	51
18	21	57
17	18	49
16	17	46
15	18	49

Years Experience.	Number Returned.	Corrected for Entire State.
14	26	70
13	23	62
12	28	76
11	20	54
10	52	140
9	43	116
8	47	127
7	46	124
6	54	146
5	77	208
4	77	208
3	75	203
2	114	314
1	211	585
Total.	1,166	3,177

We have no returns upon the basis of which we can form an estimate of the number of teachers in the state whose terms of service are between 43 and 54 years. There must be some. There are probably very few. Neither have we returns on the basis of which we can estimate the number of superannuated teachers in the state. There are certainly some, but probably not a very considerable number.

Independently of our main inquiry it is important to note that *more than 18% of all the teachers in the state had taught one year or less on the 15th day of July, 1914.*

I have scrutinized the returns and have separated into classes the teachers who might retire under the measure proposed during the ten years next following and including the class of 1916. The table which follows shows the utmost possible cost supposing that all women teachers should retire at 55 and all men teachers at 60, and supposing that all such teachers could qualify.



BROWN SCHOOL, BERLIN.

TABLE NO. 33.

Showing Maximum Cost of Pensions.

Class.	Number returned.	Corrected for state.	Total salary returned.	Average salary.	Total salary corrected.	60 per cent. of salary.	Average age at retirement.	Expectation of life.
1916,	27	27	$16,793	$570.88	$43,634.24	$26,180.54	63.1	12.26 yrs.
	16	43	10,367	647.94	27,861.42	16,716.85	56.4	16.72
1917,	10	27	11,430	680.00	25,710.00	15,426.00	56.7	15.39
1918,	7	19	4,359	625.57	11,885.83	7,131.50	55.0	17.40
1919,	10	27	7,925	680.55	6,563.85	3,938.31	56.3	16.72
1920,	14	38	10,242	586.00	24,478.00	14,686.80	55.3	17.40
1921,	10	27	9,697	637.13	21,802.51	13,081.51	56.1	16.72
1922,	9	24	7,247	492.00	16,103.00	9,661.80	56.4	16.72
1923,	15	41	10,569	549.15	25,945.15	15,567.09	55.7	16.72
1924,	11	30	9,571	654.47	19,634.10	11,780.46	55.0	17.40
1925,	10	27	7,951	648.87	20,279.49	12,167.69	55.0	17.40

The class of 1916 is divided into two groups, the first containing those who will be 60 or over on August 31, 1916, and the second those who will be more than 55 but less than 60. This class would of course be larger theoretically than any succeeding class, because it would contain not only those reaching 55 in 1916, but also all who will be above 55 at that time. Such conditions could not recur to any considerable extent.

Now nothing like the maximum sums estimated above would be called for, first, because teachers in sound health would not retire at 60% of their salary when they could draw 100% of the same, and second, because by no means all of the teachers in the class could qualify.

The annual carrying cost of this pension system could of course be predicted by applying actuarial principles, but we should secure only a maximum estimate and the same would necessarily be greatly exaggerated. A better method would, I think, be to rely upon the actual experience of another state, and for this purpose I select Rhode Island. The Rhode Island law is the same in principle as the proposed New Hampshire act, but the New Hampshire act is somewhat more generous to the retiring

teacher. On the other hand, the Rhode Island salaries are larger as is the number of retirable teachers. I cite the experience of that state in tabulated form.

STATE OF RHODE ISLAND
STATEMENT OF TEACHERS' PENSIONS
OCTOBER 1, 1914.

Number of pensions granted since 1908,		126
" " pensions terminated by death,		18
" " pensions in force,		108
Highest pension in force,		$500.00
Lowest pension in force,		114.50
Average pension in force,		341.16
Amount of 22 pensions granted in 1908,		7,331.28
" " 38 " " " 1909,		11,897.61
" " 22 " " " 1910,		8,002.30
" " 13 " " " 1911,		5,127.40
" " 11 " " " 1912,		3,703.60
" " 8 " " " 1913,		3,000.20
" " 10 " " " 1914,		3,794.41
Total yearly amount of pensions granted since first issue in 1908 (representing the total yearly face value of all pension certificates issued),		42,856.80
Amount of pensions terminated by death,		6,011.02
Amount of yearly pensions in force,		36,845.78
Expense of teachers' pensions since first issue in 1908,		158,995.54
Appropriation for 1914,		37,000.00
Total amount of money appropriated in seven years,		173,000.00
Yearly appropriations:		
1908,	$10,000	
1909,	10,000	
1910,	20,000	
1911,	30,000	

1912,	$33,000
1913,	33,000
1914,	37,000
	$173,000

I suggest the appropriation of $10,000 for each of the years 1915-1916 and 1916-1917. I think this will probably be amply sufficient. At any rate, we shall gain actual knowledge for our guidance in subsequent years.

CHAPTER XII.

State Aid.

I quote from my last report:

"The history of state school aid distributed to the smaller and less wealthy towns of the state goes back to the legislative session of 1899, when the agitation for what had been known as equalization of school privileges culminated in legislative enactment. The process of equalizing the school privileges of the state has continued without essential interruption from that day till this. The total appropriation for all purposes within the contemplation of the equalization policy was at first small, and for several years was entirely inadequate. The following table is a summary of the history of legislative appropriation for this purpose.

"TABLE NO. 19.

Summary of Annual Appropriations for Equalization of School Privileges.

1899,	$25,000	1907,	$38,000
1901,	30,000	1909,	80,000
1903,	30,000	1911,	115,000
1905,	33,000	1913,	95,100

"The present appropriation is sufficient for the needs of the present policy. Vastly less than the huge sums available in some states, it still accomplishes in the definite work of making possible a longer school year and better teachers in the smaller towns, fully as much probably as any system of distribution of state school money in the nation."

SUMMARY OF THE LAWS RELATING TO STATE SCHOOL AID.

For Encouragement of Attendance.

Towns having equalized valuation per pupil of average attendance of	For every 25 pupils of average attendance or *major part.*
less than $3,500	$1.75 per week.
$3,500 to 4,500	1.50 per week.
4,500 to 5,500	1.25 per week.
5,500 to 7,000	1.00 per week.
7,000 to 9,500	.75 per week.

Limits: Not more than 3,500 population; not more than $9,500 equalized valuation per pupil of average attendance; tax rate for school purposes of not less than $3.40 on $1,000 equalized valuation; school year of not less than thirty weeks.

For Employment of Trained and Certified Teachers.

Two dollars per week for every graduate of registered normal schools or person holding state certificate.

Limits: same as above.

For Skilled Supervision.

One-half salary of certified superintendent to each town school district in supervisory union.

For High School Tuition Rebate.

If general tax rate is from $16.50 to $17.49 on $1,000, 1-10 of tuition paid by district.

If tax rate is	$17.50 to	$18.49,	2-10.
" " " "	18.50 to	19.49,	3-10.
" " " "	19.50 to	20.49,	4-10.
" " " "	20.50 to	21.49,	5-10.
" " " "	21.50 to	22.49,	6-10.
" " " "	22.50 to	23.49,	7-10.
" " " "	23.50 to	24.49,	8-10.
" " " "	24.50 to	25.49,	9-10.
" " " "	over	25.49,	10-10.

Limits: Tax rate for school purposes of not less than $3.50.

The following tables show distribution of state school aid for December, 1913, and December, 1914:

TABLE NO. 34.

Showing Distribution of State School Aid in December, 1913.

Town.	Average attendance.	Teachers.	Salary of Supt.	High school tuition.	Total.
Acworth,	$88.65	.....	.....	$24.00	$112.65
Alexandria,	90.00	$90.00	.....	96.00	276.00
Allenstown,	.....	.....	$150.00	.....	150.00
Alstead,	97.50	114.00	.....	.....	211.50
Alton,	189.00	288.00	300.00	.....	777.00
Amherst,	160.02	422.00	252.00	90.80	924.82
Andover,	255.20	88.00	.....	336.20	679.40
Antrim,	186.74	428.00	225.00	.....	839.74
Ashland—Town,	29.50	.....	.....	108.54	138.04
Ashland—Special,	324.00	472.00	.....	24.00	820.00
Atkinson,	102.00	136.00	174.00	132.00	544.00
Auburn,	.....	.....	.....	30.80	30.80
Barnstead,	.....	.....	.....	176.00	176.00
Barrington,	.....	.....	.....	518.40	518.40
Bartlett—Town,	84.38	184.00	100.00	45.00	413.38
Bartlett—Special,	223.44	260.00	100.00	70.80	654.24
Bath—Town,	81.00	144.00	160.03	128.80	513.83
Bath—Special,	54.00	20.00	106.64	.....	180.64
Belmont,	276.80	352.00	200.00	335.67	1,164.47
Bennington,	136.00	72.00	.....	.....	208.00
Benton,	24.22	.....	.....	.....	24.22
Bethlehem—Town,	.....	.....	100.00	.....	100.00

Town.	Average attendance.	Teachers.	Salary of Supt.	High school tuition.	Total.
Boscawen,	$72.00	$132.00	.....	$551.04	$755.04
Bradford,	.....	.....	$170.00	91.00	261.00
Brentwood,	132.00	198.00	.....	.....	330.00
Bristol—Special,	.....	.....	.....	127.98	127.98
Brookfield,	.....	.....	.....	2.20	2.20
Campton,	131.25	280.00	.....	404.00	815.25
Canaan—Town,	96.00	118.00	.....	23.20	237.20
Canaan—Special,	81.00	72.00	.....	44.30	197.30
Candia,	116.25	52.00	.....	46.80	215.05
Canterbury,	.....	.....	175.00	.....	175.00
Charlestown,	216.00	504.00	146.25	344.00	1,210.25
Chatham,	24.75	132.00	.....	24.00	180.75
Chester,	.....	.....	.....	46.80	46.80
Chesterfield,	.....	.....	.....	31.50	31.50
Chichester,	.....	.....	187.50	56.12	243.62
Claremont,	.....	.....	585.00	.....	585.00
Colebrook—Town,	.....	.....	.....	343.04	343.04
Colebrook—Special,	288.00	629.60	285.00	.....	1,202.60
Columbia,	158.75	156.00	333.33	156.80	804.88
Concord—Town,	.....	.....	283.34	.....	283.34
Concord—Penacook,	.....	.....	680.00	.....	680.00
Conway,	634.14	828.00	450.00	281.58	2,193.72
Dalton,	135.00	12.00	.....	243.00	390.00
Danbury,	.....	.....	.....	193.20	193.20
Danville,	135.00	144.00	.....	108.00	387.00
Deerfield,	.....	.....	.....	24.00	24.00
Derry—Town,	.....	.....	480.00	2,453.50	2,933.50
Derry—Special,	.....	.....	80.00	771.40	851.40
Dorchester,	75.00	20.00	.....	80.00	175.00
Dublin,	.....	.....	86.25	.....	86.25
Dummer,	.....	.....	.....	62.48	62.48
Dunbarton,	.....	.....	.....	6.45	6.45
Durham,	135.00	274.00	300.00	348.29	1,057.29
East Kingston,	72.00	72.00	.....	.....	144.00
Easton,	27.00	.....	.....	.....	27.00
Eaton,	90.00	.....	.....	31.50	121.50
Effingham,	155.00	236.00	.....	32.66	423.66
Enfield,	286.40	552.40	155.00	.....	993.80
Epsom,	.....	.....	150.00	142.80	292.80
Errol,	.....	.....	285.00	8.00	293.00
Farmington—Town,	51.00	34.00	.....	206.00	291.00
Farmington—Special,	255.62	606.00	400.00	.....	1,261.62
Fitzwilliam,	313.51	422.00	190.00	104.10	1,029.61
Francestown,	.....	.....	.....	22.00	22.00
Fremont,	167.00	116.00	.....	100.80	383.80
Gilmanton,	.....	.....	.....	72.80	72.80
Goffstown—Town,	.....	.....	.....	188.56	188.56
Gorham,	649.88	584.00	.....	.....	1,233.88
Grafton,	90.00	10.00	.....	43.40	143.40
Greenfield,	93.60	202.00	.....	120.00	415.60
Greenland,	85.50	152.00	125.00	.....	362.50
Greenville,	.....	.....	.....	38.60	38.60
Groton,	.....	.....	.....	40.00	40.00
Hampstead,	142.00	178.00	180.00	.....	320.00
Hampton,	.....	.....	175.00	.....	175.00
Hampton Falls,	80.26	71.33	35.00	.....	151.59
Hancock,	100.71	136.00	170.00	65.32	472.03
Hanover—Town,	116.25	64.00	.....	167.48	347.73
Hanover—Special,	270.00	638.00	.....	.....	908.00
Harrisville,	81.00	192.00	97.14	47.04	417.18
Haverhill—Town,	527.85	546.00	266.67	.....	1,340.52
Haverhill—Woodsville,	540.00	360.00	266.66	.....	1,166.66
Henniker,	195.96	212.00	.....	.....	407.96
Hill,	49.00	86.00	112.50	41.40	288.90
Hillsborough—Town.	71.62	224.00	150.00	361.20	806.82
Hillsborough—Special,	243.00	360.00	225.00	.....	828.00
Hinsdale,	231.53	208.00	243.75	.....	683.28
Hollis,	211.50	210.00	180.00	.....	601.50

Town.	Average attendance.	Teachers.	Salary of Supt.	High school tuition.	Total.
Hopkinton,	.....	.....	$283.33	.....	$283.33
Hudson,	$306.00	$206.00	232.00	$662.44	1,406.44
Jaffrey,	468.00	648.00	275.00	.....	1,391.00
Jefferson,	270.00	554.00	303.57	.....	1,127.57
Kensington,	49.50	.....	.....	55.80	105.30
Kingston,	174.65	218.80	.....	198.00	591.45
Lancaster—Town,	204.60	184.00	.....	756.00	1,144.60
Lancaster—Special,	560.00	850.00	.....	.....	1,410.00
Landaff,	67.50	80.00	212.50	47.60	407.60
Langdon,	24.75	132.00	75.00	4.00	235.75
Lebanon—Town,	.....	.....	165.00	822.90	987.90
Lebanon—Special,	.....	.....	400.00	.....	400.00
Lebanon—West,	.....	.....	150.00	.....	150.00
Lee,	.....	.....	140.00	.....	140.00
Lempster,	61.20	246.00	.....	101.00	408.20
Lisbon—Town,	81.00	72.00	212.50	528.00	893.50
Lisbon—Sugar Hill,	27.00	144.00	212.00	.....	383.50
Lisbon—Special,	297.00	720.00	212.50	.....	1,229.50
Littleton,	.....	.....	700.00	.....	700.00
Londonderry,	180.81	428.00	240.00	142.80	991.61
Loudon,	.....	.....	187.50	143.06	330.56
Lyme,	180.00	80.00	.....	48.94	308.94
Lyndeborough,	128.88	188.00	.....	80.58	397.46
Madison,	94.50	146.00	100.00	28.20	368.70
Marlborough,	448.12	608.00	242.86	.....	1,298.98
Mason,	52.50	140.00	.....	.....	192.50
Middleton,	75.00	.....	.....	19.20	94.20
Milan,	236.25	152.00	.....	.....	388.25
Milford,	.....	.....	468.00	.....	468.00
Milton,	215.40	286.00	250.00	.....	751.40
Monroe,	94.50	12.00	.....	.....	106.50
New Durham,	93.00	24.00	.....	90.00	207.00
Newfields,	54.00	144.00	.....	354.90	552.90
New Hampton,	190.94	150.00	.....	795.88	1,136.82
New London,	.....	.....	320.00	358.50	678.50
Newington,	.....	.....	125.00	52.40	177.40
Newmarket,	299.72	442.00	400.00	.....	1,141.72
Newport,	.....	.....	480.00	.....	480.00
Newton,	225.00	.....	.....	.....	225.00
Northfield,	135.00	288.00	150.00	69.32	642.32
Northumberland,	675.00	720.00	333.00	.....	1,728.00
Northwood,	126.94	68.00	.....	757.80	952.74
Orford,	128.64	130.00	.....	19.98	278.62
Ossipee,	163.80	.....	250.00	.....	413.80
Pelham,	255.00	178.00	.....	.....	433.00
Pembroke,	.....	.....	300.00	.....	300.00
Peterborough,	.....	.....	300.00	.....	300.00
Piermont,	93.31	66.00	.....	90.88	255.19
Pittsfield,	346.13	368.00	375.00	.....	1,089.13
Plainfield,	116.25	124.00	.....	96.40	336.65
Plaistow,	367.50	282.00	.....	167.00	816.50
Plymouth,	373.38	440.00	.....	.....	813.38
Raymond,	162.00	258.00	180.00	275.80	695.80
Rindge,	.....	.....	170.00	.....	170.00
Rollinsford,	297.00	576.00	.....	.....	873.00
Rumney,	102.00	230.00	.....	265.50	597.50
Rye,	.....	.....	300.00	.....	300.00
Salem,	397.76	650.00	240.00	985.32	2,273.08
Salisbury,	.....	.....	.....	44.00	44.00
Sanbornton,	112.50	32.00	.....	175.06	319.56
Sandown,	75.00	.....	.....	30.40	105.40
Seabrook,	404.25	330.00	.....	16.00	750.25
South Hampton,	70.00	.....	.....	.....	70.00
Springfield,	45.00	.....	.....	.....	45.00
Stark,	67.95	.....	.....	104.00	171.95
Stewartstown,	262.50	180.00	285.00	307.20	1,034.70
Strafford,	123.75	66.00	.....	253.04	442.79
Stratford,	216.00	448.00	333.34	.....	997.34
Stratham,	110.25	174.00	.....	264.00	548.25

Town.	Average attendance.	Teachers.	Salary of Supt.	High school tuition.	Total.
Sunapee,	.....	.....	.....	$59.20	$59.20
Sutton,	.....	.....	.....	42.66	42.66
Swanzey,	$324.00	$624.00	$157.50	136.00	1,241.50
Tamworth,	180.00	72.00	.....	77.20	329.20
Temple,	70.00	70.00	.....	23.50	163.50
Thornton,	150.80	132.00	.....	160.00	442.80
Tilton—Town,	.....	.....	175.00	78.64	253.64
Tilton—Special,	.....	.....	275.00	885.32	1,160.32
Troy,	405.00	360.00	190.00	36.00	991.00
Tuftonboro,	67.95	72.00	.....	.....	139.95
Unity,	127.80	62.00	.....	13.60	203.40
Wakefield,	210.00	310.00	250.00	19.20	789.20
Walpole,	1,080.00	1,020.00	390.00	.....	2,490.00
Warren,	102.48	72.00	.....	60.00	234.48
Weare,	193.62	132.00	283.33	173.01	781.96
Wentworth,	74.25	56.00	.....	78.40	208.65
Wentworth's Location,	.....	.....	95.00	.....	95.00
Westmoreland,	81.00	216.00	260.00	24.16	581.16
Whitefield—Town,	90.00	146.00	121.43	432.00	789.43
Whitefield—Special,	450.00	648.00	425.00	.....	1,523.00
Wilmot,	150.00	.....	.....	128.45	278.45
Wilton,	262.50	564.00	340.00	.....	1,166.50
Winchester,	479.36	592.00	262.50	.....	1,333.86
Wolfeboro,	293.78	604.00	500.00	.....	1,397.78
Woodstock,	216.00	216.00	.....	87.00	519.00
	$25,430.05	$31,524.13	$22,844.42	$22,457.59	$102,256.19

TABLE NO. 35.

Showing Distribution of State School Aid in December, 1914.

Town.	Average attendance.	Teachers.	Salary of Supt.	High school tuition.	Total.
Acworth,	$90.00	$66.00	.....	$24.00	$180.00
Alexandria,	113.03	60.00	.....	112.00	285.03
Allenstown,	.....	.....	$140.00	48.25	188.25
Alstead,	98.49	216.00	.....	12.00	326.49
Alton,	216.00	340.00	275.00	.....	831.00
Amherst,	189.00	504.00	252.00	95.40	1,040.40
Andover,	.....	.....	.....	272.20	272.20
Antrim,	186.38	306.00	225.00	.....	717.38
Ashland—Town,	31.50	.....	.....	132.16	163.66
Ashland—Special,	324.00	432.00	.....	.....	756.00
Atkinson,	105.00	196.00	160.00	77.20	538.20
Barnstead,	119.15	.....	.....	117.00	236.15
Barrington,	90.36	34.00	.....	403.62	527.98
Bartlett—Town,	81.50	248.00	103.12	5.00	437.62
Bartlett—Special,	180.00	284.00	103.13	8.60	575.73
Bath—Town,	81.00	72.00	159.75	270.00	582.75
Bath—Special,	54.00	.....	106.75	.....	160.75
Bedford,	.....	.....	283.34	.....	283.34
Belmont,	242.62	284.00	200.00	288.00	1,014.62
Bennington,	108.00	72.00	.....	22.91	202.91
Bethlehem—Town,	99.00	.....	100.00	412.50	611.50
Bethlehem—Special,	108.00	282.00	207.33	.....	597.33
Boscawen,	64.00	132.00	.....	608.62	804.62
Bradford,	.....	.....	212.50	52.00	264.50
Brentwood,	78.75	46.00	.....	.....	124.75
Bristol—Town,	.....	.....	.....	93.96	93.96
Bristol—Special,	162.00	236.00	.....	96.00	494.00
Campton,	135.00	144.00	.....	362.64	641.64

Town.	Average attendance.	Teachers.	Salary of Supt.	High school tuition.	Total.
Canaan—Town,	$117.19	$26.00	.....	$65.20	$208.39
Canaan—Special,	54.00	52.00	.....	32.00	138.00
Candia,	175.00	210.00	.....	71.10	456.10
Canterbury,	.....	.....	.....	19.50	19.50
Charlestown,	216.00	428.00	$200.00	248.00	1,092.00
Chatham,	22.69	100.00	.....	12.00	134.69
Chester,	128.74	40.00	.....	82.60	251.34
Chesterfield,	93.00	102.00	.....	40.85	235.85
Chichester,	.....	.....	187.50	31.81	226.31
Claremont,	.....	.....	800.00	.....	800.00
Colebrook—Town,	120.00	140.00	.....	377.94	637.94
Colebrook—Special,	288.00	792.00	292.50	.....	1,372.50
Columbia,	68.63	50.00	366.67	108.00	593.30
Concord—Penacook,	.....	.....	637.50	.....	637.50
Conway,	428.76	754.00	515.62	54.90	1,753.28
Dalton,	132.75	20.00	.....	232.00	384.75
Danbury,	68.24	120.00	.....	139.20	327.44
Danville,	135.00	30.00	.....	24.00	189.00
Deerfield,	114.00	.....	.....	15.47	129.47
Deering,	.....	.....	.....	36.00	36.00
Derry—Town,	.....	.....	510.00	2,472.60	2,982.60
Derry—Special,	.....	.....	85.00	513.00	598.00
Dorchester,	75.00	24.00	.....	191.33	290.33
Dublin,	.....	.....	92.00	.....	92.00
Dummer,	47.10	.....	.....	12.00	59.10
Durham,	180.00	144.00	282.32	328.47	934.79
East Kingston,	135.00	72.00	.....	.....	207.00
Easton,	33.60	.....	.....	.....	33.60
Eaton,	90.00	60.00	.....	.....	150.00
Effingham,	181.70	93.20	.....	52.72	327.62
Enfield,	314.10	554.00	175.00	.....	1,043.10
Epping,	252.00	192.00	.....	.....	444.00
Epsom,	.....	.....	.....	127.14	127.14
Errol,	.....	.....	292.50	8.00	300.50
Farmington—Town,	108.00	.....	.....	188.00	296.00
Farmington—Special,	407.00	572.00	366.67	.....	1,345.67
Fitzwilliam,	314.13	324.80	202.50	195.99	1,037.42
Francestown,	75.38	38.00	.....	30.00	143.38
Freedom,	.....	.....	.....	36.00	36.00
Fremont,	141.60	132.00	.....	140.40	414.00
Gilford,	90.00	176.00	.....	.....	266.00
Gilmanton,	262.50	70.00	250.00	95.27	677.77
Gilsum,	142.47	66.00	.....	28.00	236.47
Goffstown—Town,	.....	.....	.....	205.70	205.70
Gorham,	650.07	746.00	800.00	.....	2,196.07
Goshen,	75.00	120.00	.....	.....	195.00
Grafton,	90.36	8.00	.....	.....	98.36
Greenfield,	100.20	202.00	.....	119.16	421.36
Greenland,	82.13	126.00	117.68	.....	325.81
Groton,	.....	.....	.....	36.00	36.00
Hampstead,	144.00	128.00	200.00	.....	472.00
Hampton,	.....	.....	250.00	.....	250.00
Hancock,	99.48	155.33	183.35	95.20	533.36
Hanover—Town,	148.50	86.00	.....	77.40	311.90
Hanover—Special,	305.25	814.00	.....	.....	1,119.25
Harrisville,	81.00	210.00	104.75	24.80	420.55
Haverhill—Town,	396.00	808.00	266.75	.....	1,470.75
Haverhill—Woodsville,	504.00	504.00	266.75	.....	1,274.75
Henniker,	201.00	144.00	.....	.....	345.00
Hill,	50.50	136.00	117.50	22.00	326.00
Hillsborough—Town,	72.00	112.00	150.00	468.00	802.00
Hillsborough—Special,	243.00	282.00	225.00	.....	750.00
Hinsdale,	.....	.....	260.00	.....	260.00
Holderness,	.....	.....	.....	75.32	75.32
Hollis,	180.00	360.00	180.00	.....	720.00
Hopkinton,	187.20	64.00	283.33	.....	534.53
Hudson,	306.00	316.00	240.00	652.20	1,514.20
Jaffrey,	432.00	652.80	290.00	.....	1,374.80

Town.	Average attendance.	Teachers.	Salary of Supt.	High school tuition.	Total.
Jefferson,	$216.00	$518.00	$345.61	.....	$1,079.61
Kensington,	120.00	.....	.....	$68.50	188.50
Kingston,	179.65	406.00	.....	83.20	668.85
Lancaster—Town,	205.20	302.00	.....	641.90	1,149.10
Lancaster—Special,	525.00	898.00	.....	.....	1,423.00
Landaff,	90.00	60.00	212.50	16.00	378.50
Langdon,	62.66	164.00	75.00	2.80	304.46
Lebanon—Town,	.....	.....	275.00	741.50	1,016.50
Lebanon—Special,	.....	.....	400.00	.....	400.00
Lebanon—West,	.....	.....	150.00	.....	150.00
Lee,	.....	.....	150.00	.....	150.00
Lempster,	75.00	180.00	.....	76.00	331.00
Lisbon—Town,	108.00	40.00	212.50	463.50	824.00
Lisbon—Sugar Hill,	33.00	132.00	212.50	30.60	408.10
Lisbon—Special,	396.00	676.00	262.50	.....	1,334.50
Littleton,	.....	.....	700.00	.....	700.00
Londonderry,	252.54	368.00	255.00	163.40	1,038.94
Loudon,	.....	.....	187.50	112.52	300.02
Lyman,	112.50	.....	.....	10.80	123.30
Lyme,	184.92	320.00	.....	128.68	633.60
Lyndeborough,	125.80	212.00	.....	39.79	377.59
Madbury,	47.00	.....	.....	.....	47.00
Madison,	81.00	288.00	103.13	33.60	505.73
Marlborough,	323.92	498.00	261.90	.....	1,083.82
Marlow,	.....	.....	.....	31.20	31.20
Mason,	72.00	72.00	.....	.....	144.00
Meredith,	.....	.....	.....	125.70	125.70
Merrimack,	188.00	.....	233.33	.....	421.33
Middleton,	90.00	.....	.....	16.80	106.80
Milan,	233.40	82.00	.....	42.66	358.06
Milford,	.....	.....	468.00	.....	468.00
Monroe,	64.00	64.00	.....	.....	128.00
Newcastle,	.....	.....	.....	92.00	92.00
New Durham,	45.30	92.00	.....	68.49	205.79
Newfields,	72.00	102.00	.....	552.00	726.00
New Hampton,	150.00	26.00	.....	755.12	931.12
New Ipswich,	216.00	244.00	265.00	.....	725.00
New London,	.....	.....	180.00	288.90	468.90
Newington,	.....	.....	117.68	30.80	148.48
Newmarket,	433.29	514.00	400.00	.....	1,347.29
Newport,	.....	.....	720.00	.....	720.00
Newton,	270.00	.....	.....	.....	270.00
Northfield,	46.13	.....	.....	51.00	97.13
Northumberland,	594.00	648.00	366.67	.....	1,608.67
Northwood,	288.75	66.00	.....	789.60	1,144.35
Orford,	167.85	156.00	.....	99.20	423.05
Ossipee,	137.82	44.00	.....	61.56	243.38
Pelham,	249.98	268.00	.....	.....	517.98
Pembroke,	283.75	770.00	326.67	.....	1,385.42
Peterborough,	.....	.....	300.00	.....	300.00
Piermont,	95.19	66.00	.....	176.75	337.94
Pittsfield,	490.00	550.00	375.00	.....	1,415.00
Plainfield,	96.66	72.00	.....	90.00	258.66
Plaistow,	322.20	286.00	120.00	136.00	864.20
Plymouth,	534.60	436.00	.....	.....	970.60
Randolph,	.....	.....	50.00	.....	50.00
Raymond,	216.00	288.00	200.00	222.60	926.60
Rindge,	.....	.....	180.00	.....	180.00
Rollinsford,	270.00	612.00	.....	.....	882.00
Rumney,	170.00	330.00	.....	205.98	705.98
Rye,	.....	.....	282.32	.....	282.32
Salem,	468.00	648.00	280.00	986.58	2,382.58
Salisbury,	.....	.....	.....	18.48	18.48
Sanbornton,	90.00	36.00	.....	60.13	186.13
Sandown,	90.00	14.00	.....	43.20	147.20
Seabrook,	427.00	360.00	.....	22.50	809.50
Shelburne,	.....	.....	50.00	.....	50.00
South Hampton,	36.00	.....	.....	31.50	67.50
Springfield,	45.00	40.00	.....	76.50	161.50

Town.	Average attendance.	Teachers.	Salary of Supt.	High school tuition.	Total.
Stark,	$46.50	.....	.....	$18.00	$64.50
Stewartstown,	315.00	$160.00	$292.50	139.45	906.95
Strafford,	160.45	164.00	.....	182.40	506.85
Stratford,	162.00	434.00	366.66	.....	962.66
Stratham,	178.75	197.00	.....	197.92	573.67
Sunapee,	176.98	172.00	.....	81.20	430.18
Swanzey,	323.10	432.00	168.00	197.28	1,120.38
Tamworth,	135.90	160.00	.....	48.00	343.90
Temple,	65.32	66.00	100.00	.....	231.32
Thornton,	135.00	22.00	.....	192.00	349.00
Tilton—Town,	.....	.....	175.00	.....	175.00
Tilton—Union,	.....	.....	300.00	.....	300.00
Troy,	486.00	314.40	202.50	149.49	1,152.39
Tuftonboro,	47.49	64.00	.....	.....	111.49
Unity,	114.38	40.00	.....	22.80	177.18
Wakefield,	320.40	356.00	.....	90.20	766.60
Walpole,	864.00	1,116.00	415.00	.....	2,395.00
Warren,	105.98	248.00	.....	110.16	464.14
Washington,	.....	.....	.....	32.00	32.00
Weare,	197.46	136.00	283.33	241.65	858.44
Wentworth,	155.00	.....	.....	28.00	183.00
Wentworth's Location,	.....	.....	97.50	.....	97.50
Westmoreland,	79.20	280.00	260.00	66.64	685.84
Whitefield—Town,	135.00	288.00	138.22	382.40	943.62
Whitefield—Special,	495.00	636.00	483.84	.....	1,614.84
Wilmot,	90.00	22.00	.....	39.00	151.00
Wilton,	265.20	758.00	335.00	.....	1,358.20
Winchester,	447.20	780.00	280.00	.....	1,507.20
Wolfeboro,	325.00	688.00	458.33	.....	1,471.33
Woodstock,	270.00	288.00	.....	20.00	578.00
	$28,508.47	$35,079.53	$24,792.50	$21,232.96	$109,613.46

FINANCIAL NEEDS FOR 1915 AND 1916.

Six distributions have been made under the terms of the state aid act of 1909 as follows:

	For average attendance.	For qualified teachers.	High school tuition.	Supervision.	Total.
1909,	$29,870.70	$10,450.40	$15,754.53	$18,413.00	$74,488.63
1910,	28,978.12	21,054.00	21,973.94	20,585.50	92,591.56
1911,	26,320.75	21,913.00	24,777.22	21,015.50	94,026.47
1912,	24,069.23	24,990.80	27,155.06	21,860.49	98,075.58
1913,	25,430.05	31,524.13	22,844.42	22,457.59	101,546.19
1914,	28,508.47	35,079.53	21,232.96	24,792.50	109,613.46

A study of the tendencies shown by the above table and a consideration of conditions likely to prevail during the next two years, leads to the following recommendations for appropriations for the fiscal years ending August 31, 1916, and August 31, 1917.

	1916	1917
For average attendance,	$33,300	$38,000
For qualified teachers,	38,000	41,000
For high school tuition,	27,000	29,000
For supervision,	32,000	32,000
	$130,300	$140,000

The above figures contain an item of $11,000 for carrying into effect my recommendation for complete supervision of the schools of the state. See chapter VIII. There is, therefore, indicated as the needed gross appropriations for the ensuing fiscal years "For the Support and Encouragement of the Common Schools" the following:

For the year ending August 31, 1916,	$130,300
For the year ending August 31, 1917,	140,000
Total,	$270,300

There is an available balance in the treasury of $16,-018.60.

The total net appropriation should, therefore, be $254,-281.40; or $127,140.70 for each of the two years.

The appropriation for each of the two preceding years was $95,100.00.

CHAPTER XIII.

Length of School Year.

One of the vital questions concerning the public elementary schools is still the length of their school year. We must answer the question "How much schooling?" before we can deal very intelligently with the question "How good schooling?" In general the towns which maintain the longest school years up to 36 weeks are the towns which have the best schools.

The length of the school year, 1913-1914, was 34.11 weeks for the average school of the state. Or, to put the matter more exactly, the average length of the school year in all the schools of the state was 34.11 weeks.

Compared with previous years (by five-year periods) the following results are disclosed:

School year.	Length.	School year.	Length.
1881-1882,	19.25 weeks.	1901-1902,	28.01 weeks.
1886-1887,	22.39 "	1906-1907,	31.86 "
1891-1892,	24.32 "	1911-1912,	33.80 "
1896-1897,	26.91 "	1913-1914,	34.11 "

The latest available statistics of the United States Bureau of Education are for the school year 1911-1912.

These tables give the following values for that school year:

United States,	31.60 weeks.
North Atlantic Division,	36.15 "
South Atlantic Division,	26.30 "
South Central Division,	25.90 "
North Central Division,	32.96 "
Western Division,	32.82 "

It therefore appears that our school year was above the average for the country as a whole, but below the average for the North Atlantic Division. Of the nine states in the North Atlantic Division all but Maine, Vermont and Pennsylvania maintained longer school years than New Hampshire. In the remainder of the Union, ten states maintained longer school years than did New Hampshire as follows: Michigan, Wisconsin, Iowa, Kansas, Delaware, Maryland, District of Columbia, Colorado, Washington and California. The statistics for the past year would probably show no relative change.

The school districts maintaining less than 30 weeks during the past school year were the following:

District.	1911-1912.	1913-1914.
Acworth,	30.75 weeks.	29.75 weeks.
Albany,	23.33 "	21.00 "
Auburn,	31.59 "	29.80 "
Bridgewater,	24.00 "	24.00 "
Bristol—Town,	27.00 "	26.75 "
Canterbury,	30.33 "	24.87 "
Center Harbor,	25.00 "	28.88 "
Clarksville,	22.80 "	29.20 "
Cornish,	30.00 "	25.00 "
Dalton,	30.00 "	29.50 "
Ellsworth,	20.00 "	24.00 "
Freedom,	29.00 "	24.75 "
Grantham,	29.00 "	27.00 "
Groton,	23.00 "	26.00 "
Hebron,	32.50 "	26.00 "
Jackson—Town,	26.50 "	28.33 "
Lyman,	30.00 "	29.80 "
Moultonborough,	22.00 "	25.61 "
New Hampton,	30.10 "	29.81 "
Pittsburg,	26.90 "	28.09 "
Sandwich,	26.66 "	27.00 "
Sharon,	25.00 "	22.50 "
Shelburne,	25.00 "	22.75 "
Stoddard,	29.00 "	27.20 "
Sullivan,	26.75 "	25.00 "
Surry,	27.00 "	25.00 "
Washington,	24.25 "	26.00 "
Windsor,	21.00 "	22.00 "

There were 32 towns in this class two years ago, as against 28 this last year. On the other hand, 15 of the towns in the above list show a loss as compared with their record of two years ago. Very probably this loss is related to the excessively severe winter of 1913-1914.

Less than 3% of the average membership of the state

was in this class of towns, the membership being 1,730. This would correspond to a gross enrollment of approximately 2,000. Two thousand children in these towns have, nevertheless, as much right to 30 weeks of school or more as 2,000 children anywhere else.

Attention is invited to the following disclosure of the abilities of these districts to support schools.

District.	Eq. valuation per pupil.	Tax rate on Eq. Val.	What town would have had at the average rate.	What it actually did have.
Acworth,	$5,564	.00547%	$1,555.12	$2,342.50
Albany,	19,332	.00192	1,543.06	817.50
Auburn,	9,532	.00301	3,010.36	2,501.00
Bridgewater,	11,737	.00185	1,192.97	610.00
Bristol—Town.	(Double-district town.)			
Canterbury,	10,517	.00257	3,665.10	2,595.00
Center Harbor,	11,808	.00213	2,700.62	1,587.50
Clarksville,	11,706	.00190	2,124.72	1,115.00
Cornish,	6,372	.00382	3,307.84	3,482.50
Dalton,	3,815	.00500	1,107.96	1,526.50
Ellsworth,	14,178	.00264	205.87	150.00
Freedom,	10,077	.00339	1,546.30	1,437.00
Grantham,	11,306	.00184	1,546.30	522.50
Groton,	2,788	.00423	668.13	780.00
Hebron,	10,870	.00220	947.09	576.00
Jackson.	(Double-district town.)			
Lyman,	5,139	.00438	1,193.89	1,442.00
Moultonborough,	14,863	.00178	4,747.73	2,337.50
New Hampton,	5,940	.00391	2,587.66	2,787.50
Pittsburg,	35,281	.00301	13,842.39	11,417.50
Sandwich,	10,511	.00245	4,616.73	3,013.42
Sharon,	8,475	.00294	400.99	325.00
Shelburne,	10,726	.00257	2,024.68	1,435.00
Stoddard,	16,299	.00285	1,183.26	930.00
Sullivan,	5,419	.00659	924.58	1,681.00
Surry,	5,884	.00393	982.60	1,065.00
Washington,	9,635	.00335	1,294.18	1,195.00
Windsor,	6,444	.00577	187.13	298.00

The average rate of assessment for the state for the year 1913-1914 was .00363%.

For purposes of comparison, I add a few towns which have been doing well financially by their schools, with excellent results.

District.	Eq. valuation per pupil.	Tax rate on Eq. Val.	What town would have had at the average rate.	What it actually did have.
Alton,	$6,664	.00681%	$5,813.97	$7,110.00
Amherst,	6,305	.00763	5,581.45	6,567.50
Charlestown,	5,336	.00866	5,929.53	9,358.00
Hudson,	6,109	.00410	4,900.22	5,542.50

The town districts of Bristol and Jackson cannot be segregated from the remainder of the respective towns for comparison. The fact of two districts in the same town is itself an injustice to the children of an antediluvian character.

A study of the foregoing tables will show plainly that any district of the 28 enumerated could have had at least thirty weeks by a little extra effort and that most of them could have that and much more beside by only an average effort.

Sixty-four per cent. of the school membership of the state was in districts holding 36 weeks or more. This is a falling off from the record of 1911-1912. The reason is probably to be found partly in the severe winter of 1913-1914, and certainly in part to the fact that two large districts, the city of Keene and the town district of Derry, failed to maintain a full 36 weeks.

Recommendation.

In view of the facts presented, I think the time has clearly come to require all school districts in the state to maintain an average of at least 30 weeks. Some states require a minimum of from 36 to 40 weeks. I, therefore, recommend the enactment of appropriate legislation making 30 weeks the minimum requirement throughout the state.

STATISTICAL TABLES

1912--1913

NOTE:

Contrary to previous custom, the details of statistical returns are given for one year only. It is believed that this will serve all needful ends, and it will materially decrease the cost of the report. The statistics for both years are of course available at the offices of the department.

TABLE No. I.

(For the year ending July 15, 1913.)

SCHOOLS BELOW HIGH SCHOOLS.

TOWNS.	Public schools	Graded schools.	Schools of twelve or less, more than six.	Schools of six scholars or less.	Greatest number of weeks in any school.	Least number.	Average number of weeks.
Acworth	8	.....	3	2	30	30	30.00
Albany	3	.....	2	1	30	20	25.33
Alexandria	7	.....	2	2	30	30	30.00
Allenstown	3	3	1	.....	35	35	35.00
Alstead	6	4	.....	.....	34	31	32.50
Alton	7	4	1	.....	36	36	36.00
Amherst	9	9	4	1	36	*15	35.56
Andover	10	.....	3	.....	32	31	31.90
Antrim	7	7	.....	1	36	35	35.57
Ashland, town	2	.....	2	.....	30	29	29.50
Ashland, special	7	7	.....	.....	36	36	36.00
Atkinson	4	4	1	.....	34	34	34.00
Auburn	6	.....	3	.....	30	*17	28.65
Barnstead	8	.....	3	2	34	22	30.25
Barrington	8	.....	2	.....	33	*10	31.14
Bartlett, town	4	4	1	.....	34	33	33.75
Bartlett, special	4	4	.....	.....	36	35	35.75
Bath, town	5	5	2	.....	36	36	36.00
Bath, special	3	3	1	1	36	36	36.00
Bedford	9	.....	2	.....	36	34	35.77
Belmont	9	9	2	.....	36	32	34.60
Bennington	4	4	.....	1	36	28	34.00
Benton	2	.....	1	.....	34	30	32.30
Berlin	18	18	.....	.....	38	37	37.05
Bethlehem, town	3	.....	.....	.....	33	*10	33.00
Bethlehem, special	3	3	.....	.....	36	36	36.00
Boscawen	3	3	1	.....	36	30	32.00
Bow	7	.....	4	.....	35	33	34.55
Bradford	8	2	3	3	36	34	35.75
Brentwood	4	.....	1	.....	33	33	33.00
Bridgewater	3	.....	.....	2	24	24	24.00
Bristol, town	4	.....	2	2	28	28	28.00
Bristol, special	5	5	.....	.....	36	36	36.00
Brookfield	3	.....	3	.....	28	28	28.00
Brookline	4	.....	.....	.....	34	34	34.00
Campton	8	8	6	.....	35	35	35.00
Canaan, town	8	4	3	.....	32	32	32.00
Canaan, special	2	.....	1	1	36	36	36.00
Candia	7	7	.....	.....	31	31	31.00
Canterbury	7	7	4	.....	30	29	29.71

TABLE I.—*Continued.*

TOWNS.	Public schools.	Graded schools.	Schools of twelve or less, more than six.	Schools of six scholars or less.	Greatest number of weeks in any school.	Least number.	Average number of weeks.
Carroll	6	2	1	1	32	32	32.00
Centre Harbor	4	.....	1	.....	32	27	29.25
Charlestown	8	8	1	.....	36	36	36.00
Chatham	3	.....	2	1	34	32	33.00
Chester	7	3	3	.....	36	30	33.87
Chesterfield	6	3	.....	.....	33	30	30.33
Chichester	6	6	1	.....	36	30	31.50
Claremont	30	30	.....	.....	36	36	36.00
Clarksville	5	.....	3	.....	24	22	22.40
Colebrook, town	10	.....	4	2	30	26	29.60
Colebrook, special	4	4	.....	.....	36	36	36.00
Columbia	8	.....	4	.....	32	30	31.75
Concord, town	9	9	3	3	36	*10	35.81
Concord, Union	50	50	.....	.....	38	35	36.20
Concord, Penacook	10	10	.....	.....	36	36	36.00
Conway	19	19	1	1	36	*14	35.23
Cornish	13	.....	6	3	30	30	30.00
Croydon	2	.....	1	.....	30	30	30.00
Dalton	6	.....	1	.....	30	30	30.00
Danbury	6	.....	1	.....	24	*10	24.00
Danville	3	3	1	.....	36	36	36.00
Deerfield	9	.....	6	1	34	30	31.40
Deering	4	.....	4	.....	30	30	30.00
Derry, town	22	22	2	.....	36	36	36.00
Derry, special	2	2	.....	.....	36	36	36.00
Dorchester	4	.....	3	.....	30	20	30.00
Dover	32	32	1	.....	37	37	37.00
Dublin	4	4	2	.....	36	34	35.40
Dummer	4	.....	4	.....	27	*11	25.00
Dunbarton	4	.....	3	.....	31	31	31.00
Durham	6	6	2	.....	36	36	36.00
East Kingston	3	3	.....	.....	36	36	36.00
Easton	2	.....	.....	.....	36	36	36.00
Eaton	5	.....	4	.....	30	30	30.00
Effingham	7	.....	1	.....	33	29	31.00
Ellsworth	1	.....	.....	.....	20	20	20.00
Enfield	10	10	3	.....	36	34	35.80
Epping	6	5	.....	.....	36	36	36.00
Epsom	6	.....	1	.....	31	30	30.40
Errol	2	2	.....	.....	30	30	30.00
Exeter	16	16	.....	.....	36	36	36.00
Farmington, town	6	.....	6	.....	34	34	34.00
Farmington, special	8	8	.....	.....	40	36	37.87
Fitzwilliam	6	6	.....	.....	36	35	35.83
Francestown	3	6	1	3	34	34	34.00

TABLE No. I.—*Continued.*

TOWNS.	Public schools.	Graded schools.	Schools of twelve or less, more than six.	Schools of six scholars or less.	Greatest number of weeks in any school	Least number.	Average number of weeks.
Franconia	9	9	.....	.....	36	36	36.00
Franklin	19	18	2	.....	36	33	33.65
Freedom	4	.....	3	.....	27	27	27.00
Fremont	5	.....	.....	.....	36	32	33.40
Gilford	8	.....	3	.....	29	25	27.62
Gilmanton	11	.....	4	1	29	28	28.36
Gilsum	3	3	.....	.....	34	34	34.00
Goffstown, town	8	2	1	2	37	*11	37.00
Goffstown, special	5	5	.....	.....	36	36	36.00
Gorham	15	13	1	1	36	24	34.66
Goshen	4	.....	3	.....	25	23	24.50
Grafton	8	.....	3	1	31	28	30.00
Grantham	2	.....	.....	.....	28	27	27.75
Greenfield	5	5	1	1	34	22	31.20
Greenland	2	2	.....	.....	38	38	38.00
Greenville	3	3	.....	.....	38	38	38 00
Groton	3	.....	.....	.....	25	25	25.00
Hampstead	4	4	1	.....	36	35	35.50
Hampton	5	5	.....	.....	36	36	36.00
Hampton Falls	3	3	.....	.....	36	35	35.67
Hancock	7	7	1	.....	34	33	33.57
Hanover, town	7	.....	1	1	31	31	31.00
Hanover, special	5	5	.....	.....	36	36	36.00
Harrisville	4	4	1	.....	36	*26	36.00
Haverhill, town	16	16	2	.....	36	*26	35.19
Haverhill, Woodsville	6	6	.....	.....	36	36	36.00
Hebron	2	.....	2	.....	30	30	30.00
Henniker	9	3	1	1	38	30	32.66
Hill	3	3	1	.....	33	31	32.66
Hillsborough, town	7	7	.....	1	32	31	31.80
Hillsborough, special	5	5	.....	.....	36	36	36.00
Hinsdale	10	7	2	.....	36	33	34.30
Holderness	6	6	2	1	32	32	32.00
Hollis	4	4	.....	.....	36	33	35.25
Hooksett	6	6	.....	.....	34	34	34.00
Hopkinton	10	10	2	1	32	28	30.70
Hudson	8	8	.....	.....	34	34	34.00
Jackson, town	4	.....	.....	.....	30	25	28.00
Jackson, special	2	.....	.....	.....	33	33	33.00
Jaffrey	10	10	.....	.....	36	36	36.00
Jefferson	7	7	1	.....	36	36	36.00
Keene	38	38	1	.....	37	36	36.30
Kensington	3	.....	.....	.....	33	33	33.00
Kingston	6	6	1	.....	36	33	34.93
Laconia	29	27	.....	.....	36	36	36.00

TABLE No. I.—*Continued.*

TOWNS.	Public schools.	Graded schools.	Schools of twelve or less, more than six.	Schools of six scholars or less.	Greatest number of weeks in any school.	Least number.	Average number of weeks.
Lancaster, town	10	.....	6	.....	35	34	34.10
Lancaster, special	8	8	.....	.....	35	35	35.00
Landaff	6	6	.....	.....	30	30	30.00
Langdon	2	2	.....	.....	34	32	33.00
Lebanon, town	9	9	2	1	36	35	35.87
Lebanon, high	9	9	.....	.....	36	36	36.00
Lebanon, West	4	4	1	.....	36	36	36.00
Lee	3	3	2	.....	36	36	36.00
Lempster	5	.....	1	2	31	30	30.60
Lincoln	6	4	.....	.....	38	34	37.33
Lisbon, town	5	5	3	.....	36	36	36.00
Lisbon, Sugar Hill	2	2	1	.....	36	36	36.00
Lisbon, special	8	8	.....	.....	36	36	36.00
Litchfield	1	1	.....	.....	36	36	36.00
Littleton	23	23	3	.....	36	36	36.00
Londonderry	9	9	3	1	37	34	34.44
Loudon	6	6	1	.....	30	30	30.00
Lyman	5	.....	3	.....	30	20	28.00
Lyme	12	.....	5	.....	30	*10	30.00
Lyndeborough	6	4	.....	1	34	26	32.22
Madbury	3	.....	1	.....	32	32	32.00
Madison	4	4	2	.....	36	*18	31.50
Manchester	146	146	1	.....	38	38	38.00
Marlborough	7	7	.....	.....	36	35	35.85
Marlow	2	.....	.....	.....	33	32	32.50
Mason	4	.....	2	.....	35	35	35.00
Meredith	9	4	6	.....	35	33	33.22
Merrimack	9	6	1	1	36	36	36.00
Middleton	4	.....	.....	.....	30	30	30.00
Milan	8	8	.....	.....	32	30	31.50
Milford	19	19	1	2	36	36	36.00
Milton	10	8	2	.....	36	35	35.90
Mont Vernon	4	2	2	1	35	34	34.50
Monroe	4	.....	2	.....	32	31	31.50
Moultonborough	7	7	2	.....	29	25	25.00
Nashua	78	72	3	.....	36	36	36.00
Nelson	2	.....	.....	.....	30	30	30.00
New Boston	8	3	4	1	32	31	31.87
Newbury	6	.....	1	.....	30	20	28.00
Newcastle	2	1	.....	.....	38	38	38.00
New Durham	5	.....	2	.....	31	31	31.00
Newfields	2	2	.....	.....	36	36	36.00
New Hampton	9	.....	3	4	31	28	30.55
New Ipswich	4	.....	.....	.....	36	36	36.00
New London	6	6	.....	1	35	32	33.83

TABLE No. I.—*Continued.*

TOWNS.	Public schools.	Graded schools.	Schools of twelve or less, more than six.	Schools of six scholars or less.	Greatest number of weeks in any school.	Least number.	Average number of weeks.
Newington	2	2	.....	.....	38	38	38.00
Newmarket	10	10	.....	.....	37	36	36.33
Newport	16	13	.....	.....	36	36	36.00
Newton	4	.....	.....	.....	36	36	36.00
Northfield	4	4	1	.....	25	24	24.75
North Hampton	3	3	1	.....	38	38	38.00
Northumberland	10	10	2	.....	36	36	36.00
Northwood	7	6	.....	.....	34	33	33.85
Nottingham	6	.....	5	.....	30	30	30.00
Orange	1	.....	.....	.....	21	21	21.00
Orford	6	6	.....	.....	33	31	32.16
Ossipee	10	.....	2	.....	34	27	31.20
Pelham	5	5	.....	.....	34	34	34.00
Pembroke	11	11	3	.....	35	34	34.80
Peterborough	9	9	2	.....	36	36	36.00
Piermont	9	9	4	3	34	26	32.77
Pittsburg	11	2	9	.....	36	*18	26.63
Pittsfield	10	10	1	1	36	34	35.50
Plainfield	9	9	6	2	32	*12	31.00
Plaistow	2	2	.....	.....	35	35	35.00
Plymouth	10	10	1	.....	36	33	35.56
Portsmouth	40	40	.....	.....	38	38	38.00
Randolph	2	.....	1	1	30	26	28.00
Raymond	6	6	.....	.....	36	36	36.00
Richmond	3	.....	.....	.....	30	30	30.00
Rindge	4	4	1	.....	36	*25	36.00
Rochester	30	30	.....	.....	37	37	37.00
Rollinsford	10	6	1	1	36	36	36.00
Roxbury—No schools.							
Rumney	6	6	.....	.....	35	33	34.00
Rye	5	5	.....	.....	36	36	36.00
Salem	12	12	2	.....	37	36	36.16
Salisbury	5	.....	3	1	30	29	29.80
Sanbornton	10	.....	5	.....	30	30	30.00
Sandown	4	.....	1	.....	30	30	30.00
Sandwich	10	.....	4	.....	25	25	25.00
Seabrook	7	7	.....	.....	33	33	33.00
Sharon	2	.....	2	.....	25	21	23.00
Shelburne	4	.....	.....	.....	26	26	26.00
Somersworth	18	18	1	.....	38	38	38 00
South Hampton	3	.....	1	.....	35	35	35.00
Springfield	6	.....	3	2	30	30	30.00
Stark	5	.....	1	.....	31	30	30.20
Stewartstown	13	4	1	2	30	30	30.00
Stoddard	2	.....	2	.....	33	27	29.80

TABLE No. I.—*Continued.*

TOWNS.	Public schools.	Graded schools.	Schools of twelve or less, more than six.	Schools of six scholars or less.	Greatest number of weeks in any school.	Least number.	Average number of weeks.
Strafford	10	.....	7	1	33	33	33.00
Stratford	7	6	.....	.....	36	36	36.00
Stratham	4	4	.....	.....	37	36	36.75
Sullivan	4	.....	3	1	31	29	30.00
Sunapee	8	4	3	.....	36	30	33.63
Surry	2	.....	.....	.....	30	23	26.50
Sutton	4	3	.....	1	35	*14	34.75
Swanzey	11	8	1	.....	36	36	36.00
Tamworth	10	1	.....	.....	30	30	30.00
Temple	2	2	.....	.....	35	35	35.00
Thornton	7	.....	1	2	33	28	30.16
Tilton, town	4	4	1	.....	36	36	36.00
Tilton, special	8	8	.....	.....	36	36	36.00
Troy	6	6	.....	.....	36	36	36.00
Tuftonboro	5	.....	2	.....	31	30	30.20
Unity	5	.....	1	1	33	31	34.08
Wakefield	10	10	1	1	35	*22	34.40
Walpole	18	18	.....	.....	36	36	36.00
Warner	12	12	6	2	31	*12	29.41
Warren	6	3	1	1	36	31	34.16
Washington	4	.....	.....	.....	34	21	28.00
Weare	11	2	3	.....	34	31	32.27
Webster	3	.....	1	.....	34	30	32.33
Wentworth	7	.....	3	1	34	32	33.00
Wentworth's Location	1	.....	1	.....	32	32	32.00
Westmoreland	5	5	1	.....	36	36	36.00
Whitefield, town	4	4	2	.....	36	36	36.00
Whitefield, special	8	8	.....	.....	36	36	36.00
Wilmot	5	.....	2	.....	30	30	30.00
Wilton	10	10	2	1	35	35	35.00
Winchester	15	9	4	1	36	*22	34.24
Windham	5	5	2	.....	39	*15	33.00
Windsor	1	.....	1	.....	22	22	22.00
Wolfeboro	13	13	1	1	36	34	35.61
Woodstock	7	5	2	.....	36	36	36.00
Total	2,064	1,451	365	87	39	20	34.34

* All pupils in these schools received the full average number of weeks.

TABLE No. II.

(For the year ending July 15, 1913.)

SCHOOLHOUSES.

TOWNS.	Number of schoolhouses.	Public property.	Rented.	Normal capacity.	Built during year.	Estimated value of buildings and sites.	Estimated value of equipment.
Acworth	11	11	.....	161	.....	$4,000.00	$250.00
Albany	3	3	.....	70	.....	2,000.00	150.00
Alexandria	9	9	.....	216	.....	4,000.00	900.00
Allenstown	2	2	.....	120	.....	9,000 00	100.00
Alstead	5	5	.....	166	.....	4,300 00	200.00
Alton	11	11	.....	325	.....	13,000.00	800.00
Amherst	10	10	.....	270	.....	30 000.00	400 00
Andover	10	10	.....	.....	.....	8.000.00	150.00
Antrim	6	6	.....	260	.....	15,000 00	400.00
Ashland, town	2	2	.....	36	.....	1,550.00	150.00
Ashland, special	2	2	.....	325	.....	35,000.00	3,500 00
Atkinson	5	5	.....	114	.....	3,300.00	50.00
Auburn	8	8	.....	163	.....	2,800.00	200.00
Barnstead	13	13	.....	.....	.....	6.000.00	400.00
Barrington	12	12	.....	360	.....	7,500.00	300.00
Bartlett, town	5	5	.....	140	.....	4,000 00	150 00
Bartlett, special	1	1	.....	210	.....	5,800.00	200 00
Bath, town	6	6	.....	150	.....	5,000.00	400.00
Bath, special	1	1	.....	100	.....	3,500.00	500.00
Bedford	11	11	.....	258	.....	11,000.00	500.00
Belmont	10	10	.....	300	.....	10.000 00	500.00
Bennington	3	3	.....	100	.....	3,500 00	125.00
Benton	3	3	.....	60	.....	3,500.00	75.00
Berlin	5	5	.....	1,239	.....	122,000.00	8.000.00
Bethlehem, town	9	9	.....	250	.....	3,100.00	300.00
Bethlehem, special	1	1	.....	.....	.....	8,000.00	300.00
Boscawen	6	6	.....	250	.....	4,500.00	100 00
Bow	8	8	.....	156	.....	4,000 00	700 00
Bradford	7	6	1	200	.....	3,300.00	230.00
Brentwood	4	4	.....	50	.....	2,000.00	200.00
Bridgewater	6	6	.....	75	.....	1,800.00	.....
Bristol, town	6	6	.....	107	.....	1,600.00	500.00
Bristol, special	1	1	.....	214	.....	17,000.00	1,000.00
Brookfield	3	3	.....	88	.....	2,000.00	200 00
Brookline	4	4	.....	84	.....	5,000.00	400.00
Campton	12	12	.....	216	.....	6,000.00	200 00
Canaan, town	10	10	.....	230	.....	6,000.00	200.00
Canaan, special	1	1	.....	100	.....	2,500 00	300.00
Candia	10	10	.....	240	.....	7,475.00	400 00
Canterbury	7	7	.....	200	.....	4,500.00	500.00

TABLE No. II.—*Continued.*

TOWNS.	Number of school-houses.	Public property.	Rented.	Normal capacity.	Built during year.	Estimated value of buildings and sites.	Estimated value of equipment.
Carroll	5	5	.....	150	.....	$7,000 00	$800 00
Centre Harbor	4	4	.....	80	.....	2,500.00	300.00
Charlestown	6	6	.....	270	.....	10,000.00	125.00
Chatham	5	5	.....	126	.....	700.00	15.00
Chester	8	8	.....	290	.....	3,000.00	200.00
Chesterfield	5	5	.....	225	.....	8,000.00	700.00
Chichester	6	6	.....	140	.....	2,400 00	306.00
Claremont	13	13	.....	1,200	.....	85,000.00	500.00
Clarksville	5	5	.....	100	.....	2,500.00	30 00
Colebrook, town	12	12	.....	360	.....	2,500.00	200.00
Colebrook, special	2	2	.....	360	.....	60,000.00	2,500.00
Columbia	9	9	.....	200	.....	5,600.00	700.00
Concord, town	12	12	.....	250	.....	12,500 00	2,000.00
Concord, Union	16	16	.....	3,500	.....	525,000.00	15,000.00
Concord, Penacook	3	3	.....	475	.....	46,000 00	7,000.00
Conway	11	11	.....	700	.....	20,000.00	800.00
Cornish	14	14	.....	280	.....	5,750.00	150.00
Croydon	4	4	.....	80	.....	1,800.00	50.00
Dalton	6	6	.....	100	.....	3,000.00	.....
Danbury	8	8	.....	192	.....	5,000.00	60.00
Danville	3	3	.....	120	1	8,000 00	600.00
Deerfield	12	12	.....	345	.....	3,890.00	975.00
Deering	9	9	.....	180	.....	4,000.00	.....
Derry, town	9	8	1	838	.....	33,000.00	500.00
Derry, special	1	1	.....	76	.....	6,000 00	300.00
Dorchester	6	6	.....	80	.....	2,500 00	100.00
Dover	12	11	1	1,671	.....	250,000 00	10,000.00
Dublin	5	5	.....	150	.....	5,000 00	300 00
Dummer	4	3	1	86	.....	2,500 00	125.00
Dunbarton	8	8	.....	90	.....	2,500.00	.....
Durham	4	4	.....	190	.....	12,000.00	900.00
East Kingston	4	4	.....	80	.....	4,200 00	260.00
Easton	3	3	.....	72	.....	2,800.00	40.00
Eaton	6	6	.....	140	.....	1,200 00	.....
Effingham	7	7	.....	155	.....	4,500.00	500.00
Ellsworth	1	1	.....	16	.....	200.00	25.00
Enfield	13	13	.....	333	.....	20,000 00	1,800 00
Epping	3	3	.....	180	.....	10,000 00	250.00
Epsom	7	7	.....	180	.....	5,000.00	500.00
Errol	3	3	.....	50	.....	6,000.00	400.00
Exeter	10	10	.....	1,000	.....	80,000.00	4,500.00
Farmington, town	7	7	.....	132	.....	5,000.00	500.00
Farmington, special	4	4	.....	400	.....	28,000 00	1,600 00
Fitzwilliam	7	7	.....	292	.....	6,000.00	200.00
Francestown	6	6	.....	180	.....	3,600.00	1,200.00

TABLE No. II.—*Continued.*

TOWNS.	Number of school-houses.	Public property.	Rented.	Normal capacity.	Built during year.	Estimated value of buildings and sites.	Estimated value of equipment.
Franconia	*1	.....	.....	100	.....	$16,000 00	$500.00
Franklin	6	6	.....	860	.....	86,000.00	1,400.00
Freedom	5	5	.....	100	.....	2,500.00	200.00
Fremont	5	5	.....	175	.....	3,500 00	300 00
Gilford	10	10	.....	167	.....	4,500.00	1,200.00
Gilmanton	18	18	.....	250	.....	4,500.00	200.00
Gilsum	4	4	.....	91	.....	3,000.00	75.00
Goffstown, town	10	10	.....	233	.....	6,000 00	160.00
Goffstown, special	1	1	.....	200	.....	14,000 00	1,000.00
Gorham	7	7	.....	600	.....	50,000.00	3,000.00
Goshen	5	5	.....	100	.....	2,500 00	150 00
Grafton	10	10	.....	250	.....	5,700.00	100 00
Grantham	2	2	.....	48	.....	1,200.00	100.00
Greenfield	4	4	.....	154	.....	9,400.00	300 00
Greenland	2	2	.....	90	.....	4,000.00	200.00
Greenville	3	3	.....	200	.....	12,000.00	700 00
Groton	3	3	.....	80	.....	2,000 00	200.00
Hampstead	7	7	.....	210	.....	19,000 00	275.00
Hampton	4	4	.....	286	.....	10,000.00	600.00
Hampton Falls	4	4	.....	141	.....	4,100.00	500.00
Hancock	6	6	.....	160	.....	7,000.00	2,300.00
Hanover, town	10	10	.....	300	.....	3,000.00	500.00
Hanover, special	2	2	.....	440	1	50.000 00	3,000.00
Harrisville	3	3	.....	150	.....	5,500 00	500 00
Haverhill, town	10	10	.....	500	.....	25,500.00	1,000 00
Haverhill, Woodsville	1	1	.....	375	.....	35,000.00	500.00
Hebron	2	2	.....	84	.....	1,000.00	400.00
Henniker	9	9	.....	360	.....	15 000.00	1,000 00
Hill	3	3	.....	94	.....	5,500.00	50.00
Hillsborough, town	15	15	.....	250	.....	6,000.00	200.00
Hillsborough, special	1	1	.....	320	.....	25,000.00	600.00
Hinsdale	6	5	1	426	.....	14,000.00	1,000.00
Holderness	9	9	.....	175	.....	4,200.00	1,900.00
Hollis	6	6	.....	200	.....	20,000.00	500 00
Hooksett	8	8	.....	250	.....	9,100.00	650.00
Hopkinton	14	14	.....	418	.....	15,000.00	1,500.00
Hudson	5	5	.....	317	.....	15,000.00	300.00
Jackson, town	5	5	.....	91	.....	1,500 00	60.00
Jackson, special	1	1	.....	55	.....	2,200.00	200.00
Jaffrey	8	8	.....	350	.....	19,000.00	350.00
Jefferson	9	9	.....	300	.....	10,000.00	1,000 00
Keene	19	19	.....	1,700	.....	157,500.00	1,500.00
Kensington	3	3	.....	103	.....	2,200.00	250.00
Kingston	6	6	.....	220	.....	4 000.00	100.00
Laconia	10	10	.....	1,200	.....	111,342.00	10,000.00

* Private academy used as town school.

TABLE No. II.—*Continued.*

TOWNS.	Number of school-houses.	Public property.	Rented.	Normal capacity.	Built during year.	Estimated value of buildings and sites.	Estimated value of equipment.
Lancaster, town	11	11	.....	270	.....	$10,000.00	$1,000.00
Lancaster, special	2	2	.....	560	.....	75.000.00	4,300.00
Landaff	6	6	.....	180	.....	6,000.00	600.00
Langdon	4	4	.....	60	.....	2,000.00	25.00
Lebanon, town	10	10	.....	316	.....	13,000.00	1,200.00
Lebanon, high	2	2	.....	462	.....	50,000 00	3,300.00
Lebanon, West	1	1	.....	167	.....	11,000.00	2,000.00
Lee	3	3	.....	90	.....	2,400 00	300.00
Lempster	7	7	.....	140	.....	2,000.00	150.00
Lincoln	3	2	1	200	.....	10,000 00	500.00
Lisbon, town	5	5	.....	150	.....	5,000.00	500.00
Lisbon, Sugar Hill	1	1	.....	70	.....	3,000.00	300.00
Lisbon, special	1	1	.....	375	.....	50,000.00	5,000.00
Litchfield	2	2	.....	60	.....	1,000.00	75.00
Littleton	13	13	.....	984	.....	70,000.00	1,000.00
Londonderry	9	9	.....	301	.....	9,000 00	300.00
Loudon	8	8	.....	180	.....	4,000.00	300.00
Lyman	6	6	.....	168	.....	2,500.00	250.00
Lyme	11	10	1	250	.....	7,000.00	500.00
Lyndeborough	7	7	.....	128	.....	4,000.00	700.00
Madbury	3	3	.....	50	.....	2,000.00	500.00
Madison	6	6	.....	140	.....	2,000.00	225.00
Manchester	27	27	*2	7,376	2	1,015,506 00	35,441.00
Marlborough	4	4	.....	375	.....	10,000.00	3,000.00
Marlow	6	6	.....	140	.....	1,000.00	200.00
Mason	5	5	.....	115	.....	3,000.00	380.00
Meredith	15	14	1	550	.....	10,000 00	2,000.00
Merrimack	10	10	.....	300	.....	12,950.00	5,000.00
Middleton	4	4	.....	90	.....	2,500.00	500.00
Milan	6	6	.....	243	.....	4,600.00	300.00
Milford	9	9	.....	800	.....	70,000.00	4,000.00
Milton	9	9	.....	325	.....	11,000.00	500.00
Mont Vernon	4	4	.....	105	.....	2,300.00	30.00
Monroe	5	5	.....	200	.....	3,000.00	250.00
Moultonborough	9	9	.....	200	.....	400.00	100.00
Nashua	20	20	.....	3,614	.....	423,433.00	33,000.00
Nelson	2	2	.....	50	.....	4,000.00	400.00
New Boston	10	10	.....	329	.....	10,000.00	350 00
Newbury	7	7	.....	125	.....	2,800.00	75.00
Newcastle	2	2	.....	50	.....	3,200.00	300.00
New Durham	8	8	.....	258	.....	3,600 00	200.00
Newfields	3	3	.....	130	.....	7,000.00	1,200.00
New Hampton	12	12	.....	280	.....	6,000.00	240.00
New Ipswich	5	5	.....	180	.....	3,800.00	775.00
New London	6	6	.....	150	.....	7,000.00	500.00

*Two Kindergarten rooms.

TABLE No. II.—*Continued.*

TOWNS.	Number of school-houses.	Public property.	Rented.	Normal capacity.	Built during year.	Estimated value of buildings and sites.	Estimated value of equipment.
Newington	1	1		60		$4,000.00	$100.00
Newmarket	8	8		500		15,000.00	300.00
Newport	7	7		700		70,000.00	10,000.00
Newton	3	3		199		6,500.00	
Northfield	8	8		200		4,000.00	400.00
North Hampton	2	2		113		5,500 00	112.00
Northumberland	7	7		550		40,000.00	3,000.00
Northwood	6	5	1			7,000.00	250.00
Nottingham	10	10		200		3,000.00	500 00
Orange	4	4		60		800.00	10.00
Orford	4	4		218		6,000.00	648.00
Ossipee	12	12		400		8,000.00	200.00
Pelham	6	5	1	175		5,932.00	1,300.00
Pembroke	7	7		400		25,000.00	500.00
Peterborough	7	7		430		27,500.00	1,700.00
Piermont	9	9		216		5,800.00	250.00
Pittsburg	9	8	1	300	1	22,700.00	1,200.00
Pittsfield	7	6	1	425		30,000.00	700.00
Plainfield	13	13		250		6,000.00	50.00
Plaistow	2	2				5,000.00	
Plymouth	*8	8		519		*30,000.00	6,400.00
Portsmouth	11	11		1,980		176,500.00	7,476.00
Randolph	2	2		40		1,000 00	50.00
Raymond	10	10		227		4,000.00	200.00
Richmond	4	4		150		1,500.00	230.00
Rindge	8	8		200		4,000.00	400.00
Rochester	7	7		1,800		180,000.00	5,000.00
Rollinsford	5	5		450		10,000.00	5,000.00
Roxbury	3	2	1	60		400.00	
Rumney	5	5		234		6,000.00	350.00
Rye	4	4		190		15,500.00	800.00
Salem	9	9		470		20,175.00	525.00
Salisbury	7	7		154		2,500.00	200.00
Sanbornton	12	12		276		8,000.00	1,000.00
Sandown	4	4		80		800.00	400.00
Sandwich	9	8	1	215		11,000.00	500 00
Seabrook	6	6		360		6,000.00	600.00
Sharon	2	2		40		500.00	
Shelburne	4	4		100		2,500.00	50 00
Somersworth	6	6		1,000		100,000.00	1,500.00
South Hampton	3	3		94		5,000.00	300.00
Springfield	8	7	1	191		2,050.00	75.00
Stark	6	6		150		4,000.00	400.00
Stewartstown	14	14		418		8,000.00	400.00
Stoddard	3	3		70		1,000.00	200.00

*Exclusive of Normal Schools owned by state.

TABLE No. II.—*Continued.*

TOWNS.	Number of school-houses.	Public property.	Rented.	Normal capacity.	Built during year.	Estimated value of buildings and sites.	Estimated value of equipment.
Strafford	13	13	.....	192	.....	$4,400 00	$200.00
Stratford	6	6	.....	250	.....	9,000.00	2,500.00
Stratham	4	4	.....	173	.....	4,500.00	350.00
Sullivan	5	5	.....	123	.....	3,000 00	50.00
Sunapee	6	6	.....	250	.....	13,000.00	2,000.00
Surry	4	4	.....	110	.....	800.00	100.00
Sutton	9	9	.....	160	.....	4,500.00	500.00
Swanzey	7	7	.....	382	.....	12,100.00	450.00
Tamworth	12	12	.....	250	.....	7,000.00	1,000.00
Temple	2	2	.....	60	.....	400.00	100.00
Thornton	7	7	.....	140	.....	5,350.00	350.00
Tilton, town	4	4	.....	100	.....	4,000.00	600.00
Tilton, special	1	1	.....	350	.....	25,000.00	2,000.00
Troy	4	4	.....	200	.....	14,000.00	300.00
Tuftonboro	5	5	.....	100	.....	6,000.00	200.00
Unity	7	7	.....	210	.....	4,500.00	250.00
Wakefield	12	12	.....	325	.....	11,000.00	400.00
Walpole	9	9	.....	830	.....	50,000.00	3,000.00
Warner	15	14	1	144	.....	15,000.00	800.00
Warren	4	4	.....	165	.....	5,000.00	.....
Washington	7	7	.....	80	.....	2,500.00	400.00
Weare	15	15	.....	434	.....	10,500.00	400.00
Webster	7	7	.....	210	.....	3,500.00	285.00
Wentworth	9	9	.....	180	.....	3,000.00	100.00
Wentworth's Location	1	1	.....	16	.....	1,800.00	100.00
Westmoreland	10	10	.....	200	.....	5,500.00	300.00
Whitefield, town	6	6	.....	125	.....	4,450.00	225.00
Whitefield, special	1	1	.....	350	.....	20,500.00	3,000.00
Wilmot	7	7	.....	200	.....	3,000.00	100.00
Wilton	6	6	.....	475	.....	25,000.00	4,000.00
Winchester	12	11	1	580	.....	15,000.00	1,000.00
Windham	6	6	.....	146	.....	10,000.00	225.00
Windsor	1	1	.....	15	.....	350 00	50.00
Wolfeboro	10	10	.....	400	.....	18,000.00	1,000.00
Woodstock	4	4	.....	275	.....	19,500.00	1,000.00
Total	1,678	1,660	19	77,714	5	$5,727,353.00	$313,832.00

TABLE No. III.

(For the year ending July 15, 1913.)

SCHOLARS.

TOWNS.	Truant officers' enumeration.		Attended for two weeks.		Under five years.	Between five and sixteen.	Over sixteen years.	Non-resident pupils in high school.	Pupils attending high schools, tuition paid by town.	Pupils attending academies, tuition paid by town.	Average membership.	Average daily attendance.	Per cent. of attendance daily.	In parochial schools between five and sixteen.	In other private schools.	Between fourteen and sixteen holding work certificates.
	Boys.	Girls.	Boys.	Girls.												
Acworth	47	48	57	57	4	108	2	.....	.....	3	89	77	86	.....	....	.....
Albany	15	17	22	21	2	39	2	.....	.....	.....	29	24	87	.....	....	.....
Alexandria	44	42	52	55	3	99	5	.....	.....	3	78	68	88	.....	....	.....
Allenstown	170	164	55	27	....	81	1	.....	5	1	60	54	91	504	....	96
Alstead	61	61	66	75	3	136	2	.....	.....	4	114	95	83	.....	....	.....
Alton	103	81	106	98	1	183	20	.....	.....	.....	178	167	94	.....	....	.....
Amherst	74	77	90	72	....	160	2	.....	22	.....	136	125	92	.....	....	.....
Andover	90	103	84	109	....	189	4	.....	.....	49	158	148	93	.....	....	.....
Antrim	89	89	103	118	....	196	25	16	.....	.....	199	185	93	.....	....	2
Ashland, town	4	12	6	15	....	20	1	.....	2	1	17	16	94	.....	....	.....
Ashland, special	131	124	147	139	....	257	29	7	.....	.....	237	219	92	.....	....	4
Atkinson	30	37	29	37	....	66	.....	.....	.....	16	57	54	94	.....	....	.....
Auburn	70	72	60	59	2	117	.....	.....	1	7	98	87	88	.....	...	3
Barnstead	71	72	71	66	2	127	8	.....	10	6	123	107	89	.....	....	.....
Barrington	69	70	77	67	1	142	1	.....	11	7	118	100	84	.....	....	1
Bartlett, town	48	43	36	35	....	69	2	.....	6	.....	61	53	87	.....	....	.....
Bartlett, special	75	63	77	60	....	136	1	.....	11	3	126	115	90	.....	....	8
Bath, town	53	31	46	28	....	73	1	.....	10	.....	62	58	95	.....	....	.....
Bath, special	22	27	26	30	....	50	6	5	.....	.....	48	44	92	.....	....	.....
Bedford	110	96	88	97	....	184	1	.....	8	9	153	134	88	.....	....	3
Belmont	98	106	110	108	...	217	1	.....	4	14	186	173	93	.....	....	7
Bennington	47	56	55	54	....	109	.....	.....	11	.....	96	86	90	.....	....	.....
Benton	22	20	18	15	....	30	3	.....	.....	.....	31	26	84	.....	....	.....
Berlin	1,473	1,546	622	573	....	1,029	166	12	.....	.....	1,076	1,014	94	.....	....	252
Bethlehem, town	72	69	41	37	2	76	.....	.....	17	.....	78	64	81	.....	....	.....
Bethlehem, special	38	40	52	72	....	103	21	8	.....	.....	113	101	89	.....	....	.....
Boscawen	38	29	31	31	....	61	1	.....	16	1	53	49	92	.....	....	1
Bow	58	45	69	58	1	123	3	.....	9	4	93	76	81	.....	....	.....
Bradford	46	56	47	51	1	95	2	.....	11	2	80	64	80	.....	....	.....
Brentwood	37	47	43	53	1	94	1	.....	17	.....	79	73	91	.....	...	.....
Bridgewater	16	5	22	7	1	27	1	.....	.....	2	26	21	87	.....	....	.....
Bristol, town	16	23	43	33	1	75	.....	.....	2	1	41	39	95	.....	....	.....
Bristol, special	68	79	98	94	6	174	12	1	2	7	162	150	94	.....	...	3
Brookfield	24	10	25	12	....	37	.....	.....	3	1	27	25	93	.....	....	.....
Brookline	44	44	42	38	....	80	.....	.....	5	.....	62	54	87	.....	....	.....
Campton	51	54	56	58	2	112	.....	.....	14	9	106	100	94	.....	....	.....
Canaan, town	68	88	72	86	...	156	2	.....	4	.....	125	106	85	.....	....	.....
Canaan, special	41	37	46	47	1	86	6	4	1	4	68	63	92	.....	....	2
Candia	74	85	82	80	5	156	1	.....	1	1	142	123	86	.....	....	.....
Canterbury	55	50	43	52	....	93	2	.....	1	2	92	85	91	.....	....	.....

TABLE No. III.—*Continued.*

TOWNS.	Truant officers' enumeration.		Attended for two weeks.		Under five years.	Between five and sixteen.	Over sixteen years.	Non-resident pupils in high school.	Pupils attending high schools, tuition paid by town.	Pupils attending academies, tuition paid by town.	Average membership.	Average daily attendance.	Per cent. of attendance daily.	In parochial schools between five and sixteen.	In other private schools.	Between fourteen and sixteen holding work certificates.
	Boys.	Girls.	Boys.	Girls.												
Carroll	50	51	40	45	3	81	1	.....	8	.....	85	78	91	.....	....	.....
Centre Harbor	42	42	35	31	1	62	3	.....	7	5	55	48	87	.....	....	.....
Charlestown	136	103	132	97	....	228	1	.....	25	.....	193	173	89	.....	....	4
Chatham	12	11	15	14	....	28	1	.....	1	4	25	24	93	.....	....	.....
Chester	54	63	58	65	....	113	10	.....	1	16	106	98	91	.....	....	.....
Chesterfield	77	63	75	70	....	137	8	.....	9	.....	120	102	85	.....	....	.....
Chichester	56	54	59	49	1	107	.....	.....	5	.....	99	92	93	.....	....	.....
Claremont	641	650	534	547	19	976	86	10	.....	.....	975	927	95	341	....	65
Clarksville	34	31	46	30	1	71	4	.....	.....	.....	57	46	81	.....	....	.....
Colebrook, town	78	59	79	59	3	133	2	.....	22	.....	86	73	86	.....	....	.....
Colebrook, special	71	94	146	163	1	249	59	52	.....	.....	265	245	92	.....	....	.....
Columbia	55	86	56	79	1	132	2	.....	3	7	94	82	87	.....	....	.....
Concord, town	101	80	77	72	1	146	2	.....	34	.....	112	102	90	.....	44	.....
Concord, Union	1,355	1,484	1,363	1,509	62	2,421	389	74	.....	....	2,552	2,328	87	511	8	99
Concord, Penacook	216	243	229	250	...	445	34	13	.....	.....	417	393	94	.....	....	42
Conway	303	275	290	275	....	552	13	16	8	24	480	429	89	.....	....	5
Cornish	104	84	104	91	....	190	5	.....	.....	.....	143	123	86	.....	....	.....
Croydon	14	19	18	20	...	38	.....	.....	2	7	22	19	86	.....	....	.....
Dalton	66	67	68	49	2	113	2	.....	7	.....	96	78	82	.....	....	.....
Danbury	56	36	59	35	....	92	2	.....	1	14	78	75	95	.....	....	2
Danville	41	40	39	40	....	76	3	.....	1	11	73	69	94	.....	....	.....
Deerfield	66	64	73	79	3	147	2	.....	1	5	122	121	99	.....	....	.....
Deering	24	13	26	14	....	35	5	.....	4	.....	34	31	90	.....	....	.....
Derry, town	349	386	373	391	....	761	3	.....	3	92	644	600	95	.....	....	60
Derry, special	36	29	27	31	....	58	.....	.....	.....	27	45	42	90	.....	.....	.....
Dorchester	33	26	35	26	1	60	.....	.....	4	.....	42	38	90	.....	.....	.....
Dover	1,093	1,118	675	709	...	1,188	196	66	.....	.....	1,265	1,189	93	981	....	139
Dublin	37	39	40	42	2	80	.....	.....	6	.....	72	66	91	.....	....	.....
Dummer	30	20	36	28	1	62	1	.....	3	.....	58	49	85	.....	....	.....
Dunbarton	30	30	35	37	....	70	2	.....	2	.....	53	46	87	.....	....	.....
Durham	65	92	60	73	1	131	1	.....	28	1	115	109	95	.....	....	.....
East Kingston	32	25	28	22	....	50	.....	.....	4	16	43	38	83	.....	....	.....
Easton	15	14	24	17	....	41	.....	.....	.....	3	31	28	90	.....	....	.....
Eaton	37	39	44	39	....	81	2	.....	1	.....	69	60	87	.....	....	.....
Effingham	48	61	68	63	1	129	1	.....	7	.....	105	91	87	.....	....	.....
Ellsworth	4	2	4	2	....	6	.....	.....	.....	.....	5	5	100	.....	....	.....
Enfield	96	139	137	142	5	247	27	2	.....	.....	226	209	93	.....	....	1
Epping	133	145	112	122	....	218	16	6	.....	.....	183	165	90	64	....	4
Epsom	83	48	67	49	7	108	1	.....	1	16	101	91	90	.. ...	....	1
Errol	19	18	21	20	...	40	1	.....	2	.....	35	33	92	.....	....	.....
Exeter	447	497	514	278	4	743	45	26	.....	.....	705	664	94	.....	....	22
Farmington, town	34	27	45	43	1	87	.....	.....	6	.....	56	51	91	.....	....	.....
Farmington, spec.	135	144	145	140	1	279	5	5	.....	.....	249	236	94	.....	....	3
Fitzwilliam	118	101	110	97	....	207	.....	.....	11	2	183	169	92	.....	....	1
Francestown	48	54	47	45	....	91	1	.....	3	11	93	57	93	.....	....	.....

TABLE No. III.—*Continued.*

TOWNS.	Truant officers' enumeration.		Attended for two weeks.		Under five years.	Between five and sixteen.	Over sixteen years.	Non-resident pupils in high school.	Pupils attending high schools, tuition paid by town.	Pupils attending academies, tuition paid by town.	Average membership.	Average daily attendance.	Per cent. of attendance daily.	In parochial schools between five and sixteen.	In other private schools.	Between fourteen and sixteen holding work certificates.
	Boys.	Girls.	Boys.	Girls.												
Franconia	.....	.....	42	40	...	77	5	4	.....	.....	69	60	88	.....	....	.....
Franklin	537	556	392	423	22	703	90	11	.....	.....	710	664	93	481	158	93
Freedom	31	35	28	32	1	59	.....	.....	.....	5	60	50	84	.....	....	.....
Fremont	46	59	52	64	....	115	1	.....	.....	15	93	83	90	.....	....	.....
Gilford	58	66	68	76	....	144	.....	.....	6	2	97	88	91	.....	....	.....
Gilmanton	79	75	99	91	....	190	.....	.....	4	.....	164	138	82	.....	....	.....
Gilsum	29	40	43	32	1	71	3	.....	1	2	54	48	89	.....	....	.....
Goffstown, town	52	49	76	58	1	132	1	.....	31	2	107	96	90	.....	....	6
Goffstown, special	73	88	85	105	....	158	32	41	.....	.....	169	159	88	.....	....	.....
Gorham	216	205	227	227	....	428	26	2	.....	.....	410	378	92	.....	....	.....
Goshen	29	23	29	28	1	53	3	.....	.....	1	52	44	84	.....	....	.....
Grafton	70	40	78	44	2	119	1	.....	.....	12	96	86	89	.....	....	.....
Grantham	25	23	25	23	2	45	1	.....	.....	.....	88	74	84	.....	....	.....
Greenfield	64	42	62	47	1	108	.....	.....	9	2	84	75	90	.....	....	1
Greenland	44	44	47	49	....	96	.....	.....	7	.....	82	75	91	.....	...	.....
Greenville	168	185	55	43	2	96	.....	.....	.....	14	85	79	93	231	....	28
Groton	35	21	36	20	1	55	.....	.....	.....	1	49	43	88	.....	....	.....
Hampstead	61	52	75	61	....	124	12	.....	.....	.....	116	100	86	.....	....	.....
Hampton	105	88	92	82	...	172	2	10	.....	.....	154	140	91	.....	....	.....
Hampton Falls	48	33	46	41	1	86	.....	.....	2	3	70	63	90	.....	....	.....
Hancock	73	49	88	57	1	143	1	.....	.....	.....	104	95	91	.....	....	.....
Hanover, town	63	67	68	67	...	135	.....	.....	21	1	137	123	89	.....	....	1
Hanover, special	115	108	174	167	8	288	46	47	.....	.....	303	286	94	.....	....	.....
Harrisville	65	52	55	43	1	97	.....	.....	2	.....	89	78	87	.....	....	2
Haverhill, town	185	165	183	179	2	339	21	3	.....	.....	326	299	92	.....	....	.....
Haverhill, Woodsville	141	170	176	201	....	345	32	12	.....	.....	338	321	95	.....	....	.....
Hebron	19	17	18	16	....	33	1	.....	6	.....	26	23	88	.....	....	.....
Henniker	120	100	128	123	1	239	11	.....	.....	.....	212	197	93	.....	....	.....
Hill	44	42	39	28	....	66	1	.....	4	1	59	54	92	.....	....	6
Hillsboro', town	55	44	39	33	3	69	.....	.....	20	.....	60	55	91	.....	....	.....
Hillsboro', special	104	108	158	149	....	281	26	26	.....	.....	269	249	92	.....	....	17
Hinsdale	147	163	138	155	2	289	2	.....	.....	.....	257	236	92	.....	....	5
Holderness	38	32	42	51	1	90	2	.....	3	.....	66	58	88	.....	....	.....
Hollis	99	84	84	82	....	137	29	.....	.....	.....	148	141	95	.....	....	.....
Hooksett	123	129	101	98	2	197	.....	.....	4	10	144	131	91	113	....	16
Hopkinton	118	107	142	119	....	237	24	2	.....	.....	208	194	93	.....	....	.....
Hudson	120	113	113	125	2	236	.....	.....	40	3	193	178	92	.....	....	.....
Jackson, town	13	26	14	25	....	29	.....	.....	.....	.....	39	32	82	.....	....	.....
Jackson, special	22	36	21	30	....	50	1	.....	.....	3	44	40	90	.....	....	.....
Jaffrey	214	188	200	186	....	384	2	.....	.....	.....	303	284	92	.....	....	15
Jefferson	97	96	96	95	....	180	11	.....	.....	.....	166	155	94	.....	....	.....
Keene	875	1,044	831	903	58	1,506	170	68	.....	.....	1,566	1,463	93	254	....	22
Kensington	22	38	30	32	1	60	1	.....	10	.....	56	43	77	.....	....	.....
Kingston	72	71	61	66	8	119	.....	.....	.....	33	116	102	87	.....	....	.....
Laconia	801	802	592	588	10	1,070	100	18	.....	.....	1,038	975	94	573	....	53

TABLE No. III.—*Continued.*

TOWNS.	Truant officers' enumeration.		Attended for two weeks.		Under five years.	Between five and sixteen.	Over sixteen years.	Non-resident pupils in high school.	Pupils attending high schools, tuition paid by town.	Pupils attending academies, tuition paid by town.	Average membership.	Average daily attendance.	Per cent. of attendance daily.	In parochial schools between five and sixteen.	In other private schools.	Between fourteen and sixteen holding work certificates.
	Boys.	Girls.	Boys.	Girls.												
Lancaster, town	110	75	102	70	....	170	2	.....	30	.....	145	127	87	.....	....	....
Lancaster, special	168	162	237	232	....	377	92	50	.....	.....	466	441	95	.....	....	....
Landaff	59	38	69	49	2	114	2	.....	6	1	83	77	93	.....	....	.....
Langdon	37	27	39	21	....	55	5	.....	.....	1	39	36	91	.....	....	.....
Lebanon, town	156	167	111	108	3	215	1	.....	36	2	154	141	91	.....	....	15
Lebanon, high	289	313	223	221	9	341	64	54	.....	.....	375	361	96	398	....	30
Lebanon, West	61	79	85	77	1	150	11	1	.....	.....	134	127	95	.....	....	.....
Lee	33	31	28	35	....	63	.....	.....	6	.....	48	40	84	.....	....	.....
Lempster	22	32	32	40	....	70	2	.....	2	4	51	48	94	.....	....	.....
Lincoln	80	79	103	82	....	178	7	3	.. ..	.....	160	152	95	.....	....	.....
Lisbon, town	51	39	53	38	....	91	.....	.....	9	5	70	66	95	.....	....	.....
Lisbon, special	128	141	168	185	.. .	311	42	17	.....	.....	305	292	96	.....	....	2
Lisbon, Sugar Hill	13	11	19	14	....	33	.....	.....	.....	.....	27	24	91	.....	...	.....
Litchfield	24	19	21	13	....	34	.....	.....	7	1	28	26	90	.....	....	.....
Littleton	404	420	413	465	....	796	82	16	.....	.....	776	707	....	.....	....	41
Londonderry	124	125	108	96	2	201	1	.....	3	36	154	138	89	.....	....	.....
Loudon	58	68	56	65	3	118	.....	.....	14	5	89	82	92	.....	....	.....
Lyman	34	39	40	43	1	80	2	.....	.....	.....	66	57	86	.....	....	.....
Lyme	84	96	97	91	....	184	4	.....	7	7	156	136	88	.....	....	.....
Lyndeborough	41	43	48	55	4	97	2	.....	14	1	85	78	92	.....	....	.....
Madbury	27	14	30	17	...	47	.....	.....	15	.....	42	39	95	.....	....	.. ...
Madison	57	39	46	39	....	84	1	.....	2	3	82	72	88	.....	....	.....
Manchester	5,435	5,558	3,314	3,287	77	6,106	418	26	.....	.....	5,711	5,309	93	5,978	75	791
Marlborough	158	143	175	160	....	319	16	4	.....	.....	291	266	92	.....	....	20
Marlow	32	38	29	33	1	60	1	.....	2	.....	47	43	92	.....	....	.....
Mason	26	30	24	41	2	62	1	.....	6	1	52	46	89	.....	....	.. ...
Meredith	113	106	121	111	....	216	16	8	6	5	212	197	93	.....	....	.....
Merrimack	65	91	96	105	5	181	15	9	.....	.....	165	149	90	.....	....	1
Middleton	35	33	40	32	2	70	.....	.....	1	.....	53	45	80	.....	....	.....
Milan	86	79	106	89	2	190	3	.....	.....	.....	166	155	93	.....	....	.....
Milford	323	304	390	404	....	724	71	42	.....	.....	695	650	94	.....	....	.....
Milton	150	172	131	142	....	272	1	.....	.....	.....	225	210	93	.....	....	1
Mont Vernon	30	36	28	31	1	54	4	.....	.....	.....	52	56	87	.....	....	.....
Monroe	43	34	41	39	....	78	2	.....	1	15	65	59	92	.....	....	.....
Moultonborough	65	46	65	46	....	110	1	.....	4	.....	107	96	90	.....	....	.....
Nashua	2,264	2,707	1,580	1,627	263	2,659	285	73	.....	.....	2 699	2,490	93	2,322	....	640
Nelson	15	18	21	20	1	40	.....	.....	1	2	32	. 29	88	.....	....	.....
New Boston	72	80	77	93	2	155	13	.....	.....	.....	156	141	88	.....	....	.....
Newbury	29	30	35	37	2	64	6	.....	3	2	50	48	96	.....	....	.....
Newcastle	29	16	25	22	....	47	.....	.....	3	.....	40	37	94	.....	....	.....
New Durham	53	51	41	52	....	91	2	.....	4	.....	71	62	86	.....	....	.....
Newfields	26	25	35	26	....	61	.....	.....	5	8	50	46	92	.....	....	.....
New Hampton	73	68	68	69	2	133	2	.....	.....	26	128	108	84	.....	....	6
New Ipswich	77	78	65	75	...	140	.....	.....	.....	13	121	112	93	.....	...	.....
New London	60	49	59	63	....	122	....	.....	.....	31	105	96	91	.....	....	.....

TABLE No. III.—*Continued.*

TOWNS.	Truant officers' enumeration.		Attended for two weeks.		Under five years.	Between five and sixteen.	Over sixteen years.	Non-resident pupils in high school.	Pupils attending high schools, tuition paid by town.	Pupils attending academies, tuition paid by town.	Average membership.	Average daily attendance.	Per cent. of attendance daily.	In parochial schools between five and sixteen.	In other private schools.	Between fourteen and sixteen holding work certificates.
	Boys.	Girls.	Boys.	Girls.												
Newington	25	21	21	15	....	36	.....	.....	6	.....	29	26	91	.....	....	.....
Newmarket	293	285	187	161	....	328	20	4	.....	.....	293	270	94	306	....	.....
Newport	281	287	310	339	6	577	66	.....	6	.....	596	549	90	.....	....	32
Newton	67	68	67	68	....	131	4	.....	9	.....	117	105	90	.....	....	5
Northfield	29	35	38	30	....	68	.....	.....	.....	5	51	46	89	.....	....	.....
North Hampton	51	36	42	39	....	80	1	.....	9	.....	79	69	87	.....	....	.....
Northumberland	213	204	243	213	....	429	27	1	.....	.....	397	370	93	.....	....	2
Northwood	92	65	99	83	6	177	.....	.....	.....	2	137	128	93	.....	....	3
Nottingham	50	39	49	43	2	86	4	.....	.....	1	82	68	83	.....	....	.....
Orange	21	20	12	15	....	24	3	.....	1	.....	21	20	94	.....	....	1
Orford	90	58	85	58	....	137	6	.....	3	7	114	103	90	.....	....	.....
Ossipee	112	95	122	101	1	217	5	.....	2	2	181	170	94	.....	....	.....
Pelham	81	83	80	87	1	166	.....	.....	16	.....	151	130	87	.....	....	2
Pembroke	330	290	187	152	10	328	1	.....	.....	25	251	234	93	.....	....	96
Peterborough	157	145	172	158	1	299	30	5	.....	.....	285	258	91	.....	....	3
Piermont	49	56	53	57	4	104	2	.....	9	.....	91	83	90	.....	....	.....
Pittsburg	83	64	77	56	2	127	4	.....	4	.....	115	98	86	.....	....	.....
Pittsfield	152	163	194	207	1	350	50	18	.....	.....	373	349	93	.....	....	23
Plainfield	80	78	86	76	1	159	2	.....	.....	24	127	115	90	.....	....	.....
Plaistow	85	98	87	90	....	176	1	.....	24	.....	138	127	94	.....	....	5
Plymouth	153	200	211	275	1	407	78	47	.....	.....	441	405	92	.....	....	.....
Portsmouth	1,093	1,109	952	995	30	1,776	141	35	.....	.....	1,799	1,689	94	482	....	35
Randolph	7	11	9	17	....	25	1	.....	1	.....	26	20	77	.....	....	.....
Raymond	76	89	86	103	....	182	7	.....	2	9	160	145	91	.....	....	8
Richmond	18	23	18	26	2	41	1	.....	4	.....	36	33	91	.....	....	1
Rindge	44	43	44	45	....	89	.....	.....	12	1	79	73	93	.....	....	.....
Rochester	821	857	664	710	3	1,263	108	8	.....	.....	1,271	1,195	99	.....	....	91
Rollinsford	186	196	169	178	2	343	1	.....	15	8	264	252	94	.....	....	37
Roxbury	7	4	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	...	.....	....	.....
Rumney	61	65	69	72	....	138	3	.....	12	.....	108	99	92	.....	...	.....
Rye	67	83	65	90	....	154	1	.....	11	.....	132	124	94	.....	....	.....
Salem	138	164	158	155	....	313	.....	.....	33	8	253	236	93	.....	....	2
Salisbury	34	21	30	24	7	47	.....	.....	2	1	53	47	88	.....	....	.....
Sanbornton	77	65	71	56	2	125	.....	.....	6	16	107	96	89	.....	....	.....
Sandown	39	44	43	38	...	81	.....	.....	3	2	61	53	87	.....	....	.....
Sandwich	65	68	69	77	1	141	4	.....	2	10	127	115	91	.....	....	.....
Seabrook	136	155	108	120	....	228	.....	.....	.....	1	198	181	91	.....	....	3
Sharon	6	9	7	5	....	12	.....	.....	.....	.....	11	9	81	.....	....	.....
Shelburne	21	26	33	35	....	68	.....	.....	.....	.....	48	44	91	.....	....	.....
Somersworth	675	702	356	295	1	624	26	.....	.....	.....	564	530	94	745	....	53
South Hampton	26	27	28	25	....	53	.....	.....	6	7	39	35	87	.....	....	.....
Springfield	41	31	44	33	..	76	1	.....	1	3	56	51	90	.....	....	.....
Stark	44	46	44	43	2	85	.....	.....	3	.....	76	67	88	.....	....	.....
Stewartstown	104	99	100	86	1	184	1	.....	24	.....	164	143	87	.....	...	.....
Stoddard	19	20	17	20	....	35	2	.....	1	.....	26	24	91	.....	....	.....

TABLE No. III.—*Continued.*

TOWNS.	Truant officers' enumeration.		Attended for two weeks.		Under five years.	Between five and sixteen.	Over sixteen years.	Non-resident pupils in high school.	Pupils attending high schools, tuition paid by town.	Pupils attending academies, tuition paid by town.	Average membership.	Average daily attendance.	Per cent. of attendance daily.	In parochial schools between five and sixteen.	In other private schools.	Between fourteen and sixteen, finishing work certificates.
	Boys.	Girls.	Boys.	Girls.												
Strafford	65	47	86	67	5	148	.....	.....	.....	30	139	126	90	.....	....	.....
Stratford	88	82	95	104	....	177	22	11	.....	.....	165	156	94	.....	....	.....
Stratham	61	48	54	47	....	100	1	.....	15	13	86	79	92	.....	....	.....
Sullivan	32	21	34	20	...	54	.....	.....	3	1	44	37	83	.....	....	.....
Surry	24	16	26	15	....	39	2	.....	4	.....	36	33	90	.....	....	.....
Sunapee	97	81	104	97	3	190	8	.....	.....	3	177	166	94	.....	....	2
Sutton	46	47	35	33	....	68	.....	.....	4	7	68	53	86	.....	....	.....
Swanzey	140	124	151	118	....	265	4	.....	22	.....	247	211	86	.....	....	13
Tamworth	95	85	100	88	4	177	7	.....	.....	5	153	149	96	.....	...	.....
Temple	32	29	29	24	....	53	.....	.....	6	5	44	40	91	.....	...	.....
Thornton	56	44	64	41	3	103	2	.....	7	1	91	83	91	.....	....	.....
Tilton, town	43	46	43	49	....	89	3	.....	.....	7	71	66	94	.....	....	1
Tilton, special	132	144	146	160	....	306	.....	.....	1	60	266	253	95	.....	....	7
Troy	126	142	127	137	....	263	1	1	6	.....	227	209	92	.....	....	22
Tuftonboro	44	48	54	52	3	100	3	.....	.....	1	84	77	91	.....	.....	.....
Unity	55	36	56	40	1	95	.....	.....	3	.....	79	72	89	.....	.....	.....
Wakefield	137	115	113	121	2	240	2	.....	10	.....	207	198	96	.....	....	3
Walpole	301	292	327	304	15	599	17	4	47	.....	590	555	94	.....	.....	.....
Warner	78	97	82	104	9	174	3	9	.....	.....	173	152	88	.....	.....	.....
Warren	62	69	54	54	....	167	1	2	3	.....	94	82	87	.....	.....	.....
Washington	25	29	17	28	....	43	2	.....	.....	2	41	39	90	.....	.....	.....
Weare	115	124	107	118	3	220	2	.....	18	4	194	181	93	.....	....	1
Webster	28	28	27	25	....	50	2	.....	8	.....	43	39	91	.....	.....	.....
Wentworth	38	48	55	54	6	103	.....	.....	3	.....	81	72	90	.....	.....	.....
Wentworth's Location	7	3	9	5	....	13	1	.....	.....	.....	10	8	80	.....	.....	.....
Westmoreland	53	55	63	57	....	116	4	.....	3	3	90	78	87	.....	.....	.....
Whitefield, town	46	45	32	28	....	59	1	.....	12	.....	50	48	94	.....	.....	.....
Whitefield, special	125	117	162	181	...	395	48	22	.....	.....	293	254	94	.....	.....	.....
Wilmot	47	47	55	50	....	104	1	.....	.....	6	101	99	96	.....	.....	.....
Wilton	153	140	165	161	1	288	37	14	.....	.....	292	262	90	.....	....	12
Winchester	200	188	201	211	4	383	25	3	.....	.....	368	346	94	.....	.....	.....
Windham	48	40	48	46	4	90	.....	.....	.....	11	89	81	92	.....	.....	.....
Windsor	2	3	3	6	....	9	.....	.....	.....	.....	7	6	84	.....	.....	.....
Wolfeboro	176	199	154	162	2	312	2	.....	.....	.....	282	263	93	.....	....	8
Woodstock	97	93	118	108	3	215	11	9	4	.....	172	157	95	.....	...	.....
Total	36,353	37,127	31,728	31,276	836	58,249	3,919	1,063	1,187	988	51,334	50,000	92	14,284	285	3,119

TABLE No. IV.

For the year ending July 15, 1913.

TEACHERS BELOW HIGH SCHOOL.

TOWNS.	Number different male teachers.	Average wages per month.	Number different women teachers.	Average wages per month.	Number changes during year.	Number teaching first time.	Number without other education than elementary schools.	Number with no higher training than high school or academy.	Graduates of a normal school.	Graduates of a college.	Holding permanent state certificates.
Acworth	....	.....	12	$28.00	7	3	2	6	1	1	....
Albany	1	$32.00	4	32.00	2	1	.....	1	....	....	....
Alexandria	....	.....	10	30.85	4	2	1	8	1	....	1
Allenstown	....	.....	6	44.38	3	1	1	3	2	....	1
Alstead	....	.....	8	41.18	4	3	.....	6	2	....	....
Alton	....	.....	8	37.50	1	4	.....	3	3	....	1
Amherst	1	36.00	13	40.00	4	4	.....	2	10	1	....
Andover	....	.....	12	32.40	2	1	.....	7	....	....	2
Antrim	....	.....	7	39.43	....	....	.....	2	4	....	2
Ashland, town	....	.....	3	40.00	1	....	.....	3	....	....	....
Ashland, special	....	.....	11	44.27	5	1	.....	1	9	....	1
Atkinson	....	.....	4	42.00	....	1	.....	2	2	1	1
Auburn	....	.....	10	31.81	3	3	.....	7	1	....	....
Barnstead	....	.....	14	32.00	6	3	.....	13	1	....	....
Barrington	....	.....	8	28.00	7	1	.....	8	2	....	1
Bartlett, town	2	45.66	6	43.95	4	...	.....	.....	4	....	....
Bartlett, special	1	64.00	6	42.62	3	2	.....	.....	5	....	...
Bath, town	...	.. ...	5	34.00	....	1	1	3	....	....	2
Bath, special	....	.....	4	36 00	....	2	.....	2	....	1	1
Bedford	....	.....	15	35.60	6	4	1	10	4	...	....
Belmont	....	.....	10	39 40	1	1	1	6	2	1	4
Bennington	....	.....	4	40.50	....	....	.....	1	....	....	1
Benton	....	.....	2	40.00	3	1	1	2	....	....	....
Berlin	1	94.72	19	52.36	1	....	.....	1	18	1	....
Bethlehem, town	1	41.33	3	37.33	....	....	.....	4	...	....	....
Bethlehem, special	....	.....	3	44.00	....	1	.....	.....	2	....	....
Boscawen	....	.....	3	41.33	....	....	1	2	....	....	2
Bow	1	34.00	9	37.00	3	....	.....	6	1	....	1
Bradford	...	.....	11	34.00	4	1	6	3	1	....	1
Brentwood	....	.....	6	40.80	2	..	.....	4	2	....	2
Bridgewater	1	36.00	4	28.00	4	2	1	3	....	....	....
Bristol, town	2	32.00	3	32.33	2	2	.....	3	....	....	1
Bristol, special	....	.....	6	44.00	....	....	.....	1	3	....	1
Brookfield	...	.....	5	32.00	4	2	.....	5	....	....	....
Brookline	1	40.00	7	38.00	5	1	.....	1	....	1	....
Campton	....	.....	10	36.93	1	2	.....	6	4	....	1
Canaan, town	2	32.00	10	34.00	4	3	.....	12	....	....	2
Canaan, special	....	.....	3	37.32	....	..	.....	2	1	....	1
Candia	....	.....	13	36.25	5	3	1	10	2	....	3
Canterbury	....	.....	10	36.44	3	2	4	4	2	....	2

TABLE No. IV.—*Continued.*

TOWNS.	Number different male teachers.	Average wages per month.	Number different women teachers.	Average wages per month.	Number changes during year.	Number teaching first time.	Number without other education than elementary schools.	Number with no higher training than high school or academy.	Graduates of a normal school.	Graduates of a college.	Holding permanent state certificates.
Carroll	....	.....	6	$37.00	1	3	.....	6	....	....	....
Center Harbor	....	.....	5	35.25	1	1	.....	1	....	....	1
Charlestown	....	.....	9	42.44	1	3	....	1	8	....	....
Chatham	....	.....	4	34.66	1	2	.....	2	1	1	1
Chester	....	.....	8	35.14	1	3	.....	3	....	1	1
Chesterfield	2	$40.00	5	40 00	3	1	.....	3	...	....	....
Chichester	....	.....	9	38.80	3	2	.....	3	2	...	3
Claremont	1	72.09	29	48.95	1	1	.....	4	23	....	2
Clarksville	....	.....	8	29.24	4	5	2	5	...	....	....
Colebrook, town	1	32.00	17	30.91	8	4	1	14	2	....	3
Colebrook, special	....	.....	6	47.50	....	....	.....	2	4	....	2
Columbia	....	.....	9	32.00	1	2	1	5	2	....	2
Concord, town	....	.....	11	37.66	2	1	.....	11	....	....	....
Concord, Union	....	.....	57	62.36	2	1	.....	6	5	....	6
Concord, Penacook	1	88.88	9	45.78	....	....	1	1	5	....	1
Conway	1	52 00	23	41.44	5	5	.....	3	10	3	4
Cornish	3	27.33	24	28.00	7	3	.....	23	2	1	....
Croydon	....	.....	3	36 00	1	...	.....	1	....	....	....
Dalton	....	.....	9	28.73	3	6	1	8	....	....	1
Danbury	2	34.00	8	33.75	4	1	.....	7	.. ..	....	1
Danville	....	.....	3	40.00	....	....	... .	.....	1	....	....
Deerfield	....	.....	14	31.01	5	4	5	9	....	....	....
Deering	....	.....	4	32.00	....	....	.....	.....	....	....	....
Derry, town	1	55.55	28	44.75	6	3	1	9	15	1	....
Derry, special	....	.....	2	43.00	....	....	.....	1	1	....	....
Dorchester	....	.....	8	31.00	4	2	.....	7	1	....	....
Dover	1	100.00	31	54.50	....	1	.....	8	14	1	19
Dublin	....	.....	5	50.13	....	1	1	1	2	....	....
Dummer	....	.....	8	32.00	3	3	1	7	....	....	....
Dunbarton	....	.....	5	36.33	1	2	.....	3	1	....	....
Durham	....	.....	8	44.50	2	1	.....	1	4	....	1
East Kingston	....	.....	3	34.66	....	1	.....	3	....	....	1
Easton	....	.....	3	32.00	1	1	.....	3	....	...	....
Eaton	1	24.00	9	28 50	7	2	6	3	....	....	....
Effingham	1	36.00	12	33.83	8	3	.....	4	3	....	2
Ellsworth	....	.....	1	24.00	....	1	1	.....	....	....	....
Enfield	....	.....	12	36.03	2	2	1	4	4	....	3
Epping	1	105.55	6	48.66	....	1	.....	.....	3	2	1
Epsom	....	.....	9	36.00	4	....	.....	6	3	....	....
Errol	..	.....	2	46.00	....	....	....	.....	1	....	1
Exeter	....	.. ...	17	45.22	1	1	1	8	7	1	....
Farmington, town	....	.....	8	30.67	2	2	.....	.....	....	....	1
Farmington, spec	....	.....	8	53.08	....	....	.....	2	6	....	2
Fitzwilliam	....	.....	7	45.00	1	2	1	.....	4	1	2
Francestown	....	.....	7	30.66	1	3	....	6	....	....	....

TABLE No. IV.—*Continued.*

TOWNS.	Number different male teachers.	Average wages per month.	Number different women teachers.	Average wages per month.	Number changes during year.	Number teaching first time.	Number without other education than elementary schools.	Number with no higher training than high school or academy.	Graduates of a normal school.	Graduates of a college.	Holding permanent state certificates.
Franconia	....	.....	3	$48.00	....	....	....	.....	3	....	....
Franklin	....	.....	21	46.44	2	....	... .	2	15	...	....
Freedom	1	$40.00	3	32.00	1	....	2	2	....	....	....
Fremont	....	.....	7	37.20	2	1	.....	5	....	....	2
Gilford	....	.....	16	34.00	7	....	.....	16	....	....	5
Gilmanton	....	.....	15	28.00	3	...	2	6	...	....	....
Gilsum	....	.....	4	34.00	2	1	. .....	3	....	....	....
Goffstown, town	....	.....	10	39.23	2	3	.....	8	2	...	....
Goffstown, special	1	122.22	6	44.00	....	....	.....	1	4	3	1
Gorham	....	.....	15	40.00	1	1	.....	9	6	....	2
Goshen	....	.....	6	30.00	2	1	.....	3	....	....	2
Grafton	2	30.50	10	31.87	6	1	2	7	....	....	1
Grantham	...	.....	2	36.00	1	...	1	1	..	....	....
Greenfield	....	.....	6	40 00	1	2	.....	3	2	....	1
Greenland	....	.....	3	49.33	....	....	.....	.....	1	....	1
Greenville	....	.....	3	50.67	....	...	.....	.....	2	....	....
Groton	...	.....	6	32.00	3	....	5	1	....	....	....
Hampstead	....	.....	5	42.67	1	....	....	4	1	....	1
Hampton	....	.....	6	36.00	....	....	.....	5	1	...	....
Hampton Falls	....	.....	3	38.66	...	....	1	1	....	....	1
Hancock	....	.....	7	39.00	3	3	.....	4	....	....	2
Hanover, town	...	.....	9	34.45	2	4	3	5	....	1	1
Hanover, special	1	60.00	5	58.89	2	....	.....	.....	5	....	...
Harrisville	....	.....	5	44.00	1	1	.....	2	2	....	1
Haverhill, town	1	56.00	16	40.94	1	1	1	8	5	1	3
Haverhill, special	1	50.00	6	44.66	....	....	.....	2	3	...	1
Hebron	...	.....	4	36.00	4	....	....	3	1	...	....
Henniker	....	.....	13	35.00	6	2	.....	10	2	....	....
Hill	....	.....	4	41.00	1	1	.....	....	2	....	....
Hillsborough, town	....	.....	8	36.00	2	3	.....	4	3	....	1
Hillsborough, spec.	....	.....	5	50.00	...	....	.....	2	3	....	1
Hinsdale	....	.....	10	37.86	1	1	.....	8	3	...	....
Holderness	....	.....	6	42.00	....	....	.....	4	1	....	....
Hollis	....	.....	4	45.00	...	1	.....	2	2	....	1
Hooksett	....	.....	7	40.85	....	1	.....	6	....	....	...
Hopkinton	....	.....	10	37.80	....	1	.....	9	1	....	1
Hudson	....	.....	9	38.21	1	1	.....	5	2	....	3
Jackson, town	1	36.00	4	31.50	2	3	1	3	....	....	...
Jackson, special	....	.....	3	40.00	2	....	.....	.....	....	....	....
Jaffrey	....	.....	10	42.40	....	2	4	2	6	....	3
Jefferson	....	.....	10	37.60	2	3	.....	5	3	....	5
Keene	....	.....	38	48.75	2	3	.....	17	18	1	2
Kensington	....	.....	3	34.66	1	...	.....	4	....	....	....
Kingston	....	.....	8	35.95	3	6	.....	1	5	1	1
Laconia	....	.....	30	47.44	1	2	.....	6	24	....	1

TABLE No. IV.—*Continued.*

TOWNS.	Number different male teachers.	Average wages per month.	Number different women teachers.	Average wages per month.	Number changes during year.	Number teaching first time.	Number without other education than elementary schools.	Number with no higher training than high school or academy.	Graduates of a normal school.	Graduates of a college.	Holding permanent state certificates.
Lancaster, town	....	.....	10	$34.41	....	....	3	4	3	....	....
Lancaster, special	....	.....	8	59 25	....	....	.....	.....	2	....	5
Landaff	....	.....	9	32 80	3	5	2	5	2	....	....
Langdon	....	.....	5	43.70	2	....	.....	1	4	....	....
Lebanon, town	1	$40.00	9	33.47	1	2	.....	9	1	....	2
Lebanon, high	1	105.56	8	44.50	....	1	.....	4	4	1	5
Lebanon, West	....	.....	5	50.28	1	....	1	2	2	....	2
Lee	....	.....	3	40.00	....	....	....	3	....	....	....
Lempster	....	.....	6	32.50	1	1	1	3	2	...	2
Lincoln	1	68.00	5	44.00	....	....	.....	4	1	....	...
Lisbon, town	....	.. ...	6	31.00	1	1	.....	4	1	....	....
Lisbon, special	....	.....	8	42.25	....	....	.....	.....	8	....	....
Lisbon, Sugar Hill	.. .	.....	2	42.00	....	....	.....	.....	2	....	....
Litchfield	....	.....	1	40.00	....	....	.....	1	....	....	....
Littleton	....	.....	28	41.41	2	1	.....	5	14	....	3
Londonderry	....	.....	13	39.50	6	4	.....	4	9	....	....
Loudon	...	.....	9	35.52	3	2	.....	9	....	....	....
Lyman	....	.... .	10	32.46	5	1	6	4	....	....	....
Lyme	1	36.00	14	32.15	4	5	2	10	....	....	2
Lyndeborough	....	.....	11	35.66	5	2	.....	7	4	....	2
Madbury	....	.....	5	35.55	2	....	.....	4	1	....	....
Madison	....	... ..	6	41.16	2	1	.....	2	4	....	....
Manchester	13	148.85	160	64.62	1	11	.....	6	147	7	4
Marlborough	...	.....	7	48.00	3	2	.....	1	4	1	3
Marlow	....	.....	2	42.00	....	....	1	.....	....	1	....
Mason	....	.....	4	37.70	....	....	.....	1	1	....	1
Meredith	....	.....	11	38.20	3	1	2	4	3	....	1
Merrimack	1	.....	8	10.23	1	1	.....	9	....	....	....
Middleton	....	.....	4	32 00	2	2	.....	4	....	....	....
Milan	....	.....	8	37.68	3	....	2	5	1	....	....
Milford	....	.....	22	45 00	3	...	....	12	8	....	1
Milton	3	61.84	7	43 42	...	2	.....	5	2	1	2
Mont Vernon	....	.....	5	39.68	1	...	.....	1	3	....	1
Monroe	....	.....	5	33.00	5	1	.....	5	...	....	1
Moultonborough	....	.....	9	33.00	3	.. .	.....	8	1	....	2
Nashua	1	127.77	82	61.11	....	3	.....	10	72	1	....
Nelson	...	.....	2	36.00	....	....	. .....	1	....	1	1
New Boston	...	.....	11	35.91	3	4	.....	10	1	....	....
Newbury	....	.....	10	29.44	5	1	3	7	....	....	....
Newcastle	....	.....	2	48.00	....	....	1	1	....	....	1
New Durham	....	... ..	6	31.20	1	1	2	4	....	....	1
Newfields	....	.....	3	44.00	1	...	.....	1	2	...	1
New Hampton	....	.....	18	30.07	11	....	.....	9	1	1	2
New Ipswich	....	.....	5	43.67	1	1	....	4	....	....	1
Newington	....	.....	2	46.00	....	....	.....	.....	2	....	....

TABLE No. IV.—*Continued.*

TOWNS.	Number different male teachers.	Average wages per month.	Number different women teachers.	Average wages per month.	Number changes during year.	Number teaching first time.	Number without other education than elementary schools.	Number with no higher training than high school or academy.	Graduates of a normal school.	Graduates of a college.	Holding permanent state certificates.
New London	....	.....	7	$38.33	1	3	.....	6	2	....	....
Newmarket	....	....	9	43.00	....	1	.....	1	3	....	4
Newport	3	$73.33	17	45.82	1	1	5	7	4	3	8
Newton	....	.....	4	42.00	....	2	.....	2	....	1	....
Northfield	....	.....	6	37.50	2	....	.....	3	3	...	1
North Hampton	....	.....	4	54.00	1	....	.....	.....	....	....	1
Northumberland	....	.....	10	43.60	....	1	.....	6	4	....	4
Northwood	1	48.00	6	33.00	2	2	.....	5	....	1	1
Nottingham	1	40.00	5	28.00	2	2	6	6	....	....	...
Orange	....	.....	2	38.00	1	1	.....	.....	....	....	1
Orford	3	49.33	6	36.50	4	....	1	5	....	....	3
Ossipee	2	50.00	8	35.50	2	2	2	7	...	1	1
Pelham	...	.....	6	40.66	3	3	.....	3	3	1	1
Pembroke	....	.....	14	40.00	3	2	3	3	7	....	6
Peterborough	1	56.00	12	41.33	3	2	.....	2	10	....	....
Piermont	....	.....	13	30.92	4	4	2	6	2	....	1
Pittsburg	....	.....	17	32.03	6	3	11	6	....	1	....
Pittsfield	1	64.00	9	40.44	....	1	.....	3	3	....	3
Plainfield	...	.....	19	28.83	8	4	1	14	....	....	2
Plaistow	....	.....	6	50.00	1	2	.....	1	5	...	....
Plymouth	....	.....	12	48.40	1	....	.....	1	11	....	....
Portsmouth	....	.....	43	62.69	2	2	.....	4	5	2	8
Randolph	...	.....	4	40 00	4	2	.....	.....	1	....	....
Raymond	1	49.33	6	40.53	1	1	.....	4	3	....	1
Richmond	....	.....	4	38.68	1	....	.....	2	1	....	1
Rindge	2	52.00	5	41.00	3	1	.....	5	2	....	....
Rochester	....	.....	31	46.95	1	3	.....	.....	26	....	1
Rollinsford	....	.....	13	50.00	3	2	.....	1	9	....	1
Roxbury	....	.....	.....	.....	....	....	.....	.....	....	....	....
Rumney	....	.....	7	40.00	1	....	.....	1	5	...	....
Rye	....	.....	5	44.80	....	...	.....	.....	1	....	1
Salem	....	.....	12	46.25	....	1	.....	2	8	....	1
Salisbury	....	.....	9	33.06	4	1	.....	5	1	....	1
Sanbornton	...	.....	13	29.20	3	2	.....	12	1	....	....
Sandown	1	32.00	4	31.50	1	2	.....	3	....	1	....
Sandwich	....	.....	12	32.00	2	4	.....	5	1	....	1
Seabrook	1	37.57	9	38.66	3	3	.....	3	6	....	1
Sharon	....	.....	2	25.00	....	1	.....	.....	....	....	....
Shelburne	....	.....	4	36.00	2	....	.....	4	...	....	....
Somersworth	1	100.00	18	47.50	....	....	.....	12	6	....	5
South Hampton	....	.....	5	29.33	3	1	.....	2	....	....	....
Springfield	....	.....	11	27.66	5	5	1	6	....	....	....
Stark	....	.....	10	36.00	5	2	.....	10	1	....	1
Stewartstown	....	.....	29	32.16	21	6	2	2	2	....	1
Stoddard	....	.....	3	40.00	1	2	2	1	....	....	1

TABLE No. IV.—*Continued.*

TOWNS,	Number different male teachers.	Average wages per month.	Number different women teachers.	Average wages per month.	Number changes during year.	Number teaching first time.	Number without other education than elementary schools.	Number with no higher training than high school or academy.	Graduates of a normal school.	Graduates of a college.	Holding permanent state certificates.
Strafford	....	.....	12	$29.33	6	....	.....	9	1	....	1
Stratford	1	$36.00	6	44.80	....	....	1	1	5	....	....
Stratham	....	.....	5	44.26	1	1	.....	2	2	....	1
Sullivan	1	36.00	4	31.33	2	2	.....	4	....	1	....
Sunapee	...	.....	12	35.00	3	1	1	6	4	1	2
Surry	....	.....	2	32.00	1	1	.....	2	....	....	....
Sutton	1	40.00	6	33.33	4	1	.....	7	....	....	....
Swanzey	1	40.00	10	42.55	4	2	.....	2	9	....	3
Tamworth	....	.....	12	38.40	2	1	5	7	2	1	....
Temple	....	....	2	45 00	....	....	.....	1	1	....	....
Thornton	....	.....	12	34 00	11	1	3	5	3	....	....
Tilton, town	....	.....	4	47 00	...	1	.....	.....	4	....	....
Tilton, special	1	94.44	9	47.11	2	...	.....	4	5	....	....
Troy	....	.....	6	37.33	....	3	2	.....	3	....	1
Tuftonboro	...	.....	7	40.00	2	....	2	3	2	....	....
Unity	....	.....	9	38 66	4	1	4	4	1	....	....
Wakefield	1	32.00	9	40.88	3	2	.....	4	3	....	3
Walpole	1	112.50	18	45.80	1	1	.....	6	11	1	4
Warner	....	.....	13	32 20	1	5	.....	10	1	....	....
Warren	1	60.00	10	36.00	5	2	.....	9	2	....	2
Washington	...	.....	7	30.00	3	2	1	3	....	....	....
Weare	....	.....	21	37 66	9	5	1	11	2	....	1
Webster	....	.....	5	34.66	2	....	.....	4	1	....	....
Wentworth	....	.....	14	33.00	12	2	2	4	2	....	....
Wentworth's Location	1	40.00	1	40.00	1	1	1	1	....	....	....
Westmoreland	....	.....	5	43.60	...	2	.....	1	3	1	....
Whitefield, town	....	.....	5	43.20	1	1	1	2	2	....	1
Whitefield, special	....	.....	8	44.50	...	....	.....	.....	5	....	3
Wilmot	2	30.00	7	31.00	3	3	1	5	...	....	....
Wilton	....	.....	9	43.20	....	3	.....	2	4	....	2
Winchester	....	.....	16	38.25	3	6	3	10	4	...	3
Windham	....	.....	8	44.50	3	1	.....	4	4	....	1
Windsor	....	.....	1	21.45	....	....	.....	.....	....	....	....
Wolfeboro	....	.....	15	45.84	2	1	.....	4	6	....	3
Woodstock	....	.....	7	41.14	....	1	.....	2	3	....	....
Total	89	$65.91	2,491	$42.18	563	374	157	1,051	893	56	278

TABLE

(For the year ending

FINAN

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TOWNS.	Balance on hand.	Amount required by law.	Additional amount voted.	Raised for books and supplies.	Raised for tuition in secondary schools.	Flags and appurtenances.	Salaries of school officers.
Acworth	$11.15	$682.50	$550.00	$50.00	$150.00	$11.00	$85.00
Albany	399 81	472.50	100.00	50.00	.....	.....	50.00
Alexandria	311.00	712.50	200.00	175.00	200.00	10.00	108.00
Allenstown	236.39	1,882.50	300.00	150.00	300.00	.....	160.00
Alstead	292.45	1,387.50	1,005.00	100.00	.....	.....	125.00
Alton	376.62	2,355.00	2,900.00	375.00	.....	.....	150.00
Amherst	355.82	1,957.50	2,500.00	300.00	1,000.00	.....	188.00
Andover	577.20	1,777.50	200.00	250.00	1,900.00	.....	278.00
Antrim	2,441.21	2,175.00	2,284.06	400.00	.....	.....	197.00
Ashland, town	104.99	316.00	230.00	25.00	240.00	.....	40.00
Ashland, special	773.74	1,956.50	4,000.00	1,200.00	.....	.....	.....
Atkinson	6.32	720.00	780.00	100.00	480.00	10.00	8.00
Auburn	458.12	1,260.00	200.00	100.00	200.00	.....	98.50
Barnstead	1,231.49	1,740.00	.....	200.00	500.00	15.00	185.00
Barrington	297.07	1,305.00	600.00	75.00	.....	.....	176.00
Bartlett, town	245.96	689.25	500.00	175.00	120.00	20.00	71.00
Bartlett, special	437.32	510.75	1,000.00	175.00	75.00	.....	20.00
Bath, town	520.23	859.04	955.00	108.00	435.00	.....	45.00
Bath, special	1,706.42	505.96	.....	65.00	.....	.....	175.00
Bedford	235.78	2,227.50	1,000 00	125.00	375.00	.....	200.00
Belmont	243.53	1,717.50	1,200.00	300.00	400.00	.....	150.00
Bennington	238 00	832.50	728.00	125.00	150.00	.....	70.00
Benton	7.87	382.50	217.50	40.00	20.00	.....	30 00
Berlin	.....	13,657.50	11,342.50	.....	.....	.....	.....
Bethlehem, town	556.48	1,523.94	276.06	100.00	400.00	.....	.....
Bethlehem, special	94.17	1,168.56	1,631.44	225.00	.....	.....	75.00
Boscawen	282.93	747.76	340.00	75.00	120.00	.....	77.50
Bow	277.94	1,957.50	100.00	125.00	500.00	.....	109.00
Bradford	532.19	1,710.00	342.50	135.00	500.00	10.00	115 00
Brentwood	265.82	930.00	225.00	100.00	700 00	10.00	75.00
Bridgewater	365.80	442.50	.....	.....	.....	.....	.....
Bristol, town	224.39	580.17	400.00	35.00	.....	.....	65.00
Bristol, special	2,149.02	2,397.33	1,882.53	.....	.....	.....	.....
Brookfield	15.00	420 00	175.00	50 00	24.00	.....	40.00
Brookline	109.00	937.50	300.00	90.00	.....	5.00	85.00
Campton	70.00	1,410.00	1,290.00	225.00	300.00	.....	120.00
Canaan, town	327.84	1,125.31	800 00	225 00	150.00	50.00	110.00
Canaan, special	113.95	757.19	650.00	250.00	.....	.....	71.00
Candia	200.30	1,485.00	750.00	.....	.....	.....	.....
Canterbury	442.38	1,635.00	.....	400.00	200.00	10.00	120.00

No. V.

July 15, 1913.)

CES.

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Literary fund.	State appropriation.		Rebate from state secondary school tuition.	Local funds.	Dog licenses.	Miscellaneous (current).	Total of current revenue.
	Schools.	Superintendent.					
$74.80	$92.25	.....	$12.00	.....	$82.60	.....	$1,801.30
21.76	.....	.....	.....	.....	39.80	.....	1,133.87
60.52	67.50	.....	116.10	$134 59	137.50	.....	2,232.71
75.48	.....	$166.66	.....	.....	82.80	.....	3,353.83
94.52	97.50	.....	12.00	201.16	54.40	.....	3,369.53
263.36	.....	333 34	.....	.....	574.26	$35.35	7,362.93
136.00	723.00	252.00	217.20	446.22	205.00	82.20	8,362.94
152.32	545.55	.....	.....	.....	202.70	61.75	5,945.02
151.64	713.42	225.00	.....	55.00	177.90	468 17	9,288.40
29.22	.....	.....	122.53	20.50	31.97	60.00	1,220.21
180.89	852.00	.....	.....	.....	197.88	382.92	9,543.93
65.28	217.00	162.00	147.00	.....	111.60	.....	2,807.20
77.22	.....	.....	.....	.....	146.80	27.25	2,567.89
104.72	.....	.....	237.24	138.19	247.10	129.66	4,728.40
108.80	.....	.....	497.04	.....	196.12	.....	3,255.03
106.89	299.75	110 00	.....	.....	.....	69.44	2,407.29
71.27	470.35	93.75	26.50	.....	.....	124.50	3,004.44
59.16	81.00	150.00	196.35	16.00	83.42	32.50	3,540.70
92.47	54.00	100.00	.....	11.12	58.02	.....	2,767.99
124.44	.....	.....	.....	.....	195.00	.....	4,482.72
162.52	424 50	200.00	557.20	.....	109.00	49.26	5,513.51
77.52	131.00	.....	72.60	.....	157.00	68.00	2,649 62
25.16	.....	.....	.....	.....	37.80	35.30	796.13
798.32	.....	.....	.....	.....	513.40	5,007.53	31,319.25
88.53	.....	.....	.....	.....	104.65	13 65	3,063.31
67.87	.....	.....	.....	.....	80.25	814.13	4,156.42
20.27	246.88	.....	450.00	125.00	62.90	41.88	2,590.12
89.96	.....	.....	.....	.....	158.00	16.25	3,333.65
70.72	.....	.....	152.49	.....	135.00	83.74	3,786.64
74.12	.....	.....	.....	.....	99.40	.....	2,479.34
18.36	.....	.....	.....	.....	.....	.....	826.66
30.46	.....	.....	.....	.....	35 00	43 00	1,413.02
121.86	.....	.....	140.00	.....	140.00	27.91	6,858.65
28.00	.....	.....	24.00	87.51	58.80	.....	922.31
55.76	.....	.....	.....	.....	94.60	12.65	1,689.51
104.92	132.00	.....	583.98	1.00	.....	166.00	4,402.90
116.64	197.95	.....	52.75	.....	183.13	.....	3,338.62
77.80	102.00	.....	24.00	.....	122.16	133.85	2,301.95
107.44	78.40	.....	.....	.....	206.65	195.80	3,024.19
74.80	.....	175.00	.....	.....	130.50	17.20	3,204.88

TABLE

TOWNS.	Balance on hand.	Amount required by law.	Additional amount voted.	Raised for books and supplies.	Raised for tuition in secondary schools.	Flags and appurtenances.	Salaries of school officers.
Carroll	$801.27	$1,627.50	$250.00	$150.00	$300.00	.....	$150.00
Center Harbor	223.11	1,012.50	200.00	100 00	550.00	.....	55.00
Charlestown	2,209.97	2,242.50	3,207.50	.....	.....	.....	.....
Chatham	134.82	315.00	275.00	60.00	200.00	.....	30.00
Chester	271.40	1,620.00	300.00	125.00	500.00	$12.00	106.00
Chesterfield	792.13	1,740.00	2,580.00	200.00	500.00	.....	155.00
Chichester	.77	1,417.50	950.00	.....	.....	.....	.....
Claremont	.....	11,865.00	11,900.00	.....	.....	.....	.....
Clarksville	259.30	592.50	200.00	25.00	.....	.....	.....
Colebrook, town	539.72	1,279.06	800.00	250.00	950.00	.....	.....
Colebrook, special	.....	1,428.44	5,425.00	700.00	.....	.....	36.00
Columbia	959.53	750.00	1,500.00	150.00	375. 00	.....	80.00
Concord, town	362.14	3,316.44	2,000.00	.....	.....	.....	.....
Concord, Union	3,958.62	41,331.33	49,973.60	.....	.....	.....	.....
Concord, Penacook	2,007.67	3,854.73	6,584.74	750.00	.....	.....	150.00
Conway	2,317.79	4,110 00	4,000.06	550 00	1,200.00	.....	225.00
Cornish	165.87	1,462.50	1,000.00	164.70	.....	.....	150.00
Croydon	612.51	570 00	.....	50 00	150.00	.....	50.00
Dalton	120.02	375.00	725 00	125.00	.....	.....	101.50
Danbury	80.12	990.00	255 00	60.00	500.00	.....	95.00
Danville	161.00	577.50	413.00	100.00	400.00	10.00	45.00
Deerfield	302.11	1,695.00	553.34	100.00	250.00	.....	90.00
Deering	215.00	690.00	85.00	.....	.....	.....	75.00
Derry, town	1,835.15	5,113.17	8,000.00	700.00	.....	25.00	.....
Derry, special	370.99	706.83	500.00	.....	.....	.....	.....
Dorchester	716.14	322.50	400.00	40.00	146.66	.....	60.00
Dover	713.24	28,740 00	8,560.00	2,100.00	.....	.....	800.00
Dublin	2,082.95	2,422.50	.....	.....	300.00	.....	.....
Dummer	.....	510.00	990.00	75.00	175.00	.....	90.00
Dunbarton	298.80	1,200.00	55.25	92.45	.....	5.56	50.00
Durham	288.01	1,597.50	2,347.00	300.00	1,449.00	10.00	75.00
East Kingston	7.74	547.50	350.00	.....	700.00	.....	45.00
Easton	271.37	420.00	380.00	.....	.....	.....	.....
Eaton	411.42	375.00	400.00	75.00	60.00	5.00	75.00
Effingham	191.71	750.00	800.00	125.00	220.00	10.00	66.00
Ellsworth	21.60	67.50	32.50	.....	.....	.....	.....
Enfield	1,243.77	2,032.50	2,350.00	400.00	.....	.....	122.00
Epping	1,328 40	2,272.50	1,805 00	.....	.....	.....	210.00
Epsom	203.05	1,477.50	200.00	150.00	400.00	.....	60.75
Errol	205.03	1,065.00	700.00	125.00	100.00	.....	75.00
Exeter	306.22	8,995.50	4,282.00	1,000.00	.....	10.00	422.00
Farmington, town	1,348.95	748.10	.....	140.00	205.00	.....	155.00
Farmington, special	3,788.56	2,986.90	1,640.00	500.00	.....	25.00	.....
Fitzwilliam	401.98	1,462.50	1,200.00	200.00	100.00	.....	150.00
Francestown	147.07	1,185.00	315.00	150.00	460.00	.....	90.00

No. V.—*Continued.*

Literary fund.	State appropriation.		Rebate from state for secondary school tuition.	Local funds.	Dog licenses.	Miscellaneous (current).	Total of current revenue.
	Schools.	Superintendent.					
$69.36					$104 74	$532.29	$3,985.16
53.72					121.40		2,315.73
176.12	$644.50	$195.00		$11.56	221.25	12.68	8,921.08
26.50			$161.01	40.00	21.60	.65	1,264 58
102.68			46.70	200.00	185.84	5.50	3,475.18
100.32					163.80		6,231.25
73.44		187.50	61.89		77.40	62.00	2,830.50
726.92		780.00			790.80	575.26	26,637.98
51.75				8.00	45.20	26.98	1,208.73
91.99		300.00	558.00	691.72		499.50	5,959.99
170.45	1,055.00	300.00				4,797.62	13,912.51
102.68	183.75	316.66	197.56		76.60	30.54	4,722.32
150.70		283.34		2.74	105.14	22.31	6,242.81
1,878.03				34.08	1,310.95	9,731.69	108,218.30
207.92		500.00		3.18	185.17	1,119.75	15,363.16
435.20	1,502.50	468.75	754.00	9 40	155.13	566.86	16,294 63
119 00					235.64	21.77	3,319.48
35.36				64.09	50.60		1,582.56
78.88	485.01				124.50	9.75	2,144.66
83.64			198.90		235.10	16.80	2,514.56
65.28			291 00	6.00	83.00		2,151.78
103.36			18.00	26.00	164.30	15.00	3,317.11
31 96				140.00	120.00		1,356.96
552.61		350.00	2,931.00	107.78	444.00	186.45	20,248 16
76.39		70.00	940.00	12.22	61.38		2,737.81
44.88		90.00	106.66		58.20		1,985.04
901.00					820.35	4,171.50	46,806.09
51.00		86.25		428.96	179.11	22.00	5,572 77
45.56							1,885.56
58.48					84.80		1,845.34
106.08	346.36	275.00	267.32		84.50		7,145.77
45.56	52.50			177.36	82.80		2,008.46
24.48					44.40		1,140.25
58.48	135.00		35.00		51.00	27.24	1,708.74
90.44	152.10		32.00	57.50	83.75	75.75	2,654.25
2.04	20.26				17.40		161.30
186.32	804.00	155.00		200.00	218.30	204.65	7,916.54
127.84					212.16		5,955.90
88.40			126.15		132.27	308.63	3,146.75
26.52		300.00			43.65		2,640.20
520.20					450.00	1,150.17	17,136.09
49.30	218.00				79.47		2,943.82
196.86	449.75			2,941.47	317.33	26.00	12,871.87
134.64	605.60	172.50	66.00		194.69	222.60	4,910.51
57.12	24.00				102.20		2,530.39

TABLE

TOWNS.	Balance on hand.	Amount required by law.	Additional amount voted.	Raised for books and supplies.	Raised for tuition in secondary schools.	Flags and appurtenances.	Salaries of school officers.
Franconia	$214.02	$1,357.50	$589.00	$300.00			$211.00
Franklin	344.45	9,690.00	11,310.00				
Freedom	34.27	592.50	300.00		$110.00		57.00
Fremont	27.04	795.00	400.00		500.00		53.00
Gilford	205.81	1,462.50	750.00	150.00	200.00	$5.00	116.00
Gilmanton	306.55	1,470.00	500.00	150.00	350.00	10.00	115.00
Gilsum	60.99	592.50	467.50	50.00			69.33
Goffstown, town	1,346.07	2,672.32	200.00	150.00	743.00	10.00	75.00
Goffstown, special	1,436.24	2,420.18	1,900.00	450.00			470.00
Gorham	407.07	2,775.00	6,000.00	800.00			
Goshen	32.70	405 00	300.00	45.00	60.00	10.00	40.00
Grafton	705.42	1,087.50	100.00	50.00	500.00	10.00	100.00
Grantham		480.00	40.00				40.00
Greenfield	512.76	892.50	300.00	175.00	400.00	3.00	65.00
Greenland	838.15	1,215.00	400.00	100.80	346.50	2.50	42.00
Greenville	208.79	1,762.50	1,737.50				80.00
Groton	122.09	285.00	300.00	50.00	60.00		50.00
Hampstead	773.06	1,027.50	1,100.00	225.00		15.00	
Hampton	382.65	2,587.50	650.00	200.00			75.00
Hampton Falls	118.74	742.50	508.50	110 00	120.00		50.00
Hancock	21.59	1,342.50	1,284.70	150.00	400.00	5.00	100.00
Hanover, town	292.51	1,085.82	358.18	100.00	595.00	5.00	154.00
Hanover, special	2,070.04	3,256.68		600.00			145.00
Harrisville	201.73	1,080.00	313.00	125.00	375.00	25.00	100.00
Haverhill, town	1,177.25	2,514.57	5,286.65	407.90			150.00
Haverhill, Woodsville	1,416.23	2,030.43	2,746.91	350.00			80.00
Hebron	324.11	330.00		50.00	120.00		45.00
Henniker	74.46	2,835.00	1,665.00	200.00			125.00
Hill	281.75	825.00	100.00	150.00	480.00		37.50
Hillsborough, town	618.74	1,250.80	1,128.50		350.00	10.00	146.50
Hillsborough, special	1,262.33	2,844.20	1,925.00	500.00			75.00
Hinsdale	533.14	3,165.00	3,847.00	600.00			205.00
Holderness	259.82	1,410.00	800.00		500.00		105.00
Hollis	300.92	1,387.50	2,135 50	400.00			102.00
Hooksett	323.17	2,692.50	1,000.00				
Hopkinton	323.56	3,495.00	3,200.00	500.00			250.00
Hudson	675.69	2,280.00	1,000.00	300.00	1,200.00	15.00	105.00
Jackson, town	112.99	541.66	303.34				35.00
Jackson, special	347.63	350.84	349.37				
Jaffrey	134.96	3,270.00	1,600.00	655.00		10.00	103.00
Jefferson		1,177.50	3,322.50				
Keene	6,066.28	20,152.50	14,245.00	1,200.00		5.00	1,680.00
Kensington	357.23	592.50	60.00		300.00		50.75
Kingston	505.97	1,185.00	125.00	250.00	900.00		100.00
Laconia		15,472.50	11,237.98	1,500.00		25.00	90.00

No. V.—*Continued.*

Literary fund.	State appropriation.		Rebate from state for secondary school tuition.	Local funds.	Dog licenses.	Miscellaneous (current).	Total of current revenue.
	Schools.	Superintendent.					
$51.40				$3.00	$90.00		$2,818.92
514.08					339.42	$507.00	22,704.95
42.84					79.00		1,215.61
82.28	$176.00		$101.10		83.15	89.02	2,309.59
91.12				33.60			3,014.03
120.36			236.00		110.00		3,367.91
50.32			60.00	18.00	48.00	139.34	1,555.98
126.48			137.20		144.75	3.90	5,608.72
121.72						6.97	6,805.11
312.12	1,206.60				118.00	50.80	11,669.59
36.30					75.00		1,004.00
97.24				13.00	184.95	272.20	3,120.31
32.64					66.00	15.83	674.47
81.32	208.25		183.04		130.80		2,954.67
59.16		$137.50	58.50	35.00	87.95	7.95	3,331.01
73.44			45.40		132.44	70.65	4,110.72
38.76			40.00		40.10		985.95
71.40	353.00	200.00		8.50	107.53	21.00	3,901.99
140.76		250.00			202.10	325.50	4,813.51
52.36	126.00	50.00			116 50	20.25	2,014.85
92.48	188.42	160.00	70.00		150.07	250.00	4,214.76
57.00			548.60	23.12	60.00		3,279.23
125.00	647.50			115.00	250.09	1,308.21	8,517.43
93.84	377.75	91.45	122.20			27.00	2,921 97
277.04	1,222.00	250.00		835.42	266.66	202.40	12,589.89
226.84	784.00	250.00		75.89	218.34	779.93	8,958.57
31.96	126.50		122.64		36.78		1,186 99
150.96					205.60	5.00	5,261.02
59.16	127.50	112.50	198.00	39.00	75.40		2,485.81
76.42	105.00	150.00	309.40		83.87	111.17	4,340.40
173.82	636.00	225.00			190 75	966.29	8,798.39
172.26	617.50	243.75			315 94	14.50	9,744.09
70.72					135.10	200.00	3,480 64
116.28	427.60	180.00		465.94		44.55	5,560.29
136.00					261.50	9.90	4,423.07
180.20		233.33			236.60	175.50	8,644.19
170.67	417.34	216.00	470.01	15.58	319.80	22.89	7,207.98
27.10			8.50		65.25		1,093.84
40.93				8 50	40.00		1,137.47
462.70	900.00	250.00			158.00	2.19	7,545.85
127.84	576.78	307.69			189.70		5,702.01
974.16					872.25	6,052.03	51,247.22
63.92	102.00		48.00	74.00			1,648.40
148.82	521.00			75.60	172.75		3,984.14
706.52					968.00	831.19	30,831.10

TABLE

TOWNS.	Balance on hand.	Amount required by law.	Additional amount voted.	Raised for books and supplies.	Raised for tuition in secondary schools.	Flags and appurtenances.	Salaries of school officers.
Lancaster, town	$146.72	$1,496 38	$1,211.62	$300.00	$300.00	.....	$150.00
Lancaster, special	985.77	3,858.62	5,167.88	1,228.62	.....	.....	141.50
Landaff	169.21	945 00	800.00	125.00	50.00	$10.00	83.00
Langdon	249.64	480.00	370.00	50.00	.....	.....	30.00
Lebanon, town	1,458.29	2,219.98	2,500.00	250.00	400.00	.....	190.00
Lebanon, high	351.24	4,800.54	6,300.00	825.00	.....	.....	200.00
Lebanon, West	108.50	1,154.48	1,906.50	275.00	.....	2.00	85.00
Lee	377.23	952.50	100.00	100.00	250.00	.....	70.00
Lempster	52.24	472.50	300.00	60.00	200.00	.....	69.00
Lincoln	.....	3,855.00	2,000.00	.....	.....	.....	.....
Lisbon, town	532.53	1,000 00	500.00	.....	400.00	.....	.....
Lisbon, Sugar Hill	61.70	544.00	400.00	.....	.....	.....	.....
Lisbon, special	723.08	2,596.00	9,904.00	.....	.....	.....	.....
Litchfield	621.23	855.00	.....	35.00	400.00	.....	35.00
Littleton	4,599.74	6,315 00	14,885.00	1,400.00	.....	.....	.....
Londonderry	234.48	2,122.50	2,387.47	300.00	1,400.00	25.00	150.00
Loudon	.....	1,935.00	500.00	150.00	600.00	10.00	119.00
Lyman	157.42	517.50	600.00	.....	.....	.....	72.00
Lyme	343.54	1,582.50	850.00	250.00	450.00	.....	133.75
Lyndeborough	174.07	817.50	447.00	100.00	500.00	10.00	108.00
Madbury	18.00	975 00	.....	35.00	859.50	.....	60.00
Madison	79.95	622.50	871.00	75.00	54.00	.....	35.00
Manchester	.....	121,800.00	46,638.18	11,163.77	.....	38.21	450.00
Marlborough	157.38	1,785 00	2,000.00	400.00	.....	.....	124.50
Marlow	98.30	705.00	45.00	60.00	50.00	.....	76.00
Mason	130.11	570.00	85.00	80.00	200.00	.....	85.00
Meredith	3,344.93	3,165.00	1,700.00	300.00	400.00	.....	205.00
Merrimack	186.18	2,272.50	1,115.00	475.00	1,200.00	25.00	184.00
Middleton	420.19	360.00	300.00	75.00	24.00	.....	60.00
Milan	362.64	990.00	1,010.00	200.00	200.00	.....	150.00
Milford	567.29	5,962.50	8,937. 0	1,300.00	.....	.....	.....
Milton	350.42	2,737.50	1,000.00	500.00	.....	12.50	150.00
Mont Vernon	76.95	847.50	852.50	175.00	148.36	.....	.....
Monroe	222.67	652.50	450.00	70.00	450.00	.....	71.00
Moultonborough	.....	1,492.50	150.00	275.00	.....	.....	.....
Nashua	.....	42,712.50	51,000.00	.....	.....	.....	.....
Nelson	44.18	562.50	.....	36.00	72.00	.....	30.00
New Boston	829.62	2,512.50	1,370.41	320.00	.....	.....	250.00
Newbury	59.48	1,492.50	.....	75.00	250.00	.....	100.00
Newcastle	271.71	1,035.00	365.00	.....	.....	.....	.....
New Durham	924.55	667.50	180.00	35.00	.....	15.00	115.00
Newfields	495.80	622.50	403.50	.....	.....	.....	.....
New Hampton	672.07	1,057.50	650.00	150.00	500.00	.....	106.00
New Ipswich	1,140.55	1,627 50	872.50	.....	.....	.....	190.00
New London	481.46	2,010.00	895.00	200.00	800.00	20.00	80.00

No. V.—*Continued.*

Literary fund.	State appropriation.		Rebate from state for secondary school tuition.	Local funds.	Dog licenses.	Miscellaneous (current).	Total of current revenue.
	Schools.	Superintendent.					
$121.90	$540.56	.....	$952.00	$61.50	$42.30	.....	$5,322.98
313.30	1,295.00	.....	.....	157.50	111.50	$1,794.94	15,054.63
68.00	390.50	$200.00	.....	46.90	78.40	.....	2,966.01
36.04	106.98	75.00	4.00	.....	90.00	.....	1,491.66
137.38	.....	165.00	1,024.40	.....	137.27	3.46	8,485.78
297.09	.....	400.00	.....	.....	296.83	3,000.72	16,471.42
71.45	.....	150.00	.....	.....	71.38	119.69	3,944.00
44.10	.....	150.00	.....	.....	103.25	.....	2,147.08
55.76	240.00	.....	74.40	51.58	97.38	6.00	1,678.86
108.80	.....	.....	.....	.....	64.80	76.52	6,105.12
90.46	102.75	200.00	322.00	.....	35.69	10.40	3,193.83
42.20	26.25	200.00	.....	.....	166.64	46.00	1,486.79
188.30	801.00	200.00	.....	.....	74.29	716.49	15,203.16
31.28	.....	.....	.....	.....	34.80	.....	2,012.31
601.80	.....	.....	.....	.....	31.80	1,155.38	28,988.72
155.10	504.00	140.00	259.44	.....	247.60	60.31	7,985.30
97.92	.....	187.50	107.52	.....	156.40	.....	3,863.34
122.40	68.10	.....	.....	.....	95.69	205.18	1,838.29
138.72	278.00	.....	85.60	161.63	143.60	.....	4,417.34
74.80	211.50	.....	136.80	.....	129.90	.....	2,709.57
33.33	.....	.....	.....	20.00	95.10	.....	2,095.93
59.16	260.00	93.75	36.00	.....	80.10	.....	2,266.46
4,550.56	.....	.....	.....	.....	.....	.....	184,640.72
219.64	975.00	228.57	.....	582.41	153.50	62.73	6,688.73
46.92	.....	.....	.....	26.85	108.30	70.72	1,287.09
58.48	169.50	.....	.....	829 53	111.00	214.00	2,532 62
191.76	.....	.....	285.32	.....	.....	339.00	9,931.01
137.36	.....	.....	.....	615.79	167.22	150.67	6,528.72
44.20	107.00	.....	12.60	20.00	77.66	.....	1,500.65
145.52	388.08	.....	140.00	.....	112.11	145.86	3,844.21
501.84	.....	468.00	.....	.....	380.40	2,208.58	20,326.11
174.08	451.64	250.00	.....	1,809.49	234.25	156.53	7,826.41
46.92	.....	.....	.....	.....	124.75	.....	2,271.98
59.84	96.00	.....	.....	79.39	96.00	86.00	2,333.40
80.24	.....	.....	.....	.....	94.20	.....	2,091.94
1,997.16	.....	.....	.....	.....	852.08	3,093.50	99,655.24
31.96	.....	.....	.....	.....	40.20	20.00	836.84
100.32	.....	.....	.....	400.00	193.81	3.00	5,979 06
42.84	.....	.....	.....	35.00	90.39	.....	2,145.21
38.08	.....	.....	.....	.....	27.59	.....	1,737.38
72.76	.....	.....	.....	.....	157.64	3.75	2,171.20
53.72	213.90	.....	377.60	.....	80.20	188.35	2,435.57
104.04	144.40	.....	1,022.13	.....	171.60	37.30	4,615.04
108.80	81.09	.....	.....	908.28	101.38	1.20	5,031.30
91.80	.....	190.00	420.00	68.40	117.41	.....	5,374.07

TABLE

TOWNS.	Balance on hand.	Amount required by law.	Additional amount voted.	Raised for books and supplies.	Raised for tuition in secondary schools.	Flags and appurtenances.	Salaries of school officers.
Newington	$158.45	$810.00	$165 00	$100.00	$200.00	$5.00	$21.00
Newmarket	1,000.21	3,322 50	4,000.00	500.00		50.00	205.00
Newport	398.46	5,887.50	7,337.50	1,100.00			95.00
Newton	953.08	862.50	500.00	100.00		10.00	80.00
Northfield, town	184.39	*2,145.00	500.00	75.00	125.00	10.00	70.00
North Hampton	663.50	2,130.00	615.00	150.00	360.00		75.00
Northumberland	2,003.92	2,407.50	4,500.00	700 00			135.00
Northwood	870.61	1,635.00	100.00	225.00	1,050.00	15.00	100.00
Nottingham	34.96	907.50	500.00	150.00	75.00		100.00
Orange	160.39	225.00			20.00		47.00
Orford	297.27	1,102.50	1,470.00	175.00	400 00		180.00
Ossipee	236.17	1,912.50	1,000.00	350.00	200 00	50.00	250.00
Pelham	1,344.22	1,110.00	810.00	200.00	469.47		125.00
Pembroke	606.62	3,915.00	63.00	350.00	1,200.00	50.00	200.00
Peterborough	2,485.36	5,685.00	2,015.00	500.00			140.00
Piermont	47.91	990.00	1,200.00	200.00	400.00	20.00	190.00
Pittsburg		2,355.00	9,291.00				
Pittsfield	1,005.46	4,072.50	3,448.64	500 00		25.00	105.00
Plainfield	118.19	1,522.50	600.00	100.03	928.00		112.00
Plaistow	162.13	960.00	800.00	400 00	1,000.00		100.00
Plymouth	156.11	4,117.50	4,020 55	622.71			250.00
Portsmouth	1,264.22	28,410.00	20,590.00				
Randolph	349.66	360.00	100.00	25.00	75.00		30.00
Raymond	575.30	1,747.50	1,175.00	175.00	300.00	10.00	
Richmond	514.51	780.00	437.50		100.00		90.00
Rindge	214.45	1,762.50	947.57	125.00	300.00		104.00
Rochester	125.75	14,790.00	12,410.00	1,400.00			
Rollinsford	647.35	3,247.50	780.59	500 00	888.00		650.00
Roxbury	308.72	262.50					
Rumney	423.51	1,380.00	1,000.00	300.00	500.00	15.00	54.00
Rye	241.64	3,030.00		240.00	800.00	20.00	75.00
Salem	1,121.30	2,430.00	3,200.00	500.00	500.00	15.00	125.00
Salisbury	607.82	982 50	200.00	35.00	150.00		60.00
Sanbornton	151.85	1,477.50	307.50	130.00	650.00		260 00
Sandown	83.72	427.50	300.00	50.00	24.00		34.00
Sandwich	38.76	1,545.00	272.50	100.00	300.00		117.00
Seabrook	.03	735.00	1,065 00	200.00	24.00		125.00
Sharon		232.50	117.50				
Shelburne	476.68	855.00					
Somersworth		11,400.00	8,291.20	1,008.80			300.00
South Hampton	184.89	427.50	199.50	50.00	375 00		35.00
Springfield	224.23	652.50	295.00	50.00	100.00		50.00
Stark	245.00	802.50	1,100 00				100.00
Stewartstown		1,087.50	1,500.00		597.20	2.80	192 00
Stoddard	32.93	667.50.					55.00

* This is the amount required by the entire town including that part of Northfield in the Union District of Tilton.

No. V.—*Continued.*

Literary fund.	State appropriation.		Rebate from state for secondary school tuition.	Local funds.	Dog licenses.	Miscellaneous (current).	Total of current revenue.
	Schools.	Superintendent.					
$34.98		$100.00	$36.80		$82.80		$1,714.03
227.80	$589.72	400.00			153.90	$93.13	10,542.26
444.72		760.00			471.42	396.00	16,890.60
87.72		136.00			93.80		2,823.10
40.80		150.00		$21.00	70.85		3,392.04
55.08					100.00	10.50	4,159.08
316.88	1,317.00	316.67			77.20	103.05	11,877.22
123.76	138.83		635.60		169.97	599.00	5,662.77
69.36					95.20		1,932.02
19.04					41.28		512.71
108.12	264.00		34.28	91.66	143.40	376.57	4,642.80
153.00	361.50	250.00	112.80		126.70	600.00	5,602.67
108.50					303.04		4,470.23
242.08	1,036.75	333.34			229.00	332.75	8,558.54
226.44		300.00			464.07	614.44	12,430.31
82.28	133.71			170.31	77.40	196.13	3,707.74
83.82					64.20	72.08	11,866.10
240.04	811.54	375.00			203.10	720.54	11,506.82
120.36	190.50		82.80	49.95	188.52		4,012.85
130.56	578.00		110.60		243.86	350.14	4,834.69
92.40	1,028.80				242.12	42.84	10,573.03
1,226.04					1,281.74	2,053.09	54,825.09
18.36					28.00	39.36	1,025 38
127.16	594.00	200.00	245.60			20.00	5,169.56
33.32					64.56	15.00	2,034.89
76.84		155.00			172 80	23.40	3,881.56
909.84					844.75	1,282.36	31,762.70
228.76					148.80		7,091.00
					54.00		625.22
101.32	341.75		218.00		109.80		4,443.38
110.16		312.50			54.00	534.20	5,417.50
252.96	1,116.24	270.00	1,343.10	90.93	298.76	110.56	11,373.85
41.48	106.80				51.60	10.33	2,245.53
115.60			185.79		137.00	111.05	3,526.29
53.04					61.66	53.76	1,087.68
113.56				133.92	131.71		2,752.45
146.20	536.25	150.00	16.00		101.05	.40	3,098.93
10.88					12.00		372.88
36.72					27.60		1,396.00
433.16				35.30	306.30	537.62	22,312.38
35.36					21.27	180.92	1,509.44
55.44	191.91				46.87		1,665.98
93.16							2,340.66
138.32			764.66				4,282.48
23.80					98.20		877.43

TABLE

TOWNS.	Balance on hand.	Amount required by law.	Additional amount voted.	Raised for books and supplies.	Raised for tuition in secondary schools.	Flags and appurtenances.	Salaries of school officers.
Strafford	$516.10	$1,650.90	$600.00	$150.00	$600.00	.....	$125.00
Stratford	1,343.39	1,432.50	2,902.50	500.00	.....	.....	.....
Stratham	1,467.21	1,147.50	1,080.00	.....	.....	.....	75.00
Sullivan	94.76	510.00	240.00	30.00	150.00	.....	75.00
Sunapee	548.20	2,542.50	1,700.00	325.00	120.00	.....	122.00
Surry	39.31	495.00	.....	34.15	100.00	.....	45.00
Sutton	1,062.95	1,260.00	.....	125.00	500.00	$20.00	150.00
Swanzey	235.76	2,242.50	1,950.00	350.00	1,000 00	.....	200.00
Tamworth	67.69	1,417.50	1,300.00	550.00	375.00	.....	.....
Temple	161.99	502.50	97.50	70.00	300.00	.....	40.00
Thornton	.....	622.50	1,000.00	125.00	160.00	5.00	58.00
Tilton, town	711.62	1,822.24	550.00	125.00	300.00	10.00	102.00
Tilton, special	1,818.06	2,190.26	3,831.93	500.00	800.00	.....	25.00
Troy	446.73	1,642.50	1,600 00	350.00	150.00	.....	165.00
Tuftonboro	185.19	855.00	613.00	100.00	.....	.....	82.00
Unity	86.06	592.50	413.45	50.00	50.00	.....	56.00
Wakefield	150.14	2,685.00	1,902.00	275.00	250.00	25 00	160.00
Walpole	1,856.60	5,047.50	9,722 50	1,200.00	1,200.00	.....	21.00
Warner	357.71	2,715 00	550 00	250.00	.....	.....	250.00
Warren	453.79	1,042.50	597.50	150.00	200.00	15.00	90.00
Washington	238.64	682.50	100.00	125.00	.....	.....	45.00
Weare	144.09	2,602.50	1,000.00	300.00	450.00	50.00	250.00
Webster	516.90	1,237.50	.....	100.00	249.00	.....	90.00
Wentworth	14.45	832.50	948.00	100.00	200.00	25.00	100.00
Wentworth's Location	275.19	210.00	190.00	.....	.....	25.25	.....
Westmoreland	960.40	1,230.00	500.00	175.00	50.00	.....	110.00
Whitefield, town	254.83	775.12	500.00	.....	.....	.....	.....
Whitefield, special	925.97	1,609 88	3,500 00	700.00	.....	.....	100.00
Wilmot	1,229.55	787.50	270.00	.....	.....	.....	70.00
Wilton	1,471.58	2,797.50	2,852.50	580.00	.....	20.00	250.00
Winchester	1,908.53	2,947.50	5,827.50	550.00	.....	.....	300.00
Windham	765.22	1,372.50	475 00	75.00	500.00	.....	266.00
Windsor	11.49	90.00	25.00	.....	.....	.....	13.00
Wolfeboro	3,228.44	3,555.00	2,530.72	500.00	.....	.....	160.00
Woodstock	.....	1,455.00	2,990.00	250.00	.....	.....	150.00
Total	$142,521.62	$741,975.76	$577,928 56	$69,122.93	$58,211.69	$1,089.82	$26,442.08

No. V.—*Continued.*

Literary fund.	State appropriation.		Rebate from state for secondary school tuition.	Local funds.	Dog licenses.	Miscellaneous (current).	Total of current revenue
	Schools.	Superintendent.					
$91.80	.....	.....	$380.00	$60.00	$145.80	$6.25	$4,324.95
144.16	$831.00	$316.66	.....	.....	60.60	745.84	8,276.65
82.28	223.00	250.00	241.20	.....	80.75	2.40	4,649.34
62.00	.....	.....	16.00	.....	57.00	78.00	1,312.76
143.48	.....	.....	51.20	.....	182.64	111.92	5,846.94
28.38	.....	.....	.....	25.38	64.80	.85	832.87
61.88	.....	.....	109.92	5.75	.....	11.19	3,306.69
201.68	791.89	157.50	696.69	.....	320.40	2.50	8,151.92
112.00	204.50	136.65	.....	.....	136.20	72.00	4,371.54
38.76	.....	.....	21.30	.....	51.90	.....	1,283.95
74.80	138.00	.....	60.00	78.75	100.00	.....	2,422.05
66 57	.....	175.00	318.00	.....	54.67	46.61	4,281.71
270.03	.....	275.00	1,147 98	69.33	158.58	71.76	11,157.93
187.68	669.00	172.50	9.00	24.00	199.20	43.30	5,658.91
66.64	.....	145.86	.....	772.92	147.80	34.17	3,002.58
60.52	119.20	.....	8.40	191.08	110.60	.....	1,737.81
161.16	360.00	250.00	46.80	.....	136.20	184.02	6,585.32
478.72	2,086.00	390.00	.....	.....	300.95	.....	22,303.27
122.10	.....	.....	.....	36.00	155.47	138.50	4,574.78
85.00	233.48	.....	60.00	120.00	90.10	605.60	3,742.97
36.04	.....	.....	.....	.....	74.40	.....	1,301.58
178.84	428.93	.....	.....	158.50	.....	99.44	5,662.30
43.52	.....	.....	.....	.....	46.90	20.40	2,304.22
72.76	170.42	.....	96.00	.....	97.00	22.85	2,678.98
10.88	.....	.....	.....	.....	.....	.....	711.32
85.00	.....	260.00	.....	195.25	147.10	36.25	3,749.00
91.71	306.00	92.31	493.00	8.45	30.05	1,188.53	3,740 00
190.49	1,215.00	400.00	.....	.....	62.40	3,694.40	12,398.14
78.88	.....	.....	265.60	65.10	42.25	.....	2,808.88
210.80	969.96	.....	.....	536.20	232.80	453.50	10,374.84
557.94	1,159.27	262.50	.....	.....	224.40	121.96	13,859.60
74.12	.....	140.00	.....	100.91	163.00	.....	3,931.75
4.08	.....	.....	.....	.....	6.60	.....	150.17
212.84	.....	520.80	.....	2,992.38	241.00	27.10	13,968.28
153 68	429.22	.....	116.00	35.00	103.80	.....	5,682.70
$43,327.56	$49,174.57	$21,606.08	$26,369.09	$20,179.82	$38,647.15	$76,449.74	$1,893,046.47

TABLE No. V.—*Continued.*

(For the year ending July 15, 1913.)

EXTRAORDINARY REVENUE.

TOWNS.	Balance from last year for building.	Amount raised for repairs.	Amount raised for building.	Amount raised for district debt.	To pay interest.	Any other revenue.	Total for current and extraordinary revenue.
Acworth		$100.00					$1,901.30
Albany							1,133.87
Alexandria	$9.67	100.00					2,342.38
Allenstown		150.00					3,503.83
Alstead		350.00					3,719.53
Alton		950.00					8,312.93
Amherst	155.33	500.00					9,018.27
Andover		75.00					6,020.02
Antrim		325.00					9,613.40
Ashland, town							1,220.21
Ashland, special	2,575.83	800.00		$1,500.00	$700.00		15,119.76
Atkinson		125.00					2,932.20
Auburn	73.41	75.00					2,716.30
Barnstead	120.93	50.00					4,899.33
Barrington		150.00					3,405.03
Bartlett, town		150.00					2,557.23
Bartlett, special							3,004.44
Bath, town			$50.00				3,590.70
Bath, special		258.49		150.00	160.00		3,336.48
Bedford		150.00					4,632.72
Belmont							5,513.51
Bennington	17.30	125.00		117.00			2,908.92
Benton	44.76	100.00					910.89
Berlin							31,319.25
Bethlehem, town		100.00					3,163.31
Bethlehem, special		150.00					4,306.42
Boscawen		50.00					2,640.12
Bow		100.00					3,433.65
Bradford							3,786.64
Brentwood		225.00					2,704.34
Bridgewater							826.66
Bristol, town		100.00					1,513.02
Bristol, special		300.00					7,158.65
Brookfield	60.00	35.00					1,017.31
Brookline							1,689.51
Campton	135.50	100.00					4,638.40
Canaan, town	12.20	100.00	75.00				3,525.82
Canaan, special	279.88	50.00					2,631.83
Candia							3,024.19
Canterbury							3,204.88

TABLE No. V.—*Continued.*

TOWNS.	Balance from last year for building.	Amount raised for repairs.	Amount raised for building.	Amount raised for district debt.	To pay interest.	Any other revenue.	Total for current and extraordinary revenue.
Carroll	.....	$300.00	.....	.....	.....	.....	$4,285.16
Center Harbor	.....	75.00	.....	.....	.....	.....	2,390.73
Charlestown	.....	.....	.....	.....	.....	.....	8,921.08
Chatham	.....	50.00	.....	.....	.....	.....	1,314.58
Chester	$66.06	200.00	.....	.....	.....	.....	3,741.18
Chesterfield	.....	500.00	$500.00	$500.00	$25.00	.....	7,756.25
Chichester	.....	.....	.....	.....	.....	.....	2,830.50
Claremont	.....	.....	.....	.....	.....	.....	26,637.98
Clarksville	.....	50.00	.....	.....	.....	.....	1,258.73
Colebrook, town	.....	400.00	.....	.....	.....	.....	6,359.99
Colebrook, special	.....	200.00	.....	1,000.00	150.00	.....	15,262.51
Columbia	.....	350.00	.....	.....	.....	.....	5,072.32
Concord, town	.....	.....	.....	.....	.....	.....	6,242.81
Concord, Union	.....	.....	.....	7,000.00	5,705.00	.....	120,923.30
Concord, Penacook	.....	225.00	.....	.....	260.00	.....	15,848.16
Conway	3,204.43	2,100.00	2,500.00	.....	.....	$300.00	24,399.06
Cornish	52.27	100.00	.....	.....	.....	.....	3,471.75
Croydon	.....	.....	.....	.....	.....	.....	1,582.56
Dalton	200.00	50.00	400.00	.....	.....	5.75	2,800.41
Danbury	37.34	.....	.....	.....	.....	.....	2,551.90
Danville	.....	.....	.....	600.00	44.02	.....	2,795.80
Deerfield	.....	.....	.....	.....	.....	.....	3,317.11
Deering	.....	200.00	.....	.....	.....	.....	1,556.96
Derry, town	.....	.....	.....	1,500.00	.....	.....	21,748.16
Derry, special	.....	.....	.....	.....	.....	.....	2,737.81
Dorchester	.....	50.00	.....	.....	.....	.....	2,035.04
Dover	.....	3,852.74	.....	.....	2,100.00	.....	52,758.83
Dublin	.....	.....	.....	.....	.....	.....	5,572.77
Dummer	.....	150.00	.....	50.00	.....	.....	2,085.56
Dunbarton	.....	100.00	.....	.....	.....	.....	1,945.34
Durham	.....	450.00	.....	1,000.00	120.00	.....	8,715.77
East Kingston	.....	.....	.....	.....	.....	.....	2,008.46
Easton	.....	.....	.....	.....	.....	.....	1,140.25
Eaton	.....	50.00	.....	.....	.....	.....	1,758.74
Effingham	110.64	.....	.....	.....	.....	.....	2,764.89
Ellsworth	.....	.....	.....	.....	.....	.....	161.30
Enfield	.....	200.00	.....	.....	.....	.....	8,116.54
Epping	.....	.....	.....	.....	.....	.....	5,955.90
Epsom	.....	100.00	.....	.....	.....	.....	3,246.75
Errol	.....	.....	.....	.....	.....	.....	2,640.20
Exeter	.....	1,000.00	1,500.00	7,500.00	900.00	1,000.00	29,036.09
Farmington, town	.....	.....	.....	.....	.....	.....	2,943.82
Farmington, special	.....	1,340.00	.....	.....	.....	1,221.92	15,433.79
Fitzwilliam	100.00	.....	.....	.....	.....	.....	5,010.51
Francestown	.....	.....	.....	.....	.....	.....	2,530.39

TABLE No. V.—*Continued.*

TOWNS.	Balance from last year for building.	Amount raised for repairs.	Amount raised for building.	Amount raised for district debt.	To pay interest.	Any other revenue.	Total for current and extraordinary revenue.
Franconia							$2,818.92
Franklin							22,704.95
Freedom	$8.26	$50.00					1,273.87
Fremont							2,309.59
Gilford	53.13						3,067.16
Gilmanton	136.39	100.00					3,604.30
Gilsum							1,555.98
Goffstown, town							5,608.72
Goffstown, special				$100.00	$45.00	$100.00	7,050.11
Gorham					853.89		12,523.48
Goshen		50.00					1,054.00
Grafton	113.94						3,234.25
Grantham							674.47
Greenfield		100.00		500.00	34.46		3,589.13
Greenland							3,331.01
Greenville							4,110.72
Groton	7.44						993.39
Hampstead		100.00					4,001.99
Hampton		250.00					5,063.51
Hampton Falls		250.00					2,264.85
Hancock							4,214.76
Hanover, town							3,279.23
Hanover, special		200.00		1,675.00	1,415.00	100.00	11,907.43
Harrisville							2,921.97
Haverhill, town							12,589.89
Haverhill, Woodsville				1,600.00	290.88		10,849.45
Hebron				1,000.00	492.66		2,679.65
Henniker	5.51	200.00					5,466.53
Hill				720.00	86.40		3,292.21
Hillsborough, town							4,310.40
Hillsborough, special		450.00					9,248.39
Hinsdale							9,744.09
Holderness		125.00					3,605.64
Hollis							5,560.29
Hooksett							4,423.07
Hopkinton		250.00		1,200.00			10,094.19
Hudson		400.00					7,607.98
Jackson, town							1,093.84
Jackson, special		50.00					1,187.47
Jaffrey							7,545.85
Jefferson							5,702.01
Keene	1.35	1,800.00					53,048.57
Kensington		100.00					1,748.40
Kingston							3,984.14
Laconia							30,831.10

TABLE No. V.—*Continued.*

TOWNS.	Balance from last year for building.	Amount raised for repairs.	Amount raised for building.	Amount raised for district debt.	To pay interest.	Any other revenue.	Total for current and extraordinary revenue.
Lancaster, town		$150.00					$5,172.98
Lancaster, special		200.00		$1,100.00	$2,115.00		18,769.63
Landaff		200.00					3,166 01
Langdon				100.00			1,591.66
Lebanon, town				500.00	149.00		9,134.78
Lebanon, high				1,000.00			17,471.42
Lebanon, West		1,500.00					5,441.00
Lee							2,147.08
Lempster							1,678.86
Lincoln							6,105.12
Lisbon, town	$51.03	250.00					3,494.86
Lisbon, high							15,203.16
Lisbon, Sugar Hill							1,486.79
Litchfield							2,012.31
Littleton				1,000.00	1,000.00		30,988.72
Londonderry							7,985.30
Loudon							3,863.34
Lyman		10.00					1,878.29
Lyme		200.00		300.00			4,917.34
Lyndeborough		50.00					2,759.57
Madbury							2,095.93
Madison		50.00					2,316.16
Manchester	38,168.44					$564.80	223,373.96
Marlborough							6,688.73
Marlow		25.00					1,312.09
Mason		50.00					2,582.62
Meredith							9,931.01
Merrimack							6,528.72
Middleton	75.00						1,575.65
Milan		275.00					4,119.21
Milford				1,517.91			21,841.02
Milton	550.00	850.00					9,226.41
Mont Vernon							2,271.98
Monroe	7.50	50.00					2,390.90
Moultonborough							2,091.94
Nashua							99,655.24
Nelson		150.00					986.84
New Boston						25.00	6,004.66
Newbury							2,145.21
Newcastle							1,737.38
New Durham	104.23						2,275.43
Newfields				300.00			2,735.57
New Hampton	10.35	300.00					1,925.39
New Ipswich							5,031.30
New London		538.95					5,913.02

TABLE No. V.—*Continued.*

TOWNS.	Balance from last year for building.	Amount raised for repairs.	Amount raised for building.	Amount raised for district debt.	To pay interest.	Any other revenue.	Total for current and extraordinary revenue.
Newington		$100.00					$1,814.03
Newmarket		230.80					10,773.06
Newport							16,890.60
Newton		200.00					3,023.10
Northfield							3,392.04
North Hampton							4,159.08
Northumberland		1,850.00	$975.00	$1,500.00	$1,113.75		17,315.97
Northwood		200.00		500.00		$200.00	6,562.77
Nottingham	$26.00	200.00					2,158.02
Orange							512.71
Orford							4,642.80
Ossipee		300.00					5,902.67
Pelham		75.00					4,545.23
Pembroke		250.00		2,000.00	507.50		11,316.04
Peterborough		482.69					12,913.00
Piermont		150.00					3,857.74
Pittsburg		900.00	5,100.00	3,000.00	480.00		21,346.10
Pittsfield				500.00	10.11		12,016.93
Plainfield	76.13						4,088.98
Plaistow							4,834.69
Plymouth		919.52		3,140.00	1,954.72		16,587.27
Portsmouth							54,825.09
Randolph							1,025.38
Raymond							5,169.56
Richmond	37.39						2,072.28
Rindge							3,881.56
Rochester							31,762.70
Rollinsford		1,100.00					8,191.00
Roxbury							625.22
Rumney			1,000.00				5,443.38
Rye		1,800.00					7,217.50
Salem			674.88			90.00	12,138.73
Salisbury	46.67	25.00					2,317.20
Sanbornton		100.00					3,626.29
Sandown							1,087.68
Sandwich		150.00					2,902.45
Seabrook		100.00					3,198.93
Sharon							372.88
Shelburne							1,396.00
Somersworth							22,312.38
South Hampton						40.00	1,549.44
Springfield		200.00					1,865.98
Stark		100.00					2,440.66
Stewartstown		555.00			100.00		4,937.48
Stoddard							877.43

TABLE No. V.—*Continued.*

TOWNS.	Balance from last year for building.	Amount raised for repairs.	Amount raised for building.	Amount raised for district debt.	To pay interest.	Any other revenue.	Total for current and extraordinary revenue.
Strafford		$100.00					$4,124.95
Stratford		400.00	$3,000.00				11,676.65
Stratham							4,649.34
Sullivan		25.00					1,337.76
Sunapee							5,846.94
Surry		100.00					932.87
Sutton	$34.10	200.00					3,540.79
Swanzey							8,151.92
Tamworth		450.00			$64.00	$300.00	5,185.54
Temple							1,288.95
Thornton							2,122.05
Tilton, town		400.00					4,681.71
Tilton, special				$1,000.00	350.00		12,507.93
Troy							5,658.91
Tuftonboro							3,002.58
Unity		100.00					1,837.81
Wakefield		400.00		1,650.00			8,635.32
Walpole							22,303.27
Warner		250.00		550.00	532.00		5,906.78
Warren		500.00					4,242.97
Washington							1,301 58
Weare	60.36	300 00					6,022.66
Webster		50.00					2,354.22
Wentworth[cat'n							2,678.98
Wentworth's Lo-	18.33	100.00					829.65
Westmoreland							3,749.00
Whitefield, town		300.00		120.00			1,160.00
Whitefield, spec		300.00	300.00		1,100.00	900.00	14,998.14
Wilmot							2,808.88
Wilton							10,374.84
Winchester		100.00					13,959.60
Windham							3,931.75
Windsor							150.17
Wolfeboro							13,968.28
Woodstock							5,682.70
Total	$16,847.10	$11,353.19	$16,074.88	$17,489.91	$23,158.39	$1,847.47	$2,072,817.41

TABLE

(For the year ending

FINAN

Current Ex-

TOWNS.	Free text-books.	Maps and apparatus.	Supplies.	Teachers' salaries.	Superintendent.	School board. Services and expenses.
Acworth	$17.25	$12.00	$32.83	$1,073.10	.....	$60.00
Albany	39.17	.....	5.05	608.00	.....	55.43
Alexandria	53.05	.....	33.69	1,515.00	.....	90.00
Allenstown	168.26	.....	.....	1,433.95	$306.62	42.50
Alstead	18.60	.....	169.92	1,887.00	.....	112.90
Alton	150.00	25.00	176.93	4,183.26	666.65	75 00
Amherst	225.00	.....	185.04	3,542.00	*623.12	.....
Andover	190.00	.....	70.03	2,499.00	.....	253.28
Antrim	147.09	121.27	277.45	4,504.37	262.50	150.00
Ashland, town	15.49	14.00	.....	533.00	.....	30.00
Ashland, special	973.63	150.00	20.21	4,510.71	.....	.....
Atkinson	55.10	.....	.....	1,314.00	351.00	.....
Auburn	55.56	10.28	39.22	1,623.60	.....	90.00
Barnstead	75.00	1.50	49.42	2,206.55	.....	150.00
Barrington	.....	.....	52.83	1,799.00	.....	137.00
Bartlett, town	110.36	50.71	88.39	1,455.00	203.75	51.00
Bartlett, special	125.78	.....	138.30	1,521.80	202.37	10.00
Bath, town	43.76	.....	44.33	1,267.20	300.00	45.00
Bath, special	36.14	.....	27.81	1,168.00	150.00	18.00
Bedford	53.42	10.00	75.60	2,260.60	.....	155.00
Belmont	104.49	.....	131.20	2,524.00	400.00	70.25
Bennington	65.45	.....	44.31	1,155.00	.....	50.00
Benton	22.54	20.00	14.92	635.80	.....	25.00
Berlin	304.96	894.18	230.05	20,689.35	2,400.00	100.00
Bethlehem, town	44.39	.....	.....	1,077.00	.....	63.00
Bethlehem, special	147.63	41.43	86.08	3,021.60	.....	50.00
Boscawen	25.44	.....	23.52	1,090.00	.....	60.00
Bow	90.22	.....	65.00	2,254.00	.....	82.00
Bradford	153.00	.....	42.78	2,218.00	.....	90.00
Brentwood	72.57	.....	57.57	1,352.00	.....	36.00
Bridgewater	6.65	.....	7.40	428.00	.....	26.00
Bristol, town	38.36	.....	2.01	567.00	.....	60.00
Bristol, special	157.83	.....	41.77	2,697.00	55.03	.....
Brookfield	30.00	.....	20.00	676.00	.....	31.00
Brookline	67.35	1.50	.....	1,247.00	.....	60.00
Campton	200.41	.....	51.00	3,000.50	.....	95.00
Canaan, town	189.75	.....	32.63	2,190.25	.....	78.00
Canaan, special	31.72	.....	123.30	1,656.00	.....	50.85
Candia	84.92	.....	30.94	1,788.00	166.67	104.41
Canterbury	61.86	.....	73.14	1,338.75	350.00	90.00

* Clerk, $35.12.

No. VI.

July 15, 1913.)

CES.

penditures.

Truant officer.	Other district officers.	Tuition in secondary schools.	Tuition in elementary schools.	Flags and appurtenances.	Transportation of pupils.	Minor repairs.	Insurance.	Janitors.
$10.00	$8.00	$84.00	.....	$3.10	$306.30	$123.84	.....	$18.50
.....	10.00	.....	.....	.....	50.00	.....	.....	6.00
12.00	12.00	110.43	.....	6.90	27.00	28.51	.....	.....
112.00	13.00	127.00	$197.00	.....	.....	131.09	$10.00	153.00
4.50	10.00	80.00	19.00	.....	488.58	159.78	.....	38.07
8.50	25.00	.....	52.60	.....	570.70	87.33	.....	270.45
.....	62.00	936.15	14.00	.....	351.00	169.17	.....	244.15
18.00	.....	1,756.00	.....	.....	.....	.....	30.00	.....
10.00	35.00	.....	.....	.....	254.80	87.29	100.00	228.30
5.00	5.00	230.07	.....	.....	66.00	3.00	.....	5.50
35.00	.....	126.66	.....	.....	.....	594.26	50.00	570.50
.....	8.00	450.00	25.00	.....	82.50	88.49	.....	31.18
15.50	8.50	288.67	30.13	5.40	113.60	.....	.....	31.75
15.00	20.00	427.09	.....	.76	558.75	.....	.....	18.50
15.00	19.00	497.04	.....	.....	477.00	8.94	.....	.....
20.00	.....	60.00	177.50	5.00	66.00	25.99	.....	40.50
10.00	.....	256.00	.....	.....	.....	44.51	.....	68.00
6.00	10.00	462.52	32.00	.....	.....	20.88	.....	28.50
5.00	5.00	.....	17.17	.....	.....	41.09	.....	65.00
10.00	15.00	527.10	.....	.....	306.00	181.36	.....	26.50
24.65	23.50	778.39	.....	.....	555.80	91.98	.....	191.00
10.00	10.00	279.77	.....	2.58	.....	.....	30.00	78.75
5.00	5.00	38.00	34.50	.....	18.00	.....	.....	.....
623.38	.....	.....	25.00	.....	1,052.00	296.03	11.25	1,827.68
5.00	16.00	751.50	466.33	.....	793.00	234.86	.....	38.75
10.00	13.00	.....	.....	.....	.....	.....	43.50	216.00
7.50	10.00	538.88	.....	.....	295.90	51.32	15.00	42.25
15.00	12.00	379.88	.....	3.00	.....	7.84	.....	38.75
6.00	19.00	440.62	74.50	10.00	42.75	.....	30.00	57.25
5.00	10.00	348.00	.....	.....	255.79	.....	.....	6.65
2.00	4.00	80.00	.....	.....	.....	.....	.....	.....
.....	5.00	26.66	12.00	.....	156.00	.....	.....	.....
7.00	20.00	210.01	.....	.....	.....	39.84	.....	351.18
3.00	6.00	24.00	.....	.....	10.00	36.00	.....	900.00
10.00	12.00	228.18	.....	4.75	.....	10.13	.....	55.80
10.00	15.00	1,060.00	.....	4.55	109.00	96.06	52.00	20.75
15.00	15.00	144.76	93.25	28.96	282.40	.....	.....	56.00
9.00	21.50	166.66	10.50	.....	.....	176.91	.....	90.00
30.00	25.50	197.78	.....	.....	362.50	16.40	.....	15.75
22.00	20.00	106.67	20.00	.....	603.95	51.15	.....	18.20

TABLE

TOWNS.	Free text-books.	Maps and apparatus.	Supplies.	Teachers' salaries.	Superintendent.	School board. Services and expenses.
Carroll	$67.19		$192.92	$1,785.00		$139.00
Center Harbor	44.18		82.94	1,039.60		45.00
Charlestown	42.36		331.77	3,715.96	$390.00	
Chatham	23.26		22.53	830.00		25.00
Chester	51.51		45.41	2,080.70		100.00
Chesterfield	50.85		129.75	1,820.00		105.00
Chichester	18.76		42.56	1,900.00	312.50	75.00
Claremont	608.87		844.40	14,674.77	1,560.00	
Clarksville	32.50		15.41	819.00		14.00
Colebrook, town	304.37		28.19	2,465.00	600.00	56.00
Colebrook, special	551.76	$232.57	196.98	6,139.27	600.00	
Columbia	75.00	15.00	65.61	2,090.10	578.33	69.00
Concord, town	158.72			2,774.25	566.60	200.00
Concord, Union	2,421.04	189.94	1,022.45	70,058.29	*2,825.00	250.00
Concord, Penacook	335.87	5.95	421.61	7,807.05	1,020.81	
Conway	398.67	112.55	201.74	9,256.39	891.38	150.00
Cornish	134.70		30.00	2,623.00		145.25
Croydon	105.20			587.70		36.00
Dalton	55.60		33.05	1,366.00		75.00
Danbury	10.25		35.71	1,295.10		60.00
Danville	58.38	12.00	18.91	1,058.00		40.00
Deerfield	93.01	50.60	23.05	2,061.00		75.00
Deering	41.62	1.75	756.00			70.00
Derry, town	118.11	20.65	214.00	8,970.30	700.00	90.00
Derry, special	30.99		26.59	906.00	140.00	10.00
Dorchester			46.61	930.00		40.72
Dover	1,335.69	24.31	918.41	29,083.25	†2,100.00	100.00
Dublin	64.54		74.31	2,197.68	242.50	117.37
Dummer	74.54		16.70	881.00		65.00
Dunbarton	26.60	19.56	9.59	1,094.00		66.50
Durham	115.22	52.31	129.65	2,646.97	500.00	50.00
East Kingston	21.52		22.82	635.00		‡80.00
Easton	3.70	9.00	16.14	548.00		23.00
Eaton	51.78		23.02	995.80		61.00
Effingham	47.95		76.35	1,928.00		55.00
Ellsworth				130.00		
Enfield	246.00	95.05	91.75	4,243.99	310.00	105.00
Epping	384.86	50.00	75.00	3,484.25	125.00	45.00
Epsom	73.15		50.00	1,764.00	200.00	45.00
Errol	38.69		57.81	729.49	600.00	31.00
Exeter	155.09		368.42	11,059.70		280.72
Farmington, town	41.12		31.01	1,578.00		130.00
Farmington, special	96.69	21.60	164.93	6,595.88	240.00	148.55
Fitzwilliam	77.72		115.43	2,559.43	359.37	75.00
Francestown		131.60	16.52	1,024.10		71.90

* Clerk, $525.00. † Clerk, $100.00. ‡ Two years.

No. VI.—*Continued.*

Truant officer.	Other district officers.	Tuition in secondary schools.	Tuition in elementary schools.	Flags and appurtenances.	Transportation of pupils.	Minor repairs.	Insurance.	Janitors.
$6.00	.....	$320.33	.....	.....	$51.00	$28.16	.....	$42.00
3.00	$7.00	476.68	.....	.....	120.00	68.96	.....	50.05
35.00	.....	.....	.....	.....	1,139.08	41.55	$27.50	359.30
.....	5.00	95.56	$42.00	$3.10	36.06	2.00	.....	.....
6.00	1.00	496.00	7.25	10.85	214.10	.....	.....	54.20
15.00	20.00	.....	.....	.....	919.00	.....	.....	60.00
14.00	10.00	216.87	.....	.....	7.50	36.13	.....	45.50
98.57	50.00	.....	.....	.....	3,101.06	1,392.35	.....	1,365.03
2.00	.....	32.00	5.00	.....	18.00	.....	.....	19.00
10.00	.....	1,263.11	250.00	.....	255.44	65.32	.....	36.80
.....	.....	.....	.....	.....	.....	76.68	167.00	583.00
.....	425.32	.....	.....	.....	121.00	160.00	.....	59.85
7.50	27.00	1,151.67	141.75	.....	121.00	228.58	.....	75.80
554.35	400.00	.....	.....	.....	416.50	5,115.09	742.00	6,845.64
100.00	50.00	.....	.....	.....	.....	341.37	32.50	800.00
22.00	25.00	1,087.00	.....	.....	1,579.00	656.80	160.00	911.95
10.00	.....	.....	.....	.....	102.00	152.00	.....	34.00
8.00	5.00	122.75	.....	.....	22.00	16.88	.....	15.50
7.50	19.00	253.00	.....	.....	.....	.....	28.00	28.50
15.00	20.00	472.00	108.35	.....	.....	.....	.....	.....
5.00	.....	377.00	.....	.....	.....	.....	45.00	41.65
10.00	6.00	127.00	.....	22.00	338.00	92.17	.....	.....
.....	.....	125.50	26.00	.....	82.60	14.00	.....	.....
62.62	35.00	2,934.00	94.00	1.45	248.00	348.46	236.25	763.00
2.00	.....	940.00	.....	4.40	.....	276.53	.....	100.80
5.00	.....	106.66	42.25	.....	108.00	57.80	.....	11.00
600.00	10.00	.....	.....	.....	2,105.30	.....	964.25	2,994.25
.....	12.00	150.00	18.00	.....	158.25	126.21	.....	86.67
3.00	15.00	.....	.....	.....	178.05	22.72	.....	33.15
.....	11.00	92.45	40.95	5.56	281.35	32.49	.....	32.50
10.00	25.00	1,164.32	.....	1.00	40.50	219.42	46.00	444.91
5.00	.....	601.00	65.00	.....	242.69	8.38	.....	.....
1.00	6.00	.....	5.00	4.50	25.50	.....	.....	18.05
.....	8.00	34.41	31.00	.....	120.00	55.78	.....	7.50
6.00	5.00	216.66	.....	9.75	7.50	50.80	.....	.....
.....	.....	.....	.....	.....	12.00	.....	.....	.....
‡40.00	17.00	.....	29.25	4.80	147.25	101.86	180.00	270.00
43.00	.....	.....	.....	.....	1,113.30	125.00	.....	163.25
15.75	.....	723.73	77.00	.....	192.33	.....	.....	14.70
.....	.....	82.22	.....	.....	560.00	53.02	.....	41.10
122.00	116.00	.....	.....	.....	597.20	359.62	334.45	1,121.17
10.00	15.00	235.36	25.00	.....	481.00	137.72	.....	20.75
45.00	40.00	.....	.....	3.85	.....	.....	.....	961.00
20.00	19.50	265.00	.....	1.00	774.01	188.70	25.20	132.65
10.00	.....	403.33	.....	.....	463.00	53.92	.....	38.45

‡ Two years.

TABLE

TOWNS.	Free text-books.	Maps and apparatus.	Supplies.	Teachers' salaries.	Superintendent.	School board. Services and expenses.
Franconia	$100.00		$89.00	$1,746.00		$48.00
Franklin	817.00		600.30	13,414.61	$1,422.64	
Freedom			26.35	655.00		45.00
Fremont	185.78		23.57	1,542.50		33.00
Gilford	33.18	$37.77	90.00	1,937.00		93.00
Gilmanton	190.59		22.60	2,129.00		96.00
Gilsum	20.99		32.20	857.00		55.00
Goffstown, town	121.51			2,467.50		80.17
Goffstown, special	14.12	33.67	427.77	3,486.65		78.34
Gorham	272.08	256.77	265.02	7,432.50		100.00
Goshen	8.58		15.79	715.40		32.00
Grafton	50.20			1,837.00		75.00
Grantham	17.20	3.20	10.78	477.55		30.00
Greenfield			166.31	1,494.50		80.00
Greenland	46.69		54.11	1,412.00	237.50	30.00
Greenville	108.15	42.00	92.67	1,621.00		75.00
Groton			25.49	543.00		32.65
Hampstead	215.11		71.35	1,992.07	200.00	96.48
Hampton	151.54		157.67	2,635.75	500.00	50.00
Hampton Falls	79.36			1,083.00	100.00	40.00
Hancock	181.55		61.77	2,387.00	437.00	80.00
Hanover, town	15.00		58.87	1,951.50		122.00
Hanover, special	452.41			8,149.06		145.00
Harrisville	89.25		89.25	1,470.80	301.50	69.50
Haverhill, town	175.71		232.19	7,123.35	500.00	100.00
Haverhill, Woodsville	293.78	191.47	187.69	5,229.02	541.67	50.00
Hebron			31.76	490.00		30.00
Henniker	206.14		80.87	4,037.66		67.24
Hill	91.92		28.88	962.80	220.00	20.00
Hillsborough, town	52.82		22.60	1,670.33	191.44	120.00
Hillsborough, special	203.56	12.70	328.77	5,177.44	368.75	75.00
Hinsdale	200.78		258.30	5,572.67	616.25	187.00
Holderness	348.26		37.73	2,189.22		70.00
Hollis	174.17		150.00	2,733.25	360.00	80.00
Hooksett		183.41	84.70	2,049.60		75.00
Hopkinton	227.26		203.75	5,452.53	483.33	178.00
Hudson	130.81		79.98	2,635.00	432.00	84.15
Jackson, town			10.50	908.00		35.00
Jackson, special		109.29		684.50		20.00
Jaffrey	148.74	17.75	243.29	4,056.00	*510.00	60.00
Jefferson	137.17	78.87	115.81	4,198.50	615.00	
Keene	888.82	108.83	916.36	28,517.86	1,200.00	240.00
Kensington	15.42		20.15	825.00		35.00
Kingston	100.00		111.67	1,887.60		80.00
Laconia	1,132.90	104.00	606.04	20,440.81	1,650.00	90.00

* Clerk, $10.00

No. VI.—*Continued.*

Truant officer.	Other district officers.	Tuition in secondary schools.	Tuition in elementary schools.	Flags and appurtenances.	Transportation of pupils.	Minor repairs.	Insurance.	Janitors.
$5.00	....	.....	.....	.....	$480.00	....	.....	$100.00
210.00	.....	.....	$37.50	.....	1,684.35	$294.59	$80.00	1,017.33
5.00	.....	$110.00	.....	.....	32.25	21.91	.....	.....
15.00	$5.00	356.00	.....	$1.36	.....	41.82	.....	... .
10.00	13.00	180.00	....	3.15	172.95	53.13	.....	4.50
7.00	15.00	307.93	.....	9.00	268.75	310.55	.....	22.50
12.00	7.00	34.00	.....	.27	237.33	12.39	.....	48.05
.....	.....	929.84	183.15	.....	208.50	88.71	.....	65.75
.....	....	.....	.....	... .	..... .	73.75	102.00	362.15
62.50	39.00	.....	.....	.....	.....	96.95	305.50	531.45
8.00	4.00	40.00	6.00	.....	.....	28.07	... .	17.25
12.00	13.00	311.33	....	.....	. .....	.....	.....	.....
.....	5.00	.....	....	.....	....	15.00	... .	32.25
.....	5.00	446.07	.....	2.86	.....	12.00	98.70	.....
3.00	12.00	405.00	.....	2.50	272.13	.....	... .	100.00
19.55	15.00	386.00	204.12	.....	366.60	324.98	60.00	248.00
7.50	9.00	20.00	.....	.....	.....	9.76	.....	.....
6.50	.....	....	.....	.....	121.80	94.77	40.00	63.89
8.50	25.00	.....	....	.....	579.40	132.85	.....	81.45
... .	10.00	171.00	.....	.....	195.30	17.24	.....	36.14
9.00	12.00	423.67	....	4.95	16.75	142.48	.....	....
15.00	17.00	706.99	113.50	1.00	117.00	56.27	.....	37.85
.....	....	....	... .	.....	.....	156.86	151.04	510.30
15.00	.....	318.00	.....	.....	.....	105.78	.... ..	143.25
25.00	25.00	.....	83.50	.....	177.78	542.68	100.00	529.03
18.00	20.00	.....	.....	.....	.....	6.05	.....	369.50
5.00	11.00	233.33	21.00	.. ....	.....	... .	1.75	7.75
12.00	25.00	.....	15.50	.....	166.25	227.56	.....	263.90
8.00	12.50	249.99	77.80	.....	100.20	91.29	82.00	87.25
12.00	14.50	508.00	120.50	.....	615.75	25.71	12.00	61.12
10.00	.....	.....	.....	.....	.....	.....	.....	480.00
25.00	5.00	.....	244.83	.....	77.29	52.52	94.50	144.55
15.00	13.00	353.28	41.00	19.58	115.00	26.50	.....	2.00
.....	22.00	40.00	48.00	.....	839.75	182.15	.. ....	158.00
28.33	12.00	567.40	.....	.....	312.65	.....	.....	60.00
19.00	44.00	.....	.....	.....	885.61	170.59	30.00	286.00
15.00	17.12	1,731.50	....	10.95	652.35	261.77	.....	233.75
.....	.....	.....	.....	.....	.....	... .	.....	24.60
3.75	.....	.....	.....	.....	.....	5.00	20.00	.....
33.00	15.00	.....	.....	8.60	791.75	116.02	.....	360.00
16.25	.....	.....	31.00	..... .	296.25	30.35	.....	177.20
68.82	.....	....	.....	3.40	675.80	1,799.60	31.30	2,187.53
3.00	12.75	497.00	.....	.....	.....	132.19	.....	21.90
10.00	17.00	936.00	.....	.....	.....	141.75	.....	44.19
425.00	.....	.....	....	25.00	786.09	375.00	250.00	1,691.00

TABLE

TOWNS.	Free text-books.	Maps and apparatus.	Supplies.	Teachers' salaries.	Superintendent.	School board. Services and expenses.
Lancaster, town	$90.08	$60.50	$82.15	$3,001.50		$120.00
Lancaster, special	646.56	36.21	792.66	8,142.73		100.00
Landaff	168.42		35.40	1,460.00	$400.00	35.00
Langdon	11.54	2.00	7.22	617.50	112.50	16.00
Lebanon, town	125.09	13.00	34.98	2,623.00	330.00	150.00
Lebanon, high school	445.19	149.00	233.23	9,101.68	800.00	134.03
Lebanon, West	194.45	31.50	107.05	3,709.50	300.00	75.00
Lee	63.60		26.05	1,180.00	300.00	60.00
Lempster	24.44		22.50	1,155.00		65.00
Lincoln	532.92		401.17	4,205.63		
Lisbon, town	62.72		27.32	1,431.50	400.00	40.55
Lisbon, high school	437.79	130.95	237.78	5,442.05	*410.00	25.00
Lisbon, Sugar Hill	44.69		20.69	659.00	400.00	
Litchfield	.99		35.14	402.00		35.00
Littleton	817.42	224.02	500.98	14,526.18	1,370.81	
Londonderry	98.65		104.00	2,972.00	280.00	158.91
Loudon	74.00		13.75	1,976.75	225.00	65.00
Lyman			62.15	1,313.50		50.00
Lyme	205.24			2,532.10		40.00
Lyndeborough	130.12			1,557.10		100.00
Madbury	16.48			876.00		45.00
Madison	62.98		43.72	1,277.10	204.74	30.00
Manchester	4,834.83	782.98	3,714.80	129,250.58	†3,800.00	300.00
Marlborough	130.21	5.47	130.21	4,975.31	‡448.63	25.00
Marlow	82.52		10.09	711.50		65.00
Mason	143.32			1,319.80		75.00
Meredith	527.11		165.15	3,756.80		150.00
Merrimack	175.00	50.70	225.00	3,222.77		165.00
Middleton	25.38	31.20	10.56	954.00		47.00
Milan	83.54	57.55	62.67	2,446.00		135.00
Milford	987.71		361.00	12,530.19	936.00	200.00
Milton	399.66	31.76	241.54	3,794.64	500.00	108.60
Mont Vernon	54.31		143.01	1,370.00		50.00
Monroe	43.57		25.69	1,123.50		70.00
Moultonborough	184.17			124.00		76.00
Nashua	2,714.28		2,165.55	63,745.00	§2,700.00	
Nelson		10.00	21.11	540.00		27.00
New Boston	100.05		89.92	3,542.26		195.00
Newbury	41.75		34.82	1,335.50		83.50
Newcastle	26.92		83.21	872.71		31.26
New Durham	64.20			1,252.50		80.00
Newfields	138.92		1.71	830.50		55 75
New Hampton	42.59		83.99	2,069.50		90.00
New Ipswich	92.74	57.23	9.00	1,521.00		157.94
Newington	18.72	26.02	51.25	893.00	200.00	21.00

* Clerk, $10.00. † Clerk, $800.00 ‡ Clerk, $17.91. § Clerk, $500.00.

No. VI.—*Continued.*

Truant officer.	Other district officers.	Tuition in secondary schools.	Tuition in elementary schools.	Flags and appurtenances.	Transportation of pupils.	Minor repairs.	Insurance.	Janitors.
$10.00	$12.00	$958.00	$260.00	.....	.....	$2.50	.....	$71.85
15.00	23.50	.....	.....	.....	.....	102.16	$740.34	628.10
10.00	28.00	213.97	.....	.....	$8.10	.....	.....	58.00
5.00	5.00	.....	.....	.....	.....	.....	9.00	54.70
30.00	10.00	1,214.20	64.72	.....	307.75	217.69	45.00	101.55
40.00	25.00	.....	.....	.....	.....	418.04	.....	1,080.00
5.00	10.00	.....	.....	.....	.....	17.76	.....	374.15
5.00	5.00	281.86	.....	.....	.....	.....	.....	16.00
4.00	.....	150.00	.....	.....	.....	19.05	.....	24.05
.....	.....	.....	.....	.....	.....	863.08	.....	.....
.....	11.00	606.46	.....	.....	100.50	.....	.....	54.50
8.00	16.87	.....	.....	.....	.....	454.48	.....	609.48
2.50	.....	.....	.....	.....	.....	.....	10.00	30.00
.....	.....	266.50	11.50	.....	160.00	15.35	.....	15.95
80.00	72.00	.....	.....	.....	801.00	895.00	263.00	1,452.60
5.00	11.00	1,429.18	170.45	.....	.....	235.53	4.60	56.25
25.00	29.00	670.70	59.50	.....	235.50	72.65	.....	73.50
15.00	7.00	27.00	15.00	$5.00	.....	.....	.....	35.25
13.00	20.00	355.79	.....	17.66	69.80	.....	8.00	107.93
8.00	5.00	372.64	.....	9.45	144.00	32.10	.....	44.00
.....	15.00	825.00	134.00	.....	.....	.....	.....	.....
11.00	7.00	110.00	112.44	1.50	184.00	25.98	.....	11.00
2,200.00	.....	.....	.....	38.21	750.20	.....	453.16	12,474.90
32.00	.....	.....	.....	.....	96.99	48.49	3.26	321.22
5.00	11.00	30.00	.....	.....	215.36	13.55	.....	18.75
.....	10.00	147.25	19.00	.....	502.60	71.98	.....	42.75
15.00	55.00	420.97	.....	.....	478.90	81.61	37.50	283.85
5.00	19.00	513.00	48.00	19.50	499.61	243.78	.....	234.30
5.00	6.00	18.00	.....	.....	.....	.....	.....	.....
15.00	15.00	237.50	.....	3.50	204.40	185.50	.....	130.00
82.50	50.00	.....	82.50	.....	71.50	828.97	21.00	1,091.33
15.00	41.00	.....	1.40	.....	710.50	815.15	.....	392.13
.....	10.00	250.42	.....	.....	138.75	115.99	.....	72.90
5.00	.....	296.00	.....	.....	309.50	20.00	.....	36.50
.....	10.00	73.33	.....	.....	2.20	56.20	.....	15.00
950.00	.....	.....	.....	86.85	337.50	5,121.35	.....	9,291.02
.....	3.00	72.00	.....	.....	18.36	6.80	.....	11.78
25.00	30.00	.....	93.15	13.14	93.50	44.66	.....	161.00
6.50	13.50	189.49	.....	.....	294.50	7.42	.....	35.50
10.00	19.00	210.00	.....	1.25	.....	12.47	.....	63.97
15.00	15.00	70.48	.....	1.25	120.00	26.75	.....	.....
.....	13.50	512.00	.....	.....	217.50	1.00	.....	90.00
10.00	10.00	853.13	.....	.....	.....	.....	.....	.....
30.00	10.00	508.00	.....	9.45	785.28	132.14	.....	46.00
.....	.....	200.00	.....	3.00	.....	81.45	.....	53.00

TABLE

TOWNS.	Free text-books.	Maps and apparatus.	Supplies.	Teachers' salaries.	Superintendent.	School board. Services and expenses.
New London	$150.00		$135.35	$2,021.00	$342.00	$55.00
Newmarket	285.70		173.40	6,563.00	800.00	109.00
Newport	1,353.95			9,861.83	*1,529.96	75.00
Newton	60.31	$6.75	68.13	1,356.00		68.00
Northfield	26.87		80.36	1,004.00	300.00	50.00
North Hampton	31.13	18.07	155.66	1,747.45		109.16
Northumberland	278.01	239.25	389.19	6,332.25	619.98	100.00
Northwood	117.28	98.42	42.31	2,338.20		90.00
Nottingham			55.75	1,469.00		78.00
Orange	5.50		8.98	292.00		32.00
Orford	93.53	32.40	64.48	2,076.50		130.00
Ossipee	194.43		190.32	2,939.80	250.00	160.00
Pelham	130.68	86.32		1,796.00		80.00
Pembroke	153.87		305.23	3,834.20	663.85	120.00
Peterborough	243.79	39.20	286.74	6,693.14	350.00	85.97
Piermont	47.75		133.10	2,371.00		80.00
Pittsburg	89.60			2,502.00		95.00
Pittsfield	387.20		186.06	5,914.50	750.00	50.00
Plainfield	46.40		53.63	2,299.50		100.00
Plaistow	86.85			2,114.70		75.00
Plymouth	302.76		319.75	8,162.00		175.00
Portsmouth	1,151.35	303.30	1,127.05	37,778.44	†2,292.50	
Randolph	12.70		3.75	560.00		19.00
Raymond	200.37		95.94	2,576.00	373.34	35.00
Richmond	8.64		10.99	898.00		90.00
Rindge	80.58		55.11	1,658.00	311.20	74.90
Rochester	1,272.26	14.05	672.06	19,076.11	1,200.00	
Rollinsford	230.92		224.81	4,294.10		245.00
Roxbury						21.00
Rumney	61.74	72.00	96.81	1,957.00		54.00
Rye	84.27		155.98	2,061.30	560.00	60.00
Salem	313.50			5,133.20	540.00	99.58
Salisbury	49.50	17.50	18.35	1,127.50		50.00
Sanbornton	111.49		19.01	2,117.00		231.72
Sandown	44.90		10.00	750.00		27.00
Sandwich	90.77		37.48	2,054.00		117.00
Seabrook	49.84	5.75	54.20	2,080.20	325.00	65.00
Sharon	4.00		2.00	320.00		8.00
Shelburne			75.89	1,256.00		20.00
Somersworth	630.16		951.21	14,113.15	‡1,585.25	
South Hampton	10.92		14.37	826.50		30.00
Springfield	50.00		20.04	1,303.00		45.00
Stark	19.79		7.48	916.00		75.00
Stewartstown	200.00		100.00			170.00
Stoddard	61.90			491.10		50.00

* Clerk, $10.00. † Clerk, $550.00 ‡ Clerk, $135.25.

No. VI.—*Continued.*

Truant officer.	Other district officers.	Tuition in secondary schools.	Tuition in elementary schools.	Flags and appurtenances.	Transportation of pupils.	Minor repairs.	Insurance.	Janitors.
$10.00	$15.00	$1,123.00	.....	.....	$618.30	$125.85	$100.00	$213.00
100.00	.....	.....	.....	$30.80	115.90	474.41	32.41	574.74
30.00	10.00	.....	.....	.....	902.15	286.30	112.00	1,024.70
4.00	13.00	390.00	$10.25	.....	67.00	30.47	.....	208.45
10.00	10.00	221.68	97.20	3.18	6.00	21.77	.....	30.20
.....	.....	136.00	.....	1.51	169.05	112.57	20.00	74.00
37.00	.....	.....	.....	.....	1,198.10	310.29	211.00	610.00
12.00	.....	1,202.00	.....	.....	646.00	73.26	.....	92.58
10.00	17.00	15.00	.....	7.50	103.50	23.18	.....	.....
5.00	4.00	18.50	73.50	1.00	.....	.....	.....	.....
25.00	20.00	243.02	.....	.....	912.75	69.59	.....	152.00
39.00	62.50	229.50	.....	4.25	462.00	341.60	.....	85.85
.....	20.00	469.47	.....	.....	111.30	74.73	.....	47.00
100.00	18.00	1,500.00	.....	14.85	179.60	30.92	63.00	325.00
1.00	15.00	.....	.....	1.00	396.40	275.00	50.00	411.95
.....	10.00	174.92	.....	.....	281.00	39.41	.....	65.25
15.00	.....	132.00	.....	80.00	30.00	150.00	.....	250.00
45.00	16.00	.....	6.00	20.93	483.60	276.48	.....	530.75
10.00	12.00	928.00	185.63	.....	22.50	76.13	.....	48.44
20.00	24.00	727.67	.....	.....	443.30	250.00	30.00	225.00
25.00	50.00	.....	.....	8.30	106.75	.....	.....	646.12
159.97	.....	.....	.....	20.25	.....	813.14	40.00	3,700.29
.....	7.00	36.00	.....	.....	.....	110.85	.....	24.25
31.29	20.00	497.00	191.30	6.30	615.00	45.20	.....	141.80
7.00	8.00	95.00	5.00	.....	149.18	15.53	.....	44.15
7.50	29.00	322.00	.....	.....	652.80	25.60	.....	45.30
.....	.....	.....	103.92	22.05	4,626.75	732.04	404.25	2,259.95
55.00	.....	216.00	.....	.....	256.59	93.16	.....	357.25
.....	.....	139.08	.....	.....	186.06	.....	.....	.....
10.00	.....	390.17	.....	.....	597.30	.....	75.00	20.48
5.00	10.00	740.00	.....	.....	46.50	43.25	.....	178.05
19.50	25.00	1,581.09	.....	18.65	494.50	520.37	90.42	660.83
.....	10.00	135.33	.....	.....	.....	49.18	.....	8.48
13.00	15.00	793.35	.....	.....	86.00	119.05	.....	.....
6.00	6.00	24.00	.....	4.25	40.00	7.25	.....	4.00
12.66	.....	266.68	.....	.....	87.00	94.90	.....	.....
53.75	15.00	40.00	35.25	.....	100.00	79.54	.....	21.50
1.50	.....	.....	.....	.....	.....	.....	.....	.....
3 00	.....	.....	.....	.....	.....	.....	.....	21.20
200.00	.....	.....	.....	.....	704.00	220.01	412.50	1,850.00
5.00	5.00	288.00	.....	.....	.....	8.02	40.00	26.00
5.00	5.00	161.77	.....	.....	.....	116.87	.....	5.25
10.00	13.00	90.00	.....	2.50	174.50	28.09	.....	49.25
22.00	26.00	736.00	.....	2.50	240.00	380.00	30.00	170.00
5.00	.....	10.00	89.00	.....	69.93	.....	.....	13.50

TABLE

TOWNS.	Free text-books.	Maps and apparatus.	Supplies.	Teachers' salaries.	Superintendent.	School board. Services and expenses.
Strafford	$113.70		$33.34	$2,537.00		$93.00
Stratford	213.96	$57.52	203.67	4,679.96	$612.00	
Stratham	160.55	13.50		1,713.50	541.70	50.00
Sullivan	33.38			912.00		65.00
Sunapee	275.71		98.12	3,103.00		102.00
Surry	22.00		12.15	417.00		40.00
Sutton	6.00		85.18	1,282.00		118.25
Swanzey	370.36			4,035.45	389.00	150.00
Tamworth	139.50		186.58	3,001.50		105.00
Temple	64.05			722.50		40.00
Thornton	25.00		77.67	1,538.00		58.00
Tilton, town	75.64		86.00	1,684.00	350.00	60.00
Tilton, special	169.57	17.70	181.08	4,749.39	550.00	
Troy	128.79		166.24	3,007.34	330.62	135.00
Tuftonboro	65.51		34.49	1,544.00	291.70	60.00
Unity	37.43		37.44	1,306.40		36.00
Wakefield	116.73	68.25	185.66	3,242.00	500.00	140.00
Walpole	699.39	12.00	454.44	10,120.98	750.00	4.00
Warner	165.00		85.00	2,666.00		195.00
Warren	42.80			2,358.00		65.00
Washington			131.98	834.00		45.00
Weare	234.68		61.45	3,435.00	280.00	220.05
Webster	46.02		41.59	770.50		69.00
Wentworth	139.00		32.10	1,918.50		80.00
Wentworth's Location			2.34	410.00		21.34
Westmoreland	115.97	5.00	37.56	1,996.00	499.98	70.00
Whitefield, town	57.65		41.25	1,402.00	183.84	100.00
Whitefield, special	358.94	49 19	330.63	7,148.04	800.00	75.00
Wilmot	60.00		21.15	1,353.00		32.00
Wilton	327.74		347.47	5,641.02	384.00	165.00
Winchester	680.86			7,234.00	525.00	183.00
Windham	141.01			1,408.00	210.00	68.00
Windsor	2.00		1.51	118.00		10.00
Wolfeboro	255.27	19.80	201.56	5,022.65	1,041.64	50.00
Woodstock	110.00		140.00	3,796.00		150.00
Total	$50,315.70	$6,458.10	$35,838.53	$1,070,829.62	$67,339.55	$19,360.67

No. VI.—*Continued.*

Truant officer.	Other district officers.	Tuition in secondary schools.	Tuition in elementary schools.	Flags and appurtenances.	Transportation of pupils.	Minor repairs.	Insurance.	Janitors.
$12.00	$20.00	$732.00	.....	$12.80	$423.62	$138.20	.....	$30.25
.....	.....	.....	.....	.....	1,134.00	363.04	.....	228.00
25.00	20.00	786.02	.....	.....	.....	25.70	.....	73.00
1.00	12.00	150.00	$84.50	.....	.....	5.71	.....	24.25
10.00	10.00	124.66	.....	.....	99.85	328.62	.....	236.07
.....	5.00	110.00	.....	.....	151.65	.....	.....	18.50
15.00	19.00	495.37	30.00	9.13	.....	187.59	.....	39.49
14.00	27.00	670.00	.....	.....	183.28	523.56	.....	205.50
.....	30.00	200.00	.....	.....	106.50	495.60	$35.00	109.40
.....	.....	214.00	3.50	.....	86.50	.....	.....	34.25
12.00	.....	279.98	.....	5.00	219.00	.....	.....	90.00
20.00	22.00	329.98	.....	7.50	8.70	31.57	16.00	77.25
.....	25.00	2,060.09	.....	.....	166.14	.....	.....	502.65
17.85	10.00	130.00	.....	1.35	699.75	106.56	.....	248.25
10.00	12.00	.....	.....	.....	540.90	114.77	.....	71.00
6.00	14.00	56.00	.....	.....	.....	.....	.....	9.00
20.00	.....	236.00	.....	20.50	837.28	397.00	110.50	262.60
15.00	.....	1,171.48	.....	.....	2,449.65	578.85	41.20	739.93
11.00	20.00	.....	.....	.....	564.75	16.95	.....	159.92
8.00	12.00	120.00	.....	.....	323.97	176.28	.....	117.25
5.00	.....	80.00	.....	2.50	17.00	20.46	.....	8.00
26.60	18.00	362.50	.....	3.00	350.50	249.34	15.33	75.50
5.00	13.00	331.81	34.00	.....	228.00	54.45	.....	15.50
10.00	10.00	68.00	.....	.....	108.00	203.68	.....	48.71
.....	.....	.....	25.25	.....	.....	.....	.....	.....
5.00	29.00	124.18	11.20	.....	249.10	7.12	.....	82.00
15.00	11.60	443.00	203.25	.....	331.56	51.98	52.00	54.00
.....	10.00	.....	.....	.....	.....	400.70	70.00	540.00
20.00	13.00	238.00	.....	.....	10.00	265.19	.....	30.75
39.00	35.00	.....	255.96	.....	305.00	225.62	.....	566.35
25.00	34.50	.....	.....	.....	600.00	177.19	.....	420.00
.....	26.00	461.00	.....	37.64	336.62	74.35	.....	194.75
.....	3.00	.....	8.00	.....	33.00	.....	.....	.....
41.75	65.00	.....	.....	.....	942.85	277.96	97.50	422.75
10.25	.....	240.00	.....	.....	.....	.....	128.00	337.00
$9,522.54	$4,097.66	$73,451.30	$6,033.35	$798.88	$71,747.01	$43,284.79	$8,689.66	$86,472.40

TABLE No. VI.—*Continued.*

(For the year ending July 15, 1913.)

FINANCES.

Current Expenditures.

TOWNS.	Building supplies.	Fuel, light and water.	All other expenditures.	Total current.	Rate of school assessment.	Average of current expenditure per pupil.
Acworth	.....	$31.37	$20.15	$1,800.44	$6.25	$20.23
Albany	.....	9.50	1.25	784.40	2.70	27.05
Alexandria	.....	42.65	34.20	1,965.43	4.62	25.20
Allenstown	.....	89.67	85.79	2,869.88	3.72	47.83
Alstead	$10.88	108.82	96.18	3,201.23	5.38	28.10
Alton	12.50	575.35	347.09	7,226.36	6.81	40.60
Amherst	.....	281.85	.....	6,636.48	7.63	48.80
Andover	.....	.....	352.51	5,168.82	5.54	32.71
Antrim	.....	439.91	199.49	6,820.47	5.52	34.28
Ashland, town	.....	41.25	.....	948.31	10.46	55.78
Ashland, special	.....	892.23	448.57	8,371.77	10.46	35.32
Atkinson	2.75	94.60	20.81	2,523.43	6.99	44.27
Auburn	.....	82.25	32.73	2,427.19	3.76	24.77
Barnstead	.....	184.15	31.92	3,733.64	3.28	30.35
Barrington	.....	95.00	13.33	3,114.14	3.80	26.39
Bartlett, town	.....	89.25	57.10	2,500.55	7.00	40.99
Bartlett, special	21.75	183.88	33.59	2,618.98	7.00	20.79
Bath, town	48.11	127.00	.....	2,435.30	5.96	39.28
Bath, special	.....	174.32	41.80	1,749.33	5.96	36.44
Bedford	.....	158.94	171.25	3,950.77	4.23	25.82
Belmont	3.38	240.03	126.79	5,265.46	5.31	28.31
Bennington	153.16	25.00	181.52	2,085.54	4.79	21.72
Benton	.....	34.50	.....	853.26	4.54	27.52
Berlin	68.90	2,153.05	643.42	31,319.25	4.11	29.10
Bethlehem, town	.....	72.58	.....	3,562.41	4.15	45.67
Bethlehem, special	338.72	.....	108.25	4,076.21	4.15	36.07
Boscawen	.....	74.60	5.67	2,240.08	5.75	42.27
Bow	94.89	125.25	11.05	3,178.88	3.23	34.18
Bradford	.....	116.65	.....	3,299.95	3.32	41.25
Brentwood	.....	48.42	.....	2,192.00	4.84	27.75
Bridgewater	.....	6.50	.....	560.55	2.19	21.56
Bristol, town	.....	19.25	.....	886.28	3.51	21.62
Bristol, special	.....	568.92	49.03	4,227.61	3.51	26.10
Brookfield	.....	21.25	.....	1,757.25	4.08	65.08
Brookline	.....	67.10	37.92	1,801.73	3.29	29.06
Campton	.....	100.00	.....	4,844.27	5.16	47.20
Canaan, town	.....	70.35	231.78	3,431.13	4.98	27.44
Canaan, special	.....	98.57	40.00	2,475.01	4.98	36.40
Candia	.....	76.45	9.32	2,908.61	4.97	20.48
Canterbury	.....	62.82	27.20	2,845.74	2.85	30.93

TABLE No. VI.—*Continued.*

TOWNS.	Building supplies.	Fuel, light and water.	All other expenditures.	Total current.	Rate of school assessment.	Average of current expenditure per pupil.
Carroll	.....	$60.50	$198.12	$2,800 22	$6.18	$32.94
Center Harbor	.....	10.25	.....	1,977.06	3.67	35.95
Charlestown	.....	534.18	172.31	6,819.04	8.66	35.33
Chatham	.....	57.00	5.50	1,116.95	6.13	44.68
Chester	.....	82.50	23.07	3,175.89	3.61	29.96
Chesterfield	.....	91.75	14.50	3,225.85	5.42	26.88
Chichester	$17.78	104.05	17.84	2,818.49	3.76	28.47
Claremont	.....	2,051.89	891.04	26,637.98	4.70	27.22
Clarksville	.....	55.25	.....	1,012.16	2.39	17.76
Colebrook, town	.....	233.50	173.08	5,741.11	11.09	66.76
Colebrook, special	.....	1,521.03	1,049.97	11,118.26	11.09	41.96
Columbia	.....	151.70	45.90	3,859.81	9.26	41.06
Concord, town	.....	177.00	112.04	5,741.91	3.92	51.27
Concord, Union	1,562.51	7,226.14	3,798.50	103,427.45	6.18	40.52
Concord, Penacook	30.44	762.84	444.28	12,152.72	2.38	29.14
Conway	206.19	871.53	425.71	16,955.91	6.22	35.32
Cornish	.....	160.65	.....	3,391.60	4.17	23.72
Croydon	.....	44.75	35.89	999.67	3.01	45.44
Dalton	.....	96.50	12.70	1,914.85	8.50	19.95
Danbury	.....	49.65	21.68	2,090.74	4.50	26.80
Danville	31.27	68.50	35.28	1,793.99	5.45	24.58
Deerfield	15.00	104.79	57.95	3,075.57	3.00	25.21
Deering	.....	65.00	.....	1,182.47	3.16	34.78
Derry, town	47.81	1,312.07	296.81	16,521.93	6.02	25.66
Derry, special	.....	154.30	62.76	2,654.37	6.02	58.99
Dorchester	.....	26.12	45.25	1,419.41	7.00	33.80
Dover	.....	3,252.80	4,282.08	47,770.34	3.59	37.36
Dublin	.....	115.12	159.80	3,522.48	2.34	48.92
Dummer	.....	30.10	4.25	1,323.51	8.45	22.82
Dunbarton	63.54	53.75	14.50	1,844.34	3.03	34.79
Durham	.....	278.47	81.98	5,805.75	8.66	50.48
East Kingston	.....	48.75	.....	1,730.16	5.33	40.24
Easton	.....	47.10	12.00	718.99	4.50	23.19
Eaton	.....	57.50	4.34	1,450.13	5.20	21.02
Ellingham	77.58	.....	151.04	2,631.63	6.47	25.06
Ellsworth	.....	.....	.....	142.00	2.92	28.40
Enfield	.....	124.80	98.62	6,405.37	5.13	28.34
Epping	156.99	225.40	50.00	6,041.05	4.37	33.01
Epsom	.....	91.00	.....	3,246.66	3.84	32.15
Errol	.....	98.33	117.74	2,412.40	9.24	68.93
Exeter	.....	944.11	237.04	15,695.52	5.50	22.26
Farmington, town	.....	75.65	3.84	2,834.45	6.65	50.62
Farmington, special	.....	583.44	276.33	9,140.27	6.65	36.71
Fitzwilliam	12.93	112.88	291 .	4,833.81	5.62	26.41
Francestown	.....	82.53	91.82	2,347.18	4.65	25.24

TABLE No. VI.—*Continued.*

TOWNS.	Building supplies.	Fuel, light and water.	All other expenditures.	Total current.	Rate of school assessment.	Average of current expenditure per pupil.
Franconia	.....	$150.34	.....	$2,718.34	$4.55	$39.10
Franklin	.....	2,037.65	$868.04	22,514.01	4.88	31.71
Freedom	$7.00	.....	39.93	945.44	4.19	15.76
Fremont	.....	54.50	44.78	2,303.31	4.52	24.77
Gilford	.....	72.15	.....	2,699.83	4.28	27.83
Gilmanton	.....	109.43	19.45	3,507.80	3.20	21.39
Gilsum	.....	68.80	16.78	1,401.81	4.34	25.96
Goffstown, town	.....	141.25	16.50	4,302.88	3.87	40.21
Goffstown, special	.....	243.29	191.83	5,013.57	3.87	29.67
Gorham	.....	413.83	350.72	10,126.32	9.91	24.70
Goshen	.....	32.00	15.30	922.39	5.03	17.74
Grafton	.....	31.00	15.65	2,345.18	4.58	24.43
Grantham	.....	.....	10.85	601.83	2.83	6.84
Greenfield	85.75	25.50	37.45	2,454.14	5.66	29.22
Greenland	.....	111.00	47.56	2,733.49	5.38	33.34
Greenville	.....	229.30	20.62	3,813.29	4.28	44.86
Groton	.....	22.00	.....	669.40	5.92	13.66
Hampstead	.....	87.15	20.05	3,012.17	4.65	25.97
Hampton	128.24	122.60	46.00	4,019.00	4.13	26.10
Hampton Falls	11.00	68.64	18.15	1,829.83	5.62	26.14
Hancock	66.65	140.00	85.75	4,051.57	5.70	38.96
Hanover, town	56.27	86.45	.....	3,354.70	8.14	24.41
Hanover, special	.....	556.72	120.55	10,241.94	8.14	33.80
Harrisville	.....	239.48	43.62	2,855.43	4.50	32.08
Haverhill, town	.....	1,470.17	445.81	11,530.22	7.93	35.37
Haverhill, Woodsville	.....	566.95	164.80	7,638.93	7.93	22.60
Hebron	.....	22.00	22.51	882.10	3.45	33.93
Henniker	.....	391.25	43.85	5,537.22	6.22	26.12
Hill	.....	188.87	40.69	2,202.19	5.71	37.33
Hillsborough, town	.....	84.50	6.21	3,520.48	4.50	58.67
Hillsborough, special	.....	274.91	258.00	7,189.13	4.50	26.73
Hinsdale	.....	466.48	338.20	8,583.37	4.75	33.39
Holderness	42.02	68.32	131.37	3,472.28	5.05	52.61
Hollis	.....	158.90	102.02	5,048.24	6.07	34.11
Hooksett	.....	200.00	266.64	3,849.73	2.69	26.73
Hopkinton	.....	396.71	152.26	8,529.07	5.39	40.01
Hudson	32.21	248.17	51.17	6,615.93	5.23	34.28
Jackson, town	.....	36.00	.....	1,014.10	3.25	26.00
Jackson, special	33.00	27.00	.25	902.79	3.25	20.52
Jaffrey	17.05	624.20	247.53	7,251.93	7.62	23.55
Jefferson	10.52	184.25	140.51	6,031.68	8.77	36.33
Keene	91.00	2,487.73	3,624.55	42,841.60	5.32	27.36
Kensington	.....	59.55	62.81	1,684.77	6.00	30.09
Kingston	.....	119.07	35.04	3,482.32	4.99	30.02
Laconia	600.00	2,140.09	515.17	30,831.10	4.11	29.70

TABLE No. VI.—*Continued.*

TOWNS.	Building supplies.	Fuel, light and water.	All other expenditures.	Total current.	Rate of school assessment.	Average of current expenditure per pupil.
Lancaster, town		$244.40	$25.59	$4,938.57	$7.91	$34.06
Lancaster, special	$345.85	2,010.88	363.85	13,947.84	7.91	29.93
Landaff		70.00		2,486.89	4.97	29.96
Langdon		28.13		868.59	4.55	32.27
Lebanon, town		317.13	178.53	5,762.44	6.36	37.42
Lebanon, high school		1,260.78	237.89	13,924.84	6.36	37.13
Lebanon, West		411.98	167.41	5,403.80	6.36	40.33
Lee		24.15	1.75	1,966.41	3.56	40.97
Lempster		51.50	22.67	1,538.21	4.72	30.16
Lincoln				6,002.80	3.34	37.52
Lisbon, town		93.50	14.14	2,845.19	6.73	40.65
Lisbon, high school		1,280.65	154.44	9,207.49	6.73	30.19
Lisbon, Sugar Hill	38.09	91.50	11.69	1,311.16	6.73	48.56
Litchfield		21.50	5.75	969.68	2.72	34.63
Littleton		1,345.12	518.93	22,867.09	8.53	29.47
Londonderry		164.39	119.53	5,812.49	5.02	37.74
Loudon	17.50	155.75	6.25	3,699.85	3.71	41.57
Lyman		108.00	71.17	1,709.07	5.26	25.90
Lyme	5.52	219.85		3,594.89	7.35	23.04
Lyndeborough		68.57	53.41	2,524.39	7.87	29.70
Madbury		47.00	63.10	2,021.58	3.39	48.13
Madison		95.90	23.53	2,200.89	7.00	26.84
Manchester	1,184.41	15,074.97	9,781.68	184,640.72	3.80	32.33
Marlborough	238.54	224.97		6,680.30	5.49	22.96
Marlow		8.50	8.75	1,180.02	2.28	25.11
Mason		75.25	38.91	2,445.86	1.57	47.04
Meredith		231.22	334.62	6,537.73	3.64	30.84
Merrimack		405.40	195.41	6,021.47	4.85	36.49
Middleton	18.64	14.75	10.03	1,140.56	5.04	24.52
Milan		86.25	121.12	3,783.03	4.70	22.79
Milford	87.27	1,446.07	332.17	19,108.21	7.50	27.49
Milton		516.50	85.99	7,686.87	4.54	34.16
Mont Vernon		33.25	33.35	2,271.98	5.65	43.69
Monroe		53.00	108.31	2,091.10	5.04	32.17
Moultonborough		55.88	30.42	627.20	2.80	5.86
Nashua	425.66	6,627.98	5,492.05	99,655.24	5.05	36.92
Nelson		31.75	19.40	764.20	3.21	23.88
New Boston		205.32	13.41	4,606.41	4.07	29.53
Newbury		56.75	50.24	2,149.47	2.71	42.99
Newcastle		65.72		1,396.51	2.45	31.91
New Durham		79.96		1,725.14	1.56	24.30
Newfields		133.63	15.75	2,010.26	4.50	40.21
New Hampton		100.00	7.00	3,266.21	6.35	25.52
New Ipswich		79.75	22.24	3,460.77	3.47	28.60
Newington			15.35	1,562.79	3.52	53.89

TABLE No. VI.—*Continued.*

TOWNS.	Building supplies.	Fuel, light and water.	All other expenditures.	Total current.	Rate of school assessment.	Average of current expenditure per pupil.
New London		$324.56	$306.90	$5,539.96	$5.14	$52.76
Newmarket		1,035.28		10,294.64	6.09	35.14
Newport		912.04	4,576.32	20,677.25	5.12	34.61
Newton		195.48	40.01	2,517.88	5.78	21.52
Northfield		48.25	18.37	1,927.88	5.82	37.80
North Hampton	$110.91	47.65	19.82	2,753.61	2.90	34.85
Northumberland		701.87	313.13	11,373.07	10.48	28.65
Northwood		127.58	26.14	4,865.80	5.03	35.52
Nottingham		50.26		1,829.19	4.49	22.31
Orange		4.50	37.75	482.73	6.21	22.99
Orford	159.15	4.60	81.29	4,064.31	7.13	35.65
Ossipee		173.45	687.30	5,823.00	5.27	32.17
Pelham		82.87	84.01	2,982.38	5.68	19.75
Pembroke		211.13	150.29	7,672.94	4.58	30.57
Peterborough		626.71	576.31	10,052.21	3.42	35.27
Piermont		137.03	158.37	3,497.83	6.16	38.44
Pittsburg		300.00	150.00	3,793.60	6.25	32.99
Pittsfield	11.99	891.78	412.69	9,982.98	4.50	26.76
Plainfield		115.12	37.84	3,935.19	4.74	30.99
Plaistow	311.02	256.73	263.64	4,827.91	7.94	34.98
Plymouth		1,086.57	496.81	11,379.06	7.88	25.80
Portsmouth	347.93	3,193.74	622.58	51,550.54	2.99	28.66
Randolph		39.40	3.90	816.85	3.34	31.42
Raymond		197.60	99.12	5,125.26	4.52	32.03
Richmond		46.75	22.72	1,100.96	3.90	38.92
Rindge	6.49	89.30	224.00	3,581.78	4.16	45.34
Rochester		1,699.12	1,080.14	33,162.70	4.52	26.09
Rollinsford		353.77	75.54	6,402.14	4.61	24.25
Roxbury				346.08	4.71	
Rumney		94.00	77.78	3,506.28	6.06	32.47
Rye	115.56	310.51	69.17	4,439.89	3.79	33.64
Salem	97.21	592.31	105.56	10,291.72	6.55	40.68
Salisbury		43.00	138.48	1,647.32	2.79	31.08
Sanbornton		73.80		3,579.42	4.54	33.45
Sandown		17.50	59.73	1,000.63	5.82	16.40
Sandwich		29.75	67.84	2,858.08	4.03	22.50
Seabrook	13.91	167.26	32.60	3,138.80	6.48	15.85
Sharon		10.00		348.50	3.30	31.68
Shelburne		20.00		1,396.09	2.84	29.09
Somersworth		1,440.95	205.15	22,312.38	3.89	39.56
South Hampton		58.93	10.95	1,323.69	4.87	33.94
Springfield		70.35	2.75	1,788.03	4.60	31.93
Stark		87.50	41.21	1,517.32	5.13	19.96
Stewartstown	76.00	300.00	15.00	2,467.50	8.24	15 05
Stoddard		28.22	11.57	830.22	2.42	31.93

TABLE No. VI.—*Continued.*

TOWNS.	Building supplies.	Fuel, light and water.	All other expenditures.	Total current.	Rate of school assessment.	Average of current expenditure per pupil.
Strafford	.....	$119.05	$42.40	$4,307.36	$4.54	$30.99
Stratford	.....	394.68	129.02	8,015.85	11.75	48.58
Stratham	$26.13	128.93	38.70	3,597.73	4.50	41.83
Sullivan	.....	51.63	9.23	1,348.70	4.00	30.65
Sunapee	.....	427.63	60.78	4,876.44	4.50	27.55
Surry	.....	6.00	4.50	786.80	3.85	21.86
Sutton	.....	69.55	.....	2,356.56	3.78	34.66
Swanzey	.....	491.54	80.24	7,139.93	4.71	28.91
Tamworth	.....	91.90	142.40	4,643.38	6.85	30.35
Temple	8.50	20.15	7.13	1,200.58	4.55	27.29
Thornton	.....	84.00	9.58	2,398.23	7.15	26.35
Tilton, town	.....	85.75	120.26	2,977.65	6.27	41.94
Tilton, special	.....	675.55	643.22	9,740.39	6.27	36.62
Troy	22.12	245.92	107.70	5,357.49	6.19	23.60
Tuftonboro	30.00	38.63	180.83	2,993.83	4.55	35.64
Unity	.....	83.00	32.81	1,618.08	4.77	20.48
Wakefield	.....	320.58	36.31	6,493.41	4.53	31.37
Walpole	.....	2,162.81	1,128.07	20,327.80	9.06	34.45
Warner	.....	267.85	74.80	4,226.27	5.04	24.43
Warren	.....	203.26	82.74	3,509.30	6.97	37.33
Washington	.....	26.00	.....	1,169.94	2.60	28.54
Weare	.....	137.58	156.82	5,626.35	4.59	29.00
Webster	.....	13.25	58.54	1,680.66	2.89	39.09
Wentworth	.....	60.85	.....	2,678.84	5.58	33.07
Wentworth's Location	19.75	.....	.....	478.68	5.87	47.87
Westmoreland	.....	67.85	42.84	3,342.80	4.54	37.14
Whitefield, town	18.31	99.50	49.60	3,114.54	6.88	62.29
Whitefield, special	62.28	711.91	297.38	10,854.07	6.88	37.04
Wilmot	.....	58.00	.....	2,101.09	4.76	20.80
Wilton	113.50	199.42	403.59	9,008.67	5.00	30.85
Winchester	.....	423.55	418.81	10,721.91	6.36	29.14
Windham	.....	159.39	35.14	3,151.90	4.98	35.41
Windsor	.....	.....	.....	175.51	3.45	25.07
Wolfeboro	.....	262.91	646.16	9,317.80	4.97	33.15
Woodstock	.....	272.64	498.81	5,682.70	7.19	33.04
Total	$8,074.06	$104,049.68	$61,438.42	$1,727,801.92	$3.63	$31.80

TABLE No. VII.

FINANCES.

Extraordinary Expenses and Payments of Debt and Interest.

TOWNS.	Amount expended for new buildings and sites.	Amount expended for new equipment.	Amount paid for replacement of equipment.	Total extraordinary expenditures.	Liquidation of debts.	Interest on such indebtedness.	Total debt and interest payments.	Total outstanding district indebtedness.
Allenstown	$150.00			$150.00				
Alstead	82.27			82.27				
Amherst	596.16			596.16				
Antrim	247.78			247.78				
Ashland, special	2,795.18	$158.31		2,953.49	$1,500.00	$197.54	$1,997.54	$16,000.00
Auburn			$56.68	56.68				
Barnstead	88.19			88.19				
Bartlett, town			55.59	55.59				
Bath, special	258.49			258.49	150.00	160.00	310.00	629.85
Bennington	92.19			92.19			117.00	
Bethlehem, town	234.86			234.86				
Bethlehem, special		89.09	20.73	109.82				
Bristol, town		92.44		92.44				
Bristol, special	1,224.65	12.03		1,236.68				
Canaan, town		87.50		87.50				
Canaan, special	76.96			76.96				
Chester	261.92			261.92				
Chesterfield	551.34	3.00		554.34	500.00	25.00	525.00	
Claremont					2,000.00	590.26	2,590.26	14,764.38
Colebrook, town					500.00	34.83	534.83	
Colebrook, special					2,500.00	1,534.25	4,034.25	29,500.00
Columbia	511.02			511.02				
Concord, Union					7,000.00	5,705.00	12,705.00	226,000.00
Concord, Penacook	225.00			225.00	500.00	276.11	776.11	6,000.00
Conway	5,612.76			5,612.76				
Dalton	653.62			653.62				
Danbury	21.50			21.50				
Danville		152.20		152.20	3,000.00	44.02	3,044.02	2,400.00
Derry, town	650.00			650.00	2,500.00	551.56	3,051.56	4,300.00
Dover	3,852.74			3,852.74		2,100.00	2,100.00	60,000.00
Dummer	331.11			331.11			50.00	
Durham	285.40	82.95		368 35	1,000.00	104.94	1,104.94	
Enfield		61.20		61.20				
Epsom	96.81			96.81				
Exeter	2,175.93	1,905.23		4,081.16	7,500.00	732.96	8,232.96	15,000.00
Farmington, special	2,561.92	14.32		2,576.24				
Fitzwilliam	102.00			102.00				
Goffstown, special		100.50	68.49	168.99	100.00	45.00	145.00	800.00
Gorham	362.59	100.00	210.00	702.59			853.89	25,960.05
Greenfield							534.00	361.56

TABLE No. VII.—*Continued.*

TOWNS.	Amount expended for new buildings and sites.	Amount expended for new equipment.	Amount paid for replacement of equipment.	Total extraordinary expenditures.	Liquidation of debts.	Interest on such indebtedness.	Total debt and interest payment.	Total outstanding district indebtedness.
Greenland	$90.37	$12.63		$103.00				
Hampton	436.04	10.00		446.04				
Hampton Falls		236.40	$150.69	387.09				
Hanover, special	200.00			200.00	$175.00	$18.04	$193.04	$30,150.00
Haverhill, town					1,600.00	290.88	1,890.88	271.11
Haverhill, Woodsville					1,000.00	492.66	1,492.66	7,680.36
Hill					720.00	86.40	806.40	1,440.00
Hillsborough, special	375.84			375.84				
Holderness	111.79			111.79				85.33
Hopkinton					970.00		970.00	500.00
Jefferson	268.87		84.30	353.17				
Keene							2,132.50	100,000.00
Lancaster, special		322.16	357.39	679.55	1,015.75	2,100.00	3,115.75	66,200.00
Landaff	283.94			283.94				
Langdon					100.00	35.00	135.00	
Lebanon, town					500.00	149.00	649.00	1,525.66
Lebanon, special	337.13			337.13		1,186.11	1,186.11	26,976.66
Lebanon, West		1,123.47		1,123.47		46.05	46.05	1,129.32
Lisbon, town	226.12		54.40	280.52				
Lisbon, special					4,000.00	1,531.26	5,531.26	30,464.00
Litchfield	77.10			77.10				
Littleton	7,206.16	375.74		7,581.90	9,800.00	994.74	10,794.74	31,172.37
Lyme	177.31			177.31	300.00		300.00	675.00
Lyndeborough	46.78			46.78				
Manchester	38,168.41	564.81		38,733.25				
Milan	200.00			200.00				
Milford					1,517.91		1,517.91	23,245.79
Nelson	150.00			150.00				
Newfields					300.00		300.00	1,637.11
New Hampton	306.61	14.20	18.05	338.89				
Newington		27.00		27.00				
Newport					4,500.00	62.51	4,562.51	
Newton	140.00			140.00				
Northumberland	1,596.19			1,596.19	1,500.00	1,113.75	2,613.75	25,000.00
Northwood	277.10			277.10	1,000.00	56.00	1,056.00	500.00
Pembroke	250.00			250.00	2,000.00	507.50	2,507.50	13,000.00
Peterborough	484.25			484.25				
Pittsburg	6,000.00	500.00	50.00	6,550.00	3,000.00	450.00	3,450.00	7,000.00
Pittsfield					500.00	10.11	510.11	
Plaistow					500.00	450.00	950.00	
Plymouth	919.52			919.52	2,540.00	2,661.42	5,201.42	61,523.74
Portsmouth	2,836.95			2,836.95	5,000.00		5,000.00	112,000.00
Rumney		72.00		72.00				
Rye	2,265.80	62.26		2,328.06				
Salem	661.43			661.43		50.00	50.00	2,000.00

TABLE No. VII.—*Continued.*

TOWNS.	Amount expended for new buildings and sites.	Amount expended for new equipment.	Amount paid for replacement of equipment.	Total extraordinary expenditures.	Liquidation of debts.	Interest on such indebtedness.	Total debt and interest payments.	Total outstanding district indebtedness.
Seabrook	.....	$57.21	.....	$57.21	.....	.....	.....	.....
Stark	.....	12.00	.....	12.00	.....	.....	.....	.....
Stewartstown	.....	.....	.....	.....	.....	.....	.....	$3,200.00
Stratham	$114.70	.....	.....	114.70	.....	.....	.....	.....
Tamworth	.....	.....	.....	.....	.....	.....	$29.50	800.00
Tilton, town	341.57	.....	$27.00	368.57	$1,000.00	$51.89	1,051.89	.....
Tilton, special	.....	.....	.....	.....	1,000.00	240.00	1,240.00	7,000.00
Walpole	.....	.....	.....	.....	.....	121.50	121.50	2,700.00
Warner	.....	.....	.....	.....	1,000.00	531.80	1,531.80	10,668.79
Warren	.....	534.88	.....	534.88	.....	.....	.....	.....
Weare	300.00	.....	.....	300.00	.....	.....	.....	.....
Wentworth's Location	127.75	.....	.....	127.75	.....	.....	.....	.....
Whitefield, town	220.29	38.44	10.00	268.93	138.00	2.30	140.30	.....
Whitefield, special	799.37	207.75	352.55	1,359.67	.....	1,039.71	1,039.71	18,520.00
Wilton	.....	.....	.....	.....	.....	.....	.....	15,000.00
	$90,102.84	$7,029.72	$1,545.87	$98,678.43	$74,426.66	$26,680.10	$105,123.65	$1,003,781.08

STATE SUMMARY.

		1913.
	TOWNS.	
1	Towns having organized schools	231
	DISTRICTS.	
2	Districts under special acts	23
	SCHOOLS.	
3	Public schools	2,064
4	Graded schools	1,451
5	High schools	72
6	Schools averaging less than twelve and more than six pupils	365
7	Schools averaging six pupils or less	87
8	Average length of schools in weeks of five days	34.34
	SCHOOLHOUSES.	
9	Number	1,678
10	Public property	1,660
11	Rented	19
12	Built during year	5
13	Normal capacity	77,714
14	Estimated value of sites and buildings	$5,727,353.00
15	Estimated value of equipment	313,832.00
	SCHOLARS.	
	Truant officers' enumeration:	
16	Between five and sixteen inclusive { Boys	36,353
	{ Girls	37,127
17	Percentage within compulsory education year, eight to fourteen, regularly attending some school	.99
18	Boys attending two weeks or more	31,728
19	Girls attending two weeks or more	31,276
20	Number under five years	836
21	Number between five and sixteen	58,249
22	Number over sixteen	3,919
23	Number between five and eight	15,395
24	Number between eight and fourteen	35,144
25	Number over fourteen	11,629
26	Average membership of all	54,334
27	Average attendance of all	50,000
28	Average attendance to each school	24
29	Per cent. of attendance	92
30	Number in parochial schools	14,284
31	Number in other private schools	285
32	Whole number reported under 18, 19, 30, 31	77,573
33	Number attending approved public high schools	7,674
34	Number attending high schools, tuition paid by town	1,187
35	Number attending academies, tuition paid by town	988
36	Number between eight and fourteen not attending school	141
37	Number between fourteen and sixteen holding work certificates	3,119
	TEACHERS (below high school).	
38	Number of different men teachers	89
39	Average wages per month	$65.91
40	Number of different women teachers	2,491
41	Average wages per month	$42.18
42	Number changes during year	563
43	Number teaching first time	374
44	Number without other education than elementary schools	157
45	Number without other education than high schools or academies	1,051
46	Number normal graduates	893
47	Number college graduates	56
48	Number holding permanent state certificates (not graduates of normal schools)	278

STATE SUMMARY.—*Continued.*

		1913.
	HIGH SCHOOL TEACHERS.	
49	Men teachers	118
50	Average salary of principal	$1,215.49
51	Women teachers	225
52	Average salaries	$624.20
	FINANCES.	
	REVENUE.	
53	Balance from last year	$142,521.62
54	Amount required by law	750,000.00
55	Additional amount voted	569,904.32
56	Books and supplies	69,122.93
57	High school and academy tuition	58,211.69
58	Flags and appurtenances	1,089.82
59	School district officers	26,442.08
60	Literary fund	43,298.34
	STATE APPROPRIATION.	
61	*a.* Schools	$49,174.57
	b. Supervision	21,606.08
	c. Rebate for high school and academy tuition	26,369.09
62	Local funds	20,179.82
63	Dog licenses	38,647.15
64	Miscellaneous (current)	76,449.74
65	Total of current revenue	1,893,017.25
	BUILDINGS.	
66	Balance from last year	$46,847.10
67	Amount raised for repairs	41,353.19
68	Amount raised for buildings	16,074.88
69	Amount raised for debt of district	47,489.91
70	Amount raised for interest	23,158.39
71	Any other revenue	4,847.47
72	Total revenue for buildings, equipment, etc	179,770.94
73	Total revenue	2,072,788.19
	EXPENDITURES.	
	CURRENT.	
74	Text books	$50,315.70
75	Maps and apparatus	6,458.10
76	Scholars' supplies	35,838.53
77	Teachers' salaries	1,070,829.62
78	Superintendents	67,339.55
79	School board	19,360.67
80	Truant officers and other district officers	13,620.20
81	Flags and appurtenances	798.88
82	Transportation of pupils	71,747.01
83	Minor repairs	43,284.79
84	Insurance	8,689.66
85	Janitors	86,472.40
86	Tuition in secondary schools	73,451.30
87	Tuition in elementary schools	6,033.35
88	Fuel, light and water	104,049.68
89	Building supplies	8,074.06
90	Miscellaneous (current)	61,438.42
91	Total of current expenditures	1,727,801.92

STATE SUMMARY—*Continued.*

		1913.
	FINANCES.—*Continued.*	
	EXTRAORDINARY.	
92	New buildings and sites	$90,102.84
93	New equipment	7,029.72
94	Replacement of equipment	1,545.87
95	Total of extraordinary expenditnres	98,678.43
	INTEREST AND DEBT.	
96	Liquidation of debts	$74,426.66
97	Interest on such indebtedness	26,680.10
98	Total expended for interest and debt	*105,123.65
99	Total of all expenditures	1,931,604.00
100	Total outstanding district indebtedness	1,003,781.08
101	Rate of school assessment	3.63
102	Average of current expenditure per pupil	31.80
103	Average per pupil for books and supplies	1.70

*$4,016.89 reported as paid for interest and debt, but not specifying amount for each.

TABLE

General Statistics

SCHOOLS.	Whole number of different pupils registered during year 1912-1913.	Number attending at least two weeks 1912-1913.		Number over sixteen years of age, 1912-1913.	Number between eight and fourteen, 1912-1913.	Number between fourteen and sixteen, 1912-1913.	Average daily attendance, 1912-1913.	Average daily absence, 1912-1913.
		Boys.	Girls.					
Alton	34	16	18	18	0	16	31.10	1.11
Antrim	65	20	45	24	5	36	57.23	3.03
Appleton (New Ipswich)	29	11	18	21	2	6	24.88	2.53
Ashland, 3	49	21	27	27	1	20	40.85	2.49
Atkinson	19	7	11	11	1	6	14.36	.95
Austin-Cate (Strafford)	48	27	21	25	4	19	35.99	2.37
Bath	14	9	5	5	2	7	10.25	1.01
Berlin	399	177	218	147	82	166	347.24	14.57
Bethlehem	22	7	14	12	2	7	17.00	2.32
Bristol, 2	12	2	9	9	0	2	8.51	.28
Canaan, 2	17	6	11	6	5	6	15.33	.69
Charlestown, 1								
Coes (Northwood)	43	24	19	31	2	10	38.30	1.90
Colby (New London)	(a) 170	110	58					
Colebrook	118	47	71	60	8	50	103.15	8.14
Conant (Jaffrey)	40	14	24	20	3	15	31.73	2.87
Concord, 5	1,089	336	464	372	123	305	711.49	34.49
Concord (St. Mary's)	67		66	37	8	21	62.72	1.63
Conway, 2	30	12	17	9	0	20	22.72	2.30
Conway, North, 2	35	22	13	10	2	23	28.41	1.33
Dover	327	136	187	152	22	149	290.16	12.14
Dow (Franconia)	35	20	15	22	7	6	25.33	2.33
Eaton (Danville), 2	5	2	3	1	0	4	4.24	.11
Enfield	35	13	21	22	2	10	26.76	1.24
Epping	31	10	21	13	1	17	26.00	1.55
Errol, 2								
Exeter	111	110	0	41	27	42	101.81	2.42
Farmington	35	13	22	5	20	10	31.61	1.07
Franklin, 5	199	89	109	87	23	88	169.74	5.35
Goffstown	67	27	40	33	10	24	60.43	3.22
Gorham	54	20	34	25	9	20	47.83	1.63
Groveton	65	33	32	31	4	30	58.36	2.11
Hampstead	27	13	14	8	9	10	21.50	1.30
Hampton	45	19	26	27	4	14	40.55	1.77
Hancock, 2								
Hanover	94	42	52	41	24	29	81.52	4.05
Haverhill	37	19	17	17	5	11	28.83	2.21
Henniker	30	14	16	17	3	10	25.17	1.52
Hillsborough	81	35	44	25	11	43	69.45	4.46
Hinsdale	20	7	12	5	0	14	16.08	1.02
Hollis	47	24	23	29	1	17	40.88	1.85
Hopkinton	50	30	20	26	7	17	46.18	.91
Jefferson	22	12	10	9	1	12	18.65	1.09
Keene	334	147	187	282	14	38	299.50	14.03
Kimball Union (Meriden)	144	83	60	85	18	40		
Laconia	182	74	106	87	5	88	155.97	11.70
Lancaster	171	60	111	94	12	65	145.64	7.79
Lebanon	139	71	68	72	4	63	123.58	3.77
Lebanon, West	18	11	7	9	2	7	14.54	.65
Lincoln	26	10	16	10	7	9	21.52	1.00

No. VIII.

of Secondary Schools.

Average membership, 1912-1913.	Per cent. of daily attendance.		Average number of tardinesses per pupil.		Rates of tuition per annum, 1912-1913.	Number of men teachers, 1912-1913.	Salary of head master, 1912-1913.	Average annual salary of sub-masters, 1912-1913.	Number of women teachers, 1912-1913.	Average annual salary of women teachers, 1912-1913.	Length of year in weeks, 1912-1913.
	1912-1913.	1913-1914.	1912-1913.	1913-1914.							
32.21	96.5	98.2	.7	.8	$18.00	2	$1,100	$700	1	$400	36
60.26	94.9	94.4	3.7	*5.3	30.00	1	900	.....	2	414	36
27.41	91.0	90.0	3.2	*9.7	40.00	1	1,150	.....	2	650	36
42.34	96.5	95.2	2.9	1.9	40.00	1	1,100	.....	2	477	36
15.31	93.0	90.3	*5.4	*10.3	30.00	1	(b) 850	.....	1	425	38
38.36	93.0	94.3	*5.3	1.3	24.00	2	1,100	500	2	575	36
11.26	91.0	88.3	*4.2	*7.9	25.00	0	432	.....	2	360	36
361.81	96.0	97.2	1.2	2.1	47.50	5	2,000	875	9	583	38
19.32	87.9	94.0	*6.7	*7.3	36.00	1	900	.....	2	425	36
8.79	96.0	92.8	0.0	.7	27.00	0	.....	.....	1	600	36
16.02	95.2	97.4	*6.3	3.5	18.00	1	648	.....	0	.....	36
.....	.....	96.1	.....	3.9	.....	.....	.....	.....	.....	.....	.....
40.20	95.2	94.5	2.9	2.1	30.00	2	1,350	750	1	475	37
144.00	.....	.....	.....	.....	40.00	6	2,100	800	6	766	37
111.19	92.6	93.8	*12.8	*12.8	40.00	2	1,700	1,000	4	600	36
34.60	91.7	95.0	*6.6	2.6	30.00	1	900	.....	1	450	36
745.99	95.0	91.9	1.6	2.0	55.00	5	2,300	1,150	24	671	36.3
64.35	97.0	97.2	.6	.9	.....	0	.....	.....	7	.....	34
25.02	90.0	95.1	*4.1	1.8	30 00	1	690	.....	1	432	36
29.74	96.8	94.6	1.3	2.9	30.00	1	750	.....	1	432	36
302.30	94.2	97.1	.2	.4	40.00	2	1,700	1,000	9	772	38
27.66	91.5	86.3	*7.9	*13.2	30.00	1	850	.....	3	500	36
4.35	97.5	87.9	3.5	.9	.....	0	.....	.....	1	540	36
28.00	95.6	94.4	.8	1.8	40.00	2	700	(c) 144	1	450	36
27.55	94.3	93.8	1.9	1.5	27.00	1	950	.....	1	450	36
.....	.....	95.4	.....	.1	.....	.....	.....	.....	.....	.....	.....
104.23	97.7	96.5	2.2	1.7	40.00	2	1,799	800	2	600	36
32.68	96.7	94.7	*4.2	1.7	20.00	1	900	.....	2	675	40
175.09	96.9	96.9	1.6	1.6	40.00	2	1,600	900	5	590	36
63.65	94.9	95.1	1.6	1.9	27.00	1	1,100	.....	2	400	36
49.46	98.0	97.0	.4	.9	15.00	1	1,000	.....	2	486	36
60.47	96.5	94.8	2.2	3.3	30.00	1	1,050	.....	3	500	36
23.80	94.5	93.9	*6.0	*7.9	30 00	1	800	.....	1	500	36
42.32	95.8	96.5	1.3	1.1	24.00	1	800	.....	2	400	36
.....	.....	94.5	.....	*5.2	.....	.....	.....	.....	.....	.....	.....
85.57	95.4	93.3	*7.0	*4.6	30.00	2	1,600	.....	3	700	36
31.04	92.9	94.6	2.3	2.5	30.00	1	900	.....	1	458	36
26.69	94.3	93.2	*4.4	*5.4	30.00	1	900	.....	1	418	38
73.91	93.9	95.1	.5	.2	30.00	1	1,200	....	3	511	36
17.10	94.0	95.1	1.9	2.7	18.00	1	1,000	.....	2	500	37
42.73	95.0	94.5	3.6	*9.6	.....	1	728	.....	1	400	36
47.09	98.0	95.5	*14.0	*15.4	30.00	2	1,300	1,000	1	500	36
19.74	94.2	91.7	3.0	*8.4	.....	1	900	.....	1	400	36
313.53	95.0	95.5	.6	1.3	30.00	3	2,200	1,150	8	600	38
.....	.....	.....	.....	.. ..	40.00	5	1,800	883	5	620	38
167.67	93.0	95.0	1.2	1.0	38.00	3	1,800	975	4	638	38
153.43	95.0	96.0	*4.5	2.4	36.00	2	1,700	1,000	4	750	36
127.35	97.0	96.9	.5	.8	40.00	2	1,450	(d) 396	4	575	36
15.19	95.7	95.5	2.9	2.9	40.00	1	1,122	.....	2	.....	36
22.52	95.4	91.6	2.6	4.0	38.00	1	1,000	.....	2	425	38

TABLE

SCHOOLS.	Whole number of different pupils registered during year 1912-1913.	Number attending at least two weeks 1912-1913.		Number over sixteen years of age, 1912-1913.	Number between eight and fourteen, 1912-1913.	Number between fourteen and sixteen, 1912-1913.	Average daily attendance, 1912-1913.	Average daily absence, 1912-1913.
		Boys.	Girls.					
Lisbon	65	25	40	38	9	18	58.81	1.68
Littleton, 5	148	59	89	73	12	63	119.76	11.96
McGaw (Merrimack)	31	14	16	13	8	9	24.89	2.23
Manchester	709	334	369	369	30	304	640.52	25.81
Marlborough	44	17	27	18	1	25	35.72	3.58
Meredith, 2	34	10	24	13	3	18	27.65	1.65
Milford	165	63	102	68	31	66	147.35	4.65
Nashua	418	196	222	250	18	150	363.00	15.00
New Boston	25	10	15	15	1	9	21.56	1.29
New Hampton	156	81	75	.....	.....	.....	.....	.....
Newmarket	42	18	23	18	5	18	34.94	2.39
Newport	91	39	51	60	0	30	83.70	5.50
Nute (Milton)	60	32	28	31	6	23	52.83	3.30
Pembroke	73	32	41	37	31	5	62.85	2.59
Penacook	65	29	35	33	4	27	55.29	2.82
Peterborough	57	31	26	28	4	25	51.10	1.98
Pinkerton (Derry)	211	104	107	116	7	88	192.76	7.44
Pittsfield	75	33	41	49	4	21	65.89	3.82
Plymouth	121	61	58	73	10	36	102.15	4.72
Portsmouth	356	154	202	128	36	192	325.57	7.87
Proctor (Andover)	120	67	53	49	12	59	.....	.....
Robinson (Exeter), 5	179	0	178	88	19	71	161.47	6.27
Rochester	242	103	138	95	29	117	218.00	11.00
St. Anselm's (Manchester)	122	122	0	81	4	37	.....	.....
Sanborn (Kingston)	85	54	31	35	15	35	76.20	2.12
Simonds (Warner)	45	24	21	21	4	20	38.21	1.03
Somersworth	75	34	41	31	1	43	70.12	2.48
Stevens (Claremont)	154	63	88	80	10	61	134.57	4.42
Stratford	33	13	19	19	1	12	27.52	1.30
Sunapee, 2	16	9	7	7	0	9	13.96	1.05
Tilton	342	197	145	218	47	77	.....	.....
Troy, 2	19	6	13	1	5	13	16.24	1.30
Walpole	37	11	26	9	5	23	29.63	1.33
Warren, 2	12	6	6	3	1	8	10.29	1.35
Whitefield	76	22	52	40	6	28	61.83	3.16
Wilton	71	31	40	36	4	31	61.48	5.01
Winchester	39	15	24	31	0	8	36.40	.81
Woodstock, 2	.....	.....	.....	.....	.....	.....	.....	.....
Woodsville	61	28	33	29	4	28	54.39	1.64
Total	9,405	4,159	4,908	(e) 4,422	(e) 889	(e) 3,432	7,069.74	330.91

No. VIII.—*Continued.*

Average membership, 1912-1913.	Per cent. of daily attendance.		Average number of tardinesses per pupil.		Rates of tuition per annum, 1912-1913.	Number of men teachers, 1912-1913.	Salary of head master, 1912-1913.	Average annual salary of sub-masters, 1912-1913.	Number of women teachers, 1912-1913.	Average annual salary of women teachers, 1912-1913.	Length of year in weeks, 1912-1913.
	1912-1913.	1913-1914.	1912-1913.	1913-1914.							
60.49	97.2	98.1	.2	.2	$36.00	1	$1,300	.....	2	$540.00	36
131.72	90.9	96.6	*6.2	1.7	38.00	2	1,400	$750	4	663.00	38
27.12	91.8	92.7	*10.0	*7.5	37.00	1	1,500	.....	1	400.00	37
666.33	96.12	.....	3.3	.....	57.00	7	2,400	1,350	18	889.00	38
39.29	90.9	94.1	*7.3	2.8	25.00	1	850	.....	1	600.00	36
29.30	94.0	95.3	2.7	*12.5	35.00	1	800	.....	0	.....	35
152.00	96.4	97.9	2.7	2.0	40.00	2	1,400	700	4	488.00	38
378.00	96.0	96.1	2.2	2.7	57.00	3	2,000	1,150	13	800.00	38
22.85	94.3	87.5	2.5	*43.9	.....	1	800	.....	1	432.00	36
.....	.....	.....	.....	.....	40.00	6	.....	.....	2	.....	37
37.33	93.6	95.9	2.3	2.9	35.00	2	1,200	500	1	500.00	39
89.20	93.4	94.6	1.8	3.9	25.00	2	1,100	650	2	500.00	36
56.13	94.1	94.9	*4.9	1.9	24.00	1 (*b*)	1,200	.....	2	575.00	39
65.44	96.0	96.0	.9	.7	40.00	1	1,100	.....	3	508.33	37
58.11	95.1	95.6	3.3	*4.1	35.00	1	1,200	.....	3	647.00	36
52.08	96.2	97.4	1.0	1.9	30.00	1	1,125	.....	2	638.00	36
200.20	96.3	95.5	*6.7	2.7	38.00	5	2,000	1,000	9	685.00	38
68.40	96.8	96.2	1.5	2.3	32.00	1	1,050	.....	2	488.00	38
106.87	95.2	96.6	1.3	1.3	40.00	2	2,000	750	5	685.00	38
333.44	97.7	96.7	.5	.8	50.00	5	1,800	950	9	645.00	38
.....	.....	.....	.....	.....	40.00	5	.....	.....	6	.....	37
167.71	96.4	96.0	.9	1.1	40.00	1 (*b*)	2,050	.....	14	725.00	36
229.00	95.3	95.1	3.1	*6.1	40.00	3	1,300	800	5	608.00	38
.....	.....	.....	.....	.....	.....	10	.....	.....	.....	.....	36
78.00	97.4	96.3	2.2	.8	40.00	2 (*b*)	2,000	950	6	650.00	38
39.29	97.2	97.5	*4.7	3.7	40.00	1	1,100	.....	2	625.00	38
72.60	96.3	95.9	.5	.4	24.00	2	1,400	700	3	700.00	38
138.99	96.8	97.6	1.6	1.6	30.00	2	1,700	1,100	6	683.00	38
28.82	95.5	95.6	1.3	.4	24.00	1	1,400	.....	1	535.00	37
15.00	93.0	94.7	*9.0	3.9	.....	0	.....	.....	1	630.00	35
.....	.....	.....	.....	.....	51.00	6	.....	.....	10	.....	37
17.54	92.5	95.8	2.2	6.9	30.00	1	850	.....	0	.....	36
30.96	95.7	95.1	*8.2	2.3	18.00	1	900	.....	2	432.00	36
11.44	90.0	96.1	2.8	*6.8	12.00	0	.....	.....	1	432.00	36
65.00	95.2	94.6	3.3	2.4	36.00	1	1,000	.....	5	530.00	36
66.52	90.8	94.6	*10.1	*8.5	36.00	1	1,000	.....	2	540.00	36
37.21	97.0	97.9	1.5	1.2	25.00	1	1,000	.....	1	540.00	36
.....	.....	91.9	.....	1.2	.....	.....	.....	.....	.....	.....	.....
56.04	96.9	97.0	1.7	.9	36.00	2	1,700	500	2	540.00	36
7,400.65	95.5	95.7	2.7	2.5	$33.58	162	$1,269	$873.55	296	$601.25	36.67

(*a*) Includes music pupils.
(*b*) And house.
(*c*) Commercial teacher four afternoons per week.
(*d*) One-half day.
(*e*) These three items cannot be made to equal the sum of the two marked "number attending at least two weeks," because the figures from Colby Academy and New Hampton Literary Institution are lacking in the totals marked (*e*).
*Excessive number of tardinesses per pupil.

TABLE

General Statistics of

SCHOOLS.	Number of students entering college directly from approved secondary schools, fall of 1913.	Number entering higher institutions other than collegiate.	Number graduates June, 1913.	PROMOTION, First year class.		
				*I.	II.	III.
Alton	1	0	5	18	12	0
Antrim	0	1	4	31	12	0
Appleton (New Ipswich)	0	0	9	12	12	.....
Ashland	0	0	0	19	14	.....
Atkinson	0	0	5	2	2	0
Austin-Cate (Strafford)	1	0	8	12	9	0
Bath	0	0	2	3	1	0
Berlin	11	5	58	147	99	.....
Bethlehem	1	0	4	5	3	0
Bristol, 2	.....	.....	.....	11	7	.....
Canaan, 2	.....	.....	.....	10	4	0
Charlestown, 1	.....	.....	.....	12	9	0
Coes (Northwood)	2	1	6	14	11	.....
Colby (New London)	8	0	16	54	33	0
Colebrook	1	0	21	44	33	0
Conant (Jaffrey)	3	0	9	12	9	0
Concord	11	5	80	272	190	4
Concord, St. Mary's	2	1	3	3	2	.....
Conway, 2	.....	.....	.....	12	11	0
Conway, North, 2	.....	.....	.....	18	8	3
Dover	13	1	57	104	83	0
Dow (Franconia)	2	0	9	11	5	4
Eaton (Danville), 2	.....	.....	.....	9	4	0
Enfield	0	0	3	16	13	0
Epping	1	0	3	9	7	0
Errol, 2	.....	.....	.....	4	2	.....
Exeter	4	0	16	54	36	2
Farmington	1	0	2	20	8	.....
Franklin	3	2	20	74	48	5
Goffstown	0	2	11	24	11	0
Gorham	1	0	13	30	17	0
Groveton	0	1	18	23	15	0
Hampstead	0	1	3	9	6	0
Hampton	0	3	13	23	22	0
Hancock, 2	.....	.....	.....	15	11	0
Hanover	3	0	10	31	24	0
Haverhill	0	0	5	9	4	0
Henniker	0	0	6	15	11	1
Hillsborough	0	0	4	30	14	3
Hinsdale	0	0	2	11	8	0
Hollis	0	0	2	12	6	0
Hopkinton	3	2	13	22	10	0
Jefferson	0	0	1	3	2	0
Keene	9	8	41	131	93	12
Kimball Union (Meriden)	11	2	20	40	22	0
Laconia	2	1	16	65	43	0
Lancaster	2	4	28	42	25	0
Lebanon	3	1	21	45	31	0
Lebanon, West	.....	.....	4	20	14	1
Lincoln	0	0	3	6	4	0

No. IX.

Secondary Schools.

Retardation and Loss from September, 1913, to June, 1914.									Number of graduates June, 1914.	Per cent. of number entering school with this class.
Second year class.			Third year class.			Fourth year class.				
I.	II.	III.	I.	II.	III.	I.	II.	III.		
12	9	0	7	7	0	3	3	1	3	60
12	9	0	20	11	0	14	14	0	14	64
6	2	.....	4	4	.....	7	6	.....	6	45
12	7	2	12	11	0	13	13	1	13	59
3	2	0	0	0	0	6	5	0	5	42
7	5	0	17	14	0	8	8	0	8	114
2	2	0	1	1	0	1	1	0	1	14
107	66	17	63	52	11	71	65	5	65	51
6	5	0	3	2	0	4	4	0	4	50
1	1	1	.....	.....	.....	.....	.....	.....	.....	.....
8	7	0	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	10	1	15	11	0	7	7	0	7	50
38	21	3	36	18	2	36	31	2	31	69
25	18	1	26	20	1	20	16	0	16	39
8	2	0	11	10	0	5	5	0	5	83
213	200	0	241	174	5	160	138	2	85	47
10	9	.....	14	10	.....	17	17	.....	13	130
14	9	0	.....	.....	.....	.....	.....	.....	.....	.....
12	9	6	.....	.....	.....	.....	.....	.....	.....	.....
80	69	0	69	61	0	61	57	0	57	63
9	5	0	7	5	0	.....	.....	.....	1	20
4	4	0	.....	.....	.....	.....	.....	.....	.....	.....
8	7	2	10	7	0	5	5	0	5	83
9	8	0	9	8	0	6	6	0	6	60
3	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
46	34	1	14	10	1	13	12	0	12	39
13	8	.....	9	9	.....	4	4	.....	4	20
50	41	6	40	28	3	27	21	1	20	34
16	11	0	15	10	0	17	17	0	17	89
18	17	0	5	5	0	13	13	0	13	45
22	11	0	9	9	0	7	4	0	7	64
4	2	0	9	6	0	7	7	0	7	58
9	8	0	9	8	0	7	7	0	7	41
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	12	2	19	16	0	28	24	2	19	51
9	9	0	4	1	1	5	5	0	5	50
10	8	0	1	0	0	9	8	8	8	62
20	16	1	22	10	0	18	18	0	18	64
4	4	0	5	4	0	3	3	0	3	23
9	6	2	9	6	2	12	12	0	12	75
12	10	1	8	4	0	10	9	0	9	36
5	1	0	5	4	0	3	3	0	3	38
90	64	7	75	58	4	74	73	1	72	65
40	33	0	34	25	0	16	13	0	13	46
48	35	7	50	36	6	31	30	2	30	56
46	38	0	40	37	0	37	32	1	32	76
40	36	2	23	17	1	26	24	1	24	57
6	4	0	5	4	0	4	3	0	3	75
12	7	1	6	2	0	5	4	1	4	80

TABLE

SCHOOLS.	Number of students entering college directly from approved secondary schools, fall of 1913.	Number entering higher institutions other than collegiate.	Number of graduates June, 1913.	PROMOTION, First year class.		
				*I.	II.	III.
Lisbon	3	2	15	33	13	0
Littleton	6	5	22	66	41	.....
McGaw (Merrimack)	2	0	7	16	13	.....
Manchester	32	7	126	314	243	.....
Marlborough	0	0	5	16	7	.....
Meredith, 2	.....	.....	.....	13	7	.....
Milford	4	4	27	54	33	23
Nashua	21	1	60	145	91	.....
New Boston	1	0	5	8	4	0
New Hampton	5	3	20	.....	.....	.....
Newmarket	0	0	8	25	12	3
Newport	3	2	17	32	18	0
Nute (Milton)	1	0	12	12	8	0
Pembroke	2	2	5	29	16	0
Penacook	1	2	11	28	16	1
Peterborough	1	0	11	29	16	0
Pinkerton (Derry)	5	3	29	55	48	0
Pittsfield	5	3	15	24	14	.....
Plymouth	5	3	22	50	34	0
Portsmouth	4	11	53	152	89	7
Proctor (Andover)	5	2	19	27	17	1
Robinson (Exeter)	7	2	23	46	40	3
Rochester	5	0	33	149	99	24
St. Anselm's (Manchester)	5	0	12	40	29	15
Sanborn (Kingston)	5	0	18	12	6	1
Simonds (Warner)	2	0	6	31	18	1
Somersworth	2	2	15	23	19	0
Stevens (Claremont)	5	1	25	94	70	2
Stratford	0	5	8	21	17	0
Sunapee, 2	.....	.....	.....	10	8	0
Tilton	18	5	60	71	38	12
Troy, 2	.....	.....	.....	9	3	1
Walpole	2	1	4	22	8	0
Warren, 2	.....	.....	.....	2	1	0
Whitefield	0	1	9	28	13	0
Wilton	2	2	17	26	19	1
Winchester	2	0	7	10	4	0
Woodsville	1	0	6	46	29	0
	259	110	1,306	3,386	2,241	130

*I.—Number in full standing at beginning of year, September, 1913, plus number admitted to full standing during year.

II.—Number in full standing at end of year, June, 1914. This value is reached by subtracting from 1 (*a*) Number of pupils who failed in one unit of work or more during the year; plus (*b*) number of pupils lost by voluntary withdrawal, or by expulsion; plus (*c*) number of pupils lost by death or by removal from town.

III.—Number of pupils not returning at the beginning of the year, and whose school life is presumably ended.

No. IX.—*Continued.*

Retardation and Loss from September, 1913, to June, 1914.									Number of graduates June, 1914.	Per cent. of number entering school with this class.
Second year class.			Third year class.			Fourth year class.				
I.	II.	III.	I.	II.	III.	I.	II.	III.		
14	11	4	12	8	1	4	4	0	4	50
32	24	2	27	26	0	18	18	0	18	35
9	7	1	10	9	0	1	1	0	1	17
171	141	25	138	105	11	144	137	5	137	62
12	8	1	6	4	1	6	5	1	5	38
8	8	.....	.....	.....	.....	.....	.....	.....	.....	.....
53	44	23	32	28	4	22	22	3	22	71
99	61	12	83	62	5	93	91	2	91	59
4	3	0	6	3	4	4	3	2	3	50
.....	.....	.....	.....	.....	.....	.....	.....	.....	18	43
7	5	1	11	11	1	6	6	0	6	75
19	12	1	29	21	0	14	13	1	13	42
11	8	0	15	8	2	10	10	0	10	63
22	15	2	17	15	2	11	11	0	11	38
15	14	0	12	10	0	10	9	0	9	53
11	5	1	13	13	1	12	12	0	12	63
65	46	4	51	39	3	47	44	2	44	59
25	10	2	8	7	2	7	7	2	7	33
24	18	5	30	25	1	25	25	2	25	54
101	70	2	88	62	12	52	51	0	51	43
20	12	2	14	13	1	20	18	.....	18	49
34	22	3	44	37	5	35	26	1	16	55
73	43	5	64	54	5	38	38	0	38	64
23	18	4	29	18	1	31	19	0	19	54
15	11	3	15	11	0	17	16	0	16	59
15	7	2	10	6	2	4	4	0	4	67
26	23	0	8	7	0	20	19	0	19	61
55	44	3	25	24	0	17	16	0	16	33
6	6	1	8	8	0	3	3	0	3	50
11	8	0	.....	.....	.....	.....	.....	.....	.....	.....
68	30	9	61	33	6	40	36	0	36	57
5	5	2	.....	.....	.....	.....	.....	.....	.....	.....
10	5	0	7	6	0	6	6	0	6	43
2	2	0	.....	.....	.....	.....	.....	.....	.....	.....
18	13	0	19	13	2	15	14	2	14	40
21	13	2	6	4	0	10	9	0	9	35
6	3	3	11	7	1	4	4	0	4	27
22	15	3	13	8	0	8	8	0	8	47
2,340	1,693	191	1,903	1,440	110	1,574	1,452	51	1,400	53

SUMMARY OF GENERAL STATISTICS OF SECONDARY SCHOOLS.

I.

(1913—1914.)

Number of students entering college directly from highest class, fall of 1913	259
Number entering higher institutions other than collegiate	110
Number of graduates, June, 1913	1306

II.

(1913—1914.)

Number in full standing at beginning of year, September, 1913, plus number admitted to full standing during year:	
First year pupils	3386
Second year pupils	2340
Third year pupils	1903
Fourth year pupils	1574
Number in full standing at end of year, June, 1914. (This value is obtained by subtracting from I (a) number of pupils who failed in one unit or more during the year plus (b) number of pupils lost by voluntary withdrawal or by expulsion plus (c) number of pupils lost by death or by removal from town:	
First year pupils	2241
Second year pupils	1693
Third year pupils	1440
Fourth year pupils	1452
Number of pupils not returning at the beginning of the year and whose school life is presumably ended:	
First year pupils	130
Second year pupils	191
Third year pupils	110
Fourth year pupils	51
Number of graduates, June, 1914	1400
Percentage of number entering school with this class	53

III.

(1912—1913.)

Whole number of different pupils registered during year	9405
Number attending at least two weeks	9067
Boys	4159
Girls	4908
Number over sixteen years of age	4422
Number under sixteen years	4321
Average daily attendance	7069.74

Average daily absence	330.91
Average membership	7400.65
Per cent. of daily attendance, 1912-1913	95.5
Per cent. of daily attendance, 1913-1914	95.7
Average number of tardinesses per pupil, 1912-1913	2.7
Average number of tardinesses per pupil, 1913-1914	2.5
Average rate of tuition per annum	33.58

IV.

(1912—1913.)

Number of men teachers	162
Average salary of head masters	$1269
Average salary of sub-masters	$873.55
Number of women teachers	296
Average salary of women teachers	$601.25
Average length of year in weeks	36.67

CHAPTER XIV.

Enrollment.

A question of prime importance is always "What percentage of your children are you reaching?"

There is strictly speaking no legal school age in New Hampshire as there is in many states. The census age is 5 to 16. The age for compulsory schooling is 8 to 14.

The school census for 1914 is not complete at this writing. The census of 1913, which is related to the number of children in school for the year 1913-1914, shows 63,321 children between the ages of 5 and 16 outside of the city of Manchester, which makes a census but once in three years. The Manchester census for September, 1914, is 13,356. We thus have a census account showing 78,677 children of the ages mentioned in the state. Our school census is improving: it is only about 4,000 children short of the number we know there must be in the state.

From the federal census of 1910 we secure the value 80,725 as the number of children between the ages of 5 and 16. Assuming that the increase has been in about the same annual ratio since 1910 as it was for the decade preceding, we find the probable value for 1914 to be 82,893.

To account for this number we have the following returns:

Registered in the public school (unrepeated) for school year 1913-1914,	63,991
Reported as attending parochial schools,	13,684
Reported as attending other private schools,	622
Institutional cases,	524
Total,	78,821

We thus have 4,072 children within the age limits of

5 to 16 to be accounted for. From the census returns (1913) we find:

Number of children 5 to 8 not attending,	3,553
Number of children 8 to 14 not attending,	509
Number of children 14 to 16 not attending,	2,204
Total,	6,266

It will thus be seen that the difference between the highest estimate of the school population and the known enrollment in the public schools is more than accounted for. The fact that it is more than accounted for is due to the rounding up of children falling into the group of 6,266 who were known to be out of school in September, 1913, and putting them in school, so that children who were counted into this last named value appear also in the enrollment of the schools, to the extent of more than 2,000.

Children between the ages of five and eight were legally out of school. Children between the ages of fourteen and sixteen may have been legally out of school. Children between the ages of eight and fourteen were illegally out of school unless disabled.

We may conclude that, except in isolated instances, all children of compulsory school age were in school last year.

Of the children attending school, 92.53% were in school every day.

The average membership of the public schools for the year 1913-1914 was 56,008.75, which is a marked increase. A comparative statement of average membership values for several years past is here given:

1905,	55,679	1910,	54,966
1906,	55,232	1911,	53,724
1907,	55,236	1912,	53,884
1908,	54,472	1913,	54,334
1909,	52,867	1914,	56,009

Continuation Schools.

Evening schools were maintained during the past school year as shown by the following table:

TABLE NO. 36.

STATISTICS OF EVENING SCHOOLS.

District.	No. elementary schools.	No. secondary schools.	No. teachers, Ele. schools.	No. teachers, Sec. schools.	Cost.	Enrollment.	Average attendance.	No. weeks.
Claremont,	1	0	5	0	$200.00	63	32.	14.
Concord,	2	0	2	0	211.13	104	41.42	9.25
Dover,	1	0	5	0	869.50	135	64.5	21.
Jaffrey,	1	0	1	0	26.00	43	16.84	11.
Laconia,	1	0	1	0	200.00	40	18.6	15.
Manches'r,	5	0	34	0	2,555.66	717	310.	16.
Nashua,	8	3	8	3	1,480.06	354	286.74	18.
Tilton,	1	0	2	0	140.00	12	7.93	13.
	20	3	58	3	$5,682.35	1,468	778.03	14.66

CHAPTER XV.

Promotion, Retardation and Loss.

Next to enrollment the most important fundamental question connected with the school system is, "How long do you hold your pupils, and how far do you carry them?" This question this chapter tries to answer. It should be remembered, however, that we can make no claims to absolute accuracy here. Our tables give a close approximation to the truth, and they make a picture of the situation with reference to the movements of pupils through school and their dropping out in school which is a true picture.

TABLE

Promotion, Retardation and Loss

DISTRICTS.	Grade I.					Grade II.					Grade III.				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Allenstown	7	1	5	....	9-8	6	....	....	3	14-1	9	....	....	1	10-8
Alstead	10	.....	....	....	6-2	11	....	....	..	7-6	7	....	....	....	8-6
Alton	13	7	5	....	6	9	4	....	..	7-6	17	....	2	...	8-6
Amherst	13	16	....	....	6-2	16	2	....	..	6-7	23	1	....	....	8-6
Antrim	5	2	1	....	6-3	9	1	1	..	7-3	6	1	....	....	8-3
Ashland, special	25	8	8	....	6-10	29	2	1	1	8-6	24	3	....	....	8-2
Atkinson	6	1	....	....	6-3	7	2	1	..	8-11	9	1	....	....	8-3
Bartlett, town	6	4	3	....	6-6	5	....	1	..	7-6	11	....	1	....	9
Bartlett, special	12	3	....	....	6	10	2	....	..	7	9	7	3	....	8
Bath, town	9	10	1	...	6-5	10	....	....	..	8-4	9	....	....	...	9-9
Bath, Union	11	2	2	....	6-8	6	....	....	..	8	6	1	1	....	9
Belmont	14	16	4	....	7-6	14	....	3	..	8-2	16	2	....	....	9-9
Bennington	.....	7	1	4	5-6	15	....	....	..	8	25	....	....	....	10
Berlin	90	15	6	....	6-9	77	5	5	..	7-11	75	7	1	....	8-8
Bethlehem, special	11	3	....	....	7-3	13	....	....	..	8-7	6	3	....	....	....
Boscawen, town	5	3	....	....	10	6	....	1	..	7	11	....	1	....	8
Bristol, special	31	18	3	....	7	16	1	1	..	8-10	15	....	....	....	8-9
Canaan, special	8	2	...	....	5	4	....	....	..	8	8	....	....	....	7
Candia	....	4	1	....	5	28	....	....	..	6	11	1	....	....	7
Charlestown	20	5	4	....	6	23	3	1	..	7-6	25	2	....	...	8-6
Claremont	83	23	2	....	6-5	97	10	10	..	7-6	94	10	7	...	8-9
Colebrook, special	19	6	1	...	5-11	17	2	1	..	6-10	22	1	...	....	9-3
Concord, Union	298	107	24	....	6-10	297	37	5	1	7-10	257	31	...	1	9-2
Concord, Penacook	50	12	....	....	6-5	44	9	....	..	7-9	36	2	....	....	9-1
Conway	44	7	9	....	6-7	54	2	2	..	7-11	53	1	3	....	8-8
Danville	8	1	....	....	6	5	....	1	..	7	3	5	....	...	8
Derry, town	99	24	....	....	6-2	79	5	1	..	7-3	82	6	....	....	8-2
Derry, special	10	3	....	....	5-10	4	....	....	..	7-5	7	....	....	....	8-8
Dover	119	43	17	....	6-8	118	4	5	..	8-4	114	1	4	....	9-2
Dublin	5	.....	....	....	.....	9	....	....	..	7-3	7	....	2	....	8-6
Durham	13	6	1	....	6-5	15	6	4	..	8-4	12	2	....	....	9
Enfield	25	8	3	....	6-9	24	4	3	..	8	33	6	3	....	10-5
Epping	13	6	....	....	6-3	18	...	1	..	7-3	17	14	....	....	9
Errol	2	1	1	....	5-8	4	....	....	..	6-3	1	....	....	....	7-6
Exeter	83	31	12	....	5-11	81	9	5	..	7-4	107	8	1	....	8-3
Farmington, special	34	7	....	...	6-1	29	2	2	..	7-2	32	4	4	....	8-6
Fitzwilliam	17	9	4	....	6-4	23	2	....	..	8-3	27	4	....	....	9-2
Francestown	8	2	2	....	6	6	2	2	..	7-4	12	....	....	....	9-1
Franconia	8	.....	1	....	6	8	1	1	..	7	8	1	2	....	9
Franklin	60	19	5	....	6	49	8	7	..	7-10	50	3	1	....	8-11
Goffstown, special	12	.....	3	....	6-8	19	...	1	..	7-4	9	....	....	....	9-2
Gorham	24	8	2	....	7	25	5	....	..	7	29	3	3	....	9
Greenland	10	3	3	....	6-7	12	....	1	..	7-10	10	....	....	....	9-3
Greenville	5	4	2	....	6	6	2	....	..	7	8	1	2	...	8
Hampstead	16	1	1	...	6-6	6	....	....	..	7-2	12	2	....	....	8-3
Hampton	24	7	1	....	6-1	24	2	....	..	7-1	15	2	....	....	8-11
Hampton Falls	13	2	....	....	6-11	11	1	....	..	7-10	7	....	....	....	9
Hancock	11	5	1	....	6-5	10	2	2	..	7-5	13	1	....	....	8-8
Hanover, special	25	6	....	....	6-3	34	3	....	..	7-5	37	....	3	....	8
Harrisville	6	7	....	....	6-8	12	....	....	..	8-3	11	....	....	....	9-1

No. 37.

—Elementary Schools.

Grade IV.					Grade V.					Grade VI.					Grade VII.					Grade VIII.				
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
8	...	...	1	9-3	6	...	...	1	12-4	6	1	...	1	12-3	4	1	..	...	12-1	8	...	...	1	13-5
10	....	1	..	9-7	8	...	...	...	9-9	8	...	...	...	11-4	10	1	..	...	11-10	16	...	...	5	13-7
19	3	3	..	9-8	21	2	3	...	11	10	1	1	...	11	14	...	1	1	12-8	14	...	2	2	14-2
15	....	....	..	10-8	17	3	...	...	10-5	18	4	...	...	11-5	17	2	..	1	13-4	12	...	...	1	14-5
10	....	....	..	9-8	9	3	2	...	10	12	...	1	...	11-10	12	...	..	4	12	13	1	1	..	13-10
27	3	1	..	10-9	29	2	3	...	12	21	...	...	1	11-9	23	...	..	3	13-7	19	...	3	..	14-11
5	1	....	..	10-6	12	...	...	...	10-1	15	...	...	...	11-6	2	...	..	...	12	13	2	...	..	14-2
9	....	....	..	10	2	...	...	...	11	14	...	...	...	12	2	...	..	...	13	2	4	...	1	14-6
5	3	3	1	10-8	11	...	...	...	10	16	1	...	2	12	13	...	..	1	12-5	10	...	...	..	13-10
10	....	....	..	9-10	3	...	...	...	12-2	5	2	...	...	12-4	5	...	..	...	12-7	5	3	...	3	14-6
3	4	....	..	11-4	2	1	...	...	11-6	4	...	...	...	11-9	....	...	..	...	.....	3	3	1	..	13-10
10	1	....	..	9-9	15	2	...	2	11	15	1	...	...	11-11	9	...	2	...	... ..	8	...	...	1	.....
14	....	....	..	11	8	...	...	...	12	2	..	...	...	13	14	...	..	...	14	....	..	...	..	.....
83	8	1	..	10-1	131	6	...	11	11-6	129	11	7	20	12-3	106	15	1	12	13-1	....	..	...	..	.....
9	....	2	..	.....	10	...	...	...	.....	4	4	1	...	12	4	2	..	...	13	5	3	...	..	13
9	1	....	..	10	8	...	...	...	10-6	....	1	...	...	14	5	1	..	...	12	5	...	...	..	12
18	....	....	..	10-3	20	...	...	...	11-5	12	2	...	...	12-3	8	3	..	...	13	15	...	...	..	14-2
5	1	....	..	11	5	3	...	...	12	7	...	1	...	11	6	5	..	...	12	4	...	2	..	14
17	....	....	..	8	17	...	...	...	9	13	...	...	...	10	12	...	..	...	12	21	...	...	..	14
29	2	2	..	10	21	2	...	...	10-3	24	3	...	1	11-3	18	2	..	...	13	16	1	...	..	13-3
78	3	11	..	10-3	108	4	14	4	10-10	100	5	4	...	12-3	82	12	2	2	13-4	67	3	5	6	14-1
21	....	....	..	9-6	15	2	...	...	10-2	14	...	...	3	13-7	21	...	1	...	12-10	18	...	1	..	13-5
235	49	8	8	10-7	198	38	...	...	11-9	222	26	1	4	12-5	.....	...	...	...	.....	.....	...	...	...	.....
61	....	....	..	10-4	35	12	2	...	11-1	30	16	1	...	11-6	19	13	2	...	12-11	35	...	4	1	13-6
66	....	2	..	9-11	45	1	5	...	11	48	4	2	...	11-5	55	5	2	5	12-9	39	9	5	6	13-8
9	2	....	..	8-6	18	1	...	...	10-6	8	...	...	...	11-6	11	1	..	...	13	3	...	...	1	14
84	5	....	..	9-5	76	6	...	1	10-1	72	1	...	8	11-6	54	3	..	2	12-9	41	...	...	4	13-5
5	....	....	..	10-2	6	...	...	...	10-11	2	...	...	...	11	2	1	..	...	12	14	...	...	..	13
114	6	1	.	11-3	108	3	5	1	11-10	111	3	...	1	13-6	108	3	2	2	12-11	88	...	...	5	13-11
...	....	....	..	.....	11	...	...	...	10-6	...	...	...	...	.....	....	...	..	...	.....	12	...	...	2	12-1
15	2	3	..	10-5	18	1	...	...	10-6	7	...	...	...	12-2	12	1	2	...	12-9	6	2	...	1	12-9
22	4	....	..	10-1	16	1	...	...	11 3	23	2	4	...	12-7	20	2	..	1	14-4	11	3	...	..	13-9
9	4	....	..	10	14	2	...	...	12-2	17	3	...	...	12-9	17	1	3	...	13-6	8	...	...	..	13-7
7	....	....	..	9	7	2	...	...	11	2	...	...	...	11-3	6	...	..	1	12	2	...	...	..	12-8
92	5	6	..	8-11	92	9	4	...	10-2	34	4	...	1	11-4	38	3	1	1	12-10	23	5	2	9	13-9
24	...	....	..	9-8	31	5	...	...	10-9	22	4	...	...	11-11	29	6	1	1	12-3	17	2	...	2	13-5
20	2	....	..	9-11	16	7	...	. .	11	17	1	...	...	11-4	11	...	3	1	13 1	19	...	2	1	13-6
8	....	....	..	9-2	11	1	...	...	9-10	6	...	...	...	11-10	3	2	...	...	13-2	7	...	...	1	14-4
9	1	1	..	9	12	2	3	...	11	5	...	1	...	12	8	1	..	1	14-2	4	...	...	...	15-2
63	...	....	..	9-8	67	4	...	...	11-3	65	2	...	...	11-3	59	3	1	...	12-3	38	6	1	3	13-9
13	....	....	..	9-2	8	5	...	...	12	12	...	...	...	12	14	2	..	1	13-6	11	1	...	..	14
26	2	10	..	10	25	...	...	...	11	27	1	3	...	11	13	5	1	1	12	22	1	...	2	14
8	3	....	..	10-4	8	1	...	1	11-2	7	...	...	...	11-11	5	...	...	...	11-10	7	3	2	..	13-8
11	1	....	..	11-7	17	3	...	...	12-8	11	5	...	...	12-11	10	...	1	...	13-2	13	...	...	..	13-4
15	2	....	..	9-4	12	...	...	...	11-3	8	...	...	...	12-4	18	1	..	2	12-3	2	2	...	..	14-1
17	2	....	..	9-6	14	2	...	...	10-11	19	1	...	...	12-1	15	1	...	...	13-1	19	1	...	..	14-3
13	1	....	..	9-8	5	...	...	...	11-3	7	..	...	...	12-4	2	...	1	...	12-9	5	1	...	..	13-10
10	....	....	..	9-4	13	...	...	...	11	14	...	...	...	11-7	5	...	...	...	13	8	...	...	1	13
26	1	....	..	8-4	28	...	1	...	9-11	26	...	2	...	11-4	21	1	...	...	10-10	19	2	...	..	12-4
8	....	....	..	10-2	12	1	...	...	11-2	6	...	.	...	12	8	1	...	...	13-3	2	...	...	..	14-2

TABLE

DISTRICTS.	Grade I.					Grade II.					Grade III.				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Hart's Location	5	1			5-10	3				7-9	1				7-1
Haverhill, town	23	27	5		6-1	29	8	5		6-10	23	6	3		7-9
Haverhill, Woodsville	45	1			5-6	33	5	5		7-5	31	2	2		8-6
Henniker	11	5	5		6	16	1	2		7	13				8
Hill	12	1			6-4						2				8-8
Hillsborough, special	31	5			7-4	19	4			7-10	17	1	1		9-4
Hinsdale	26	7			6	25				7-2	27	1			8-5
Hollis	14	6			6-8	17				8-2	12	3			9
Hooksett	32	4	2		6-8	34	1	1		8-2	34	1		1	10
Hopkinton	11	7	6		6-7	15	3	3		7-3	15	2			8 4
Hudson	26	3			6-7	25	1	2		7	25	6			8-10
Jaffrey	44	15			6-8	45	7	7		8-3	42	4			9-4
Jefferson	20	8	1		6-6	26	1		1	7-10	27	1			8-11
Keene	138	29	8		5-6	157	12	3		6-3	117	8	3		7
Kingston					5	19	8			6	17				7
Laconia	112	60	13		6-1	120	12	5		6-9	123	15	9		8-2
Lancaster, special	40	10			5	35	2	2		7	30	2			8
Landaff	11	9			6-9	6				7-6	9				8-4
Langdon	5	2			6	7	2			8-1	5				9
Lebanon, town	24	2			6-8	19	6	1		7-10	27	1			8-6
Lebanon, high school	31	6	8		7-2	24	1	1		7-7	32				9-2
Lebanon, West	16	4			6-2	18				7-2	15				8-9
Lee	11	1			6-7	9				7-6	5				9-8
Lincoln	20				6	9	1			8	11				9
Lisbon, Sugar Hill	2				6						6				8
Lisbon, special	37	5	7		6-5	30	4	3		8	34	2	5		8-5
Litchfield	3	3			7	2				8	1				8
Littleton	77	27	3		6-7	74	31	7		7-9	75	7	5		9-3
Londonderry	21	14	2		5-6	31	2			7	25				8
Madison	9	1			6-11	17				7-10	11				9-5
Manchester	731	113	7	1	7	507	33	4		8-2	721	54	1	6	9-5
Marlborough	24	7			6-10	23				8	40	2			8-3
Meredith	13	6			6-2	30				7-3	17			2	9
Merrimack	5	15			6	13	34	8		7	7	28	10		8
Milan	19	3			6-3	19	4	1		8	14				9-4
Milford	82	13	14		6-4	74	12	3		7-9	82	7	5		8-9
Mont Vernon	4		1		6-4	5				7-4	1				9
Nashua	328	140	48		6-8	209	30	16		8-3	274	35	9		9-5
New Boston		8			6	8	1			6-5	11	1			8
Newfields	4		2		6-1	5				6-1	5				7-6
New Ipswich	27	6			6-11	24				8	24				8-11
New London	8				6	18	3			6-6	3				9
Newington	4		2		6-2	7		1		7-10	2	1			8-10
Newmarket	35	25	7	3	6	29	15	1		9	31	2		1	10
Newport	70	26	12		6-7	70	7	11		8-2	61	4	3		9-5
Newton	11	4	1		5-10	20				7	22	1			8-1
North Hampton	8	3	3		6	14	2			7-3	7	1	4		11-11
Northumberland	40	19	13		7-5	33	7	2		7-10	37	4	3		9-8
Northwood	7	8			5-9	12	1			7-3	14		2		8-4
Pelham															

No. 37.—*Continued.*

Grade IV.					Grade V.					Grade VI.					Grade VII.					Grade VIII.				
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
...	....	...	...	.....	1	....	....	..	9-6	1	...	....	..	11-7	....	....	....	..	.....	....	....	....	....	.....
25	3	...	...	10-2	21	6	1	1	10-6	22	8	....	1	11-8	18	4	....	..	12-11	20	..	..	2	13-6
39	2	...	...	9-1	35	....	....	..	11	34	3	2	..	11-4	32	....	4	1	13-1	23	7	7	3	14-5
13	....	2	...	10	11	1	....	..	11	13	....	...	..	12	8	....	....	..	13	12	2	..	...	14
4	....	...	...	8-11	10	....	....	..	10	8	....	....	..	11	....	....	....	..	.....	10	..	..	...	13
25	1	...	...	10-8	33	1	2	..	11	18	1	2	1	13	14	2	....	..	13-3	20	2	..	...	13-11
26	1	1	...	10	22	1	....	..	10-7	15	....	...	..	11-5	18	4	....	..	12-4	22	4	..	1	13-7
17	5	...	...	9-3	12	2	....	..	10	9	1	....	..	11	12	2	....	..	12-3	12	3	..	...	13-7
29	....	...	1	10-5	13	....	1	..	10-6	....	....	....	..	.....	11	....	....	1	13	....	....	....	....	.....
9	....	...	...	9-6	11	3	..	..	10-6	18	....	1	..	13-8	20	3	....	..	12-8	15	6	1	...	13-7
19	....	...	...	9-11	20	3	....	..	10-10	20	2	....	..	11-10	31	4	....	1	12-10	12	..	..	...	13-1
45	5	3	1	10-11	36	7	....	..	12-3	34	...	....	..	12-4	22	1	....	..	12-9	19	..	..	1	13-7
17	2	...	...	10-9	12	2	....	..	12-3	11	4	1	..	12	13	4	....	2	12-8	7	..	..	..	14-4
152	10	2	...	7-11	128	10	1	..	8-4	101	6	4	..	9-8	118	11	2	2	11	73	5	2	4	12-1
7	3	...	...	8	16	4	....	..	9	8	5	...	..	10	17	5	....	..	11	14	..	..	..	12
80	12	5	...	9-	86	11	5	..	10-10	85	8	4	..	11-10	75	8	2	1	12-5	68	14	5	1	13-4
33	....	3	...	8	36	3	1	..	10	34	2	3	1	11	32	5	....	..	13	26	9	1	1	13
10	1	...	...	10-4	9	5	....	.	10-9	18	2	....	1	12	3	1	....	..	13-6	3	1	..	...	14-2
3	...	...	..	11-10	3	....	....	..	12	5	....	....	..	12-4	5	....	...	.	13-4	5	..	.	...	14
23	2	...	...	10-3	17	1	....	..	12-3	4	2	....	..	10-10	5	3	....	1	11-10	10	..	..	...	13-8
17	2	...	...	10-5	23	7	6	..	11-6	20	3	....	..	11-9	25	4	3	..	13-4	39	2	3	1	1 -11
12	2	...	...	8-1	18	4	....	..	11-3	24	2	....	..	12 3	11	1	....	..	13-9	11	..	..	...	13-8
12	....	...	...	9-8	....	....	....	..	.....	8	3	....	..	11-8	3	1	....	..	11-6	7	..	..	...	14-4
12	....	...	...	10	17	2	2	..	11	9	....	....	..	11	9	....	....	..	12	9	..	..	...	14
3	....	...	...	10	7	2	....	..	11-9	3	....	....	..	13	2	1	....	..	13-8	....	..	..	..	.....
30	4	5	...	9	26	10	9	..	11-4	14	9	7	..	13	13	1	3	1	13	20	5	4	2	14
3	..	..	..	9	7	....	....	..	12	4	....	....	..	11	1	....	....	..	13	1	..	..	..	14
71	12	7	3	10-3	72	20	8	..	11-5	67	9	....	2	12-1	57	9	7	5	13-4	45	6	..	..	14
20	1	...	...	9-3	21	1	..	..	11	12	....	....	..	12	13	1	....	..	12-6	13	1	..	..	13-3
4	....	...	...	11-3	3	..	....	..	11-4	14	..	4	..	12-1	2	....	....	1	13-9	9	..	..	1	13-10
744	49	...	10	10-4	884	87	5	17	11-6	557	60	2	12	12-5	429	20	4	23	13	369	12	4	17	14-1
47	3	3	..	9-7	34	2	....	..	10-10	30	1	....	..	11-4	20	7	....	1	13-2	13	..	..	1	13-11
17	....	...	...	10	18	1	....	..	11-2	12	....	.	..	11-7	10	1	....	..	13-8	10	..	..	..	14-5
7	17	2	...	9	...	8	2	..	11	....	18	3	..	12	....	11	2	..	13	...	7	1	1	14
17	1	...	...	9-3	21	3	....	1	11-11	17	....	....	..	11-3	9	....	....	1	13-3	15	..	..	1	13-5
64	7	3	...	10-4	59	7	20	.	11-1	62	13	12	..	11-9	39	8	4	..	12-6	56	3	5	2	13-5
4	....	....	...	8-3	2	1	....	..	10 6	6	....	....	..	11	4	....	....	..	13	....	..	2	1	13-8
223	12	6	...	10-5	227	20	8	..	11-7	128	8	3	..	12-3	146	4	....	..	12-5	155	10	.	...	13-3
11	2	...	...	9-11	2	....	....	..	10	11	3	1	..	12	6	1	....	..	13	6	2	..	...	12-1
6	2	1	...	9-4	5	2	....	..	10-3	5	....	....	..	10-7	4	..	....	..	12-8	2	4	3	3	13-4
24	...	...	...	10	13	1	....	..	10-10	9	....	....	..	11-6	17	....	....	..	11-11	8	1	..	...	13-4
16	1	...	...	9-6	7	....	....	..	9-9	9	....	....	..	11-8	3	....	....	3	12-3	6	..	..	...	12-9
4	3	1	...	9-9	5	....	1	..	11-11	8	....	....	..	12-3	....	....	....	..	.....	2	..	..	...	12
36	4	2	1	11	17	3	....	..	10-6	17	....	....	2	12	18	..	....	3	12	17	1	..	1	13
65	3	2	...	10-11	58	1	....	..	11-1	43	4	....	3	12-3	54	1	....	1	12-2	36	6	..	9	13-8
11	2	...	...	9-8	8	....	....	..	10	16	3	...	..	11-1	9	1	....	1	12-9	10	..	..	...	14-6
5	2	1	...	9-6	10	2	....	..	11-3	3	....	1	..	12-3	8	....	....	1	12-6	8	..	..	1	12-11
29	2	...	...	9 6	30	3	....	1	10-2	35	2	...	1	12	19	1	....	2	12-6	29	..	..	..	14
17	5	2	1	9-6	12	2	1	..	10-6	16	1	2	..	11-9	13	2	....	1	12-5	17	7	5	1	13-10
...	....	..	..	.....	....	....	....	..	.....	....	....	....	..	.....	11	3	....	1	11	5	6	3	1	13

TABLE

DISTRICTS.	Grade I.					Grade II.					Grade III.				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Pembroke	22	12	8	....	5-6	21	3	2	....	7-6	39	3	....	2	8
Peterborough	35	20	1	....	6-4	28	8	1	2	8-2	36	3	....	...	9-5
Piermont	7	.....	3	....	6	8	....	....	....	6-8	6	....	....	...	8
Pittsburg	.....	.....	....	....	....	.....	....	....	....	....	4	1	....	...	8
Pittsfield	31	23	4	....	6-6	58	4	....	....	8-1	35	....	....	...	8-11
Plaistow	15	9	3	....	6-6	20	8	....	....	8	7	4	2	...	10-3
Plymouth	35	4	3	....	6-7	44	4	....	....	7	37	1	....	...	8-6
Portsmouth	195	36	1	....	6-2	188	30	....	1	7-6	162	13	....	3	8-9
Raymond	19	6	....	....	6-4	24	....	1	....	7-6	20	1	....	...	9
Rindge	5	1	....	....	5-11	5	1	....	...	7-6	4	1	....	...	8-10
Rochester	128	24	6	....	6-4	111	16	2	....	7-4	118	7	6	...	8-6
Rollinsford	30	19	....	....	5	31	9	2	....	7-2	25	9	2	3	10-5
Rye	18	3	3	....	6	19	....	3	....	7-4	15	1	1	...	8-6
Salem	39	15	3	....	6-6	36	2	1	...	7-9	30	1	....	...	8-10
Seabrook	.....	.....	....	....	6	21	10	3	....	7	35	3	9	...	8-6
Somersworth	43	46	....	1	6	48	10	1	....	7-5	54	9	4	...	9-3
South Hampton	7	1	....	....	6-5	7	2	....	....	8-5	5	....	....	...	10
Stewartstown	11	8	....	....	6-5	15	3	2	....	8-5	9	1	1	...	8-11
Stratford	18	2	....	....	6-6	13	1	....	....	7	15	....	....	...	8
Stratham	21	4	2	...	6-8	9	3	1	....	7-3	11	....	....	...	8-7
Sunapee	12	4	....	....	6-11	16	....	....	..	7-9	14	....	....	1	9-11
Swanzey	13	6	3	....	5-11	17	1	....	....	6-11	18	1	....	...	8-9
Temple	12	2	....	....	5-11	1	....	....	....	8-5	8	....	....	...	8
Tilton, special	37	16	....	....	6-6	29	11	3	....	7-4	28	6	2	...	8-9
Troy	28	10	5	....	7-1	35	4	2	....	8-7	28	2	3	...	9-4
Wakefield	21	16	3	....	6-3	24	16	4	....	6-8	18	5	....	...	7-8
Walpole	60	9	1	....	6-1	59	7	....	....	7-2	56	2	1	1	7-9
Warren	4	4	....	....	7	9	..	1	....	8-6	8	....	1	...	9
Weare	5	.....	5	....	6-4	4	1	....	....	6-9	5	....	....	...	8-8
Westmoreland	12	.....	....	....	6-10	11	....	...	....	7-5	11	....	....	...	8-8
Whitefield, town	7	3	....	....	6-2	8	3	....	....	7-10	8	1	....	...	8-8
Whitefield, special	31	5	2	....	6-6	25	3	....	....	6-6	31	3	....	...	8-10
Wilton	31	12	2	....	6 3	23	3	....	....	7-9	23	6	1	...	8-6
Winchester	42	13	13	....	6	24	3	....	....	7-5	25	1	1	1	8-8
Wolfeboro	42	18	14	2	6-2	41	1	5	....	7-6	29	2	1	...	8-10
Woodstock	.....	.....	....	....	....	.....	....	....	....	....	17	....	....	...	8-7
Total	4,754	1,495	394	11	6.12	4,476	568	196	8	7.52	4,626	426	144	23	8.15

1. Number of pupils promoted to next grade during or at end of school year.
2. Number of pupils in grade at end of year not promoted.
3. Number of pupils in grade at end of year who have been there two years.
4. Number of pupils who have left school and whose school life has presumably ended during year. Includes those dropping out in summer vacation, 1913.
5. Average age of class at beginning of year.

No. 37.—*Continued.*

Grade IV.					Grade V.					Grade VI.					Grade VII.					Grade VIII.				
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
27	4	...	1	8·3	36	2	...	..	10·4	25	...	...	...	11·8	27	1	...	..	12·4	17	...	...	...	14·6
20	3	...	..	9·9	26	2	...	..	11·2	29	2	...	...	11·7	20	1	...	..	12·8	14	4	...	...	13·8
11	1	...	..	9	8	...	...	1	10·6	6	...	...	1	11	6	3	1	..	13	4	...	...	...	13
5	...	...	..	9	8	...	...	..	11	3	...	...	...	12	2	1	...	..	13	.....	...	...	4	16
41	3	2	..	10	36	4	...	1	11·3	39	3	...	2	12·6	20	1	...	3	13·5	24	1	...	1	13·9
8	2	2	..	9·6	13	...	3	..	10·4	17	4	7	...	12·6	7	...	...	..	12·6	.....	...	...	...	.....
40	2	2	..	10·7	38	1	...	..	12	26	...	2	...	11·2	37	1	2	..	12·8	34	...	3	...	13·4
168	11	...	1	10·3	173	10	1	2	11·8	154	11	...	4	12	134	11	1	6	13·1	93	12	2	15	13·9
16	1	2	..	10·3	12	5	...	..	11·3	15	...	...	...	11·8	11	3	2	1	12·9	18	...	1	...	13·9
7	...	...	1	7·9	7	...	...	..	10·3	11	4	...	...	11·1	5	2	...	..	12	5	...	...	2	12·9
143	10	6	1	10·2	129	11	3	3	11·4	130	6	6	6	12·4	112	15	6	3	12·9	101	2	1	2	13·10
31	4	...	2	10·7	36	7	...	3	11·3	19	3	...	4	12·9	18	3	2	5	13·4	10	...	...	4	13·8
11	...	...	..	10·4	15	...	1	1	11·5	11	3	2	...	11·6	11	5	3	1	13·6	10	2	2	1	13·10
32	2	1	..	9·4	30	6	4	..	10·9	29	2	3	2	11·11	34	1	3	1	12·5	34	3	6	1	13·7
34	2	3	..	10·6	34	1	2	..	12·6	36	2	...	...	13	13	5	...	..	13·6	12	1	...	...	15
57	10	3	..	11·1	59	5	...	1	11·8	57	2	...	3	12	37	...	...	..	12·6	44	2	...	...	13·5
2	...	...	..	10·3	6	1	...	..	11·4	.....	...	...	...	.....	.....	...	...	...	.....	7	...	...	...	13
3	...	1	..	9·10	3	...	...	..	12·4	15	...	...	...	12·6	3	...	...	..	12·11	3	...	...	...	13·8
15	...	...	..	8	12	...	...	..	9	10	...	...	...	11	19	...	...	..	12·5	19	1	...	1	14
10	1	...	..	9·9	11	2	...	..	10·4	10	...	1	2	12·2	8	1	...	..	12·9	7	...	...	...	13·8
14	...	...	..	9·4	16	...	...	..	10·9	7	...	...	...	12	12	...	1	..	13·5	7	...	...	...	13·5
24	1	2	..	9·9	13	1	1	..	10·10	21	2	...	...	11·4	21	...	1	..	12·10	25	1	3	...	13·8
2	...	...	..	9·4	10	...	...	..	10·1	4	..	...	...	12·2	10	...	...	..	13·2	1	...	...	...	14·3
43	1	1	..	9·6	30	...	...	..	11·3	30	2	...	1	12	37	1	...	1	12·2	30	1	2	3	14·1
37	4	3	..	10·4	23	6	4	1	10·5	19	2	2	2	11·7	16	5	...	6	13·8	12	...	...	2	13·3
29	...	...	..	10·1	17	3	3	..	10·11	21	6	5	...	12·2	25	...	...	1	13·8	15	1	...	1	14·2
54	5	3	..	8·5	42	4	2	..	10	44	4	...	3	11·3	69	6	...	4	12	51	6	...	3	13·2
5	1	2	..	9	2	2	...	..	10	9	1	2	...	12	6	1	3	..	13	3	...	...	2	14
7	1	1	..	10	2	2	...	..	10·6	6	...	...	...	11	4	1	...	.	13	2	...	...	1	15
10	...	...	..	9·6	10	...	...	..	10 5	6	...	...	...	11·7	6	...	...	2	12·10	6	2	...	4	13·4
3	...	...	..	10·1	5	1	...	..	10·10	5	1	2	...	11·6	1	...	...	..	11	3	4	...	...	14·3
20	9	1	..	9·5	21	9	...	.	10·3	23	10	2	6	12·10	27	1	...	1	13·3	17	15	3	1	14·6
20	2	...	..	9·8	15	2	...	1	11·11	32	1	...	...	12	23	4	...	..	12·11	23	3	...	...	13·11
17	1	...	..	10·4	32	5	2	..	11·4	24	1	...	...	11·10	25	3	...	..	12·3	14	1	2	2	13·6
34	1	2	..	10·1	32	...	2	..	11·1	26	...	1	...	12·2	23	2	2	..	13·1	23	...	3	...	14·5
9	...	...	..	9·6	15	...	...	..	11·1	19	5	...	...	11·7	15	...	...	..	13·1	9	1	...	...	13·2
4520	387	143	33	9.72	4,516	478	143	55	10.63	3,835	369	116	102	11.80	3,203	313	85	..	12.76	2,735	247	110	165	13.49

SUMMARY OF TABLE.

	Grade.							
	I.	II.	III	IV.	V.	VI.	VII.	VIII.
Pupils promoted.....	4,754	4,476	4,626	4,520	4,516	3,835	3,203	2,735
Pupils not promoted.....	1,495	568	426	387	478	369	313	247
Pupils in grade two years	394	196	144	143	143	116	85	110
Pupils left school.....	11	8	23	33	55	102	132	165
Average age September...	6.12	7.52	8.15	9.72	10.63	11.80	12.76	13.49
Retardation as referred to this year's first grade age.	....	.40	.03	.60	.53	.68	.64	.37

The above table includes of course only those school districts making reports, that is to say, those which have schools sufficiently well graded to enable them to make such reports. The membership of these districts was 47,193.61 or 84% of the membership of the state. Of the remaining 16% we know little. For the most part it is enrolled in schools in which grading represents merely the whim of the teacher of the hour.

The most notable revelation of this year's summary is its disclosure of the influence of the attendance act of 1913, requiring children to remain in school until they finish the eighth grade or until they reach the age of sixteen. Attention is called to the following comparison of loss statistics:

	Grade.							
	I.	II.	III.	IV.	V.	VI.	VII	VIII.
1911-12.....	6	13	50	173	176	242	292	268
1913-14.....	11	8	23	33	55	102	132	165

It will be seen at once that there has been a marked decrease in loss beginning with the third grade. By comparison with the statistics of two years ago, New Hampshire School Report, 1911-12, page 194, it will be seen that the marked loss was then beginning in Grades IV-V while it is now deferred to Grades VI-VII. *At the rate of loss during the school year 1913-14, 92 per cent. of the pupils now entering the first grade will graduate from the eighth.* As a matter of fact, it will be more than this for the law of 1913 is now having its effect upon the children in the lowest grades and the loss from them will be the loss due to disability and death only.

PASSAGE FROM ELEMENTARY TO SECONDARY SCHOOL.

The line between the elementary and the secondary schools is rapidly disappearing and in many school districts we have already reached a time when children pass from the eighth grade to the high school as naturally and with no more loss than from the fifth grade to the sixth. Still a distinction exists in the minds of most people between the grades which are a part of the elementary and those which are a part of the high school. For that reason the following table is given:

TABLE NO. 38.

Showing Percentage of Eighth Grade Promotions Entering Secondary School, September, 1914.

Class I. Twenty-five promotions or over.		Class II. Ten to twenty-five promotions.		Class III. Less than ten promotions.	
Lancaster,	100%	Alton,	100%	Atkinson,	100%
Littleton,	98	Bethlehem (Town),	100	Bath,	100
Northumberland,	97	Bristol (Sp.),	100	Chichester,	100
Portsmouth,	95	Colebrook,	100	Durham,	100
Conway,	94	Goffstown,	100	Epping,	100
Keene,	93	Gorham,	100	Errol,	100
Berlin,	92	Hanover,	100	Landaff,	100
Laconia,	91	Henniker,	100	Newington,	100
Concord,	90	Lisbon (Sp.),	100	New Ipswich,	100
Lebanon (Sp.),	89	West Lebanon,	100	Greenland,	86
Milford,	89	Rye,	100	Hollis,	86
Newport,	89	Woodsville,	96	Loudon,	84
Penacook,	88	Hampton,	95	Lisbon (Town),	80
Franklin,	86	Stratford,	95	Stewartstown,	80
Walpole,	83	Farmington (Sp.),	94	Canterbury,	75
Claremont,	82	Peterborough,	93	Epsom,	73
Rochester,	82	Whitefield,	93	Jefferson,	73
Wilton,	82	Antrim,	92	Hampton Falls,	71
Dover,	81	Derry (Sp.),	92	Madison,	71
Somersworth,	81	Lebanon (Town),	92	Allenstown,	63
Derry (Town),	80	Pittsfield,	92	Rindge,	50
Winchester,	76	Amherst,	91	Plaistow,	40
Nashua,	72	Hillsborough (Sp.),	90	Tilton (Town),	40
Manchester,	71	Wolfeboro,	88	Lee,	33
Salem,	71	Newmarket,	84		
		Jaffrey,	83		
		Troy,	83		
		Haverhill,	82		
		Hudson,	82		
		Enfield,	80		
		Fitzwilliam,	80		
		Charlestown,	79		
		Hinsdale,	77		
		Tilton (Union),	77		
		Londonderry,	72		
		Raymond,	67		
		Bartlett,	58		
		Hopkinton,	56		
		Swanzey,	54		
		Pembroke,	45		
		Belmont,	36		
		Weare,	30		

In the districts reporting, and these enroll about two-thirds of the membership of the state, 83% of the pupils promoted from the eighth grade entered some secondary school in the fall of 1914.

Loss in the Secondary School.

The table which follows shows the ratio of the graduating class of 1914 to the size of the same class on entering school four years previously,—first class (four-year) schools only.

TABLE NO. 39.

Showing Retention in Secondary School from Entrance to Graduation.

Class I. Twenty-five or more graduates.		Class II. Ten to twenty-five graduates.		Class III. Less than ten graduates.	
Lancaster,	76%	Goffstown,	80%	Austin-Cate Academy,	114%
Keene,	66	Hollis,	75	Enfield,	83
Rochester,	64	Milford,	71	Conant (Jaffrey),	83
Dover,	63	Antrim,	64	Lincoln,	80
Manchester,	62	Hillsborough,	64	Newmarket,	75
Colby Academy,	60	Peterborough,	63	West Lebanon,	75
Nashua,	59	Nute (Milton),	62	Simonds (Warner),	67
Pinkerton Academy,	59	Somersworth,	61	Groveton,	64
Tilton Seminary,	57	Sanborn Seminary,	59	Henniker,	61
Laconia,	56	Lebanon,	57	Alton,	60
Plymouth,	54	Ashland,	56	Epping,	60
Berlin,	51	Robinson Seminary,	55	Hampstead,	58
Concord,	48	St. Anselm's (Manchester),	54	Penacook,	53
Portsmouth,	43	Hanover,	51	Bethlehem,	50
		Proctor Academy,	49	Coes Academy,	50
		Kimball Union Academy,	46	Haverhill,	50
		Gorham,	45	Lisbon,	50
		New Hampton,	43	New Boston,	50
		Newport,	42	Stratford,	50
		Whitefield,	40	Woodsville,	47
		Colebrook,	39	Appleton Academy,	46
		Exeter,	39	Walpole,	43
		Pembroke,	37	Atkinson,	42
		Littleton,	35	Hampton,	41
		Franklin,	34	Jefferson,	38
		Stevens (Claremont),	33	Marlborough,	38
				Hopkinton,	36
				Wilton,	35
				Pittsfield,	33
				Winchester,	27
				Hinsdale,	23
				Dow Academy,	20
				McGaw Institute,	17
				Bath,	14

The aggregate percentage of retention for the state as a whole is 53%. That is to say, for every 100 pupils who entered some secondary school or schools in the fall of 1910, 53 graduated in June, 1914.

TABLE NO. 40.

Showing Graduates of Class of 1913 Who Entered Higher Institutions in September, 1913.

School.	No. graduating.	No. going to college.	No. going to other institutions.
Alton	5	1	..
Antrim	4	..	1
Appleton (New Ipswich)	9	..	..
Atkinson	5	..	..
Austin-Cate (Strafford)	8	1	..
Bath	2	..	..
Berlin	58	11	5
Bethlehem	4	1	..
Coes Academy (Northwood)	6	2	1
Colby Academy (New London)	16	8	..
Colebrook	21	1	..
Conant (Jaffrey)	9	3	..
Concord	80	11	5
Dover	57	13	1
Dow (Franconia)	9	2	..
Enfield	3	..	..
Epping	3	1	..
Exeter	16	4	..
Farmington	2	1	..
Franklin	20	3	2
Goffstown	11	..	2
Gorham	13	1	..
Groveton	18	..	1
Hampstead	3	..	1
Hampton	13	..	3
Hanover	10	3	..
Haverhill	5	..	..
Henniker	6	..	..
Hillsborough	4	..	..
Hinsdale	2	..	..
Hollis	2	..	..
Hopkinton	13	3	2
Jefferson	1	..	..
Keene	41	9	8
Kimball Union (Meriden)	20	9	2

School.	No. graduating.	No. going to college.	No. going to other institutions.
Laconia	16	2	1
Lancaster	28	2	4
Lebanon	21	3	1
Lebanon (West)	4	..	..
Lincoln	3	..	..
Lisbon	15	3	2
Littleton	22	6	5
Manchester	126	32	7
McGaw (Merrimack)	7	2	..
Marlborough	5	..	..
Milford	27	4	4
Nashua	60	21	1
New Boston	5	1	..
New Hampton	20	5	3
Newmarket	8	..	..
Newport	17	3	2
Nute (Milton)	12	1	..
Pembroke	5	2	2
Penacook	11	1	2
Peterborough	11	1	..
Pinkerton (Derry)	29	5	3
Pittsfield	15	5	3
Plymouth	22	5	3
Portsmouth	53	4	11
Proctor (Andover)	19	5	2
Robinson (Exeter)	23	7	2
Rochester	33	5	..
St. Anselm's (Manchester)	12	5	..
St. Mary's (Concord)	3	2	1
Sanborn (Kingston)	18	5	..
Simonds (Warner)	6	2	..
Somersworth	15	2	2
Stevens (Claremont)	25	5	1
Stratford	8	..	5
Tilton	60	18	5
Walpole	4	2	1
Whitefield	9	..	1
Wilton	17	2	2
Winchester	7	2	..
Woodsville	6	1	..
Total	1,306	259	110

It thus appears that 20% of all those who graduated from our four-year secondary schools in June, 1913, entered college in September of that year, while 28% entered institutions of all grades above secondary.

SUMMARY OF PROMOTION, RETARDATION AND LOSS.

Summarizing the foregoing, we find the following:

At the rate maintained during the school year 1913-14.

Of every 100 pupils entering Grade I—

1. 92 would complete Grade VIII.
2. 76 would enter a secondary school.
3. 38 would graduate from a secondary school.
4. 11 would enter some institution higher than secondary, and
5. 7 would go to college.

Tied down to somewhat more concrete terms this statement means that if we maintain the present rate, the children now attending not only the first grades but the second to the sixth inclusive will distribute themselves closely in accordance with the above statement, with this reservation: Item 1 should tend to increase, while the remaining items may show a slight decrease, owing to the fact that we shall be holding a relatively larger proportion of pupils through the elementary schools of the type which will tend to go no further.

TABLE NO. 41.

SHOWING PERCENTAGE OF TOTAL MEMBERSHIP IN HIGH SCHOOL FROM HIGHEST TO LOWEST.

	District.	Percentage in High School.	Rating on Basis of 100.
1.	Colebrook	32	97
2.	Antrim	28	85
	Berlin	28	85
	Concord	28	85
	Franconia	28	85
	Hollis	28	85
3.	Lancaster	27	82
4.	Exeter	25	76
	Lebanon	25	76

	District.	Percentage in High School.	Rating on Basis of 100.
5.	Franklin	22	67
	Hanover	22	67
6.	Hillsborough	21	64
	Woodsville	21	64
7.	Dover	20	61
	Goffstown	20	61
	Hampstead	20	61
	Hampton	20	61
	Keene	20	61
8.	Hopkinton	19	58
	Portsmouth	19	58
9.	Claremont	18	55
	Peterborough	18	55
	Plymouth	18	55
	Rochester	18	55
	West Lebanon	18	55
	Whitefield	18	55
10.	Henniker	17	52
	Stratford	17	52
11.	Ashland	16	48
	Newport	16	48
	Warner	16	48
12.	Bethlehem	15	45
	Laconia	15	45
	Wilton	15	45
13.	Somersworth	14	42
	Alton	14	42
	Farmington	14	42
	Gorham	14	42
	Lisbon	14	42
	Littleton	14	42
	Milford	14	42
	Penacook	14	42
14.	Lincoln	13	39
	Nashua	13	39
	Northumberland	13	39
	Pembroke	13	39
	Pittsfield	13	39
	Walpole	13	39
15.	Bath	12	36
	Epping	12	36
	Manchester	12	36
	Newmarket	12	36
16.	Marlborough	11	33
17.	Enfield	10	30
	Jaffrey	10	30
18.	Hinsdale	9	27
	Jefferson	9	27
19.	Haverhill	7	21
20.	Winchester	4	12
Value for State		17	52

In the above table, the figures in the column headed percentage in high school, show the percentage of the total home membership which was registered in the high school during the last school year. This is reduced to an eight-four equivalent. That is to say, in cases in which the local system has nine grades elementary and four grades secondary, the percentage is reduced to what it would be if the system were the normal eight-grade elementary and four-grade high school. Similarly kindergarten enrollment is allowed for. In fact any known peculiarity of a local system is so treated as to bring it into the prevailing eight-four equivalent. The average membership of non-resident pupils was returned for the year 1913-14 so that it has been possible to make accurate deductions in that respect from the total membership of both high and elementary schools. It is the home membership in every case with which we are dealing.

The figures in the column entitled "Rating on basis of 100" show the approach to a theoretically perfect distribution of pupils. That is to say, if every pupil lived and none were disabled, if there were no fluctuations in membership due to sickness, accident, etc., and especially if every pupil were completing the high school course, then of course one-third of the membership would be found in the high school and two-thirds in the elementary schools. In that case, the system would rate 100% so far as keeping pupils in school is concerned. If the percentage of the total membership enrolled in the high school is 16, then evidently that school system is 16 divided by 33 1/3 of perfection for the purposes of this comparison, or 48% and a fraction.

The comparison instituted by the table is not and cannot be absolutely precise but it is a close approximation. So far as is known, there is but one case which is somewhat out of keeping with the rest, namely, the special district of Lebanon. Here we have a relatively small elementary

membership due to the establishment of a parochial school which has not yet begun to affect the high school. Consequently, the percentage enrolled in the high school will be abnormally large and increasing over a period of a few years and then decreasing and abnormally small for an equal succeeding period.

The districts which have parochial schools are shown to the disadvantage of districts which do not, for the reason that parochial schools ordinarily withdraw from the public elementary schools an element which is not likely to enter high school.

Altogether the table makes a good picture of the relative efficiency of school districts with reference to (a) their fundamental purpose of getting children into schools and keeping them there; and (b) with reference to teaching efficiency, if we are to look upon the highest efficiency of the teacher as his ability to inspire children with the desire to learn more and go farther.

CHAPTER XVI.

Medical Inspection.

At the last session of the legislature a local option medical inspection act was adopted. The act is here quoted:

AN ACT RELATING TO MEDICAL INSPECTION OF SCHOOLS.

Be it enacted by the Senate and House of Representatives in General Court convened:

Section 1. Whenever any city, union, special, or town school district shall adopt the provisions of this act the said provisions shall be in force in such school district as hereinafter provided.

Sect. 2. The school board of the city or town, in which such school district is located, shall appoint one or more

school physicians of not less than five years' experience, shall assign one to each public and each private school within such school district, and shall provide them with all proper facilities for the performance of their duties as prescribed in this act.

SECT. 3. Every school physician shall in the presence of the teacher at least once a year, previous notice having been given, make such an examination of every pupil, excepting such as are hereinafter exempted, and of every teacher, janitor, and other employees, of the schools committed to his charge, and of the school buildings, yards and surroundings thereof as the protection of the health of the pupils may require. He shall report the results of his examination to the school board, who shall record the same, and they shall forthwith take such action thereon as in their judgment the public health or the health of the pupils demands.

SECT. 4. Every child who shows signs of being in ill health or of suffering from a communicable disease, shall be referred by the teacher to the parents or guardian of such child for examination and diagnosis by some regularly registered physician and if said parents fail or neglect to have such child so examined, and produce a certificate from such physician within two days, then such child shall be examined by said school physician.

SECT. 5. The school physician shall cause notice of the disease or defects, if any, from which any child is found to be suffering to be sent to his parent or guardian. Whenever a child shows symptoms of smallpox, tuberculosis, diphtheria, influenza, tonsilitis, whooping cough, mumps, scabies, or trachoma, or other communicable disease, he shall be sent home immediately, or as soon as safe and proper conveyance can be found.

SECT. 6. The school physician shall cause every child in the public schools to be carefully tested and examined in the presence of the teacher at least once in every school

year to ascertain whether he is suffering from defective sight or hearing or from any other disability or defect tending to prevent his receiving the full benefit of his school work, or requiring a modification of the school work in order to prevent injury to the child or to secure the best educational results. The tests of sight and hearing, shall be made by the teacher under the direction of the school physician. The physician shall cause notice of any defect or disability requiring treatment to be sent to the parent or guardian of the child and shall require a physical record of each child to be kept in such form as the state superintendent of public instruction shall prescribe.

SECT. 7. The state board of health shall prescribe the directions for tests of sight and hearing, and the superintendent of public instruction shall, in co-operation with the state board of health, prescribe instruction, test cards, blanks, record books, and other useful appliances for carrying out the purposes of this act, and shall provide for students in the normal schools instruction and practice in the best methods of testing the sight and hearing of children.

SECT. 8. Any parent or guardian may protest in writing to the teacher against the examination of his or her child or ward, and such pupil shall thereafter be exempt from any examination for or on account of any non-contagious disease or defect.

SECT. 9. The district may raise money for carrying into effect the provisions of this act.

SECT. 10. All acts and parts of acts inconsistent with the foregoing are hereby repealed, and this act shall take effect upon its passage.

[Approved April 22, 1913.]

There has in reality been but one year, namely, 1914, in which the local school districts could act on medical inspection at the annual school meeting. The list of districts which have adopted the provisions of the act follows:

SCHOOL DISTRICTS WHICH HAVE ADOPTED MEDICAL INSPECTION OF SCHOOLS.

Bath (Town)
Belmont
Berlin
Claremont
Franklin
Greenland
Hampstead
Hanover (Special)
Haverhill
Keene
Lee
Lisbon (Special)
Meredith
Nelson
New Ipswich
Newport
Newton
Northumberland
Plaistow
Rindge
Rye
Salem
Stratham
Tilton (Town)
Tilton (Special)
Weare
Whitefield (Town)
Whitefield (Special)
Woodstock

In addition to the above list, Concord and Penacook employ school nurses.

CHAPTER XVII.

Quality of Work in the Public Schools.

After we have got our children into school and kept them there, the matter of supreme interest is, "What kind of work is done in the school?" And this question cannot be answered with anything like the precision with which we can answer questions relating to enrollment. The question of the quality of education is perhaps the most productive of endless dispute and disagreement of all our public questions. People are content to indulge in interminable races of opinion to which there can be no definite outcome. Educational science has not yet reached a stage at which precise measurements can be applied at all points to the work of schools, although good progress is

being made and in not a few respects very definite measurements can now be applied. Whatever I have to report in this chapter is based upon conclusions drawn from actual observation and inspection though not in all cases upon measured facts. Consequently, the report has simply the value which it may derive from public confidence in the credibility of the observer and in his competency in drawing conclusions.

Whether in the elementary or in higher schools the standard by which work is judged is its capacity to produce active thinking in the pupils under instruction.

THE ELEMENTARY SCHOOLS.

Elementary schools, and teachers, as we know them in this department, fall naturally into four groups, which I describe in the order of excellence from lowest to highest.

1. We have the teacher whose highest conception of his or her office is the ringing of the bell, the assignment of lessons, keeping a semblance of order, and dismissing the school as soon as the time of day will warrant. This school is very commonly "kept" by an ignorant, not infrequently semi-illiterate, person and sometimes worse, who is frankly engaged in keeping school for the meagre financial return involved and nothing more. Of course such a school is a school in name only. The children derive no profit, and, since it is sometimes rotten with immorality, it is a curse to the community rather than a blessing. Let us call these schools fourth class.

I am sorry to say that such schools are still much more common than most of our citizens realize. It is impossible to give an accurate estimate of their number and the proportion of pupils attending them. Perhaps 10% of the whole number of elementary schools would fall within this class, but a much smaller proportion of the total enrollment. Of course, the law of the land and the organization

of the state educational system ought to make this kind of school impossible.

II. Next in order, though very much better than schools of this lowest class, are those schools in which there are teachers whose consistent aim is in the direction of real teaching, but who lack the requisite knowledge of skill or address to make their teaching effective in its best sense. Such schools when properly supervised very commonly become good schools and even excellent schools. Without supervision, such schools are apt to become extremely insufficient, and not infrequently in effect but little better than those of the fourth class. We will call them third-class schools.

III. Better than these schools ordinarily, but not so good as the best of the class last named, are a decreasing number of schools which are mechanical in type, usually in charge of veteran teachers who never had any professional training and possessed of little or no insight into the principles of the educative process. Scholastically, the effect of schools of this type is very rarely stimulating to the pupils and very little genuine mental growth results. Pupils are apt to be well grounded in the three R's, which is a good and eminently desirable thing, but they seldom show interest in their work, they seldom acquire much power to think, and they very rarely acquire the broad and generous outlook on life which is on the whole the best gift which the public schools have to bestow. Discipline and moral tone in these schools is ordinarily better than in either of the preceding. I rate them as among our better schools, because they accomplish what they profess. It is very much better that children should behave themselves while in school and acquire a sound and effective grasp upon the three R's, even if they do not acquire very much real moral strength or much capacity to think, than that they should acquire none of these and still not conduct themselves well while in school, nor acquire an

educated capacity of thinking. These are second-class schools.

IV. The best of all our schools are an increasing class taught by well trained teachers of native capacity, properly supervised, pursuing a program of study which is at least up-to-date, housed in buildings which are themselves calculated to stimulate and develop a refined taste in all that pertains to the material surroundings of life. Such schools very frequently fail to meet the exacting standards of the citizen who thinks that ability to measure a pile of wood and give its contents in cord feet is the foundation stone of education. They very commonly fail to produce accomplished writers of English at the age of fourteen, but they do recognize the incidence of the impossible in education with an increasing degree of exactness, they do equip children with a fair capacity to think in terms of the world in which the children are going to live, and they do give the children a broad outlook upon life which is at times surprising. In the so-called fundamentals, the children are taught and taught to think with a better grade of efficiency than has ever before been the case. Of course, the fourteen-year-old boy who has studied the arithmetic which he will need to know and has omitted the arithmetic which has long since ceased to have any concrete meaning, will not compare favorably with the country youth of twenty who once attended the "common school" winters and ciphered on abstruse arithmetical gymnastics year after year with little attention to anything else, with a heart single to the purpose of acquiring the ability to "stick the teacher," when judged by the standards of the latter. But then, our youth of twenty would make a very sorry figure in the eyes of the competent and impartial judges if he were weighed in the balance with the modern fourteen-year-old, and judged by the standard of the latter.

Our efforts for better schools can be summarized as efforts to eliminate schools of the fourth class, to transform

schools of the third class into schools of the first class, and to replace schools of the second class with schools of the first class as opportunity is presented. To this end is all our training of teachers, our extension of supervision, our improvement of school buildings, our conservation of child life.

THE SECONDARY SCHOOLS.

The term "Secondary School" includes those schools whose program covers that part of education lying between the close of the elementary school and the higher education of the college and professional school. In our state it means substantially the public high schools and the endowed academies.

This department is brought into closer relations with these schools than with the elementary schools because of the fact that they are subject to the approval of the superintendent of public instruction as maintaining standards contemplated by law. They have been inspected during the past year as never before and we know more about the actual character of the work done in them than ever before.

It is not possible to classify secondary schools according to the character of their work as is the case with elementary schools, for the elementary school ordinarily means one teacher in one school and the school is apt to stand or fall according to the excellence of the teacher. In the secondary school, however, there are commonly anywhere from two to many teachers and the character of the school is a composite of the merits of the several teachers taken together with the administrative and governmental ability of the principal.

In general we have no secondary school so poor as the fourth class of elementary schools above described, and we have few, if any, secondary schools so good as the first class of elementary schools.

Teachers.

There are almost no trained teachers in the secondary schools of the state, though we find of course in the aggregate a good many individual teachers who by dint of native ability, private study, intelligent observation, and habits of pondering upon their problems, have become as efficient as most elementary teachers of the trained group. As a class, our secondary teachers are much better educated with reference to their work than are the elementary teachers with reference to theirs. The majority of these teachers are immature young women, recent graduates of college, who have little or no conception of teaching as such. The industrious and ambitious pupil gets what he can under their guidance, but the majority of the pupils who need genuine intellectual stimulus to spur them on to any considerable attainment obtain very little in the way of mental growth. Passed on from year to year by the mechanical process of successfully getting through examinations, the pupils as a whole finally arrive at any point the highway to which is through examinations and a certain average of marks leniently assigned by the teachers themselves. An inspection which shows a school in which pupils can and do stand on their feet in every classroom and intelligently deliver themselves of something which is their own is on the whole an exception.

Teachers in the secondary schools not uncommonly seem to feel that they have reached a stage in their professional development at which they are themselves the measure of things. Whatever goes wrong, or whatever fails, not they but somebody else is at fault. The venerable excuse, "poor preparation of the pupils in the lower schools," is most frequently heard. "A particularly dull class" is another. "Lack of support from the administration" is a third. The attitude is easy to be understood. The community has for a long time looked upon high school and college teachers as superior beings, and has itself rarely thought of

holding teachers to the kind of definite responsibility exacted from other workers. Ambitious young persons, not content with the easy accessibility of positions in the elementary schools, devote themselves to four years of college study. This means in most cases an ideal of severe preparation for a calling and not infrequently a serious struggle for an education, with more or less accompanying hardship. Such persons are worthy of all praise and the process unquestionably gives us a distinctly higher grade of personal worth and general education than is the case in the lower schools. But to a greater or less extent it is productive of the attitude which I have described. The college graduate often feels that he or she has passed the test, is the winnowed wheat and for all time must be right. Such a state of mind is not productive of a sense of responsibility for the intellectual growth of the student, except when he is a willing pupil.

The reports of inspection of secondary schools often end with the statement, "These teachers would show marked improvement under competent supervision." On the whole our high school teachers perhaps receive less real supervision than the entire elementary force, including those who are not under supervision at all. This does not tend to increase a sense of responsibility on the part of the teacher.

Finally, with few exceptions, the teachers in our secondary schools have their minds centered upon college requirements. They conscientiously, and often in worry and anxiety, as a class devote themselves to the cramming of a few of their pupils to the attainments of an wholly artificial standard set up by college professors in an wholly artificial manner. What they ought to do, of course, is to recognize that the mental and intellectual growth of their pupils is a natural growth and governed by natural laws like any other growth; that it cannot profitably be forced into arbitrary and predetermined

moulds, that the growth of pupils in the secondary school must arise out of the growth which has already taken place in the lower schools. In a word, their minds should be upon the lower school and not upon the college.

I report then that the greatest present need of the secondary school in this state is: first, adequate training of teachers; second, more and better supervision; third, the diversion of the attention of teachers from college requirements to the present needs of their pupils; fourth, and largely growing out of the foregoing, an heightened sense of responsibility for the intellectual life and growth of their pupils.

Equipment.

The scholastic equipment of all approved secondary schools is presumed to be adequate because that is the legal requirement. If it is not so, it is the fault of this office, for equipment is merely a matter of the expenditure of a moderate sum of money and this office has power to enforce the law. A part of the material equipment of the school is the school building. Most of the secondary schools are now housed in adequate and suitable buildings of modern construction.

Programs.

The programs of our secondary schools are approved when they conform to the established American standards. But judicial sanction of a program is a very different thing from approval of that program as being best calculated to meet the needs of the pupils and to serve the advantage of the community.

The typical program has until recently been a mechanical thing devised to satisfy college entrance requirements and to initiate the pupil into an imaginary culture assumed to consist of proficiency in a certain body of knowledge. Such programs are as a general thing highly formal in

character and consist of courses which are but little related to the needs of an education calculated to enable the pupil to interpret the life situations in which he is likely to be placed. Our New Hampshire secondary schools have, however, of late been making notable advances in the direction of the deformalizing of their programs and the adaptation of their various courses to the serving of the needs of pupils who will have to meet the living conditions of the twentieth century. Of course the most notable of these changes have been in the direction of the introduction of curricula in the practical arts. Of that I shall speak in the next chapter more at length. It should not be forgotten, however, that in various schools under the leadership of progressive superintendents, principals and teachers, the languages are coming to be taught as vehicles for the communication of thought, instead of merely as means for linguistic drill; mathematics as means of reading certain of the experiences of life in mathematical terms; science as the handmaid of the daily life; history as a means of appreciating the past rather than as a body of lore to be learned.

Modifications of the length of the program.

For many years, the distribution of the pupils' time in American schools has prevailingly been: eight or nine years, usually eight, in the elementary schools; four years in the secondary, and four years in either college or professional school. For more than twenty years this distribution has been increasingly unsatisfactory to most educational thinkers, and various tentative changes have been proposed. It is known that American schools cost their pupils at least two years more time between the first grade and college graduation than is the case in the best European systems. Among the changes proposed have been a six-year elementary and a six-year secondary followed by four years collegiate, in which the last year may be devoted

to professional study; and three years professional, in addition to the fourth collegiate year. In some of the universities of the Middle West, the college has been definitely divided into two-years' junior college and two-years' senior college, in which the latter is professional work.

Four modifications of the traditional course are in process of trying out in New Hampshire:

I. *The Concord plan*, in which a six-year elementary course is followed by a junior high school of two years and a senior high school of three years.

II. *The Errol plan*, in which an elementary school of six years is followed by a modified high school of four years. This plan is being worked out with special reference to the needs of a remote and self-dependent country town.

III. *The Berlin plan*, in which an elementary school of seven years is followed by a high school of four years.

IV. *The Portsmouth plan*, in which an elementary school of six years is followed by a central grammar or junior high school of two years and that by a senior high school of four years.

None of these plans can be said to have reached any final conclusion, though the Concord plan has been followed long enough to give promise of much.

To sum up, I report as follows upon the condition of secondary schools:

I. Thoroughly bad schools have been entirely eliminated as is not the case with elementary schools.

II. The teaching of these schools is not productive of the kind of mental growth and intellectual capacity which can reasonably be expected, though it is and has been steadily improving.

III. The programs are in process of adaptation to the native capacities and interests of adolescent minds, and the process is going on fully as fast as is consistent with the demands of conservative progress.

CHAPTER XVIII.

Industrial Education.

For about ten years industrial education has held the centre of the stage in discussions of matters educational. Like all new movements it has had its era of definitions, experimentation, discussion and more or less tentative action; and it is still in that period. It has been the response to a marked demand on the part of the public for "something practical"; to a persistent demand on the part of manufacturers for an educated and trained class of workers in the industries; and finally to an insistence on the part of economists and sociologists that the education of the masses should contribute to earning power.

In recent years the term "vocational education" has been applied to what was earlier called industrial education. The term is unfortunate for we have had little education in any of our schools above the grade of elementary which has been any less "vocational" than the industrial arts now being introduced. We have had "vocational education" leading up to the professions for many years, but none leading up to the trades and industries including homemaking and agriculture. The usage of this office has applied the term "Practical Arts" to the courses generally described as vocational, the same being contrasted with courses in the "Liberal Arts."

I discussed at length in my last biennial report certain distinctions which we must keep in mind between education and training and pointed out the dangers of the premature specialization which training presumes. I am content to let the matter rest at that point for the present.

Rapid Extension.

It is doubtful if any movement in our educational history as a state has ever proceeded so rapidly as has the introduction of practical arts courses in our second-

ary schools and the inclusion of manual training and cooking and sewing in the work of our elementary schools. So far as the movement which is now under way is concerned, it dates only from 1906. In that year, the trustees of Gilmanton Academy introduced courses in agriculture in that institution. That attempt proved for the time being abortive, but it was quickly followed by similar enterprises in Coes and Pinkerton academies and by the development of the mechanic and household arts in the Berlin and Concord high schools. The action of the legislature of 1913 in providing for a deputy superintendent of public instruction to exercise a general oversight of such work throughout the state has proven to be a powerful stimulus. During the current school year secondary courses in one or more of the practical arts curriculums, to wit: commerce, mechanic arts, household arts, agriculture, are found in fifty-nine different secondary schools, which is about three-fourths of all the four-year schools of the state. Forty-two such schools have courses in household arts; thirty-nine have courses in commerce; twenty-four in agriculture; and eight in mechanic arts. Ninety-one different school districts report courses in either manual training or cooking and sewing in the elementary schools. While some school districts tend to lag behind, as they ought not, the movement has progressed too rapidly, and I anticipate that there will sooner or later be a period of reaction, though of the ultimate successful operation of practical arts courses in substantially every secondary school in the state I have no doubt. One of the indications of such reaction has appeared during the present fall term in one of the best of the rural high schools. In this school, the usual number from the entering class elected agriculture and household arts, but as soon as the home found it out the election was vetoed. Here we have just what was to be expected. People who once were calling most loudly for "practical schools" will in many cases

School Gardens, Pinkerton Academy.

Orchard Spraying.
Agricultural Pupils, Pinkerton Academy.

be the principal objectors to practical courses as soon as the latter are in successful operation. That seems to be human nature in one of its manifestations.

Difficulties and Problems.

A new broom proverbially sweeps clean. We are now in the midst of a period of enthusiasm for the practical arts courses. They are attracting more pupils to our high schools and they are keeping both boys and girls in school and soberly at work who would otherwise be out of school or little better than loafers in school. But, it should be remembered, they are also attracting many pupils whose chief aim is to secure relief from study and who take to the new courses hopefully for that end.

Again, not a few of the instructors entering a field in which there are no established standards are not unwilling to take the path of least resistance and carry on work which is showy and attractive but which has but little educational worth.

I have understood that the superintendent of public instruction should not approve schools in which poor practical arts work is being done any more than schools in which poor liberal arts work is being done. All of this work is now accepted in preparation for "college, technical school and normal school." I am accordingly insisting that practical arts work if done at all in approved schools shall be done well.

As I have intimated above, there are no generally accepted standards for this type of work. We are endeavoring to determine standards from a careful study of what the schools can do. This is going to be a long and slow process, for it takes a full year to secure returns on even the most trivial point.

There are no text-books of any consequence, though there is an abundant supply of good reference books. Such text-books as there are, are commonly of a scrappy type, and

not infrequently inaccurate. Especially in the commercial subjects, it is not uncommon to find books in use published by concerns having typewriters to sell and with little or no teaching value. We find that the time taken to produce efficiency in typewriting and stenography, for instance, has very commonly been more than twice what it should have been.

The lack of text-books has been in part remedied by institute circulars prepared by Deputy Superintendent Whitcher in charge of our Practical Arts Division, and will in time be wholly remedied. It is to be hoped that teachers in these newer courses will never become so dependent on the text-book as are teachers in the liberal arts courses.

The teachers are professionally untrained and not always as well versed in the subjects which they propose to teach as they should be. I have required as a condition of approval of such courses that the regular teachers should be graduates of institutions of college grade or the best available substitute. In agriculture, all of the instructors are graduates of agricultural colleges, but it is worthy of note that two of the best teachers of agriculture in the state are graduates of Bowdoin and Dartmouth respectively. Teachers of the household and mechanic arts are as a general thing satisfactory so far as educational preparation goes, but they rarely are capable without guidance of organizing and teaching their subjects effectively to pupils of high school age. It is difficult to secure teachers of commerce who possess the requisite education, although the situation is improving every year and a respectable number of our commercial teachers are college graduates with additional commercial training. It is still necessary, however, for the principal or other members of the faculty in most cases to carry such courses as political economy and commercial law. We greatly need in the state a school of commerce of collegiate grade.

Description of Work in Practical Arts.

Work done during the past year in typical schools is described in the following pages. The instances chosen are of course among the best, but they will give the reader some idea of what is being done and of the character of the work which we think all practical arts schools ought to do.

Agriculture.

ALTON HIGH SCHOOL.

"The class in horticulture raised and sold two crops of lettuce, one each of radishes, cucumbers and beets. The class also raised lettuce, tomatoes, cabbage and pepper plants for the trade.

"Crops raised in the greenhouse and those used in experiment work were sold and the proceeds used toward paying the expenses of the greenhouse.

"Both first- and second-year classes aided in the building of the greenhouse, did all the grading about the building and put in the cement center bed. They also built a hot and cold frame in which the first crop of lettuce was started. The frames were also used in the spring for hardening off plants raised to sell. The classes shared the care of greenhouse and boiler, each student having complete care of the greenhouse for one week at a time.

"The two classes, together with the instructor in charge, did enough pruning for farmers in the vicinity of Alton to net $215. This work was done between the end of the Christmas vacation and the first of May, working nights after school and Saturdays."

CHARLESTOWN HIGH SCHOOL.

This school was inaugurated last year and the work done was necessarily done by first-year, ninth grade pupils.

"Collected soil samples, studied different soils. Field trips to study leaves and trees in general. Tested soils to determine amounts of different kinds of moisture. Tested germination of corn. Planted corn at different depths. Study of starch grains of cereals with microscope. Studied different soils to learn their ability to retain moisture. Built cold frame. Planted, transplanted, and sold tomato and cabbage plants. Started a corn experiment for the department and one of the boys has charge of it during the summer."

COES ACADEMY.

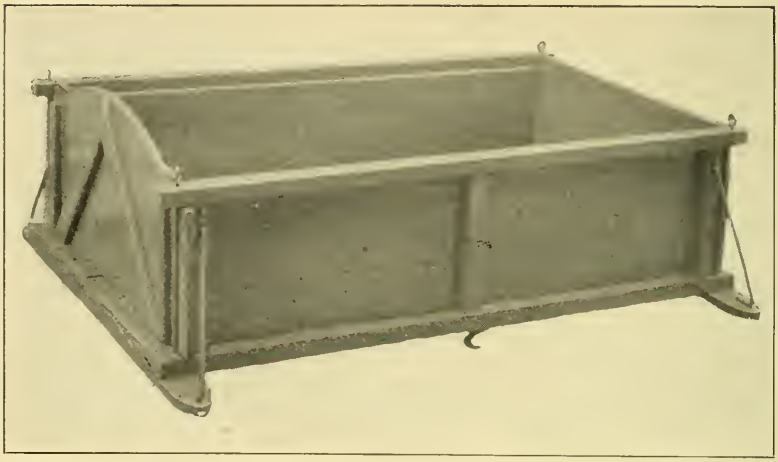
"In the feeding projects seven students experimented with cows, three with hens, two with pigs and one with steers.

"Six weeks of careful feeding in the seven experiments with cows to see how cheaply milk could be produced showed a cost of from two and one-half to six and one-half cents. This wide variation was caused by the different conditions entering into the experiment, such as age of cow, time from calving, and feeding. The highest cost of production was with a cow which had been milking over a year.

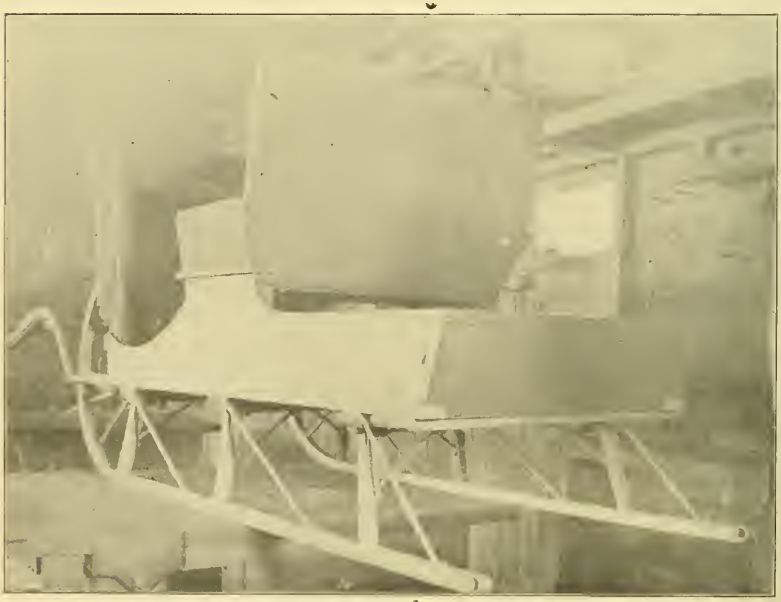
"The three experiments with hens showed good results. Eggs produced for from eleven to twenty cents brought thirty-five to forty cents in the market.

"Two experiments with pigs weighing about one hundred pounds did not produce very good results owing to the cold weather at the time the experiment was being carried on. Cost to put a pound of flesh on the pigs was eight and fifteen cents respectively.

"The experiment with steers showed that the correct amount of food was given to produce good results."



Cart Body.
Made by Colebrook Pupils in Farm-Mechanics Course.



Grocer's Sleigh.
Made by Mechanic Arts Pupils, Berlin.

COLEBROOK ACADEMY.

Project Work in Agronomy.

"The greenhouse has been used for experimental purposes in the fall and spring terms.

"The nature of the experiments has been to show:

(1) The effect of moisture, heat and air in relation to seed germination.
(2) Capillary action.
(3) Effect of thinning plants on their growth.
(4) Effect of cultivation on plant growth.
(5) Experiment to show the process of osmosis.
(6) Effect of lime upon plant growth.
(7) Effect of dissolved bone-black as compared with nitrate of soda and sulphate of potash on plant growth.
(8) Practice in mixing chemicals to get desired fertilizing formulæ.

"The results of the experiments carried on were in most cases very marked.

"A school garden has been planted by the class, the area of which is about one-fourth of an acre, on the school grounds.

"The various plots in the garden are staked, indicating the fertilizer used.

"The plants used for experimental purposes in the greenhouse were as follows: radish, lettuce, cabbage, tomato, aster, snapdragon and celery. Although the greenhouse is not a commercial establishment, the class has taken in about $25 for plants sold to local farmers.

"Ten students in the agricultural course are keeping data on a dozen tomato plants, according to the blank given below:

Record of Tomato Plants.

I	Date transplanted.		
II	What kind of fertilizer was used? When added?		
III	Date first blossom appeared.		
IV	Date first fruit sets.		
V	Date first fruit ripens.		
VI	Weight or measure of ripe fruit picked.		
VII	Weight or measure of green fruit picked.		

"I realize that this is a very small project for summer work, but summer work here must be started gradually if we are to retain our agricultural students."

Animal Husbandry.

"Through the kindness of a near neighbor and friend of the school, the students have had a fine opportunity for judging stock both of the dairy and beef type.

"By frequent visits the students were able to note the growth of the stock and the results of the different feeds fed.

"Two members of the class had cows in the village,—one had a Jersey cow and the other a Guernsey.

"Records were kept for a month to show the feed fed; the nutritive ratio was worked out in each case so that the cows were fed according to standard conditions.

"The weather temperature was also recorded to note the effect of milk production under changing temperature."

Dairying.

"The class has had much practice in testing milk, skim milk and cream for butter fat.

"Several tests have been made to determine the acidity of cream. (By Farrington's test.)

"Whole milk was received and separated, allowed to ripen over night and the cream churned the next morning. All steps were followed in detail from the whole milk to the printed butter.

"One morning was spent in visiting the Mohawk Dairy Company's plant, where condensed milk is made."

Economic Entomology.

"Made a study of the life history, eating habits and means of control of insects of economic importance to this section of the country.

"The life history of the meal worm was carried through by the class from the larva stage, including the adult.

"Several trips were taken to observe nests, egg masses, etc., of various insects."

Plant Diseases.

"Plant diseases of economic importance to this section of the country were studied, emphasis being laid on potato and grain diseases, their cause and means of control.

"A microscope was used a great deal in connection with this work to show the spores, hyphæ mycelium, etc., of the various diseases.

"A thorough study of bread mould and orange mould was made to show a typical fungus disease."

Agricultural Economics.

"This course dealt with the study of rural conditions, ways of bettering conditions, the relation of land and goods produced to social wealth, factors influencing the value and rent of land."

Farm Carpentry.

In farm carpentry, among other projects, the first-year class built a serviceable dump-cart body, standard size, and the second-year pupils ironed it; one 13-ft. farm wagon

body (made to order); model of barn; automatic grain feeder for hens.

In blacksmithing, among other projects, the second-year class made six neck yoke hasps, eight cold chisels and tempered same; ironed dump-cart body and farm wagon body; four trace-hooks for working harness; new shoes for two sleds; numerous knives and other tools and tempered same.

PINKERTON ACADEMY.

Agronomy.

"Each pupil in this course has an individual garden ten feet long and five feet wide in which vegetable gardening is practiced and experimented upon. Insects and common plant diseases are treated under student observation. Detailed note-book records."

Animal Husbandry.

"Horses, cattle and swine with feeding projects from Henry and the State Department. Judging horses and cattle. Study of types at Hood's Dairy Farm where registered stock were observed and judged. Babcock test of milk. Measuring of hay, grain, etc., and planning of barns. Rations as outlined by State Department given to class to be tried out on home farms. Nutritive value of these rations determined and detailed notes recorded. Class discussion before and after. (It had been the custom to force little pigs, thereby increasing the waste rather than the efficiency of rations.)"

Horticulture.

"Orchard Work. About forty trees to work upon. Each student pruned four trees, cutting off browntail moth nests, scraping for cocoons, and preparing for spraying. Spraying and grafting done in spring.

"Field Project. Half acre of oats sown in late, June

1st, 1½ bushels to ½-acre. Oats secured from Maine farm recommended by department. Fertilizer used, 100 lbs. nitrate of soda, 200 lbs. acid phosphate, 100 lbs. muriate potash."

Rural Engineering.

"Roads, drainage, irrigation, elementary forestry, including types and cutting methods. Elementary landscape gardening including planning for lower classes in work about grounds."

Agricultural Project Work.

"Corn (Longfellow) secured from department at Concord. Planted May 13th and 14th, up May 19th and 20th, commercial fertilizers in various combinations being used to determine best mixture. Corn is doing well considering dry weather.

"Landscape. Fifty plants (Berberis Thunbergii) planted as hedge bordering walk (May 1st). Doing well. Trench dug and plants set in one foot apart.

"Home Projects. All work except preparation of land, including ploughing, harrowing and marking is done by the student. A detailed account of money and time expended in carrying the project to successful issue is required in all project work. Such data is used for class discussion in the fall and the success of the project determined accordingly. Every two weeks the instructor visits the gardens on the academy grounds and directs such work as is necessary to the best development of the crops. The farms where project work is being carried on are visited and helpful directions given to students for developing their problem to successful completion. In the fall (October), all products exhibited at the Pinkerton Practical Arts Exhibit."

HAVERHILL ACADEMY.

This school was in its first year of practical arts work.

Agronomy.

"The class has sown one-sixth acre of oats and has cut, planted, fertilized, hoed, and sprayed about one-third of an acre of potatoes. The potatoes were treated with formalin to prevent scab and the class mixed the fertilizer as well as the Bordeaux mixture.

"The potato field has been divided into 1/20-acre plots and fertilized about as suggested by the department. The class helped prepare the land and has taken the entire care of the potatoes.

"It was the intention of the instructor to have as many members of the class as possible carry out home project work but severe illness of three members of the class prevented this from being done. The rest of the class, with one exception, were so situated that they could not carry out home project work. One boy, however, is 'testing out' some corn furnished by the department."

HOPKINTON HIGH SCHOOL.

Agronomy.

"Field and Laboratory Exercises:

1. Measurement of fields.
2. Taking soil samples.
3. Field trip to study soil formation.
4. Capacity of soil to take in rainfall.
5. Capacity of soils to store up moisture.
6. Determination of rate of capillary action in different kinds of soils.
7. To determine effect of slope on soil temperature.
8. To determine temperature of soils at different depths.

9. Seed structure of a dicotyledon. (Bean.)
10. Seed structure of a monocotyledon. (Corn.)
11. To determine condition necessary for seed germination.
12. Germination of monocotyledons and dicotyledons.
13. Stem structure of exogens.
14. Growth of roots.
15. Structure of typical flower.
16. To show that leaves give off moisture.
17. To show osmosis.
18. To show food materials in seeds.
19. To find yield and value of one acre of corn.
20. Selecting seed corn.
21. Judging seed corn.
22. Judging seed corn.
23. Cost and construction of a germination box.
24. Cost and construction of a seed corn tree.
25. Hanging corn by double string method.
26. Germination test of seed corn.
27. Germination test of seed corn.
28. Germination test of seed corn.
29. Plan of home farm and present rotation.
30. Plan of improved rotation for each home farm.
31. Figuring cost of 1 lb. of N^1 P^2 O^5 and K^2 O in different chemicals.
32. Figuring plant food value of commercial fertilizers.
33. Same as above.
34. Figuring a home-mixed fetilizer for potatoes.
35. Figuring a home-mixed fertilizer for corn.
36. Figuring a home-mixed fertilizer for grass.
37. Actual mixing of chemicals for fertilizers.
38. Actual mixing of chemicals for fertilizers.
39. Laying out ½-acre school experiment plot as planned in Institute Circular (1913-14).
40. Planting ½-acre of potatoes on experiment plot."

Horticulture.

"Field and Laboratory Work:

1. Entire planning and construction of two hot-beds and one cold-frame.
2. Complete renovation six old apple trees.
3. Pruning of six middle-aged apple trees.
4. Pruning of twelve young apple trees.
5. Making different kinds of lime sulphur sprays.
6. Making Bordeaux mixture.
7. Entire care of hot-beds and cold-frames in which tomato, cabbage, celery and beet plants were raised and in which lettuce and radishes were grown to maturity. This includes the marketing.
8. Study of a spray pump.
9. Winter spray with lime sulphur.
10. Making grafting wax.
11. Figuring home-mixed fertilizer for potatoes.
12. Figuring home-mixed fertilizer for corn.
13. Figuring home-mixed fertilizer for grass.
14. Figuring home-mixed fertilizer for apple orchard.
15. Actual mixing of above.
16. Figuring plant food value of commercial fertilizers.
17. Spraying just as petals were falling.
18. Grafting apple trees.

"Field work has been carried on to the possible neglecting of recitation or lecture work, but the outside work has attracted much attention, helped the boys and been pleasing to the community. Two of the boys have done all the pruning their spare time allowed, for the townspeople, and have been obliged to refuse as much work as they have undertaken. One boy is to remain in town a week or two to finish some tree surgery that he has had no time to do before."

JEFFERSON HIGH SCHOOL.

This is a very small high school recently inaugurated. The following is an example of what can be done in such schools:

Horticulture.

"During the fall some work was carried on in orchards. The results of a potato-growing contest were carefully examined. The harvesting, storing, and marketing of vegetables was carefully investigated. During the winter term most of the text-book work was done and purity and germination tests of seeds made, while laying out of home vegetable gardens and plans for same were discussed and made. In the spring term each student had a garden plot, one-third acre, at home, carried out according to the plan he had made and two afternoons each week were devoted to working on these plots. Cleft grafting and whip grafting were done. A hot-bed at school was used to start cabbage plants of the different types.—the boys doing the 'picking off' and transplanting from flat to flat at the proper time. These plants were then set in their own garden plots. The flats used were made in laboratory periods."

KIMBALL UNION ACADEMY.

This year was the first year of practical arts work in the academy. With its admirable equipment and efficient management, this school promises to become one of the most effective practical arts schools of rural type in the state.

"Constructed boxes for testing seeds and starting plants.

"Built hot-bed sash as well as frame.

"Mixed fertilizers to be used on three different crops on school farm.

"Set and pruned apple, pear, plum, cherry and ornamental trees, currant, blackberry, raspberry and ornamental bushes.

"Watched the preparation of ground for seed oats bought of J. C. Peterson, of Maine.

"Corn ground treated with barn manure plowed in in the fall, applied during the winter and applied at the time of plowing in the spring.

"Pot test for soils.

"Planting of vegetables in large quantities for canning."

PROCTOR ACADEMY.

Field work in this course involved the collecting and identification of thirty weeds, study of soil type on school-farm; rocks, etc. Study of germinating tests, and planting in fertilized plots the following seed: snapbeans, shell beans, corn, pumpkins, parsnips, beets, turnips, radish, lettuce, onion sets, cucumbers, squash, carrots.

The plots ran across the rows and are arranged as follows:

N=nitrogen as nitrate of soda.
P=phosphorus as acid phosphate.
K=potassium as muriate of potash.

N-P-check-P, & K-P & N-check-K & N-K, P, N,-check-K.

"Examples relating to texture, water needed by plants, mixtures of fertilizers, etc., have been worked out in abundance.

"Two of local pupils are working on plots this summer, keeping notes of growth of above and participating in cultivation of the crops.

"Among projects in horticulture was planning and planting of a combination flower and vegetable garden (correlated with the work of the art instructor). One girl mapped out the campus and buildings to scale and made a contour map for same; class studied the laying hen and the newly-hatched chicken, and made plans for poultry houses.

"In addition to the above eight extra periods were spent

with the domestic arts instructor in lecture and discussion on the selection of plants and shrubs for the country house. The project used was the development of a plan for planting about Mary Cowell Stone House (the girls' dormitory). Among the topics considered were:—the purpose of such decoration, selection of plant materials for height and manner of growth, season of bloom, color combination, relation of hardy and annual plants for permanence and variety, native plants suitable and available. Seed catalogues and periodicals such as 'Suburban Life' and the 'Garden Magazine,' etc., were studied."

Among the projects constructed by the first-year class in carpentry were the following: step-ladders, ironed by second-year class; whiffle-trees, ironed by second-year class; weaving frame for making matting for hot-bed; large physics table for laboratory; sleds, ironed by second-year class.

"The last month of the year in wood-working was correlated with elementary work in the use of *concrete* on the farm. The wood-work enables pupils to construct forms and molds in which concrete is poured. The elements of mixing, proportion of ingredients, the 'how' and 'why' were gone into as thoroughly as time allowed. This feature of first-year mechanics work was experimental with us this year.

"Projects worked out: hog trough (completed); slabs to cover sewers (completed); cement roller for roads and tennis court and walks (620 lbs.)—(completed). (ironing for this done in forge-room); retaining wall 7′ high, 18′ long, 8″ thick (not quite completed)."

The class in blacksmithing among other projects constructed the following: barrel-header; repairs on dump-cart; cold chisels; ironing cement roller; ironing whiffle-tree, wagon-jack and sleds; repairs to several kinds of implements brought by boys from home and used on the farm.

Proctor Academy was earlier in the field with practical arts than Kimball Union, and like the latter promises to become one of the great forces in rebuilding the rural civil-

ization of New Hampshire. Its work is admirably conceived by its administration and its equipment offers great possibilities in its chosen course.

Household Arts.

In sewing, first-year, the typical first-year work is the cutting, fitting and making of a series of garments for wear by either the pupil or by members of her family.

In cooking (first-year pupils) the typical round of work is plain cooking, canning and preserving, the preparation and serving of meals to the class, to invited friends, or to teachers.

The above in both sewing and cooking is the typical round of work. Many of the teachers tend to want to do little or nothing else for four years. This is natural; there is little breadth and content to the courses in many of the higher institutions from which the teachers come. A complete account of all the work done in all the schools which offer courses in the household arts cannot be given. The following are some of the better records:

BERLIN HIGH SCHOOL.

Household Accounts.

1. Division of income, considering income and number in family.
2. Accounts for families of 4, 5 and 6.
3. Keeping of grocery accounts.
4. Keeping of check-book and account.
5. Making out bills of various kinds.
6. Comparative cost of food material bought in large and small quantities.
7. Cost of all common food materials.
8. Ways in which food may be procured at less cost.
9. Cost of food cooked in kitchen.

The Noon Hour.
Rural Practice School, Keene Normal.

Demonstration Lesson in Geography before a Class of Normal Students, Keene Normal.

10. Practical problems reviewing tables of weights and measures.
11. Estimates of cost and quantity of articles needed for school and own use.
12. Reading of various magazine articles.
13. Cost and planning of menus for various sized families.
14. Cost of luncheons prepared at school.
15. Comparative cost of foods prepared in different ways.
16. Cost of bread experiment for State Deputy Whitcher.

COLEBROOK ACADEMY.

In connection with sewing studied the cultivation, growth, manufacture and use of the textile fibres. Chemical tests of fibres with laboratory experiments. Use of microscope on fibres, methods of detecting adulteration. Study of important materials of each fibre as to cost, use, desirability. Consumers' League work. Cost of clothing.

Household design and decoration. Principles of design and decoration were studied and applied to every department of house furnishing and decoration. Types of dwellings; drawing of house plans of various types; history of modern dwellings. Selection of furniture and entire furnishings of house on different amounts of money. Detailed study of house decoration and interior finish, with actual selections made by each girl for entire house.

CONCORD HIGH SCHOOL.

One Course:

Household Appliances.

Heating appliances, plumbing, lighting, power in the household; kitchen utensils, materials used in households, etc. Each pupil keeps a note-book for class and lecture notes.

Household Chemistry.

Inorganic chemistry, including action of acids upon various metals, etc. Organic chemistry, including study of food-stuffs, nature of fuels, adulteration, removal of stains. Two laboratory periods per week with an occasional lecture at the beginning of a new subject. Pupils perform experiments in laboratory and keep a personal record of experiments in note-book. Trips to manufacturing plants, state chemical laboratory.

Household Sanitation.

Germ theory of disease, elementary principles of bacteriology, ventilation, water supply, milk supply, food supply, drugs and medicines, disposal of refuse, personal hygiene. Each pupil has a note-book for class and lecture notes. Trip to State Bacteriological Department and talk by Dr. Howard regarding work done by department.

DOVER HIGH SCHOOL.

Course in Physics of Household Appliances.

Outline of Course.

Division of matter.
Chemical and physical changes.
Oxidation.
Study of coal range.
Study of luminous and nonluminous flames.
Fuels.
Heat: sources, effects, intensity.
The thermometer.
Transmission of heat.
Conductors and nonconductors.
The refrigerator.
The fireless cooker.
The thermos bottle.

Hot water supply system.

Study of direct and indirect heating and ventilating system.

Hot air heating system.

Good and poor radiators.

Study of fireplace.

Liquid pressure.

Hydraulic press.

Air pressure.

Suction pumps.

Vacuum cleaner.

Force pumps.

Plumbing.

Study of traps and arrangement of pipes in a house for waste removal.

Electricity.

Static and voltaic.

Electro-magnetic induction.

Electric bell.

Telephone and telegraph.

Electrical heating appliances.

Course in Household Sanitation.

Outline of Course.

General division of microörganisms.

Molds: General nature. conditions favoring their growth. Protection of food from molds. Result of mold growth. Microscopical examination of mold growth on bread, fruit, etc.

Yeasts: Comparison with molds—size, multiplication, etc. Conditions favoring their growth. Source. Yeasts in the household as friends—process of bread-making. Commercial forms of yeasts. Yeasts as enemies. Miscroscopical examination of yeast in resting and growing stages.

Bacteria: Size, shape, multiplication, etc. Conditions favoring the growth of bacteria. Petri dishes containing culture medium exposed under different conditions and compared. Dishes exposed one minute in rooms while sweeping (a) with a dry broom, (b) with dampened broom, (c) with carpet sweeper, (d) with vacuum sweeper. Bacteria in water, soil, food, and in our bodies. Consideration of proper conditions in a house to diminish bacterial growth.

Saprophytic bacteria—Parasitic bacteria: Useful and harmful effects of bacterial growth upon foods. Garbage disposal. Preservation of foods—use of harmless preservatives, sugar, salt, etc. Use of chemical preservatives. Bacteria in milk. Consideration of milk supply. Certified milk. Causes of ptomaine poisoning. Disease bacteria. Distribution of disease germs. Necessary precautions.

GROVETON HIGH SCHOOL.

In connection with the course in cooking some special dinners were served at noon at twenty-five cents per plate. Food was cooked for church societies, Woman's Club and class societies on request. Girls have frequently acted as waitresses for suppers, banquets, etc., outside of school.

LANCASTER HIGH SCHOOL.

Household Design and Decoration.

Study of art by special topics with oral and written reports. Stenciling and design problems for sewing worked out. Baskets made. Planning, papering and furnishing of six-room house with paper furniture, calculating cost. Freehand drawing problems given.

Household Appliances and Sanitation.

Care of range and kitchen utensils. Principles of stoves, heating, ventilation, plumbing, thermos bottle, double boiler,

ice cream freezer and egg-beater. Care of floors, furniture, woods and table linen. Public and private health with causes, prevention and care of more common diseases.

PINKERTON ACADEMY.

Minimum requirement for each pupil in dressmaking; a piece of embroidery, a fall and a spring hat, two dresses and a shirtwaist. All the millinery was drafted, designed, fitted and trimmed by pupils, taking as a starting point an eighteen-inch square.

In cooking, simple meals were served. Each girl cooked, served and presided at least twice during the year.

PROCTOR ACADEMY.

First Course Cooking.

Menus and planning of meals with regard to food requirement and cost. In all, the composition, properties and nutritive value were considered. The class undertook several large projects; *e. g.*, making bread for the academy dining-room, also cakes and dessert. All canned goods were used in the dining-room of the academy.

Second Year of Domestic Arts Curriculum.

(a). "The mechanics of the house and the physical laws presented in household appliances. The first half year was carried on by the science instructor mainly under the direction of the domestic arts instructor. The course was carried on without text-book. Characteristic appliances were explained on the basis of elemental physical laws; *e. g.*, the lever, inclined plane, density, heat, refrigeration; fractional distillation; flashing point; principles involved in appliances which are efficiency to cog-wheels and egg-beaters, washing-machines, ice cream freezers studied. Class made drawings of various kinds of heating appara-

tus; class studied school kitchen appliances, also plumbing (simple); towards end of semester's work elements of chemistry introduced partly to familiarize pupils with terms, partly to explain cleaning processes. The course took up such topics as heat transmission systems, fireless cookers, fuels and their combustion, etc. Note-books were required.

(b). *Household sanitation and personal hygiene.*

"This part of the year's work was conducted by the domestic arts instructor. Works used by the teacher: Hough & Sedgwick. 'Human Mechanism'; Coleman, 'The People's Health'; 'Hygienic Physiology'; Richards' 'Hygiene for Girls.' Whereas the first part of the year was devoted to the fundamental physical laws at work in the household, the latter part was devoted to those subjects that are essentially biological. Emphasis made throughout the course upon duty of individual to do all in her power to develop and maintain vigorous good health for herself and for all those about her. Note-books kept throughout course; outside reading and papers required. The course took up the house, its site, construction and care with proper sanitation and health needs in view; the water supply, dangers from contamination; disposal of household waste and sewage. Definitions of simplest bacteriological terms: germ theory; pests of household and methods of extermination; infectious and contagious diseases; the most prevalent germ diseases and their prevention; public health laws; rural hygiene."

"In both cooking and sewing the most gratifying results were in the work done outside the class-room and laboratory, which showed what the course really meant to the girls who were taking it.

"Girls who could not sew at all in September progressed slowly until at the end of the year they were doing the required work very well, making some things outside and

planning things they were going to make during the vacation. There was a feeling of confidence and ability which replaced the feeling that it was much beneath them to mend a worn or remodel an out-of-date article and far above them to actually plan and make a new one.

"The results of the cooking course were shown at different occasions when the girls were called upon to help in work or play; they put their shoulders to the wheel every time. One* of the girls tried practically every recipe in the text-book at home and did most of the cooking at home by the end of the year."

ROBINSON FEMALE SEMINARY.

"The first course in cooking is given in the first year of the five-year high school. A study of stoves, refrigerators and appliances used in the kitchen was first taken. Study was then given to the dining-room, the table and its appurtenances, and serving. From November until May this class cooked and served some hot dish for the school lunch. Five cents covered the cost per plate. The dish was usually something in the nature of a chowder. Each week pupils did this work in groups of two, serving, washing the dishes, and cleaning the laboratory, after the lunch was finished. Valuable experience was gained. During the year simple meals were served by members of the class to other members.

"The second course in cooking was given to the fourth-year class. It consisted mainly of dietaries and invalid cookery suited to such diseases as diabetes, eliminating sugars and starchy foods; tuberculosis, emphasizing the use of milk, eggs and concentrated foods; rheumatism, gout and kindred diseases eliminating nitrogenous foods. Also non-alcoholic hot drinks for colds, varied diets for indigestion

"* This same girl had completely failed at end of first term last year when pursuing an academic course."

from different causes. Menus were planned in connection with division of income to suit needs of individuals engaged in different occupations. A general review of elementary cooking preceded this work. Entire milk and butter bread made from best materials obtainable was found to cost $0.45 per lb.

"It seemed that the time put on invalid cookery was profitably spent. In one or two instances girls cooked for their invalid mothers dishes learned in class.

This class cooked and served a four-course meal to the trustees and faculty, numbering thirty-six, at a cost of twenty cents per plate.

House Construction.

"Choice of situation and surroundings.

Dealings with architect and contractor.

Specifications (blue-prints of houses obtained from contractor).

Each pupil made several floor plans and elevations for house of given dimensions.

Foundation and materials used for construction.

Frame, roof and all structural elements.

Prices, uses, durability of common woods used in building.

Different materials of construction.

Proportion of house, good arrangement of rooms, harmonious color schemes.

Original work on planning and making floor plans.

Decoration and furnishings (colored drawings in art department).

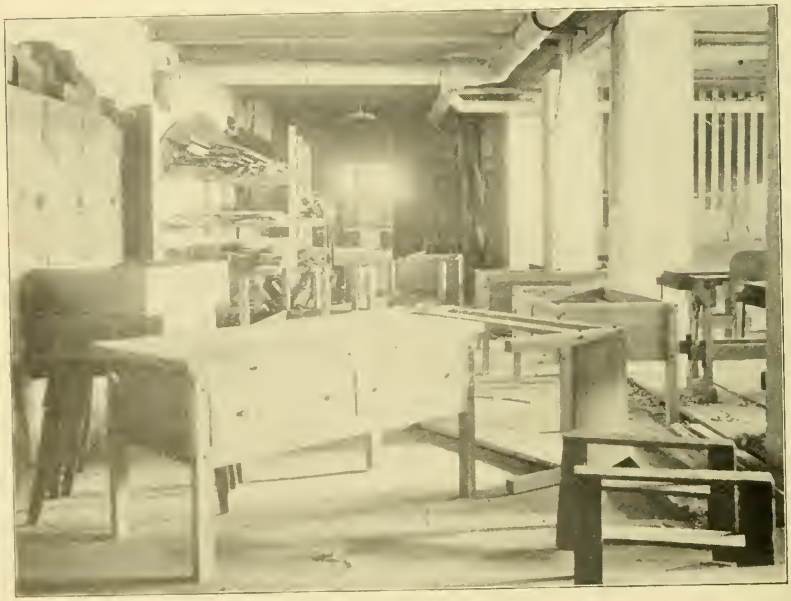
Furniture.

Rugs.

Pictures.

"In connection with this work a course has been given in mechanical appliances, two periods per week throughout the year. The course suggested in the secondary pro-

Concrete Wall.
Made by Pupils in Walpole High School.



Domestic Arts Tables.
Made by Pupils in Mechanic Arts Course, Portsmouth.

gram of studies was carried out as far as possible. Notebooks were kept by the pupils. The principles of the simple machines, lever, screw, pulley, etc., were taught and applied to various tools and implements. The use of a few tools in mending chairs, tables, settees, etc., about the building intensified the practical side of mechanics. The atmosphere and atmospheric pressure were studied preliminary to the study of siphons and pumps. Under 'Heat' the following topics were discussed and experiments were performed:

Elementary principles of heat:

Measurement of heat.
Transmission of heat.
Conductors of heat.
Effect of heat on various substances.
Forms of heat generators.
Comparison of various kinds of heating appliances.
Nature of combustion.
Study of elements in combustion.
Products of combustion.
Formation of the earth and coal.
Heat and work—various kinds of engines.

A short time was spent on the subject of magnetism and the instruments which make use of that power.

Under electricity the following topics were considered:

Static and voltaic electricity.
Batteries—various kinds and uses.
Electric bells.
Electrical units.

Household Chemistry.

"This course was given to the juniors in connection with the cooking and sewing work in that year. There were three double periods of laboratory work throughout the year. The aim of the course was to give the pupils some

principles of chemistry which would help them to understand problems of the home and their surroundings with special reference to cooking and the value of foods, explaining why certain foods are advised in various diets. A notebook was kept of all the experiments done in the laboratory and in addition notes were taken on a number of the subjects from different books, such as Hutchinson's 'Food and Dietetics,' Ellen H. Richards' 'Food Materials and their Adulterations' and Thorpe's 'Industrial Chemistry.' ''

ST. MARY'S SCHOOL, CONCORD.

Household Management.

''References:

'Household Hygiene,' S. M. Elliott.

'Foods and Household Management,' Kinne & Cooley.

'Fuels of the Household.'

'Care of the Home,' Clark.

''Washing windows, sweeping, dusting, cleaning paint, care of varnished and polished surfaces, bed-making, cleaning silver, brass, etc., care of plumbing supplies and fixtures, care of all floors, removing stains from fabrics. Work in laundry, washing, blueing table linen, etc., ironing flat pieces, underclothes and waists. Visit to stove foundry and laundry and silver factory.''

WALPOLE HIGH SCHOOL.

1. *Housebuilding.*

''Text.	Successful Houses, White. Omitted a few chapters.
	Household Hygiene, Eliott.
Ref.	Household Sanitation, Talbot.
Read	Principles of Home Decoration, Wheeler.
Ref.	Homes and Their Decoration, Finch.
	Colonial Furniture in America, Lockwood.

"*Lectures* and *class discussion* on advantages and disadvantages of land ownership, buying and renting houses, types of houses, plumbing, waste disposal (drawing stack), water supply, lighting and heating systems. Values and purchasing fuels, stoves, sinks, kitchen utensils, floor coverings, table ware, silver, bed springs and mattresses. Study of catalogues, visited a store and private house. Furnished theoretically a kitchen, dining-room, bed-room, laundry, closets, living-room, etc. Tried to cultivate a taste for simple good lines, design, color, in furniture.

"Home decoration. Class discussion and study of pictures. Types of chairs and other furniture.

2. *History of Architecture.*

"Text. Hamlin, History of Architecture.
Prof. B. B. Fletcher, History of Architecture.

"Study of most important types from art point of view to familiarize student with best in architecture.

3. *Food and Dietetics.*

"Text. Food and Dieteties, Norton.

"Class read Richard's Cost of Living and Cost of Shelter. Cost of food, food principles, dietary standards, study of special food-stuffs, composition, adulteration.

"Eight laboratory periods of cooking—projects especially desired by the students and which they had not previously had."

This office has endeavored to make clear to the schools offering courses in the household arts that such courses should be something more than cooking and sewing. Indeed it is doubtful if elementary cooking and sewing have any place in high schools as now constituted, belonging rather to the upper grades of the elementary schools. The secondary courses should be conceived of as at bottom

means for putting young women in the attitude which will enable them to interpret for themselves the problems of the modern home, not only as a material plant for the housing and feeding of a family but also as the great fundamental human institution for the enlightenment of the new generation and the constant spiritual replenishment of the dominant generation. To this end we have encouraged the development of courses in music and general art from the standpoint of appreciation and with the purpose in view of the cultivation of a refined taste. A few of the schools have made good progress in this line.

CONCORD HIGH SCHOOL.

The girls in the domestic arts curriculum have had systematic instruction in music by Mr. Conant, director of music in the public schools, covering the theory of musical composition, its history and the lives of composers, and the study of many masterpieces through the use of the Victrola. The effect has appeared to be as marked as we should expect.

NASHUA HIGH SCHOOL.

History of Music.

Texts used:

"Outlines of Music History," C. G. Hamilton.
"How Music Developed," Henderson.

Reference books:

"Study of the History of Music," Dickinson.
"The Opera," R. A. Streatfield.
"Biographical Dictionary," Theo. Baker.

General information.

The class made a special study of the oratorio, the opera, the cantata, etc. They studied carefully the lives of im-

portant musicians. Members of the class sang and played to illustrate the work being studied. There was one Victrola concert in which opera selections were given before the entire school.

PROCTOR ACADEMY.

"The fundamental principles of good design and decoration were given, not with the hope of making artists, but rather of giving the knowledge and feeling that would enable the girls to select what was good and genuine and reject that which was inferior.

"Nearly all the designs made were for definite purposes and were adapted and carried out in some household object.

"Among articles made were:

Stenciled pillows, scarfs, bags, curtains.
Collars and cuffs (embroidered).
Shirtwaists and towels (embroidered).
Raffia baskets (designed and executed).
Tatted lace, and crocheted bag and lace.
Designs for furniture (chairs and tables).
Designs for dishes (plates).
Designs for rugs.

"Some time was devoted to freehand sketching in perspective; geometrical drawing; sketching of various household objects.

"Color schemes and furnishing for the home were discussed."

ROBINSON SEMINARY.

This school maintains continuous courses throughout four years in music and in the study of art. The courses in sewing and dressmaking, in house construction and decoration, are also treated from the standpoint of instruction in the canons of good taste. In music, instruction on

the side of understanding and appreciation is stressed and the whole atmosphere of the community is helpful in the development of catholic tastes in music. In the study of general art, its history, its divisions, its masterpieces, its meaning and its relation to the common life is covered. The school owns one of the best art collections in the state, perhaps the very best, and the administration is utilizing its capital in this direction intelligently and in full measure. In this and in other directions, this institution is becoming one of the notable centres in the upbuilding of the intellectual and the spiritual life of the state.

Mechanic Arts.

Curriculums in mechanic arts are designed to give a broad educational foundation for vocational activities in the trades and industries, not only for the trade of the machinist, but also for the building trades and in a word for all who use machinery. These curriculums are presumed to be parallel to the traditional liberal arts courses which have laid the broad educational foundation for vocational activities in the learned professions and in literary pursuits.

The reports of work done in various schools which follow will indicate to the general reader what the courses are.

BERLIN HIGH SCHOOL.

In wood-working in the first-year course 33 different projects were worked out, but these included the construction of 250 different pieces. For instance, one project was 35 small drawing-boards for geometry. In general, the projects were designed and drafted in working drawings before being constructed. Among the projects were the following:

Six typewriter tables for commercial department; 2

wheelbarrows for school department; 3 oak book-cases for library; 12 kindergarten tables; 3 hat-racks, with mirrors, for school; repairing 2 book-cases for library.

In forging, 45 different projects were worked out, including the construction of 378 pieces. Among the projects were the following:

Spindle binder for new wood-turning lathe; electro-magnet and armature for physics laboratory; 3 irons for flag-poles for High and Burgess schools; 19 wood-turning tools for new lathes; special chisel for "letting in" locks on desks; 179 forgings for playground apparatus; 56 angle irons for school furniture.

Eighty-five different projects were worked out on machine tools by third- and fourth-year classes. These projects included the construction of 747 pieces. The machines in use were engine lathe, milling machine, upright drill and planer. The projects included: 22 parts for vacuum pump; 3 cone pulleys for ½-H. P. motors; 6 hand-wheels for new lathes; 8 adjusting screws for new lathes; parts for motorcycle brake.

Miscellaneous projects included, among others: wiring and setting up 4 ¼-H. P. motors; 4 wood-turning lathes in working order; 79 chairs repaired for school department.

CONCORD HIGH SCHOOL.

The projects listed below, it should be understood, presume a large amount of mechanical drafting, which was done and more beside.

In wood-working, first course, 20 projects in cabinet work and 11 in wood-turning were worked out. These included 60 or more pieces. Among the projects were the following: 5 library tables; 3 book-cases; 6 round tables; 1 Morris chair; 1 piano bench. In turning: carving tool handle; pin tray; card receiver; mirror.

Second course projects, pattern-making, included among others the following: connecting link; tail nut; hollow chuck; shaft coupling; core boxes; connecting rods.

Ten pieces were moulded: block; T piece; hanger; tail nut; link; hand wheel; bearing cup; eccentric; crank-shaft; pulley.

In forging 9 projects were worked out, including 32 pieces.

In general machine work 25 different projects have been covered, including 69 pieces. Sample pieces are the following: jack-screw; bench grinder; 2 valve lifters; 4 screw chucks for wood lathes; 2 steel mandrels; 2 small steam engines; 1 2-cylinder, 6-H. P. gasolene engine; 1 1-cylinder, 3-H. P. gasolene engine.

DOVER HIGH SCHOOL.

Last year was this school's first year in mechanic and domestic arts. Few schools have accomplished as much in their first year in the face of a succession of disheartening mishaps. The year was devoted to wood-work, carpentry and turning. More than 40 projects were worked out, including over 200 pieces, including the following:

Twenty glued up bread-boards; 24 inkstands; 35 necktie racks; 16 taborets; 4 book-cases; 1 music cabinet; 1 library table; 1 tea table; 10 glove boxes; 6 dining chairs; 4 card-filing cabinets; 3 picture frames; 5 sleds; 1 tool chest; 2 shoe polishing boxes; 1 piano stool; 6 T squares; 1 foot-rest; 5 standards for lumber racks; 4 large work benches; 1 grinder bench; 1 large tool cabinet; 1 cold-air box; 2 cases, 3 drawers each; 1 case, 7 drawers; 1 case, 48 drawers for screws, etc.; 2 blue-print cabinets.

Wood-turning, such as cylinders; handles; mallets; darning balls; gavels; candlesticks; puff boxes; Indian clubs; dumb-bells; turned cups, etc.; a few small patterns.

TREE-PRUNING AT ALTON.
Pupils Pruning Trees.

ALTON CLASS IN HORTICULTURE.

PORTSMOUTH HIGH SCHOOL.

First course, mechanical drawing: 24 construction problems in geometry; projection of lines, plane and solids; sections and intersections, and development of solids; the helix and its application to V and square threads; a bolt with hexagonal head and nut designed from U. S. thread formulæ; details and assembly of a domestic science table. All of the models made in first course wood-working were drafted.

Second course, mechanical drawing: pipe rest; return head; two gears of cycloidal form in mesh sketches; details and assemblies of a speed lathe, a grinder, a hanger for a countershaft, and a domestic science table. Tracings and blueprints were made of the table and also of the details of the lathe and grinder.

First course, woodworking: file and chisel handles; mallets; gavels; Indian clubs; dumb-bells; drawer pulls; rolling-pins; candlesticks; collar boxes; typewriter tables; card tables; pedestals and filing cases, etc. Besides the new work many chairs and seats were repaired by this class. The pupils of this class worked with the second class in making twelve domestic science tables.

Second course, woodworking: pattern of a head stock, a tail stock and a slide for a speed lathe; a grinder and hangers and pulleys for a counter shaft. Twelve domestic science tables have been made with the help of pupils in the first class. These tables were not commenced until after May 1.

The domestic science tables were constructed for that department of the school and were equal to any which could be purchased in the market.

STEVENS HIGH SCHOOL, CLAREMONT.

This school had no regular mechanic arts course last year, as it has this year. A tentative course in wood-

working was, however, carried out, *as extra study in spare periods, or at noon or after school.* Projects included the following:

"Not all did same work. Twenty suit hangers, 4 knife boxes; 3 sleeve ironing boards; 3 book racks; 3 brush broom holders; 15 handkerchief boxes; 10 candlesticks; 3 necktie holders; 10 clocks; 10 sugar scoops; 2 carved bracket shelves; 1 gun rack; 1 piano seat; 2 taborets; 2 library tables; 1 writing table; 1 dictionary stand with shelves; 1 magazine stand; 1 costumer; 1 umbrella rack; 1 corner telephone table; 2 square telephone tables; 2 checkerboard tables with inlaid squares ¼-inch thick; 1 Morris chair; domestic science tables to accommodate 12 pupils at once, with drawers; bread and meat boards, cabinet and wall cases and various work for the school."

Commerce.

The curriculums in commerce are susceptible of being made the broadest and most vital of all, just as commerce has been perhaps the most civilizing of all man's activities. Our schools are not thought to have done so well in commerce as in other practical arts courses. This is due in part to the greater difficulty in securing well-trained teachers, and in part to the fact that commercial courses having been in the field long before the other practical arts courses became loaded up with the formalistic traditions of the liberal arts. It is also true that commercial courses have been the happy hunting ground of vendors of cheap devices for producing marvelous returns with the minimum expenditure of mental energy. It is further true that in their earlier days, especially, commercial courses were allowed to become the refuge of pupils who were too weak or too lazy to carry the regular work, a fatal gift to any department of school or college work.

Some of our schools are, however, beginning to make notable advances. A few typical instances are cited:

BERLIN HIGH SCHOOL.

Bookkeeping.

"Since January the city bills have furnished material for about one-half of the daily work.

"For the benefit of those who do not know what the city bills are, I will give a brief explanation. All of the accounts of expenditures for the maintenance of the public schools of Berlin are kept by the school pupils, starting in the freshman year of the course and continuing, in different phases, throughout the course.

"In rounding up the work at the end of the year a thorough review of all principles and applications was made.

"The work of the sophomores covers only about half of the year, since they take up shorthand in the middle of February and continue it, in place of the bookkeeping, for the remainder of the year.

"During the time spent on the work a thorough review of journal, cash book, sales book and invoice book was made, business and financial statements and balance sheets were taken up, partial payments and partnership entries were made, and notes, involving interest and discount entries, were taken up in detail.

"Then, too, in connection with the sales and invoice books a study was made of merchandise discounts and how to take advantage of them. Series of discounts were figured and any general calculation apt to arise from such work was fully considered."

Phonography.

"With this year's class, I dictated for transcription to machine on April 20. They began the subject February 15.

"When they get to taking letters I have dictation almost every day.

"From about the sixth lesson I have, first sentences, then letters, quotations or magazine articles on the board for

reading. When they come to class the first thing to do is read what is on the board. Some teachers think reading is not important but I find it is the very best thing to make them see and write correct outlines. It also makes the subject much more interesting and without interest nothing can be taught, especially shorthand.

"In the senior class, in order to graduate, they must write 100 words per minute continued matter and 120 on letters. There are a number in the class who can do even more than this. I have dictated as high as 140, and eight or ten could read back their notes as rapidly as if I had dictated a hundred."

Typewriting.

"The pupils in my department do all of the work in the high school office, the superintendent's work, the health officer's correspondence, also if any of the business men in the city require the services of a stenographer for a day or two, one of the commercial students is sent out to do the work.

"In this way the children receive practical training and one that is of use to them when they get out of school. Most of last year's class are still filling the positions they accepted last July, which speaks for itself. In this year's class there are four who have already accepted positions to commence work the Monday after graduation.

"No exact number of words is set for the required amount per minute for the lower classes. The seniors are required to do 25 words a minute transcription of own shorthand notes. The majority of the class do between 28 and 34, but the average is about 26."

Office Practice.

"In the second year the pupils are prepared to do considerable of the work in the principal's and superintendent's office where shorthand is not involved, as well as a large amount of typewriting for the department's use.

Then, too, they have the city bills to make out. This consists of typewriting the bills in duplicate, listing them and making a statement of school expenditures each month.

"The juniors, as soon as their knowledge of shorthand is sufficient, are given much experience in the offices of the school in dictation and letter writing. In addition to this, and a considerable amount of typewriting, they have a set of city books to keep. Two people work on these each month, and alternate, so that during the year everyone has the experience gained in this way.

"Toward the end of the year the juniors are worked into the senior duties as rapidly as possible so that they will be able to carry them along without any difficulty the next year.

"Now, let us see what is expected of the pupils who are about to graduate. They have full charge of the school bank, handling the money, making out of checks (except that they have no power to sign them) and any clerical work that may arise in this department. During the past school year the deposits and withdrawals aggregated, respectively, $1,304.61 and $564.09, making a total balance in the bank on June 1, 1914, $2,037.88.

"Then, during the past year, there has been in the principal's office, every period of the day, a senior who answered the telephone, looked after the class attendance reports of each teacher and did whatever other office work might present itself.

"All of the accounts kept in the school, including a card system of city accounts, stock-room and high school supply and equipment accounts and the school bank are audited by seniors.

"We have supplied stenographers from time to time for the Y. M. C. A. and also for the board of health.

"Each pupil has a time card and signs up for every time he does any special work. In this way it is possible to see at any time what amount of work he has done.

"One of our graduates has already secured an excellent position with the Berlin Mills Co., and two others are to work for Armour & Co., as soon as they have completed their course in June."

COLEBROOK ACADEMY.

Commercial and Industrial Geography.

I. Conditions Affecting Commerce.
   a. Climate.
   b. Soil.
   c. Field trip, etc.

II. Commercial Geography.
   1. Cities.
      a. Reasons for location, etc.
      b. Transportation.
      (1) Study of the station.

III. Industrial Geography.
   1. Study of Industries.
      1. With the use of exhibits.
      2. Maps to put in area of production.
      3. Diagram.
         a. To show the relation between the areas of production, the places of manufacture and the places of consumption.
      4. Note-books.

IV. Summary.
   1. A large prize map was done which grouped all the area of production, and some manufacturing sections.
   2. Some of the most important industries were thrown on a screen by means of a reflectroscope, and the pupils gave a talk to the eighth grade, explaining the field processes and some manufacturing processes of the various industries.

Planting Beans, Alton High School.

V. Captains of Industry.

The last week was given up to a brief study of some of the greatest men in the commercial world, such as Rockefeller, Bessemer, Edison, Carnegie, Morse and a few others.

During the year the class gave an entertainment. The proceeds were used to buy a reflectroscope, and postcards showing processes of industries, and a cabinet in which to keep the industrial exhibits. The class added fifteen exhibits to the collection already here.

History of Commerce was studied with the commercial and industrial geography, and one day each week was given to topics from "Webster's General History of Commerce" and "Moore's Industrial History of the American People."

A field trip to study the earth, rock, mountain, rivers and valleys.

A trip to the station to study transportation, methods of shipping various articles, and to learn how stations in general are planned in relation to the tracks and freight house.

Industrial exhibits were studied and several industries assigned to each. One pamphlet on an industry not studied in class to be written, illustrated and diagramed for use in the school.

LEBANON HIGH SCHOOL.

The second-year class in bookkeeping kept the accounts of the school department and of the school savings-bank system.

SIMONDS FREE HIGH SCHOOL, WARNER.

Commercial Geography.

Pupils have prepared maps of each country to show sources of products. Two papers and note-book required

of each pupil. Each paper dealt with some particular manufacturing interest.

Illustrative material studied: Cotton, several forms.
Wheat, several forms.
Coal, two forms.
Cocoa, several forms.
Wool, several forms.
Silk, several forms.

Transportation.

Use of Railway Library, 1910-1911; "The Modern Railroad"; annual reports of B. & M. R. R. to date; study of organization of B. & M. R. R.; newspaper and magazine articles relating to transportation in general.

A note-book record has been kept by each pupil.

CHAPTER XIX.

Department Financial Statement.

TABLE NO. 42.

Showing Appropriations and Expenditures for Fiscal Year Ending August 31, 1913.

	Appropriations.	Expenditures.
Salary of superintendent,	$3,136.99	$3,136.99
Salary of clerks,	2,300.00	2,092.14
Attendance officer,	2,600.00	797.26
Incidentals,	1,400.00	1,307.35
Printing,	700.00	699.51
Printing report,	1,400.00	1,505.47
Overdraft transferred to printing account,	105.47	.....
Child labor enforcement:		
Salaries,	3,600.00	2,300.00
Travel and printing,	2,900.00	1,584.73

TEACHERS' INSTITUTE FUND.

Interest of fund,	$2,383.92	.....
Institutes for year,	.....	$1,600.61
Printing.	.....	460.31
Examinations,	.....	224.90
		$2,285.82

TABLE NO. 43.

SHOWING APPROPRIATIONS AND EXPENDITURES FOR FISCAL YEAR ENDING AUGUST 31, 1914.

	Appropriations.	Expenditures.
Salary of superintendent,	$4,000.00	$4,000.00
Salaries of deputies,	6,500.00	6,100.00
Travel of deputies,	1,400.00	995.41
Salaries of clerks,	2,500.00	1,558.75
Attendance officer,	1,000.00	152.92
Incidentals.	1,400.00	1,398.91
Printing.	1,000.00	998.70
Child labor enforcement:		
Salaries,	2,400.00	2,375.00
Travel and printing.	2,200.00	1,275.30

TEACHERS' INSTITUTE FUND.

Interest on fund,	$2,383.92	.....
Institutes for year,	.....	$1,749.84
Printing.	.....	486.34
Examinations,	.....	145.00
		$2,381.18

TABLE NO. 44.

ESTIMATES FOR APPROPRIATIONS NEEDED FOR FISCAL YEARS 1915-16 AND 1916-17.

	Present.	1915-16.	1916-17.
Salary of superintendent,	$4,000.00	$4,000.00	$4,000.00
Clerical expenses,	2,500.00	2,000.00	2,000.00
Truant officer,	1,000.00	1,000.00	1,000.00
Incidentals,	1,400.00	1,500.00	1,500.00
Printing,	1,000.00	1,000.00	1,000.00
Child labor:			
Salaries,	2,400.00	2,400.00	2,400.00
Travel and printing,	2,200.00	1,400.00	1,400.00
Salaries of deputies,	6,500.00	7,500.00	7,500.00
Travel,	1,400.00	1,400.00	1,400.00
Report,	1,400.00	.....	1,400.00
Course of Study,	.....	550.00	.....
10,000 registers,	.....	600.00	.....
	$23,800.00	$23,350.00	$23,600.00

CHAPER XX.

SUMMARY OF RECOMMENDATIONS.

I divide my recommendations into two classes. In the first class, I include those upon which I think there should be legislation at the approaching session of the General Court. In the second class, I include those upon which legislation is needed, but is not urgent at the present time.

I.

1. I recommend that legislation be enacted providing for the supervision of all schools in the state by qualified

persons, each superintendent to derive his powers directly from the statute.

2. I recommend provision for the retiring of superannuated and disabled teachers upon pensions paid by the state in accordance with the recommendations of the State Teachers' Association.

3. I recommend the establishment of a school or department of education in the State College for the education and training of teachers for the secondary schools and superintendents of schools.

4. I recommend the appropriation of money to complete the dormitory at the Plymouth Normal School and the extension of the dormitory at the Keene Normal School.

5. I recommend that the minimum school year be fixed by law at thirty weeks.

6. It is perhaps not the function of the superintendent of public instruction to make recommendations concerning matters which lie rather in the province of the Board of Charities and Correction or in that of the Children's Commission created by the last legislature and soon to report. I do, however, wish to draw attention to the urgent need of organizing and centralizing the administration of all our laws which relate to care of dependent, defective and delinquent children.

II.

Less pressing, but still needful, are the following:

1. Prohibit the vending of newspapers, magazines or merchandise on the streets by children under the age of fourteen, and require minors beyond the age of fourteen, when so engaged, to wear a badge issued by the superin-

tendent of schools in the same manner as employment certificates.

2. Provide for the establishment of two additional normal schools, one in the northern and one in the southeastern section of the state.

3. Require that all persons teaching in the public schools after a certain date shall hold licenses issued by the superintendent of public instruction, said licenses to be revokable for cause.

Cow Stable, Kimball Union Academy.

APPENDIX.

SCHOOL OFFICERS

DEPARTMENT OF PUBLIC INSTRUCTION

HENRY C. MORRISON.....*State Superintendent*
GEORGE H. WHITCHER.....*Deputy State Superintendent*
HARRIET L. HUNTRESS.....*Deputy State Superintendent*
HARRY A. BROWN.....*Deputy State Superintendent*
MABEL L. SEAVEY.....*Registrar*
RUTH H. DAGGETT.....*Stenographer*
ROBERT J. MITCHELL.....*Inspector Child Labor Service*
JOHN BISHOP.....*Inspector Child Labor Service*
CHARLES H. McDUFFEE.....*Inspector Attendance Service*

NORMAL SCHOOLS

PLYMOUTH.....ERNEST L. SILVER, *Principal*
KEENE.....WALLACE E. MASON, *Principal*

CITY SUPERINTENDENTS

CHARLES W. BICKFORD..Manchester
LOUIS J. RUNDLETT.....Concord
JAMES H. FASSETT.....Nashua
JAMES N. PRINGLE.....Portsmouth
GEORGE A. KEITH.....Keene
ERNEST W. BUTTERFIELD....Dover
JOSEPH H. BLAISDELL.....Laconia
EVERETT A. PUGSLEY.....Rochester
HARRY L. MOORE.....Berlin
WILLIAM C. COGGINS.....Franklin
LOUIS DEW. RECORD...Somersworth

DISTRICT SUPERINTENDENTS

WILLIAM L. MACDONALD, Troy, Fitzwilliam, Rindge, Jaffrey, *P. O. East Jaffrey.*
CHANNING T. SANBORN, *Pittsfield,* Loudon, Chichester.
EVERETT J. BEST, *Walpole,* Westmoreland, Langdon.
F. U. LANDMAN, *Wolfeboro,* Alton, Farmington.
WILLIAM H. SLAYTON, *Claremont,* Charlestown.
THOMAS A. ROBERTS, *Lebanon,* Enfield.
FREDERICK D. HAYWARD, *Newport,* New London.
JOHN BACON, *Milford,* Amherst, Hollis.
CHARLES W. CUTTS, *Derry,* Londonderry.
CARL COTTON, Greenland, Newington, Durham, Rye, *P. O. Portsmouth.*
FREDERICK L. KENDALL, *Peterborough,* Antrim, Hillsborough.
GEORGE W. SUMNER, *Penacook,* Bradford.
ORIN M. HOLMAN, Stratford, Northumberland, Columbia, *P. O. Coos.*
FRED S. LIBBEY, Hopkinton, Weare, Bedford, *P. O. Contoocook.*
HOWARD L. WINSLOW, *Salem,* Atkinson, Hudson, Plaistow.
NORMAN J. PAGE, *Woodsville,* Haverhill, Bath.
CHARLES A. BRECK, *Tilton,* Belmont, Gilmanton.
ANDREW P. AVERILL, Hinsdale, Swanzey, Dublin, Winchester,
P. O. R. F. D. 1, Keene.
ALONZO J. KNOWLTON, Conway, Madison, Bartlett, *P. O. North Conway.*
S. HORACE WILLIAMS, *Colebrook,* Errol, Stewartstown, Wentworth's Location.
WILLIAM C. COGGINS, *Franklin,* Hill.
FRANK W. JACKSON, *Whitefield,* Jefferson, Bethlehem Special.
FRANK M. RICH, *Marlborough,* Harrisville, Hancock.
JOHN S. GILMAN, *Lisbon,* Landaff.
LOUIS DEW. RECORD, *Somersworth,* Newmarket.
ALBERT T. LANE, Hampstead, Raymond, Lee, *Hampton.*
HENRY S. ROBERTS, Pembroke, Allenstown, Merrimack, *P. O. Suncook.*
DAVID F. CARPENTER, *Littleton,* Bethlehem Town.
LEONARD S. MORRISON, *Wilton,* Temple, New Ipswich.
JACOB E. WIGNOT, *Gorham,* Randolph, Shelburne.

LIST OF SECONDARY APPROVED SCHOOLS

Name of School.	FIRST CLASS.	Name of Principal.
Alton High School		Roy H. Walch.
Amherst High School		F. L. Bradford.
Andover, Proctor Academy		Francis T. Clayton.
Antrim High School		A. G. Davis.
Ashland High School		Frank W. Knight.
Atkinson Academy		H. Warren Dow.
Bath High School		Mrs. Ellen S. Chase.
Berlin High School		Daniel W. MacLean.
Bethlehem High School		Wallace W. Wilder.
Claremont, Stevens High School		Allen C. Cummings.
Colebrook Academy		C. W. Kemp.
Concord High School		Charles F. Cook.
St. Mary's School		Isabel M. Parks.
Derry, Pinkerton Academy		John J. Marrinan.
Dover High School		Melvin M. Smith.
Enfield High School		Raymond I. Haskell.
Epping High School		Frederick T. Johnson.
Exeter, Tuck High School		Harry E. Walker.
Robinson Seminary		Harlan M. Bisbee.
Farmington High School		William H. Buker.
Franconia, Dow Academy		John M. Skilling.
Franklin High School		Harry P. Swett.
Goffstown High School		William H. Martin.
Gorham High School		Herbert E. Wolfe.
Groveton High School		Irving Hinkley.
Hampstead High School		Percival F. Bliss.
Hampton Academy		William B. Elwell.
Hanover High School		Bion C. Merry.
Haverhill Academy		Edward B. Cornell.
Henniker High School		Frederick M. Armstrong.
Hillsborough High School		G. Hampton McGaw.
Hinsdale High School		Edwin B. Young.
Hollis High School		Norris E. Woodbury.
Hopkinton High School, *Contoocook*		Joseph A. Wiggin.
Jaffrey (*East*), Conant High School		Fred R. Lord.
Jefferson High School		L. D. Jesseman.
Keene High School		James F. Smith.
Kingston, Sanborn Seminary		Z. Willis Kemp.
Laconia High School		Verne M. Whitman.
Lancaster High School		Willis O. Smith.
Lebanon High School		Frank Y. Hess.
Lebanon (*West*) High School		John J. Howard.
Lincoln High School		H. C. Farwell.
Lisbon High School		Walter M. May.
Littleton High School		Guy E. Speare.
Manchester High School		George H. Libby.
St. Anselm's College		Vincent Amberg.
Marlborough High School		Fred W. Chaplin.
Meriden, Kimball Union Academy		Charles A. Tracy.
Merrimack, McGaw Institute, *Reed's Ferry*		Fred W. Dudley.
Milford High School		Winnifred S. Ross.

Milton, Nute High School.....Franklin H. Manter.
Nashua High School.....Charles H. Noyes.
New Hampton Literary Institution.....Frank W. Preston.
New Ipswich, Appleton Academy.....Herschel W. Lewis.
New London, Colby Academy.....Justin O. Wellman.
Newmarket High School.....Alfred W. Smith.
Newport High School.....E. Newton Smith.
Northwood Centre, Coes Academy.....Edwin K. Welch.
Pembroke Academy.....Henry S. Blount.
Penacook High School.....Albert S. Woodward.
Peterborough High School.....William G. Park.
Pittsfield High School.....Edward S. Watson.
Plymouth High School.....Charles L. Wallace.
Portsmouth High School.....Frank F. Dunfield.
Rochester High School.....Gilman H. Campbell.
Somersworth High School.....John B. Pugsley.
Strafford Center, Austin-Cate Academy.....Ernest P. Freese.
Stratford (*North*) High School.....Thomas W. Watkins.
Sunapee High School.....Joseph F. Burch.
Tilton Seminary.....George L. Plimpton.
Walpole High School.....R. E. Skinner.
Warner, Simonds Free High School.....George H. Harmon.
Whitefield High School.....W. W. Shanor.
Wilton High School.....Frank Leonard.
Winchester High School.....Clarence M. Harris.
Woodsville High School.....Elbert E. Orcutt.

THIRD CLASS.

Bristol High School.....Julia Mae Swain.
Canaan High School.....George P. Leete.
Charlestown High School.....Irving C. Mitchell.
Conway High School.....William H. Bailey.
Eaton High School, Danville.....Elizabeth Hyde.
Errol High School.....Ina M. Fogg.
Fitzwilliam High School.....H. Gardner Chase.
Hancock High School.....Hermann G. Patt.
Meredith High School.....D. Alvah Crandall.
North Conway High School.....Charles H. Walker.
Troy High School.....Charles W. Walker.
Warren High School.....Lillian V. Clark.

FOURTH CLASS.

Piermont High School.....Ruth F. Powers.

TOWN AND CITY SCHOOL BOARDS

Town.	Name.	Post-office address when different from town.
Acworth	Miss Esther R. Chatterton	
	Rev. James F. Eaton	
	Clarence F. Crandall	
Albany	Onslow S. Smith	Passaconaway.
	Alfred Hammond	Conway.
	Eliphalet W. Lippett	Conway.
Alexandria	Charles P. Fiske	R. F. D. No. 1, Bristol.
	Alonzo N. Blake	R. F. D. No. 1, Bristol.
	Augustus F. Cheney	R. F. D. No. 1, Bristol.
Allenstown	Mrs. Etta M. Stearns	Suncook.
	Harry L. Billings	R. F. D., Suncook.
	Dr. C. E. Butterfield	Suncook.
Alstead	Harvey C. Strout	
	Dr. P. B. Stevens	
	John Rawson, Jr.	
Alton	Dr. Frank W. McLaughlin	
	D. J. Ellison	
	Mrs. Alta H. McDuffee	
Amherst	William W. Sloan	
	Mrs. Fannie L. Clark	
	Miss Cora E. Holbrook	
Andover	Rev. James F. Morton	
	Mrs. Lizzie W. Elkins	
	Mrs. Daisy Eastman	East Andover.
Antrim	George E. Hastings	
	Harry B. Drake	
	John D. Hutchinson	
Ashland (Town)	Erville J. Batchelder	
	W. Byron Smith	
	Charles L. Small	R. F. D. No. 4, Plymouth.
Ashland (Special)	Ellis G. Gammons	R. F. D. No. 4, Plymouth.
	Harry R. Spaulding	
	Ora A. Brown	
	Charles H. Pattee	
	Frederick M. Merrow	
	Edward P. Colby	[Mass.
Atkinson	Herbert N. Sawyer	R. F. D. No. 2, Haverhill,
	Charles I. Pressey	Atkinson Depot.
	Harold N. Cross	Atkinson Depot.
Auburn	Mrs. Clara M. Preston	
	Fred H. Hall	R. F. D. No. 1.
	William J. Moy	R. F. D. No. 2.
Barnstead	George W. Dow	North Barnstead.
	John George	Center Barnstead.
	George F. Hall	
Barrington	Albion G. Weeks	R. F. D. No. 1, Rochester.
	Mrs. Madge H. Locke	
	Mrs. Linna M. B. Locke	North Barrington.
Bartlett (Town)	J. L. Pendexter	North Conway.
	Walter Pitman	Intervale.
	H. F. Kittredge	Glen.
Bartlett (Special)	L. A. Dunbar	
	Charles E. Allen	
	G. K. Howard	
Bath (Town)	Mrs. Marion M. Child	Woodsville.
	Benjamin B. Gale	Woodsville.
	Harry Woods	Woodsville.

Town.	Name.	Post-office address when different from town.
Bath (Special).....	Mrs. Farrand Foster.....	
	Jonas Minot.....	
	Amos N. Blandin.....	
Bedford.....	Arthur W. Davis.....	Reed's Ferry.
	Mrs. Bertha E. French.....	Bedford Center.
	Chester Rausch.....	R. F. D. No. 8, Manchester.
Belmont.....	James C. Hill.....	
	Mrs. Lillian M. Knowles....	
	Juan A. Smith.....	R. F. D. No. 2, Laconia.
Bennington.....	Mrs. Martha E. Knight.....	
	George E. Cheney.....	
	Frank L. Keeser.....	
Benton.....	Fred M. Tyler.....	
	William W. Eastman.....	
	S. H. Dexter.....	R. F. D., Woodsville.
Berlin.....	Orton B. Brown.....	
	Charles B. Barton.....	
	Mrs. Lucy W. Fowler.....	
Bethlehem (Town)..	Charles E. Baker.....	R. F. D., Littleton.
	Waldo C. Whitcomb.....	
	C. H. Hazen.....	R. F. D., Whitefield.
Bethlehem (Special)..	Dr. H. E. Thompson.....	
	Miss Cynthia A. Kidder....	
	George H. Turner.....	
Boscawen	Edward Webster.....	
	Mrs. Mattie Q. Griffin.....	R. F. D. No. 13.
	Mrs. Alla J. Carter.....	
Bow.....	John W. Bourlet.....	R. F. D. No. 3, Concord.
	Mrs. Susie H. Colby.....	R. F. D., Hooksett.
	Mrs. Millie White.....	R. F. D. No. 4, Concord.
Bradford.....	Frank O. Melvin.....	
	Frank B. Gould.....	
	Joseph W. Sanborn.....	
Brentwood.....	John F. Swasey.....	R. F. D. No. 1, Exeter.
	Mrs. Grace M. Bartlett.....	R. F. D., Fremont.
	Mrs. Susie N. Moreland....	R. F. D., Epping.
Bridgewater.....	Mrs. Maud M. Pothecary...	
	Mrs. Sadie H. Gilpatrick...	R. F. D. No. 2, Plymouth.
	Mrs. Addie R. Pollard.....	R. F. D. No. 2, Plymouth.
Bristol (Town).....	Fred Whittemore.....	R. F. D. No. 1.
	George E. Price.....	
	Mrs. F. D. Dolloff.....	
Bristol (Special)....	Frank N. Gilman.....	
	William C. White.....	
	Mrs. Ada B. Cavis.....	
	Mrs. Mabel M. Ladd.....	
	Homer H. Hutchinson.....	
	Ira A. Chase.....	
Brookfield.....	William R. Wentworth.....	Sanbornville.
	Albert Shortrige.....	Sanbornville.
	Benjamin R. Canney.....	Sanbornville.
Brookline.....	George H. Nye.....	
	Arthur A. Goss.....	
	Mrs. Nancy J. Daniels.....	
Campton.....	George D. Pattee.....	R. F. D. No. 3, Plymouth.
	Mrs. Clara J. Pulsifer.....	R. F. D. No. 5, Plymouth.
	Joseph E. Sanborn.....	
Canaan (Town).....	George W. Chase.....	R. F. D. No. 1.
	Mrs. Emma L. Sherburne...	Canaan Center.
	William Arnold.....	
Canaan (Special)....	Frank B. Clark.....	
	Mrs. Cora B. Smith.....	
	Dr. F. A. Bogardus.....	

Town.	Name.	Post-office address when different from town.
Candia	John D. Underhill	
	Charles W. Phillips	East Candia.
	Miss Mary L. Brown	
Canterbury	C. A. Depuy	
	Mrs. Harry G. Clough	
	George E. Wiggin	
Carroll	Mrs. Della A. Straw	R. F. D. No. 4, Whitefield.
	Millege O. Nelson	R. F. D. No. 4, Whitefield.
	Leon G. Hunt	R. F. D. No. 4, Whitefield.
Center Harbor	George A. Simpson	
	Norris P. Bartlett	R. F. D. No. 1, Meredith.
	James R. Lovett	Meredith.
Charlestown	Walter H. Perry	North Charlestown.
	Miss S. Abbie Spooner	
	Ernest Bowen	
Chatham	Madison O. Charles	North Chatham.
	Perley R. Head	Green Hill.
	Willis C. Bryant	
Chester	Miss Martha T. Learnard	
	Dr. James S. Roberts	
	William B. Underhill	
Chesterfield	Mrs. Mabel C. Spaulding	
	Nathan Puffer	Spofford.
	Mrs. Mattie J. Carey	West Chesterfield.
Chichester	Albert S. Dame	R. F. D. No. 7, Concord.
	Harry S. Kelley	North Chichester.
	Frederick B. Shaw	North Chichester.
Claremont	Melvin F. Colby	
	Miss Florence K. Bailey	
	Phineas C. Kinney	
Clarksville	Almon J. Young	
	George Haynes	Pittsburg.
	John C. Hurlbert	
Colebrook (Town)	Walter Cummings	
	Allen A. Forbes	
	John J. McNeely	
Colebrook (Special)	Darwin Lombard	
	Ira A. Ramsay	
	Guy B. Trask	
	John D. Annis	
	Dr. Edwin E. Jones	
	Charles O. Stevens	
Columbia	Michael H. Gray	Coos.
	Alpheus B. Frizzell	Colebrook.
	George Parkhurst	Colebrook.
Concord (Town)	Irving T. Chesley	
	Mrs. Albert J. Morrill	East Concord.
	William S. Holland	Penacook.
Concord (Union)	Edward C. Niles	
	Mrs. Fanny E. Minot	
	Omar S. Swenson	
	Dr. Dennis E. Sullivan	
	Miss Carrie E. Evans	
	Hon. William H. Sawyer	
	Harry H. Dudley	
	Hon. George H. Moses	
	Mrs. Lillian R. Shepard	West Concord.
Concord (Penacook)	Dr. H. C. Holbrook	
	George M. Lane	
	Edson H. Mattice	
	Harry G. Rolfe	
	Henry A. Brown	
	Almon G. Harris	

Town.	Name.	Post-office address when different from town.
Conway	Mrs. Abbie M. D. Blouin	Centre Conway.
	Arthur H. Furber	North Conway.
	Leander C. Prescott	
Cornish	Pearl S. Gordon	Cornish Flat.
	Rev. F. J. Franklyn	Cornish Flat.
	James Chadbourne	R. F. D. No. 4, Windsor, Vt.
Croydon	Edgar W. Davis	
	Mrs. Laura Ide	
	Charles Barton	
Dalton	Henry F. Whitcomb	R. F. D. No. 1, Littleton.
	Mrs. Bertha Aldrich	R. F. D. No. 2, Whitefield.
	Rev. David C. Hershey	R. F. D. No. 2, Whitefield.
Danbury	Mrs. Nellie F. Edson	
	Mrs. Emma M. Martin	South Danbury.
	Mrs. Annie G. Roby	
Danville	Miss Flora M. Tuck	North Danville.
	Charles H. Johnson	
	Melburn J. Dimond	
Deerfield	Oscar J. Chase	R. F. D. No. 1, Raymond.
	Fritz E. Kallenberg	South Deerfield.
	Horace M. Churchill	R. F. D. No. 1, Raymond.
Deering	George K. Wood	R. F. D. No. 2, Antrim.
	Mrs. Belle C. Locke	
	Dennis R. Chase	East Deering.
Derry (Town)	Mrs. Eva C. Day	Derry Village.
	Edwin B. Weston	R. F. D. No. 3.
	Herbert L. Grinnell, Jr.	
Derry (Special)	Mrs. Emma A. Campbell	
	Mrs. Susan B. Ranney	Derry Village.
	Fred E. Stevens	Derry Village.
Dorchester	Herbert H. Ashley	Cheever.
	Isaac D. Walker	Cheever.
	Harrison H. Noyes	Cheever.
Dover	Dr. Charles A. Fairbanks	
	George J. Foster	
	Charles E. Wendell	
	Albert H. Winn	
	James F. Dennis	
	Frank R. Bliss	
	E. Frank Boomer	
	Edwin C. Colbath	
	Michael Duffy	
	Andrew Killoren	
	George D. McDuffee	
	James H. Southwick	
	Melvin A. Galucia	
	Norman E. Scavey	
	James Brennan	
Dublin	Clifton E. Richardson	R. F. D. No. 3, Peterborough.
	Wilfred M. Fiske	
	Robert C. Woodward	
Dummer	Mrs. Maud Sanderson	
	Herman Anderson	
	Mrs. Edith M. Lovejoy	West Milan.
Dunbarton	John Ladue	R. F. D. No. 3, Manchester.
	Walter H. Burnham	R. F. D. No. 1, Goffstown.
	Frank E. Garvin	R. F. D. No. 2, Concord.
Durham	Charles E. Hewitt	
	Charles S. Langley	
	Charles Wentworth	
East Kingston	Joseph F. Currier	
	Mrs. Laura O. Philbrick	
	Mrs. Betsey B. Monahan	

Town.	Name.	Post-office address when different from town.
Easton	Fred H. Bowles	
	C. L. Thayer	
	Mrs. Katherine L. Bowles	Box 80.
Eaton	George E. Doe	Eaton Center.
	Dr. Charles M. Stanley	Snowville.
	Charles E. Durkin	Eaton Center.
Effingham	Miss Kate E. Barker	Mountainview.
	Charles H. Tewksbury	Center Ossipee.
	Frank O. Leavitt	
Ellsworth	William M. Whidden	
	Mrs. Della F. Leeman	
	James B. Connolly	
Enfield	Rev. Albert S. Kilbourn	
	Val M. Clough	West Canaan.
	Mrs. Edith Colby	
Epping	Augustus D. Brown	
	William S. Mason	
	D. Webster Dow	North Epping.
Epsom	Mrs. Lizzie F. Fowler	Short Falls.
	Samuel R. Yeaton	Short Falls.
	Harold Bickford	Gossville.
Errol	Edward E. Bennett	
	Lewis C. Ilsley	
	James L. Bragg	
Exeter	Rev. Edward Green	
	Albertus T. Dudley	
	Miss Frances E. Smith	
Farmington (Town)	William V. Ware	R. F. D. No. 1.
	Winslow P. Thompson	R. F. D. No. 2, Rochester.
	Mrs. Clara Wyatt	R. F. D. No. 2, Rochester.
Farmington (Special)	Eugene B. Hayes	
	Mrs. Lizzie M. Carter	
	Ned L. Parker	
Fitzwilliam	Mrs. Lolie R. Pierce	Fitzwilliam Depot.
	Dr. George S. Emerson	
	Francis R. Parker	
Francestown	Mrs. Mary M. Woodbury	
	Miss Maria A. Richardson	
	George R. Smith	
Franconia	Dr. Hiram L. Johnson	
	Guy H. Clark	
	Archie W. Bowles	
Franklin	Rev. Henry C. McDougall	
	Enos K. Sawyer	
	Harry W. Burleigh	
Freedom	Arthur P. Merrow	
	Perley K. Towle	
	Edgar J. Young	
Fremont	Alden F. Sanborn	
	Fred J. Clement	
	James E. Taylor	
Gilford	Mrs. Julia M. Rand	R. F. D. No. 5, Lakeport.
	Mrs. Lizzie A. James	R. F. D. No. 3, Laconia.
	Fred R. Weeks	R. F. D. No. 4, Laconia.
Gilmanton	Jeremiah W. Sanborn	R. F. D., Pittsfield
	Mrs. Anna Edgerly	Gilmanton Iron Works.
	Dr. A. H. French	
Gilsum	Mrs. Arabelle E. Crain	R. F. D., Surry.
	Rev. Aaron W. Field	
	John H. Laing	
Goffstown (Town)	B. Frank Davis	R. F. D. No. 1.
	Benjamin F. Greer	Grasmere.
	Mrs. Marjorie B. Parker	

Town.	Name.	Post-office address when different from town.
Goffstown (Special)..	Fred B. Luscombe.....	
	George A. Frachner.....	
	Dr. Albert Marden.....	
	Dr. H. D. Gould.....	
	Dr. C. W. Milliken.....	
	Mrs. Lena G. Richards.....	
Gorham.....	Thomas L. Marble.....	
	Jesse F. Libby.....	
	Elisha H. Cady.....	
Goshen.....	Mrs. Mabel K. Pike.....	Mill Village.
	Miss Maud D. Mitchell.....	Mill Village.
	Walter R. Nelson.....	Mill Village.
Grafton.....	Mrs. Hattie Walker.....	
	Alpheus A. Howe.....	
	Thomas Roeder.....	
Grantham.....	Mrs. Rosa F. Heath.....	Montcalm.
	Mrs. Nina E. Sherman.....	
	Van W. Hastings.....	
Greenfield.....	Daniel O. Flynn.....	
	Dr. Nathaniel F. Cheever..	
	Mrs. Minnie Aiken.....	
Greenland.....	Allen A. Odell.....	
	Mrs. E. S. Daniell.....	
	Miss Lillian A. Odell.....	
Greenville.....	Mrs. Ellen A. Hall.....	
	Charles A. Preston.....	
	Dr. Victor Potvin.....	
Groton.....	Rev. Arthur N. Lewis.....	
	Barron S. Kinne.....	North Groton.
	Mrs. Katie E. Brown.....	
Hampstead.....	Adin S. Little.....	
	Mrs. Annie F. Sanborn.....	
	George E. Morse.....	East Hampstead.
Hampton.....	Charles M. Batchelder.....	
	Rev. John A. Ross.....	
	Miss Elizabeth B. Norris...	
Hampton Falls.....	Henry M. Prescott.....	
	Mrs. Mabelle McDevitt.....	
	George F. Merrill.....	
Hancock.....	Mrs. Ella F. Perry.....	R. F. D.
	Frank Pearson.....	R. F. D.
	A. S. Moore.....	R. F. D.
Hanover (Town)....	Mrs. Etta Emerson.....	Etna.
	Albert W. Adsit.....	Enfield.
	F. V. Tuxbury.....	Etna.
Hanover (Special)...	Perley R. Bugbee.....	
	Prof. Sidney B. Fay.....	
	Prof. Harry E. Burton.....	
	Horace E. Hurlbutt.....	
	Mrs. Vesta F. Gile.....	
	Prof. Harlow S. Person....	
Harrisville.....	Bernard F. Bemis.....	Chesham.
	Robert McCall.....	
	Frank P. Symonds.....	Chesham.
Harts Location.....	Mrs. Charles H. Morey.....	Bemis.
	Mrs. L. S. Evans.....	Crawfords.
	Mrs. Joseph Monahan.....	Wiley House.
Haverhill (Town)..	Jesse R. Squiers.....	
	Dr. William E. Lawrence...	North Haverhill.
	Emile Blank.....	Pike.
Haverhill (Woodsville)	Joseph M. Howe.....	
	Ernest A. Sargent.....	
	D. S. Stone.....	

Town.	Name.	Post-office address when different from town.
Hebron	Mrs. Rhoda A. Esty	
	Rev. J. R. Remick	
	George S. Smith	East Hebron.
Henniker	George H. Dodge	
	Dr. George H. Sanborn	
	John C. Cogswell	
Hill	Frank R. Woodward	
	Angelo H. Fowler	
	Frederick H. Gage	
Hillsborough (Town)	James M. Ray	
	Mrs. Deborah M. Brown	Hillsborough Lower Village.
	Elberton E. Farrar	Hillsborough Center.
Hillsboro' (Special)	George W. Haslet	
	Joseph W. Chadwick	
	Leon E. Annis	
Hinsdale	Dr. Walter E. Fay	
	Mrs. Lizzie L. Bailey	
	Harold C. Holland	
Holderness	Mrs. Elmira C. Evans	R. F. D. No. 4, Plymouth.
	Mrs. Winnie Willoughby	
	Wilbur L. White	R. F. D. No. 1, Ashland.
Hollis	Charles P. Brown	
	Francis K. Sweetser	
	Miss Clara E. Smith	
Hooksett	Albert W. Cole	R. F. D. No. 9, Manchester.
	Clifton P. Sanborn	
	Dr. Leopold T. Togus	
Hopkinton	Charles H. Peaslee	Contoocook.
	J. Arthur Jones	R. F. D. No. 2, Contoocook.
	George E. Lord	Contoocook.
Hudson	Henry C. Brown	
	Dr. Henry O. Smith	
	Mrs. Lettie V. Leslie	
Jackson (Town)	James H. Hodge	R. F. D., Intervale.
	Charles A. Dinsmore	R. F. D., Intervale.
	Arthur W. Howe	R. F. D., Intervale.
Jackson (Special)	Fred M. Dinsmore	
	Arthur C. Gray	
	Arba M. Pitman	
Jaffrey	Dr. Frederick C. Sweeney	East Jaffrey.
	Albert E. Knight	East Jaffrey.
	Edward C. Boynton	East Jaffrey.
Jefferson	Manasah Perkins	
	Dr. L. C. Aldrich	
	Lyman D. Kenison	Starrking.
Keene	Charles C. Sturtevant	
	Daniel M. Spaulding	
	Wilton H. Spalter	
	Frank H. Whitcomb	
	Adolf W. Pressler	
	Henry W. Lane	
	Robert T. Kingsbury	
	John E. Allen	
	W. Harry Watson	
Kensington	Stephen Brown	R. F. D., East Kingston.
	Moses Evans	R. F. D., East Kingston.
	Mrs. John True	R. F. D. No. 2, Exeter.
Kingston	Frank Cavaric	Box 75.
	Mrs. Joseph Wadleigh	R. F. D., Newton.
	Mrs. Flora E. Hilliard	East Kingston.

Town.	Name.	Post-office address when different from town.
Laconia	Dennis O'Shea	
	Georgia G. Wells	
	F. P. Tilton	
	Clifton S. Abbott	
	Dr. A. H. Harriman	
	Idella D. Lamprey	
	George D. Mayo	
	Dr. George H. Saltmarsh	Lakeport.
	Harry L. Smith	Lakeport.
Lancaster (Town)	James E. McIntire	R. F. D. No. 2.
	Bert J. Howe	R. F. D. No. 2.
	Mrs. Ella Hartford	R. F. D. No. 1.
Lancaster (Special)	George F. Morris	
	James L. Dow	
	Mrs. Etta S. Carpenter	
Landaff	George D. McKean	R. F. D. No. 2, Lisbon.
	Calvin E. Heath	R. F. D. No. 2, Lisbon.
	Leon E. Noyes	R. F. D. No. 2, Lisbon.
Langdon	Edwin H. Clark	Alstead.
	Charles A. Jefts	Alstead.
Lebanon (Town)	Mrs. Mary J. Benson	R. F. D.
	Fred P. Hatch	
	Mrs. Clara G. Adams	R. F. D., West Lebanon.
Lebanon (High)	Dr. Frank A. Smith	
	Clarence E. Clough	
	Mrs. Clara G. Churchill	
Lebanon (West)	Samuel P. French	
	Frank Dalton	
	Winn J. Harding	
Lee	Fred P. Comings	
	Walter W. Jones	R. F. D. No. 5, Dover.
	Benton E. Layne	R. F. D. No. 5, Dover.
Lempster	Carl A. Parker	
	A. W. Welch	East Lempster.
	Mrs. Camilla U. Hodgman	East Lempster.
Lincoln	L. G. Burnell	
	George E. Henry	
	Mrs. M. H. Wallace	Johnson.
Lisbon (Town)	L. D. Barrett	R. F. D., Littleton.
	Harry B. Sherman	R. F. D.
	Arthur B. Jesseman	Sugar Hill.
Lisbon (Special)	A. M. Clough	
	Frank S. Kelsea	
	Mrs. Sadie E. Woolson	
	Mrs. N. G. English	
	Dr. F. E. Speare	
	George W. Moulton	
Lisbon (Sugar Hill)	D. M. Tefft	
	Mrs. E. M. Murray	
	Rev. D. W. Hall	
Litchfield	Miss Della Shepard	R. F. D. No. 1, Hudson.
	Mrs. Margaret A. Leach	R. F. D. No. 1, Hudson.
	John A. Reid	R. F. D. No. 5, Manchester.
Littleton	Myron H. Richardson	
	Rev. T. W. Harris	
	Frank I. Parker	
	John T. Lytle	
	George Houle	
Londonderry	Mrs. Hattie T. Colburn	R. F. D. No. 1, Hudson.
	Miss Cora B. Goodwin	
	Norman F. Watts	R. F. D.

Town.	Name.	Post-office address when different from town.
Loudon	A. L. Osgood	Pittsfield.
	Miss Mabel Osgood	R. F. D. No. 2, Pittsfield.
	Mrs. Nellie A. Megrath	
Lyman	S. W. Miner	R. F. D. No. 1, Lisbon.
	M. Ward Clough	R. F. D. No. 3, Lisbon.
	Frank Gilman	R. F. D. No. 3, Lisbon.
Lyme	Elmer F. Morrill	
	Mrs. Mabel Barron	
	Arthur E. Derby	
Lyndeborough	Mrs. May B. Emery	South Lyndeborough.
	Mrs. Bertha P. Woodward	R. F. D., Wilton.
	Mrs. Ella R. Holt	South Lyndeborough.
Madbury	Lewis H. Young	R. F. D., Dover.
	Charles S. Kingman	
	Arthur L. Fernald	R. F. D., Dover.
Madison	Mrs. Edna A. Gilman	Silver Lake.
	Ernest E. Kennett	
	Dr. Wilbur G. Martin	
Manchester	Charles C. Hayes	
	James M. Yuill	
	Patrick B. Maloney	
	Allan M. Wilson	
	George M. Watson	
	William A. Phinney	
	Francis J. Hurley	
	Joseph M. McDonough	
	Edward B. Woodbury	
	Frank A. Cadwell	
	Euclide F. Geoffrion	
	Maurice L. Bullard	
Marlborough	Ray H. Page	
	Charles W. Buckminster	
Marlow	William W. Howe	
	Arthur M. Davis	
	Walter R. Haydock	
Mason	Mrs. Annie L. Churchill	
	Albert B. Eaton	Greenville.
	John T. Smith	R. F. D.
Meredith	Bertram Blaisdell	
	Mrs. Lettie E. Mead	
	Joseph F. Smith, Jr	Meredith Center.
Merrimack	George P. Foskett	Reed's Ferry.
	Miss Clarissa W. Griffin	Thornton's Ferry.
	David R. Jones	
Middleton	Mrs. Elizabeth L. Davis	Box 732, Farmington.
	William F. Hanson	Union.
	Mrs. Louise M. Stevens	R. F. D., Union.
Milan	L. A. Bickford	
	Mrs. Virginia F. Hagar	West Milan.
	Mrs. Susie Barrows	
Milford	William H. Walbridge	
	Arthur B. Roteh	
	Mrs. Dorothy E. McLane	
Milton	Dr. M. A. H. Hart	
	Fred P. Jones	R. F. D., Union.
	Joseph Boyd	Milton Mills.
Monroe	Albert H. Nelson	
	Hugh Nelson	North Monroe.
	Rev. Robert S. Ward	North Monroe.
Mont Vernon	Frank O. Lamson	
	William H. Kendall	
	Rev. A. W. Remington	

Town.	Name.	Post-office address when different from town.
Moultonborough	Joseph L. Meloon	Center Harbor.
	Dr. Frank S. Lovering	
	Percy Kelley	Center Harbor.
Nashua	John H. Field	
	Charles W. Howard	
	Arthur K. Woodbury	
	Dr. Arthur L. Wallace	
	Ernest W. Gray	
	Walter F. Norton	
	Frank P. Rideout	
	John D. Gardiner	
	Albert J. McKean	
	James L. Bickford	
	Frank B. Clancy	
	Dr. Samuel Dearborn	
Nelson	George S. Page	Munsonville.
	Harry R. Green	Munsonville.
	Homer F. Priest	
New Boston	Orren S. Waldo	
	Herbert S. Todd	
	Frank A. Greer	
Newbury	John D. Peaslee	South Newbury.
	Walter Grout	
	C. H. M. Perkins	Mt. Sunapee.
Newcastle	James E. Sylvester	
	W. B. Guptill, Jr	
	Thomas Jackson	
New Durham	Zanello D. Berry	
	Mrs. John N. Tash	
	Frank C. Wright	
Newfields	Daniel R. Smith	
	Christopher A. Pollard	
	Mrs. Alice J. Partridge	
New Hampton	Joseph C. Tilton	
	Mrs. Abbie F. Huckins	R. F. D. Ashland.
	Miss M. Eva Rand	Winona.
Newington	William L. Furber	R. F. D. No. 1, Portsmouth.
	Charles W. Coleman	R. F. D. No. 1, Portsmouth.
	Mrs. Laura E. Frink	R. F. D. No. 1, Portsmouth.
New Ipswich	Isham E. Aldrich	R. F. D.
	Herschel W. Lewis	
	Mrs. Lucy M. Whitney	
New London	Charles W. Gay	Elkins.
	Mrs. Grace T. Hall	
	Miss Emma L. Colby	
Newmarket	Frank H. Durgin	
	Michael B. Griffin	
	Ernest P. Pinkham	
Newport	Silas C. Newell	
	Lewis S. Record	
	George A. Fairbanks	
Newton	Mrs. Mabel A. Bartlett	R. F. D. No. 1.
	Oscar E. Huse	Newton Junction.
	Elmer E. Butler	R. F. D. No. 1.
Northfield	Mrs. Mary R. Gile	R. F. D., Tilton.
	John B. Yeaton	R. F. D., Franklin.
	Gawn E. Gorrell	R. F. D., Tilton.
North Hampton	Mrs. Clara W. Brown	
	George A. Boynton	Little Boar's Head.
	Albert E. Locke	
Northumberland	Ernest H. Macloon	Groveton.
	Joseph P. Boucher	Groveton.
	Daniel W. Marshall	Groveton.

Town.	Name.	Post-office address when different from town.
Northwood	Daniel L. Miner	Northwood Ridge.
	John A. Tasker	Northwood Narrows.
	Edwin F. Towle	
Nottingham	Perley B. Batchelder	R. F. D., South Lee.
	Horace P. Tuttle	R. F. D., East Barrington.
	Roy P. Webb	R. F. D., South Lee.
Orange	John Peterson	R. F. D. No. 1, Grafton.
	Charles S. Corbin	R. F. D. No. 2, Canaan.
	Charles H. Ford	R. F. D. No. 2, Canaan.
Orford	Mrs. Grace M. Stone	R. F. D. No. 1.
	Mrs. Hittie R. Carr	
	Henry H. Pease	R. F. D. No. 1.
Ossipee	W. H. Lord	Mountainview.
	H. W. Hobbs	Ossipee Valley.
	Andrew J. Small	R. F. D., Mountainview.
Pelham	Henry M. Currier	R. F. D.
	Mrs. Jennie K. Sherburne	R. F. D. No. 3, Nashua.
	Miss Susan M. Smith	
Pembroke	Almon F. Burbank	Suncook.
	George W. Fowler	
	Frank T. Cheney	
Peterborough	Mrs. Susan T. Ellsworth	
	Rev. Rollo G. Bugbee	
	Edgar A. Bishop	
Piermont	Samuel H. Ames	
	Mrs. Martha E. Worthen	
	Mrs. Ludella Ames	
Pittsburg	Arthur P. Merrill	
	Alfred E. Amey	
	George W. Hawes	
Pittsfield	Harry E. Drake	
	Burt W. Carr	
	Mrs. Bertha B. Potter	
	Rev. William H. Getchell	
	Miss Clara B. Brown	
	Albam L. Page	
Plainfield	Miss Mary Chellis	Meriden.
	Miss Mabel R. Jordan	R. F. D. No. 1, W. Lebanon.
	Griswald S. Hayward	R. F. D. No. 3, Windsor, Vt.
Plaistow	Harry W. Flanders	
	William P. Warner	
	Mrs. Margaret T. Ryder	
Plymouth	John Keniston	
	Miss Mary L. Mudgett	
	Fred P. Weeks	
Portsmouth	Rev. Lucius H. Thayer	
	Mrs. Annie H. Hewitt	
	Ira A. Newick	
	Frank W. Knight	
	Rev. Alfred Gooding	
	Mrs. Ida P. Benfield	
	Fernando W. Hartford	
	Dr. Fred S. Towle	
	Calvin Page	
	George W. McCarthy	
	Charles E. Hodgdon	
	Mrs. Mary I. Wood	
Randolph	Raynor C. Reed	
	Vyron D. Lowe	
	Mrs. Florence G. Wood	
Raymond	Lewis O. Pollard	
	Rev. Roger E. Thompson	
	David J. Baker	

Town.	Name.	Post-office address when different from town.
Richmond	Mrs. Nellie H. Prescott	R. F. D. No. 3, Winchester.
	Harry A. Tolman	R. F. D., Winchester.
	Mrs. Clara L. Tolman	R. F. D., Winchester.
Rindge	William L. Robinson	East Rindge.
	Mrs. Mabel G. Lloyd	East Rindge.
	William F. Wilder	
Rochester	Frank B. Preston	
	George F. Wilson	
	Irving C. Faunce	
	Andrew F. Hooper	
	George W. Varney	
	William G. Welch	
	Miles H. Dustin	
	Elihu L. Webster	
	William Wright	
	Charles W. Wentworth	
	Vinton W. Preston	
	John M. Bosch, Jr.	
	Dr. Robert V. Sweet	
Rollinsford	J. D. Roberts	R. F. D. No. 2, Dover.
	L. W. Brewer	Salmon Falls.
	William F. Bowman	Salmon Falls.
Roxbury	Cyrus K. Ellis	R. F. D., Keene.
	Charles A. N. Nye	R. F. D. No. 2, Marlborough.
	Lorenzo W. Davis	R. F. D. No. 2, Keene.
Rumney	Mrs. Susie C. Atwood	West Rumney.
	Rev. N. A. Wood	
	J. Elwin Wright	Rumney Depot.
Rye	Willard M. Jenness	Rye Beach.
	Wallace S. Goss	R. F. D. No. 2, Portsmouth.
	Mrs. Agnes E. Perkins	
Salem	Charles E. Merrill	
	Seth M. Pattee	North Salem.
	Egbert J. Manor	Salem Depot.
Salisbury	Mrs. Nellie C. Sanborn	R. F. D. No. 1, Andover.
	Mrs. Lizzie B. Sawyer	R. F. D. No. 1, Andover.
	Mrs. Beulah Tuttle	R. F. D. No. 1, Warner.
Sanbornton	Joseph C. Bodwell	
	George A. Leavitt	R. F. D., Laconia.
Sandown	Mrs. Laura J. M. Talbot	
	Mrs. Margaret M. Clark	
	Mrs. Emma F. Dunbar	
Sandwich	Mrs. Nellie G. Atwood	Center Sandwich.
	Howard W. Blanchard	
	Dr. Albert B. Hoag	Center Sandwich.
Seabrook	Thomas F. Owen	
	James Smith	Smithtown.
	Fred L. Weare	
Sharon	B. H. Sanders	Peterborough.
	George M. Smith	
	Mrs. Annie Putney	Peterborough.
Shelburne	Chester D. Peabody	
	Mrs. Maud Rix	
	Albert G. Larv	
Somersworth	Henry C. Harden	
	John E. Sullivan	
	Clement Roy	
	Sidney F. Stevens	
	Peter M. Gagne	
	Patrick C. Murnane	
	Joseph Deshais	
	Laurent J. Gaudreau	

Town.	Name.	Post-office address when different from town.
South Hampton	Joseph B. G. Welch	R. F. D. No. 2, Amesbury, [Mass.
	Frederick B. French	R. F. D. No. 1, Amesbury, [Mass.
	Frank O. Towle	R. F. D. No. 1, Amesbury,
Springfield	Loyal Barton	Grantham. [Mass.
	Guy Lovering	West Springfield.
	Carl B. Philbrick	West Springfield.
Stark	Charles A. Cole	Percy.
	Mrs. Electa M. Pike	
	Mrs. Kate L. Osgood	
Stewartstown	Willie Hall	R. F. D. No. 4, Colebrook.
	Orman J. Poore	R. F. D. No. 3, Colebrook.
	Fay Tibbetts	R. F. D. No. 3, Colebrook.
Stoddard	Mrs. Mary M. Sanborn	Munsonville.
	Henry E. Spalding	
	Mrs. Edna L. McMahan	
Strafford	Guy M. Hall	R. F. D. No. 1, Barnstead.
	Martin S. Brock	R. F. D. No. 1, Rochester.
	Mrs. Emma L. P. Foss	Center Strafford.
Stratford	John C. Hutchins	Coos.
	John C. Pattee	Coos.
	Charles D. Platt	
Stratham	Mrs. Annie Scammon	
	Mrs. Hannah Thompson	
	Albert C. Lane	
Sullivan	Mrs. Nettie E. Davis	East Sullivan.
	Minot W. Hubbard	East Sullivan.
	Mrs. Bessie C. Jewett	
Sunapee	Albert D. Felch	
	Ernest P. Bartlett	
	James S. Brooks	
Surry	Edward M. Britton	
	Hiram F. Newell	R. F. D. No. 1, Keene.
	Mrs. Emma P. Wilder	
Sutton	Reuben E. Dickey	
	Warren C. Blodgett	South Sutton.
	Mrs. Rosina Kelley	
Swanzey	Dr. Arthur W. Hopkins	West Swanzey.
	Mrs. Winifred Goodell	Richmond Stage, Keene.
	Leander H. Roscoe	West Swanzey.
Tamworth	Andrew W. Fisher	
	M. Everett Hodgkins	Chocorua.
	Frederick Lincoln Steele	
Temple	Mrs. Fannie A. Wheeler	Wilton.
	Jacob Kendall	Wilton.
	Charles Rockwood	
Thornton	Mrs. Affie R. Merrill	R. F. D. No. 1, Campton.
	Walter I. Lee	R. F. D. No. 2, Campton.
	Mrs. Annie Fadden	R. F. D. No. 1, Campton.
Tilton (Town)	Burt C. Abbott	
	Lillias Baniford	Lochmere.
	Mrs. W. B. Fellows	
Tilton (Union)	Ford T. Sanborn	
	Mrs. Arrthur T. Cass	
	Rev. E. A. Durham	
Troy	Dr. Harry S. Platts	
	Mrs. Luetta K. Barnard	
	Dr. Melvin T. Stone	
Tuftonboro	Edwin C. Hersey	Center Tuftonboro.
	Edwin B. Edgerly	Mirror Lake.
	Mrs. Caroline E. Hersey	Melvin Village.

Town.	Name.	Post-office address when different from town.
Unity	Mrs. Emma L. Stowell	Quaker City.
	Mrs. Mary E. LaClair	
	Mrs. Annie Wright	Newport.
Wakefield	George W. Morrison	Union.
	Everett K. Freeman	Sanbornville.
	James S. Mooney	East Wakefield.
Walpole	Fred A. Ramsay	
	Mrs. F. M. Gilbert	
	Ira S. Hubbard	
	Charles J. O'Neil	North Walpole.
	William Lane	North Walpole.
	Charles E. Beckwith	Drewsville.
Warner	F. W. Johnson	R. F. D. No. 2.
	E. C. Cole	
	Dr. L. H. Cogswell	
Warren	Wilbur C. Gordon	
	Edgar S. Carbee	
	William B. Nicol	
Washington	Sumner N. Ball	
	Perley H. Crane	
	C. W. J. Fletcher	East Washington.
Weare	Edward T. Breed	North Weare.
	Oliver H. Edwards	North Weare.
	Louis O. Prince	South Weare.
Webster	Rev. Harvey C. Sawyer	R. F. D. No. 16. Penacook.
	Joseph H. Noyes	R. F. D. No. 1, Contoocook.
	Mrs. Hattie A. Nichols	R. F. D. No. 16, Penacook.
Wentworth	Mrs. Lettie Colburn	West Rumney.
	Charles H. Brown	
Wentworth's Location	Eugene C. Downing	
	James R. Turner	
	N. H. McGinley	
	Mrs. Lewis H. Coy	[land Depot.
Westmoreland	Eli C. Wellington	R. F. D. No. 1, Westmore-
	Charles H. Aldrich	Westmoreland Depot.
	Forrest W. Hall	East Westmoreland.
Whitefield (Town)	Edward O. Colby	
	Amasa H. Glidden	
	Frank S. Dodge	
Whitefield (Special)	Miss Mabel Aldrich	
	Charles C. King	
	Edgar M. Bowker	
Wilmot	Thomas Graney	
	John H. Greeley	Wilmot Flat.
	Mrs. J. Blanche Smith	
Wilton	Stanley H. Abbott	
	Mrs. Jessie Hatch	
	Harold D. Cheever	
Winchester	Alexander F. Pierce	
	Miss Cora S. Moore	
	Maurice E. Partridge	
Windham	Nathaniel W. Garland	Windham Depot.
	Ernest L. Rand	
Windsor	Charles G. Dunlap	Hillsborough Upper Village.
	Mrs. Lizzie J. Dunlap	Hillsborough Upper Village.
	Mrs. Mabel Severance	Hillsborough Upper Village.
Wolfeboro	Sewall W. Abbott	
	Mrs. Clara F. Burleigh	
	Horace Rust	
Woodstock	Ernest L. Putnam	North Woodstock.
	James H. Fadden	North Woodstock.
	Mrs. Mary E. Bagley	

RESOLUTIONS PASSED BY THE NEW HAMPSHIRE STATE TEACHERS' ASSOCIATION AT THE SIXTIETH ANNUAL MEETING, 1913.

We, the members of the N. H. State Teachers' Association, at the sixtieth annual meeting, offer the following resolutions in the name of the educational needs of the public schools of the state:

1. Resolved, That we express cordial approval of the action of the legislature in increasing the efficiency of the Department of Public Instruction by providing for the addition of three assistant superintendents, thus permitting a closer relation between the department and the schools of the state, and enabling a more adequate inspection of the schools.

2. Resolved, That these facilities of inspection should be so increased as to include compulsory supervision of all the schools of the state.

3. Resolved, That the State Teachers' Association hereby heartily approves the principle of pensions for teachers, and endorses the action already taken by the Merrimack Valley Teachers' Association in investigating this subject.

4. Resolved, That we hereby recommend that this association appropriate the sum of $100 to help defray the expenses incident to a further extention of this investigation.

5. Resolved, That a committee of three be appointed by the president for a continuation of this work.

6. Resolved, That we adopt these recommendations as resolutions of the association, earnestly desiring that they be given careful consideration by the people of New Hampshire.

F. P. Emery,
W. E. Mason,
C. F. Cook,
Committee.

The motion that this report of the committee be accepted and that the resolutions on pensions be adopted by the association was carried.

President Blaisdell appointed the following committee on pensions:

Mrs. Elizabeth R. Elkins, Concord.
Principal F. W. Lakeman, Nashua.
Miss Elsie D. Fairbanks, Manchester.

RESOLUTIONS PASSED BY THE NEW HAMPSHIRE STATE TEACHERS' ASSOCIATION AT THE SIXTY-FIRST ANNUAL MEETING, 1914.

The New Hampshire State Teachers' Association in convention assembled regards with satisfaction the progress in educational matters in the state. It rejoices in the tendency toward a broader conception of the work of the schools as shown in the growth and extension of practical courses. It rejoices in the aroused interest on the part of the citizens of the state in the welfare of the child. It recognizes that there is a growing sentiment on the part of the public that the laborer is worthy of his hire and that he should be paid accordingly.

It believes that justice requires that the large body of citizens now deprived of the right of suffrage because of an age-worn and antiquated custom should be by the body politic granted full participation in the electoral franchise. It believes in the extension of supervision in the state. It recognizes the need of additional facilities for the training of teachers and especially for the training of teachers of secondary schools. It believes that the statutes should determine the powers and define the duties of supervisory officers, thereby placing responsibility where a due accounting may be demanded. It believes in the organization of the teachers of the state into independent associations for self-improvement, for the promotion of their own interests and for the general good of the profession. It believes that the security of our free institutions and of personal liberty throughout the world demand a constant reference to the fundamental ideas of our democratic society, and such a training of the youth of the land as will make them independent.

In view of these facts be it therefore resolved:—

1. That we urge the extension of practical work on a scientific basis.

2. That we urge the enactment of a law whereby properly appointed officers of the state may conserve the welfare of a class of children, several hundred of whom under present conditions are doomed to lives degrading to themselves and harmful to others.

3. That we favor the increase of the pay of teachers to salary commensurate with the value of their services to the community.

4. That we favor a teachers' pension law, in harmony with the constitution of the state, as a measure of protection to the state itself.

5. That we favor the enlargement of facilities for the training of teachers.

6. That we urge that provision be made by law for the complete supervision of the schools of the entire state.

7. That we urge that the powers and duties of superintendents of school be defined by law.

8. That we advise the formation of teachers' organizations for the promotion of the good of the profession.

9. That we urge upon teachers the duty of striving to develop in their pupils social interests and a spirit of initiative and independence.

10. That we extend to the superintendent, school authoritives, teachers and citizens of the city of Portsmouth the assurance of our appreciation of the courtesies and kindnesses which have made this meeting unusually attractive and memorable.

CHARLES W. BICKFORD,
HARRY P. SWETT,
Committee.

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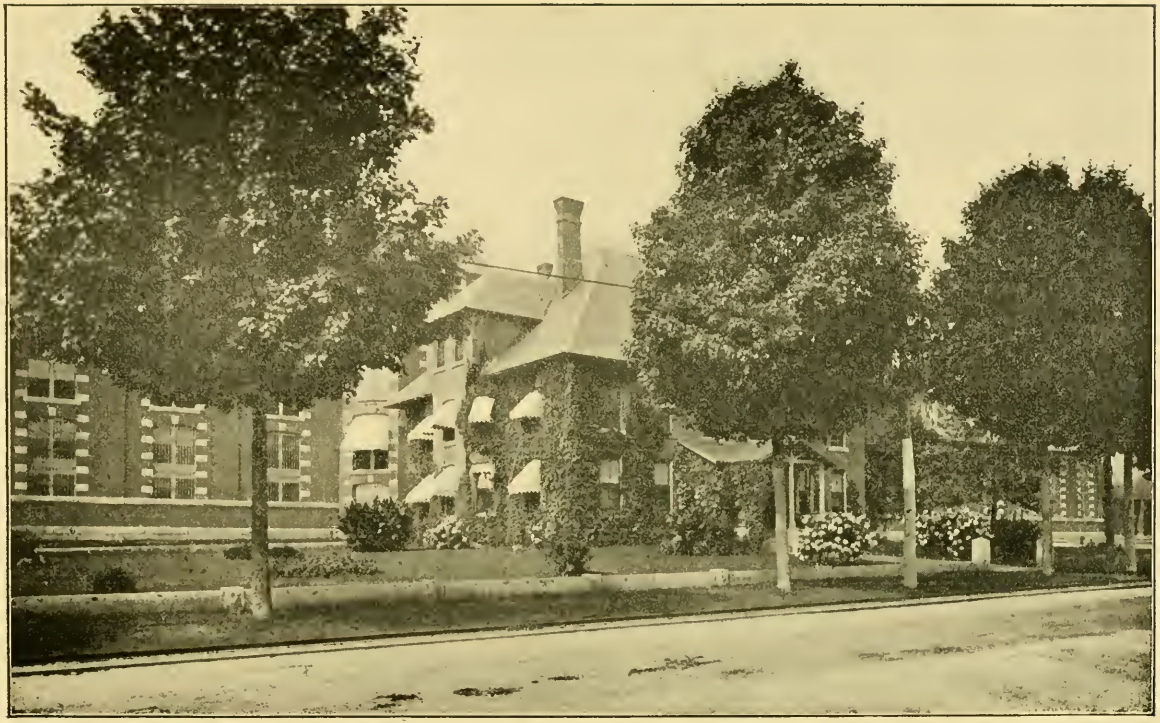


NEW HAMPSHIRE STATE PRISON.

Report of the Officers

OF THE

New Hampshire State Prison

TO THE

Governor and Council

FOR THE

Two Years Ending Aug. 31, 1914

VOL. 1—PART XV.

Printed by W. B. Ranney, Penacook, N. H.

OFFICERS OF THE PRISON

August 31, 1914.

PRISON COMMITTEE OF THE GOVERNOR'S COUNCIL.

HON. GEORGE W. McGREGOR, ... Littleton
HON. ALBERT W. NOONE, ... Peterborough
HON. WILLIAM H. SAWYER, ... Concord

CHAS. H. ROWE, ... Warden
FRANK A. BAILEY, ... Deputy Warden
FRED B. TAYLOR, M. D., ... Physician
REV. WHITMAN S. BASSETT,
Chaplain and Parole Officer
EDWARD J. SULLIVAN, ... Steward
JOSEPH MARTIN, ... Shop Officer
FRANK DAY, ... Shop Officer
MARTIN A. HADLEY, ... Shop Officer
MATHEW J. PERRY, ... Shop Officer
RALPH A. HALL, ... Shop Officer
FRED D. HENDERSON, ... Shop Officer
WILLIAM J. MULLIGAN, ... Shop Officer
HAROLD D. MERRILL, ... Hall Officer
HARRY S. TAYLOR, ... Guard
PAUL J. PERRY, ... Guard
GEORGE A. BRISBANE, ... Guard

GLEASON H. DAVIS, ... Guard
GUY EMERY, ... Guard
CHARLES A. YOUNG, ... Guard
JOHN LANE, ... Guard
CHARLES A. DURGIN, ... Engineer
NATT WIGGIN, ... Night Watchman
RUSSELL P. SHEPARD, ... Night Watchman
FRANK A. BLANCHARD, ... Messenger
KATE A. WEBBER, ... Matron
HARRY B. HALL, ... Organist

REPORT OF PRISON COMMITTEE

to

GOVERNOR and COUNCIL.

In pursuance of the legislative requirement that a report of the Prison Committee of the Governor's Council be rendered biennially, the following is submitted:

The control and conduct at the prison during the year 1913 has been practically that carried out during the preceding year.

The new contract with the Granite State Manufacturing Co., became operative in July, 1913, whereby an increase in the per diem of the convict went into effect.

Under Warden Charles H. Rowe, whose service began December 1, 1913, the same efficiency, discipline, and uplifting influence so characteristic of his predecessor, has been continuously exerted to the end that no serious breach of discipline has occurred; on the contrary, a spirit of hopefulness has been engendered and cultivated in the prisoners, encouraging them to re-establish their manhood and earnestly reform their habits.

In the summer of 1913 the warden, with the hearty approval of the Prison Committee, constructed "bleachers" within the enclosure, erected a flag-staff and with imposing ceremony caused the prisoners to march, headed by their own band, in phalanx around the pole from which a beautiful flag was unfurled midst the cheers and hurrahs of these unfortunate men. Every Saturday afternoon the first grade convicts are turned loose in the yard to play baseball and mingle undisturbed with one another. The limited suspension of prison rules works to the advantage of officers and inmates in health and conduct.

For information pertaining to the contract system in vogue at the prison, we would respectfully refer you to the Prison Report of the last previous Committee.

In July 1914, there occurred a disastrous fire in the yard outside the walls, destroying much lumber and finished product. This loss fell entirely upon the lessees, the Granite State Manufacturing Co., who have replaced the burnt buildings with better ones.

CRIMINAL INSANE.

There is a large and debatable question of what to do with the criminal insane. They must be segregated from the non-insane and they should have remedial medicinal treatment. This is not a proper function of the prison physician. Such treatment can be given by an alienest, only. It can be given at the State Hospital but there are no effective means of detention of this type of patients. Barring the criminal insane, there is no crying need of a hospital ward or special cells at the prison. Hence isn't it a logical deduction that a suitable number of cells be built at the State Hospital where this type of criminal can be housed safely? When he recovers his sanity he is returned to the prison.

THE WARDEN.

The warden should be appointed for a longer term than one year, the present method. He could render better service if not troubled every twelve months about a re-appointment. His mind could be wholly occupied with his duties. Also his salary should be raised to $2500.00 at least, with the same perquisites that he now enjoys: house rent, fuel and lights.

With the abolishing of the lock-step, the downcast eye, and striped suits, the workshop presents to the eye

of the visitor the outward appearance of the non-convict shop.

The warden and his able assistants have the welfare of these men uppermost in their hearts and minds, and we especially commend their untiring zeal and unremitting toil in their endeavors to restore these under their care to useful citizenship.

EXPLANATORY.

The legislature of 1913 passed an act entitled: An act authorizing the Governor and Council in their discretion to Provide Pecuniary Assistance to Prisoners and Their Families and to Cause Forfeiture Thereof. Section 1. reads: That the Governor and Council be and hereby are authorized and empowered to provide for the payment to prisoners confined in the state prison of such pecuniary earnings and to the rendering to their families of such pecuniary assistance as they, the said Governor and Council, may deem proper, under such rules as they may prescribe. Such earnings and such assistance, when allowed shall be paid out of such money as may be available for current running expenses of the state prison.

Without presuming to reflect upon the intelligent sympathy and well meaning efforts of those earnest men and women who successfully advocated the enactment of this statute, your committee finds that there is a well founded belief among some state officials that conditions in New Hampshire do not warrant the (at least) immediate enforcement of this act. Hence the committee recommends its reference to the next administration. Your attention is specifically called to the preamble of the statute which *to the laymen*, seems to grant large discretionary powers to the Governor and Council.

The prisoners are well fed, well clothed and well housed. When liberated, each is given a new suit of

clothes and ten dollars in money. This, with the minimum sentence and its liberal interpretation and recommendation by the warden, and the granting of parole by the Governor and Council, constitutes a sufficient concession to the humanitarian side of these abnormal men.

That man does not live to himself alone is nowhere better exemplified than in those people who commit crime, in that their dependants and friends suffer with them. A per diem allowance would relieve their financial distress to some extent, but such relief is amply provided for by towns, cities and counties, and the humiliation attendant upon receiving aid from these sources cannot be greater than when received from the convict himself.

The profit derived from prison labor goes direct to the State Treasury, thereby benefitting all citizens alike, whence it is disbursed in the various state expenses, thus lessening the state tax by just such amount.

There are from 60 to 90 U. S. Naval prisoners. Should they share the compensation? A large proportion is nonresident; others are "repeaters" i.e. old offenders. Should they share the state's bounty? Does New Hampshire want to tax itself further for these men? Again, in case of a cancellation of the contract by the lesses (a right reserved) and a period of idleness ensue with a wiping out of the surplus (only for the last three years has there been a surplus), do the people desire a direct tax to provide this "compensation?"

These are some of the reasons that actuated your committee in recommending its reference to the next administration.

G. W. McGREGOR, Chairman,
A. W. NOONE,
Prison Committee.

REPORT OF THE WARDEN.

The Governor and Council:

In compliance with the law, I have the honor to submit the biennial report of this prison for the two years ending August 31, 1914.

FINANCIAL

Receipts and Expenditures

FROM

From September 1, 1912, to August 31, 1914.

	Year Ending Aug. 31, 1913	Year Ending Aug. 31, 1914
Warden's Salary:		
Appropriation:	$ 2,000.00	$ 2,000.00
Henry K. W. Scott, Warden,	2,000.00	500.00
Chas. H. Rowe, Warden,		1,500.00
Chaplain's Salary:		
Appropriation:	$ 1,000.00	$ 1,000.00
Rev. Whitman S. Bassett, Chaplain,	1,000.00	1,000.00
Physician's Salary:		
Appropriation:	$ 500.00	$ 500.00
Charles H. Cook, Jr., M. D.,	366.65	125.00
Russell Wilkins, M. D.,	133.35	
Fred B. Taylor, M. D.,		375.00
Parole Officer's Salary:		
Appropriation:	$ 200.00	$ 200.00
Rev. Whitman S. Bassett,	200.00	200.00
Prison Library:		
Appropriation:	$ 200.00	$ 200.00
Expenditure:	169.16	185.89
Balance unexpended:	30.84	14.11

	Year Ending Aug. 31, 1913	Year Ending Aug. 31, 1914
Printing Prison Report:		
Appropriation:	$ 110.00	.....
Expenditure:	59.55	.....
Balance unexpended:	50.45	.....
Parole Officers (Necessary expenses)		
Appropriation:	$ 100.00	$ 100.00
Expenditures:	99.51	99.44
Balance unexpended:	.49	.56
Special Repairs:		
Appropriation:	$ 1,000.00	$ 2,500.00
Expenditure:	990.48	540.47
Balance unexpended	9.52	1,959.53

RUNNING EXPENSES:

RECEIPTS

Appropriation	$ 4,500.00	$ 3,000.00
Convict labor	29,213.75	38,538.00
Subsistence (board of officers, etc.)	3,366.99	3,290.60
Incidentals	363.09	66.64
Rent of officers' tenements	273.00	336.00
Lands and grounds		32.00
Water, fuel and light	43.88	30.50
Maintenance of U. S. Naval prisoners	13,470.20	13,354.40
Canteen stores furnished U. S. Naval prisoners	701.18	1,021.63
Repairs	60.12	12.80
Gain in inventory	1,087.73	
Totals:	$ 53,079.94	$59,682.57

EXPENDITURES

	Year Ending Aug. 31, 1913	Year Ending Aug. 31, 1914
Pay-roll	$14,974.31	$15,072.86
Food (exclusive of products of the farm)	11,388.82	10,375.59
Clothing and clothing material	1,977.71	2,064.76
Furnishings	1,189.66	635.26
Heat, light and power	2,423.58	2,884.54
Repairs and improvements	860.98	201.16
Miscellaneous	4,313.48	3,982.39
Farm, stable and grounds	701.27	497.12
Repairs in shop		4,410.14
Loss in inventory		105.49
Balance unexpended:	15,250.13	19,453.26
Totals	$53,079.94	$59,682.57
Average number of prisoners	247.07	240.09
Cost per capita per diem	.4195	.4592

Summary of the Receipts and Expenditures of the State Prison Department from September 1, 1912 to August 31, 1914, showing cost per capita and the average number of prisoners confined during each year:

Appropriations (total)	$ 9,610.00	$ 9,500.00
Receipts from all sources	48,579.94	56,682.57
Totals:	$ 58,189.94	$66,182.57
Expenditures:		
Salary of Warden	$ 2,000.00	2,000.00
Salary of Chaplain	1,000.00	1,000.00
Salary of Physician	500.00	500.00
Salary of Parole Officer	200.00	200.00

	Year Ending Aug. 31, 1913	Year Ending Aug. 31, 1914
Prison Library	169.16	185.89
Printing Prison Report	59.55	
Parole Officers Expenses,	99.51	99.44
Special Repairs	990.48	540.47
Running Expenses (maintenance)	37,829.81	35,713.68
Repairs in shop		4,410.14
Loss in inventory		105.49
Totals	$ 42,848.51	$44,755.11
Excess of receipts (including appropriations) above expenditures:	15,341.43	21,427.46
	$58,189.94	$66,182.57
Average number of prisoners	247.07	240.029
Cost per capita per diem	.4751	.5109
Cost per capita per year	$ 173.43	$ 186 46

ASSETS

Provisions, etc., on hand as per inventory	$ 8,110.10	$ 8,020.51
Due from contractors for labor of convicts for month of Aug.	3,323.10	3,040.50
Due from U. S. for maintenance of U. S. Federal prisoners		100.00
	$11,433.20	$11,161.01

As is shown by the foregoing statement, the financial condition of this institution is excellent. During the year September 1, 1912 to August 31, 1913, the receipts from all sources, including appropriations, were

$58,232.08, while the expenditures during that period, including the salaries of officials, were $42,848.51, leaving a balance of $15,383.57. For the year September 1, 1913 to August 31, 1914, the receipts were $66,182.57 and the expenditures $44,755.11, leaving a balance of $21,427.46.

It will be noticed that the expenditures for 1914 include fourteen installments, on the new addition to the prison shop amounting to $4,410.14. This, together with the increased prices of supplies during the latter part of the year, is responsible for the slight increase in the daily per capita cost of maintenance.

IMPROVEMENTS.

During the past two years the following improvements and repairs have been made:

In October, 1912, work was commenced on a one-story addition to a portion of the prison shop, made necessary by the lack of space for the number of prisoners employed. This addition was completed and ready for occupancy in January, 1913, at a total cost of $7,560.24. Under the agreement entered into in 1912 with the Granite State Manufacturing Company, the prison contractors, they furnished the capital for erecting this addition, deducting it in twenty-four monthly installments from the first twenty-four monthly payments due from them for convict labor.

In December, 1912, the four old bath tubs in the bath house were removed, a concrete floor laid and twelve shower baths installed. This not only increased the bathing facilities but was a much needed hygienic and sanitary improvement. The work was done by prison labor under the supervision of Steward E. J. Sullivan and the total cost, about $60.00 was for new pipes, fittings, etc.

Early in 1913 it was found necessary to enlarge the north gate of the prison yard so as to admit freight cars

of a sufficient capacity to enable the contractors to obtain the minimum rates on their shipments. This work was performed, under contract, by H. B. Lindgren at a total cost of $356.76.

In July, 1913, Messrs. Lee Brothers removed the old copper lined bath tub from the receiving room, put in two enameled tubs formerly used in the bath room and also put all plumbing in first-class condition. They also installed new plumbing throughout in the matron's quarters; the total cost for the work being $110.28.

In February, 1914, a new washing machine was purchased for the laundry, replacing one which was worn beyond repair and which was doing very unsatisfactory work.

In April, 1914, a one inch pipe was run from the feed pump of the shop boilers through the west wall of the prison yard to a small brook which runs parallel with and about seventy feet from the wall. The supply of water thus obtained was sufficient to run the shop boilers throughout the summer with the exception of a few days during a dry spell and effected a saving in the city water which heretofore was used for this purpose.

On the first day of July, 1913, the new contract entered into with the Granite State Manufacturing Company went into effect, one provision of which was that the work on every Saturday afternoon should terminate at three o'clock and the time from three o'clock until six o'clock should be spent by the prisoners in some suitable out-door recreation.

In accordance with this provision, a baseball diamond was marked off in the prison yard, a grand stand erected and on July 19th, the first game of baseball was played between two teams composed of prisoners. These games have been continued this year from April 17th to October 31st.

The privilege of attending these games has been an important factor in the maintenance of discipline as only those who are in the first conduct grade are privileged to attend. Both players and spectators took a deep interest in the contests and the inmates were greatly benefitted both physically and mentally.

In connection wth the games the Governor and Council so amended the rules of the prison relative to silence as to permit the prisoners to converse during such times as they were congregated in the yard for the purpose of recreation.

Following each game a "BASEBALL BULLETIN", printed in the prison by the mimeograph process, was issued, each inmate receiving a copy which he could retain or send to friends or relatives on the outside. This bulletin contained the standing of the teams, the scores, comment on individual plays and meritorious work and the standing of the teams in the National, American and Federal leagues.

RECOMMENDATIONS.

First and foremost among the recommendations, I would present is the desirability of increasing the size of our prison farm. At present we have about four acres of land which we can cultivate, including a small orchard. From this we harvested in the past year products to the value of $913.45 as shown by the report appended. All of these products were used by the prison in addition to those which it was necessary to purchase.

There can be no question as to the desirability of having sufficient farm lands in connection with the prison, either from an economical or healthful standpoint. Some years ago, when the question of using prison labor on work outside the walls was first introduced, it was thought that the idea could not be successfully carried

out. However, the experimental stage in this innovation has long since been passed and many penal institutions are using a large portion of their population on farm and road work, and of those who are not the majority are making preparations toward that end.

While at present it may not be possible or advisable to use many of our inmates on such work, I would suggest that the State purchase or lease a tract of land adjacent to the prison where we could work at least fifteen or twenty of our men; especially those who are constitutionally unfitted for inside labor. Besides the financial benefit which would accrue to the prison from the value of the products raised and the physical benefit to those so employed, the education in farming would aid in the reformation of the prisoner as it would tend to delay his return to the crowded centres and the evil influences of old companionships.

The "back to the farm" movement is receiving serious consideration by large numbers outside prison walls and I see no reason why it should not successfully operate inside. I sincerely trust that during the coming legislative session some action will be taken along this line.

I also desire to call attention to our urgent need of a new ice box refrigerator. The one now in use has been here for many years and is in a condition beyond repair. I would earnestly recommend that a new, up-to-date refrigerator be installed, large enough to keep on hand at least ten days' supply of meats and other perishable provisions; the estimated cost being $1,800.00.

It is further recommended that some provision be made for heating the prison tenements occupied by the married officers. The tenements have only four small rooms each and besides the inconvenience of heating by

BASEBALL GAME OF JULY 1, 1914.

means of stoves they have no suitable facilities for storing fuel. Owing to the distance that the tenement block is from the prison, it would be impracticable to furnish heat from our plant for this purpose. A separate heating plant of sufficient capacity could be installed for the reasonable cost of $600.00. This would be for apparatus and material only as the necessary work of installation could be done by prison labor.

In conclusion I will state that the sanitary condition of the prison is good and the health of the inmates excellent; only one death resulting during the past year and that from wounds self-inflicted.

I have endeavored, as far as was possible, to improve the condition of the prisoners by paying particular attention to their food, clothing and care. In this I have been ably assisted by the Deputy-Warden, Chaplain, Physician, and all the officers and commend them for their loyalty and the creditable manner in which they have performed their duties.

In behalf of our institution, I take pleasure in having this opportunity to publicly thank those who have freely given of their time and talents at our chapel services and entertainments and to express my appreciation of the hearty co-operation and assistance of your Honorable Body.

Respectfully,

CHAS. H. ROWE,

Warden.

TABULATED STATISTICS.

TABLE 1.—RELATING TO CHANGES IN THE POPULATION OF THE PRISON FOR THE YEARS 1912-1913 AND 1913-1914.

GAIN AND LOSS IN POPULATION		Year ending Aug. 31, 1913	Year ending Aug. 31, 1914
GAIN:			
Number remaining in the prison Sept. 1, 1912:	231		
Number received during the two years	198	106	92
Total number to be accounted for	429		
Loss during the two years	206	92	114
Number remaining in the prison Aug. 31, 1914:	223		
LOSS:			
Discharged by commutation law	2	2	
Discharged by order Secretary of the Navy	85	32	53
Discharged by expiration of maximum term	3	3	
Pardoned by Governor and Council	17	3	14
Paroled by Governor and Council	82	43	39
Discharged by order of court	1		1
Transferred to N. H. State Hospital	11	5	6
Died	5	4	1
Largest number in prison at any one time during year		260	250
Smallest number in prison at any one time during year		229	223
Average daily population		247.07	240.029

Total number of prisoners admitted to the prison since its establishment in 1812 to August 31, 1914 4105

Total number of persons paroled, discharged, pardoned, transferred to the New Hampshire State Hospital, died, etc., during same period 3882

Number remaining in the prison August 31, 1914 223

TABLE 2.—RELATING TO THE PRISONERS COMMITTED FOR THE TWO YEARS ENDING AUGUST 31, 1914.

	Year ending Aug. 31, 1913	Year ending Aug. 31, 1914
Total number committed from September 1, 1912 to August 31, 1914, inclusive 198	106	92
AGES WHEN COMMITTED		
Under 20 years	13	10
Between 20 and 30 years	61	44
Between 30 and 40 years	18	19
Between 40 and 50 years	9	11
Between 50 and 60 years	4	5
Between 60 and 70 years	1	3
EDUCATION, HABITS AND RELIGIOUS TRAINING (1) EDUCATION		
(a) Read and write	98	80
(b) Read and write imperfectly	.....	1
(c) Illiterate	8	11
(d) Attended public school (ranging from 3 to 15 years)	94	73
(e) Attended private schools	1	2
(f) Attended both public and private schools	1	.....
(g) Attended neither	10	17
(2) HABITS		
(a) Abstainers	31	11
(b) Moderate drinkers	3	6
(c) Occasionally intemperate	24	27
(d) Intemperate	48	48
(e) Users of tobacco	96	80
(3) RELIGIOUS TRAINING		
(a) Protestant	61	52
(b) Catholic	44	40
(c) Hebrew	1	.....
OCCUPATION AT TIME OF ARREST		
Aviator	1	.....
Barbers	.....	2
Bell-boy	1	.....
Bill poster	1	1
Blacksmith	1	1
Book-keeper	.....	1
Carder, cotton	1	.....
Carder, woolen	1	.....
Carpenters	3	.....
Chaffeurs	2	.....
Clerks	1	2
Cooks	.....	3

TABLE 2.—RELATING TO THE PRISONERS COMMITTED FOR THE TWO YEARS ENDING AUGUST 31, 1914—*Continued.*

	Year ending Aug. 31, 1913	Year ending Aug. 31, 1914
Domestic	.....	1
Dressmaker	1	.....
Drug clerk	1	.....
Electrical engineers	.....	2
Farmers	3	8
Fireman, locomotive	1	.....
Fixer, cotton mill	1	.....
Hardwood finisher	.....	1
Harness maker	.....	1
Horse dealer	1	.....
Hosiery knitter	.....	1
Hostler	1	.....
Iron moulder	.....	1
Laborers	17	13
Lumbermen	1	3
Lumber surveyor	.....	1
Machinists	2	1
Mill worker	1	1
Musician	1	.....
Painters	3	3
Papermaker	1	1
Photographer	1	.....
Pedler	1	.....
Plumbers	3	.....
Porter, hotel	1	.....
Printer	.....	1
Railroad brakeman	1	.....
Sailor, merchant service	.....	1
Salesman	.....	1
Sash and blind maker	1	.....
Section hand, railroad	1	.....
Shoemakers	6	3
Steam engineer	.....	1
Steamfitter, helper	.....	1
Stone cutters	.....	2
Student	1	.....
Tailor	.....	1
Teamsters	2	2
Telegraph operator	1	.....
Undertaker	.....	1
Waiter	1	.....
No occupation	1	1
U. S. NAVAL PRISONERS		
Apprentice seamen	5	2
Boatswain's mates, 2nd class	1	1
Cabin cook	.....	1
Coal passers	2	6
Coxswains	.....	2
Firemen, 1st class	2	1
Firemen, 2nd class	1	2
Gunner's mates	2	.....
Hospital apprentices	2	.....

TABLE 2.—RELATING TO THE PRISONERS COMMITTED FOR THE TWO YEARS ENDING AUGUST 31, 1914—*Continued.*

	Year ending Aug. 31, 1913	Year ending Aug. 31, 1914
Machinist	1	.....
Master at Arms, 1st class	1	.....
Mess attendants	.....	2
Musician, 1st class	.....	1
Ordinary seaman	8	2..
Seamen	3	3
Ward-room cook	1	.....
Yeomen, 3rd class	2	.....
Privates, U. S. Marine Corps	7	6
SOCIAL RELATIONS		
(a) Married	23	29
(b) Single	78	57
(c) Widowed	4	5
(d) Divorced	1	1
PHYSICAL CONDITION WHEN ADMITTED		
(a) Excellent	24	14
(b) Good	69	56
(c) Fair	10	19
(d) Poor	3	3
NATIVES OF THE FOLLOWING COUNTRIES		
United States	86	68
England	1	1
Canada	7	12
Ireland	4	1
Italy	4	3
Russia	2	1
Greece	1	3
Germany	1	2
Denmark	.....	1

TABLE 3.—RELATING TO SENTENCES IMPOSED, CRIMES COMMITTED AND COUNTIES RECEIVED FROM.

Minimum			Maximum			Year ending Aug. 31, 1913	Year ending Aug. 31, 1914
Years	Months	Days	Years	Months	Days		
Life			Life			1	2
30			25				1
25			21				1
25			15				1
20			15			2	1
15			12			3	
15			10			1	1
12			10			1	1
12			8			1	1
12						1	
10			8			1	
10			7			1	
10			6			1	
10			5				1
10			2			1	
10						1	
7	6						1
7			5			3	3
7			4				1
7			3				1
6			5				1
6			4			1	
6			3				1
5			4			2	3
5			3			12	8
5			2			3	1
5						4	1
4	6	27				1	
4	6					2	
4			2			2	4
4						1	1
3	6					2	1
3			2			5	7
3			1	6			1
3			1		1	9	3
3						6	10
2	6		2			2	
2	6		1	6		1	
2			1	6			2
2	6					1	1
2	1					1	
2			1		1	10	6
2						10	12
1	6		1	3		1	
1	6		1		1		3
1	6					2	1
1		1					3
1						6	2
	6					1	
Returned to prison from the New Hampshire State Hospital by order of Governor and Council						3	4

NATURE OF CRIMES COMMITTED.

TABLE 3—*Continued.*

	Year ending Aug. 31, 1913	Year ending Aug. 31, 1914
Adultery	.....	1
Aiding a prisoner to escape jail	1	.....
Arson	.....	2
Arson and inciting to arson	.....	1
Assault with intent to commit rape	4	4
Assault with intent to kill	5	4
Assault with intent to rob	1	.....
Attempted arson	.....	1
Attempted larceny from the person	2	.....
Bigamy	.....	1
Breaking and entering in the daytime with intent to steal	1	.....
Breaking and entering in the night time with intent to steal	5	.....
Breaking and entering in the day time and stealing	1	6
Breaking and entering in the night time and stealing	11	10
Burglary	6	2
Burglary with explosives	2	.....
Enticing female child away for the purpose of prostitution	1	.....
Forgery	.....	3
Horse stealing	.....	1
Impersonating a Deputy U. S. Marshal	.....	1
Incest	1	.....
Larceny	7	6
Larceny by bailee	1	.....
Larceny from the person	6	2
Manslaughter in the first degree	.....	1
Murder in the first degree	1	2
Murder in the second degree	1	.....
Obtaining money under false pretenses	.....	1
Perjury	1	1
Rape	6	9
Returned to prison from the New Hampshire State Hospital by order of the Governor and Council	3	4
Crimes for which naval prisoners were committed:		
Assaulting a sentinel	.....	1
Conduct to the prejudice of good order and discipline	2	.....
Disobedience of lawful orders	1	.....
Perjury	1	2
Robbery	1	.....
Scandalous conduct	16	13
Selling property intended for the naval service	.....	1
Sodomy	1	.....
Stealing property of the United States	2	2
Theft	15	10

COUNTIES COMMITTED FROM.

TABLE 3—*Continued.*

	Year ending Aug. 31, 1913	Year ending Aug. 31, 1914
Belknap	5	1
Carroll	2	6
Cheshire	2	7
Coos	4	3
Grafton	4	8
Hillsborough	20	16
Merrimack	5	4
Rockingham	8	5
Strafford	13	5
Sullivan	1	.....
United States District Court	.....	2
United States Navy (General Court-Martial)	39	29
Returned to prison from the New Hampshire State Hospital by order of the Governor and Council	3	4

TABLE 6.—RELATING TO THE SEX AND COLOR OF THE POPULATION REMAINING IN THE PRISON AUGUST 31, 1914.

White Males 216; White Females 1; Black Males 6; Black Females 0.

TABLE 4.—RELATING TO CONVICTS PARDONED, TRANSFERRED AND DIED FROM SEPTEMBER 1, 1912 TO AUGUST 31, 1914.

PARDONED BY GOVERNOR AND COUNCIL

Register No.	NAMES	Age when committed	Where born	What County convicted in	Crime	When committed	Sentence Not more than Years	Months	Days	Not less than Years	Months	Days
3543	Joseph Hobart	21	N. H.	Merrimack	Burglary	April 6, 1907	15	0	0	12	0	0
3844	Theophile Bernier	50	Canada	Coos	Breaking and entering in night time and stealing	Dec. 7, 1911	2	0	0	1	6	0
3688	Theodore Balatsos	28	Greece	Hillsboro	Manslaugt'r 1st Deg.	Feb. 19, 1910	6	0	0	4	0	0
3775	Pasquale Cocuzza	36	Italy	Grafton	Manslaugt'r 1st Deg.	May 26, 1911	7	0	0	5	0	0
4014	Charles B. Meek	20	N. H.	Merrimack	Rape	Oct. 19, 1903	20	0	0	17	0	0
3680	Arthur Nicholas	22	Greece	Hillsboro	Assault with intent to rape	Nov. 21, 1909	7	0	0	5	0	0
3221	Harry H. Heath	29	N. H.	Belknap	Breaking and entering and stealing	Nov. 9, 1901	15	0	0	...	...	...
3520	Charles E. Pieree	35	N. H.	Merrimack	Arson	Oct. 10, 1906	12	0	0	10	0	0
4047	Agostino Trovato	38	Italy	Rockingham	Manslaugt'r 1st Deg.	Dec. 17, 1910	7	0	0	5	0	0
3904	Martin Welch	31	N. H.	Carroll	Violation of parole.	June 24, 1912	2	0	0	...	...	...
4059	William H. Wilkins	35	Canada	Grafton	Murder (Insane)	Nov. 21, 1904						
2861	Fred A. Stockwell	26	N. H.	Hillsboro	Murder, 2d Deg.	Dec. 2, 1895	30	0	0	...	...	...
3146	Joseph Nedeau	21	Maine	Strafford	Rape	Oct. 13, 1900	30	0	0	...	...	...
3413	Benjamin Samphey	28	Maine	Carroll	Burglary	Dec. 21, 1904	16	0	7	16	0	0
3123	Napoleon Normandeau	38	Canada	Hillsboro	Rape	May 9, 1906	20	0	0	...	...	...
3529	William E. Lampman	34	Vermont	Belknap	Burglary	Nov. 8, 1906	15	0	0	10	0	0
3720	Ernest L. Young	20	Vermont	Belknap	Breaking and entering in night time and stealing	Nov. 16, 1910	5	0	0	4	0	0

TABLE 4—*Continued.*

TRANSFERRED TO THE NEW HAMPSHIRE STATE HOSPITAL

Register No.	NAMES	Age when committed	Where from	What County convicted in	Crime	When committed	Sentence Not more than			Sentence Not less than		
							Years	Months	Days	Years	Months	Days
3558	*Saverio Yarabino	45	Italy	Coos	Manslaugt'r 1st Deg.	Sept. 24, 1907	20	0	0	17	0	0
3610	Henry Underwood	21	England ...	Rockingham	Break'g & enter'g to commit robbery .	Oct. 24, 1908	7	0	0	5	0	0
3727	**Agostino Trovato ...	38	Italy	Rockingham	Manslaugt'r 1st Deg.	Dec. 17, 1910	7	0	0	5	0	0
3912	Chester R. Pike	22	Kentucky ..	Coos	Burglary	Sept. 19, 1912	2	0	0	1	0	1
3959	Edward Brady	26	R. I.	Hillsboro ..	Larceny from the person	Jan. 17, 1913	5	0	0	3	0	0
3974	Frederick A. Bouche ..	34	Maine	Strafford ...	Breaking & entering in day time with intent to steal ..	Mar. 4, 1913	4	0	0	2	0	0
2602	John Brunell	41	Vermont ...	Cheshire ...	Murder, 2d Deg. ...	April 14, 1892	30	0	0	...	...	...
4035	John MacMunn	26	Mass.	Cheshire ...	Attempted arson ..	Oct. 23, 1913	2	0	0	1	0	0
4082	Edgar R. Beach	40	England ...	Rockingham	Larceny	April 25, 1914	5	0	0	4	0	0

* Returned from State Hospital Aug. 21, 1913.
** Returned from State Hospital Nov. 25, 1913 and pardoned.

DIED

3884	Frank McIntosh	36	N. H.	Coos	Larceny	May 1, 1912	2	0	0	1	0	1
3777	Fortunato Quiambo ...	20	P. I.	U. S. Navy	Manslaughter	June 12, 1911	5	0	0	...	...	...
3712	Arthur Norrington	22	N. H.	Cheshire ...	Arson	Oct. 7, 1910	7	0	0	5	0	0
3866	Bertram Farrell	30	England ...	Strafford ...	Robbery	Mar. 11, 1912	15	0	0	10	0	0
3982	Pasquale Morano	52	Italy	Merrimack	Assault with intent to kill	April 5, 1912	12	0	0	10	0	0

RECIDIVISTS.

TABLE 5.—RELATING TO PRISONERS COMMITTED DURING THE TWO YEAR PERIOD WHO HAVE SERVED PREVIOUS SENTENCES HERE.

Register No.	Age when committed	Date of last sentence	No. of years sentenced for	County last convicted in	Nature of last crime	Where born	No. of times committed	Previous New Hampshire Prison record numbers
4095	58	May 11, 1914	3 - 7	Hillsboro	Larceny	Canada	2	3706
4087	40	April 28, 1914	5 - 6	Cheshire	Rape	N. H.	2	2956
4076	61	April 10, 1914	3 - 5	Merrimack	Horse stealing	N. H.	4	3144 2479 1914
4062	28	Jan. 10, 1912	3 - 5	Hillsboro	Breaking and entering in day time and stealing	Maine	3	3736 3258
4105	28	July 2, 1914	15 - 25	Hillsboro	Assault with intent to kill and robbery	N. H.	2	3341
4106	23	Sept. 23, 1914	1 year	Hillsboro	Violation of parole.	N. H.	2	3963
4083	20	April 25, 1914	3 - 6	Rockingham	Assault with intent to kill	California	2	3848

TABLE 6.—RELATING TO THE GAIN AND LOSS OF POPULATION OF THE PRISON EACH YEAR SINCE ITS ESTABLISHMENT IN 1812; ALSO SHOWING RATIO OF PRISONERS TO THE POPULATION OF THE STATE EACH DECADE FROM 1820.

YEAR	In prison at beginning of year	GAIN			LOSS										Total loss of population during the year	In the prison at the end of the year	Population of New Hampshire	Ratio of prisoners to population
		State and United States prisoners	United States Military prisoners	Total in prison during year	Pardoned by Governor and Council	Sentence remitted by Gov. and Council	Paroled by Governor and Council	Discharged by order of Court	Discharged by commutation law	Dis. by expiration of maximum sentence	Dis. by order of Sec'y of U. S. Navy	Died	Executed	Transferred to State Hospital. (Insane)	Escaped			
1812	0	1	....	1	....	....	....	....	....	....	....	....	....	....	....	0	1	.....	.....
1813	1	11	....	12	....	....	....	....	....	....	....	....	....	....	....	0	12	.....	.....
1814	12	14	....	26	....	....	....	....	4	....	....	....	....	....	....	4	22	.....	.....
1815	22	13	....	35	2	....	....	....	5	....	....	....	....	....	5	12	23	.....	.....
1816	23	32	....	55	1	....	....	....	5	....	....	....	....	....	....	6	49	.....	.....
1817	49	29	....	78	2	....	....	....	13	....	....	1	....	....	1	17	61	.....	.....
1818	61	26	....	87	....	....	....	....	17	....	....	....	....	....	....	17	70	.....	.....
1819	70	17	....	87	2	....	....	....	19	....	....	1	....	....	2	24	63	.....	.....
1820	63	18	....	81	2	....	....	....	15	....	....	2	....	....	....	19	62	244022	1 to 3,963
1821	62	23	....	85	2	....	....	....	15	....	....	2	....	....	....	19	66	.....	.....
1822	66	16	....	82	2	....	....	....	21	....	....	3	....	....	....	26	65	.....	.....
1823	56	26	....	82	5	....	....	....	10	....	....	1	....	....	....	16	66	.....	.....
1824	66	19	....	85	5	....	....	....	17	....	....	1	....	....	....	23	62	.....	.....
1825	62	24	....	86	3	....	....	....	13	....	....	2	....	....	2	20	66	.....	.....
1826	66	13	....	79	3	....	....	....	15	....	....	1	....	....	....	19	60	.....	.....
1827	60	12	....	72	7	....	....	....	15	....	....	2	....	....	....	24	48	.....	.....
1828	48	20	....	68	4	....	....	....	8	....	....	....	....	....	....	12	56	.....	.....
1829	56	11	....	67	6	....	....	....	9	....	....	1	....	....	....	16	51	.....	.....
1830	51	31	....	82	4	....	....	....	9	....	....	....	....	....	....	13	69	269328	1 to 3,903
1831	69	24	....	93	3	....	....	....	8	....	....	....	....	....	....	11	82	.....	.....
1832	82	19	....	101	6	....	....	....	10	....	....	1	....	....	....	17	84	.....	.....
1833	84	16	....	100	10	....	....	....	8	....	....	....	....	....	....	18	82	.....	.....
1834	82	13	....	95	11	....	....	....	4	....	....	....	....	....	....	15	80	.....	.....
1835	80	23	....	103	16	....	....	....	5	....	....	....	....	....	2	23	80	.....	.....
1836	80	21	....	101	4	....	....	....	9	....	....	1	....	....	....	14	87	.....	.....
1837	87	12	....	99	9	....	....	....	15	....	....	1	....	....	....	25	74	.....	.....
1838	74	16	....	90	15	....	....	....	11	....	....	2	....	....	....	28	62	.....	.....
1839	62	33	....	95	16	....	....	....	4	....	....	1	....	....	....	21	74	.....	.....
1840	74	29	....	103	8	....	....	....	12	....	....	1	....	....	....	21	82	284574	1 to 3,470
1841	82	21	....	103	2	....	....	....	9	....	....	1	....	....	....	12	91	.....	.....
1842	91	25	....	116	2	1	....	....	11	....	....	2	....	....	....	16	100	.....	.....
1843	100	23	....	123	8	6	....	....	18	....	....	1	....	....	....	33	90	.....	.....
1844	90	21	....	111	6	8	....	....	12	....	....	1	....	....	....	27	84	.....	.....
1845	84	29	....	113	1	15	....	1	14	....	....	2	....	1	....	34	79	.....	.....
1846	79	18	....	97	....	13	....	....	11	....	....	....	....	....	....	24	73	.....	.....
1847	73	22	....	95	2	14	....	1	9	....	....	1	....	1	....	28	67	.....	.....
1848	67	33	....	100	....	7	....	....	8	....	....	....	....	....	1	16	84	.....	.....
1849	84	30	....	114	10	....	....	....	13	....	....	2	....	1	....	26	88	.....	.....
1850	88	25	....	113	13	....	....	....	4	....	....	2	....	....	1	20	93	317976	1 to 3,419
1851	93	35	....	128	10	....	....	....	11	....	....	5	....	....	....	26	102	.....	.....
1852	102	36	....	138	14	....	....	....	9	....	....	3	....	....	....	26	112	.....	.....
1853	112	23	....	135	14	....	....	....	12	....	....	5	....	....	....	31	104	.....	.....
1854	104	29	....	133	15	....	....	....	14	....	....	6	....	1	....	36	97	.....	.....
1855	97	32	....	129	14	....	....	1	14	....	....	4	....	....	....	33	96	.....	.....
1856	96	29	....	125	13	....	....	....	23	....	....	3	....	....	....	39	86	.....	.....
1857	86	43	....	129	7	....	....	....	14	....	....	1	....	....	....	22	107	.....	.....
1858	107	47	....	154	14	....	....	....	22	....	....	2	....	1	....	39	115	.....	.....
1859	115	24	....	139	13	....	....	....	22	....	....	....	....	....	....	36	103	.....	.....
1860	103	37	....	140	9	....	....	....	16	....	....	1	....	4	....	30	110	326073	1 to 2,964

TABLE 6.—*Continued*

YEAR	In prison at beginning of year	GAIN			LOSS												In the prison at the end of the year	Population of New Hampshire	Ratio of prisoners to population
		State and United States prisoners	United States Military prisoners	Total in prison during year	Pardoned by Governor and Council	Sentence remitted by Gov. and Council	Paroled by Governor and Council	Discharged by order of Court	Discharged by commutation law	Dis. by expiration of maximum sentence	Dis. by order of Sec'y of U. S. Navy	Died	Executed	Transferred to State Hospital. (Insane)	Escaped	Total loss of population during the year			
1861	110	46	....	156	15	....	....	....	18	....	....	4	...	2	...	39	117	.....	.....
1862	117	25	....	142	8	....	....	....	20	....	....	3	...	....	...	31	111	.....	.....
1863	111	28	....	139	14	....	....	....	12	....	....	2	...	....	...	28	111	.....	.....
1864	111	8	....	119	13	....	....	....	19	....	....	1	...	1	...	34	85	.....	.....
1865	85	36	51	172	15	....	....	....	52	....	....	3	...	....	1	71	101	.....	.....
1866	101	58	2	161	19	....	....	....	16	....	....	3	...	....	2	40	121	.....	.....
1867	121	48	....	169	18	....	....	....	10	....	....	3	...	....	...	31	138	.....	.....
1868	183	44	....	182	23	....	....	....	25	....	....	5	...	....	...	53	129	.....	.....
1869	129	35	....	164	15	....	....	....	19	....	....	1	1	1	1	38	216	.....	.....
1870	126	31	....	157	17	....	....	....	34	....	....	1	...	1	...	53	104	318300	1 to 3,061
1871	104	29	....	133	10	....	....	....	31	....	....	4	...	1	...	46	87	.....	.....
1872	87	23	....	110	4	....	....	....	25	....	....	3	...	....	...	32	78	.....	.....
1873	78	41	....	119	5	....	....	1	17	....	....	8	...	....	...	31	88	.....	.....
1874	88	51	....	139	6	....	....	....	14	....	....	5	1	....	...	26	113	.....	.....
1875	113	62	....	175	8	....	....	....	30	....	....	3	...	....	...	41	134	.....	.....
1876	134	58	....	192	11	....	....	....	23	....	....	8	...	1	...	43	149	.....	.....
1877	149	84	....	233	13	....	....	....	29	....	....	10	1	....	...	53	180	.....	.....
1878	180	60	....	240	20	....	....	3	25	....	....	13	1	....	...	62	178	.....	.....
1879	178	50	....	228	18	....	....	....	54	....	....	4	2	1	...	79	149	.....	.....
1880	149	49	....	198	13	....	....	1	35	....	....	5	...	1	...	55	143	346991	1 to 2,426
1881	143	53	....	196	12	....	....	....	42	....	....	6	...	1	...	61	135	.....	.....
1882	135	28	....	163	5	....	....	....	32	....	....	4	...	1	...	42	121	.....	.....
1883	121	42	....	163	5	....	....	....	36	....	....	6	...	....	...	47	116	.....	.....
1884	116	57	....	173	5	....	....	....	30	....	....	3	...	....	...	38	135	.....	.....
1885	135	45	....	180	9	....	....	....	44	....	....	4	4	....	...	58	122	.....	.....
1886	122	55	....	177	5	....	....	....	52	....	....	1	...	....	...	58	119	.....	.....
1887	119	36	....	155	3	....	....	....	44	....	....	2	...	1	...	50	105	.....	.....
1888	105	49	....	154	7	....	....	1	32	....	....	1	...	1	...	42	112	.....	.....
1889	112	38	....	150	5	....	....	....	35	....	....	1	...	2	...	43	107	.....	.....
1890	107	46	....	153	7	....	....	....	35	....	....	1	1	....	...	44	109	376530	1 to 3,454
1891	109	60	....	169	5	....	....	....	34	....	....	3	...	3	...	45	124	.....	.....
1892	124	73	....	197	4	....	....	....	30	....	....	4	...	....	..	38	159	.....	.....
1893	159	65	....	224	4	....	....	....	42	....	....	2	1	1	...	50	174	.....	.....
1894	174	68	....	242	6	....	....	....	60	....	....	2	...	2	...	70	172	.....	.....
1895	172	83	....	255	7	....	....	....	62	....	....	..	...	....	...	69	186	.....	.....
1896	186	70	....	256	7	....	....	....	69	....	....	2	...	1	...	79	177	.....	.....
1897	177	70	....	247	7	....	....	....	67	....	....	1	...	....	...	75	172	.....	.....
1898	172	58	....	230	9	....	....	....	50	....	....	1	...	1	...	61	169	.....	.....
1899	169	44	....	213	7	....	....	....	56	....	....	3	...	1	...	67	146	.....	.....
1900	146	60	....	206	7	....	....	....	45	....	....	2	...	1	...	55	151	411588	1 to 2,726
1901	151	60	....	211	1	....	....	....	52	....	....	1	...	....	...	54	157	.....	.....
1902	157	56	....	213	2	....	9	....	38	....	....	7	...	2	...	58	155	.....	.....
1903	155	57	....	212	3	....	22	1	29	....	....	2	...	3	...	60	152	.....	.....
1904	152	78	....	230	4	....	34	....	10	....	....	1	...	1	...	50	180	.....	.....
1905	180	60	....	240	6	....	55	....	8	....	....	2	...	2	...	73	167	.....	.....
1906	167	57	....	224	9	....	44	....	5	....	....	2	...	4	...	64	160	.....	.....
1907	160	49	....	209	4	....	38	....	6	....	....	1	...	7	...	56	153	.....	.....
1908	153	39	....	192	6	....	43	....	2	....	....	..	...	6	...	57	135	.....	.....
1909	135	62	....	197	2	....	41	....	3	....	....	3	...	1	...	50	147	.....	.....
1910	147	21	....	168	1	....	82	....	....	....	....	1	...	2	...	32	136	430572	1 to 3,166
1911	136	90	....	226	1	....	39	....	1	1	....	..	...	6	...	48	178	.....	.....
1912	178	114	....	292	2	....	30	....	1	1	19	3	...	5	...	61	231	.....	.....
1913	231	106	....	337	3	....	43	....	2	3	32	4	...	5	...	92	245	.....	.....
1914	245	92	....	337	14	....	39	1	....	....	53	1	...	6	...	114	223	.....	.....

* To August 31st.

REPORT OF FARM PRODUCTS

Beets	100 bu.	$ 50.00
Cabbage	5 tons	100.00
Carrots	75 bu.	35.00
Cucumbers	55 bu.	30.00
Greens	195 bu.	100.00
Lettuce	33 bu.	21.55
Potatoes	217 bu.	151.90
String Beans	52 bu.	52.00
Sweet Corn	16,835 ears	130.00
Tomatoes	40 bu.	40.00
Turnips	70 bu.	30.00
Corn Fodder	sold for	20.00
Hay	4 tons	72.00
Apples	45 bbls.	60.00
Currants	60 boxes	9.00
Plums	3 bu.	12.00
Total		$913.45

CHAPLAIN'S REPORT.

To His Excellency the Governor and the Honorable Council:

GENTLEMEN:—

I have the honor to submit herewith the biennial report of the Chaplain's Department of the New Hampshire State Prison for the two years ending August 31, 1914;

CHAPEL SERVICES.

Of any duties which may come to a chaplain in connection with his prison work, I consider the chapel services the most important and I have endeavored to give to this work the first claim upon my time and energy.

The prison orchestra introduced a little more than two years ago has continued its splendid work and the musical part of our services has been further enriched by the addition of solo and duet singing by two of the prisoners.

During the period covered by this report, the VOLUNTEER PRISON LEAGUE, a religious but non-sectarian organization founded by Mrs. Maud B. Booth, has been reorganized and at present numbers sixty-two.

Bible, psalm, prayer and hymn books together with such other aids to worship as are needed have been purchased from time to time so that each man is provided with the essentials for his particular mode of worship.

The parts in these services taken by the officers and men have been hearty and an inspiration not alone to us who have taken part, but to those who from time to time have visited our services.

In this part of my report mention should be made of those who by sermon, song and music have aided us in these services and especially Father Timon and Queenan who have given generously and faithfully of their time and labor in ministering to the needs of those of their faith. I hope provision may be made for some compensation to these Catholic Fathers for their needed and helpful services.

VISITATION.

The practice of visiting men in the shop has been continued as has the cell visitation.

I have endeavored to visit each man twice a month: once at work and once in his cell. These visits have been of great help to me in being given an opportunity to understand each individual and I plan to give all the time I can spare to this part of my work, believing that the better a chaplain knows his men the better he is prepared to minister to their necessities.

LIBRARY.

During the past two years 51,186 books have been taken from the library and 290 have been added since my last report.

During the past few years owing to the increase of our prison population and larger use of the library, books now being given out twice a week instead of once as formerly, the wear and tear upon our books has been great. The books have been mended and patched until many are beyond repair. We need a special sum this year for re-binding and replacing many of the standard books, for re-cataloging our entire library and to purchase some needed histories, biographies, and technical books.

There are few things in a prison which aid, comfort and cheer the prisoner more than the library, and money

expended in the maintenance of this part of our institution I feel will be most wise and judicious.

SCHOOL WORK.

Night school has been held two nights each week during the school year for those unable to read and write and for those who can read and write but poorly. The school has been well attended and the interest has been uniformly good.

It is the purpose of our night school to educate all needing it, in simple reading, writing and arthmetic; and in this we have been generally successful, so that many men unable to read or write their names when they came to us, upon leaving are able to read the daily papers, to write a legible letter and do simple problems in arithmetic.

In addition to our night school, some of our better educated and more capable have taken courses in the International Correspondence Schools. At present ten are enrolled as students and of this number nearly every one is doing good work. Few have obtained a percentage less than ninety and one who has just completed his course had an average of 96 per cent for the entire course.

There are still others worthy, deserving and capable of courses in this school but on account of lack of means are unable to provide it. It is to be hoped that some provisions may be made so that all capable and deserving of a course of this kind may have an opportunity to take it.

In conclusion I wish again to express my sincere appreciation for the valuable assistance given to me by the Warden and Deputy, for the continued kind treatment of all the officers and the helpful favor, oftimes undeserved, by the prisoner.

And may the blessing of Him who came to set at liberty the captive rest and abide upon our institution and all who have in any way assisted us.

Respectfully submitted,

WHITMAN S. BASSETT,
Chaplain.

PHYSICIAN'S REPORT.

To His Excellency the Governor and the Honorable Council:

GENTLEMEN:—

Allow me to present the following report for the period from September 1, 1912 to August 31, 1914. The period prior to December 1, 1913, was under the service of Dr. Charles H. Cook, Jr., my predecessor. The remainder of the period was under my term of service.

Deaths during the two years ending August 31, 1914:

3884 Frank McIntosh, Jan. 18, 1913. Tuberculosis.
3777 Fortunato Quiambao, Apr. 15, 1913. "
3712 Arthur Norrington, June 3, 1913. Suicide.
3866 Bertram Farrell, Aug. 18, 1913. Hodgkin's disease.
3982 Pasquale Morano, Apr. 17, 1914. Suicide.

The main building is well adapted to the purpose for which it was built. It is clean, light and well ventilated. The cook rooms are neat and the food is prepared in a clean and wholesome manner. The closets are also kept well-flushed and free from pests which are common in many such places.

The careful attention to the care of closets and cook room, together with the careful supervision and preparation of the prisoner at the time of admission, tends to eliminate much disease and dirt.

The general good health which prevails here, with the population rather larger than in past years, is due in a large measure to the above hygienic precautions which are constantly kept sight of by the officials of the prison.

I believe a place of some kind should be provided for cases of tuberculosis and other infectious diseases

which may arise; whereby such an inmate could be safely and completely isolated from the rest.

I wish to take this opportunity to express my appreciation of the assistance of the Warden, Deputy-Warden, Chaplain, Steward and other officials in my work at the institution.

Respectfully submitted,

FRED B. TAYLOR, M. D.,
Prison Physician.

PAROLE OFFICER'S REPORT.

To His Excellency the Governor and the Honorable Council:

GENTLEMEN:—

I have the honor to submit herewith the biennial report for the Parole Department of the New Hampshire State Prison for the two years ending August 31, 1914:

Number of men paroled since the law was enacted is as follows:

1906	3
1907	15
1908	31
1909	41
1910	43
1911	35
1912	35
1913	51
1914 (to September 1st.)	14
Total	268

Of this number paroles have expired as follows:

1909	29
1910	35
1911	37
1912	34
1913	34
1914 (to September 1st)	24
Total	193

Recommitted as follows:

1910	2
1911	4
1912	2
1913	0
1914 (to September 1st)	2
Total,	10

Number paroled	268

Number whose term has expired	193
Number who have died	1
Number recommitted	10
Number dropped from parole	4
Total	208

Number on parole September 1, 1914	60

The number dropped from parole during the two years is four men who are now serving sentences in prisons in other states. In all these cases the length of their present sentences exceeds the time for which they were paroled from this prison.

Number paroled since last report as follows:

1912 Sept. to Jan. 1, 1913	17
1913 Jan. to Jan. 1, 1914	51
1914 Jan. to Sept. 1, 1914	14
Total	82

Number whose parole has expired:

1912	Sept. to Jan. 1, 1913	13
1913	Jan. to Jan. 1, 1914	34
1914	Jan. to Sept. 1, 1914	24
	Total	71

Number recommitted:

1912	Sept. to Jan. 1, 1913	0
1913	Jan. to Jan. 1, 1914	0
1914	Jan. to Sept. 1, 1914	2
	Total	2

Number dropped from parole:

1912	Sept. to Jan. 1, 1913	0
1913	Jan. to Jan. 1, 1914	4
1914	Jan. to Sept. 1, 1914	0
	Total	4

Number on parole September 1, 1914 60

Average number reporting regularly and keeping parole during past two years: 66½ per cent.

In conclusion I wish to say that the parole system having passed the experimental stage, has very generally throughout the prison world been recognized as a most important part of the prison work.

It is gratifying to know that our report, despite the little time and money given to the work, compares so favorably with other like reports. Yet I am impelled to add that in order to continue our good results it will soon be necessary to make plans so that the parole

officer may devote a considerable part, if not all, of his time to this very essential part of our prison work.

Respectfully submitted,

WHITMAN S. BASSETT,
Parole Officer.

TROUT POND
Exhibit—Fair of Amoskeag Textile Club,
Manchester, N. H., Sept. 19, 1914.

State Department Fisheries and Game

Concord, New Hampshire.

REPORT

TO THE

Governor and Council

OF THE

Propagation of Fish and Game

AND

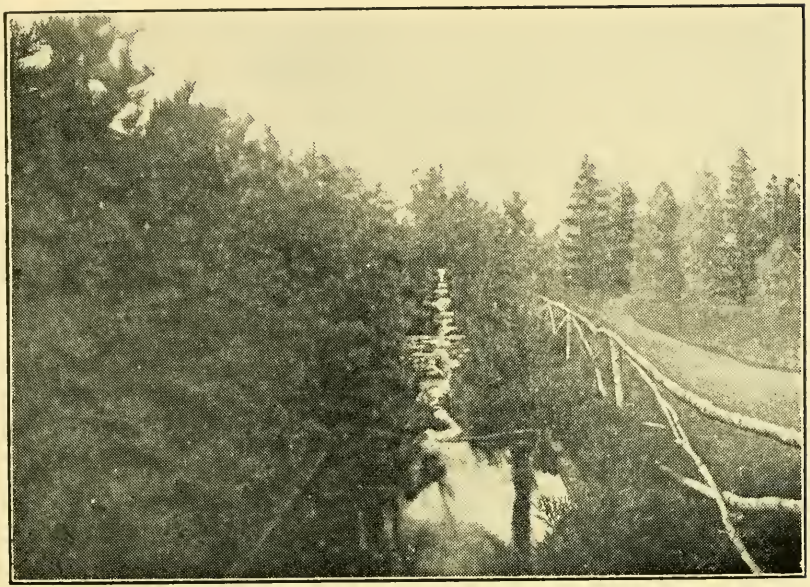
Conservation of our Natural Resources

BY

FRANK J. BEAL,
Commissioner of Fisheries and Game.

1914

Printed by W. B. Ranney, Penacook



TROUT BROOK.

New Hampshire Exhibit at the Rockingham Fair.

LETTER OF TRANSMITTAL

State Department of Fisheries and Game,

Concord, New Hampshire.

Honorable Samuel D. Felker, Governor of New Hampshire:

SIR:—We have the honor to place before you for publication this our first report.

It has been our purpose to give information that will be of use to all the people, for the conservation of our natural resources. In a general way we hope it will be of some value, and we take pleasure in dedicating it to the people of New Hampshire for whom it was especially prepared.

Respectfully submitted,

FRANK J. BEAL,

Commissioner.

FOREWORD.

A report by this department recording only the amounts which have been received together with what have been expended, would not convey any information to the public as to the necessity of conserving and of increasing the fish and game supply of our state. This necessity exists in view of the two chief values of such supply, namely: the means which it offers of unlimited health-giving recreation, and its provision of a food.

To range the woods, to climb the mountains and to ply the oar—all these, a love for which has been transmitted to us from our Saxon ancesters, are to invigorate both brain and body, relaxed from prolonged application. Giving the chase and throwing the fly mean the inspiration of men, and exhilarating desires, the creation of new interests, and the opening of new channels of thought. Communion with Nature always summons forth, even in the most unthinking and careless, the highest and noblest instincts. Not only this, but, devoted to sedentary pursuits as are many of our people, the active exercise of out door life is essential to both mind and body. We must rise above the worries and fatigue of life and find in Nature and free air that cure which will promote our greatest usefulness and service.

The food supply of a people is a serious economic problem, therefore the necessity confronts us of legislating to protect and to increase the game of our forests and the fish of our waters. Thus only can a cheap and

healthful food come within the reach of the poor, whose enjoyment of the bounties of Nature, we must remember, is just as great as that of the more prosperous.

It is especially the purpose of this report to ask the people of New Hampshire for their fullest co-operation in the protection and conservation of wild life in this state. Effort has been made to give the contents attractive form, in the hope that public sentiment might be stimulated into meeting a situation that should appeal to every man and every woman who loves the beautiful things of Nature.

FISH AND GAME COMMISSIONER'S REPORT.

New Hampshire was a wilderness when first settled. Men were hunters from the necessity of providing food and clothing for their families. The taking of large quantities of Fish and Game, compulsory as it was in those primitive days, created an inordinate desire to destroy wild life. With the improvement of our lands and the advance of civilization, this survival of savagery has only to a certain extent disappeared. Considering the large numbers that are today hunting and fishing for commercial profit, we can readily understand that here lies the responsibility for our fast disappearing wild life. Despite this destruction, however, we may be optimistic,—for there still remains a sufficient supply of the various species found by the pioneers of our state to insure their perpetuation, and good sport for years to come. This is possible, however, only under one condition,—namely, that the people may be induced to manifest a humane interest in the preservation of wild life and in the laws requisite to this end.

New Hampshire is second to no other state in her natural resources, and as these resources are great and varied, it is becoming more apparent each year that great wisdom must be exercised in inaugurating and maintaining laws for their protection and conservation. Our state has been most liberally endowed by nature with manifold blessings. The great abundance of its wild life, the beauty and magnificence of its scenery

THIRD CONNECTICUT LAKE.

and forests—these resources are being drawn upon to such an extent that we should take a firm stand against the reckless waste, which, unless checked, will mean their exhaustion and extermination.

Your Commissioner, therefore, recognizing the responsibility of this office and the great necessity for conservation, has adopted a firm, though conservative policy, and has sought, more than anything else, the cooperation and support of all the people of the state, to the end that they may see the necessity of good laws and their enforcement.

This effort has been made through the press, by public meetings, and trips to different parts of the state, to impress upon the people a greater knowledge and appreciation of what New Hampshire possesses in wonderful natural advantages, and the great necessity of their conservation and perpetuation. If this necessity is met, these resources will prove a blessing to our generation, to those unborn, and to the people for all time. In every instance we have met with a most hearty response and firmly believe that the great tide of protection and conservation is spreading through the state.

SPORTSMEN'S MEETING.

On September 15, a sportsmen's meeting was held at Concord, N. H., for the purpose of assembling all lovers of sport and of discussing matters pertaining to fish and game. For this meeting many prominent speakers were procured, and from the cooperative spirit displayed throughout the meeting, we feel that our efforts were well worth while. An interesting program was presented as follows:

SPORTSMEN MEETING

Phenix Hall, Concord, September 15, 1914

Allen Hollis, Chairman

PROGRAM

11.00 A. M.

Open meeting for exchange of views

2.00 P. M.

1. "Enforcement of laws—organization of department with responsible local deputies or wardens."
   Gen. Frank Battles, Concord
2. "Propagation of Game,"
3. "Game Refugees."
   Louis J. Rundlett, Concord
4. "Reimbursement of farmers for damage."
   Richard W. Pattee, Laconia
5. "Organization and coordination of local Fish and Game Associations."
   W. Parker Straw, Manchester
6. "Securing license fees for use of Fish and Game Department."
   Frank A. Musgrove, Hanover
7. Dr. Tarleton H. Bean, Fish Culturist, Albany, New York; on "Fish Culture."

8.00 P. M.

1. Illustrated Lecture on "Our native birds and why we should protect them."—Rev. Manley B. Townsend, Secretary, Audubon Society, of Nashua.
2. "Illustrated Lecture on "Propagation of Game."—John B. Burnham, President, American Game and Protective Association, New York.

The unanimous opinion of the convention was that all the income derived by the state from hunters' licenses and fines should be used for the propagation and protection of the State's fish and game. In fact, this financial question was the rallying cry of the convention. Statistics were presented to prove that this department has been yearly deprived of thousands of dollars which rightfully belong to it. A persuasive argument claimed that if automobile license fees were to be expended in good roads, hunters' license fees should likewise be expended in behalf of fish and game. Active measures were taken to put the resolutions of the convention into force. Provision was made for a systematized campaign which should seek radical changes in the financial laws of the department. A resolution was adopted by the entire assemblage providing for the printing of the decisions of the convention, and for their dissemination to legislators.

MR. STRAW'S ADDRESS.

There is I believe no class of men in this country whom it is a greater pleasure to meet, or to whom it is more inspiring to talk than to a body of sportsmen. For a sportsman by the very definition of his name must be a

man who loves nature, who cherishes the wild things, and who appreciates the growing things that were put into this world to be cherished and to be appreciated. In this way, at least, he fulfills one mission of humanity.

A sportsman is one who has an inborn longing to get back to nature, and in the gratification of this primal instinct he necessarily learns a lesson of sympathy—one that teaches him to realize the struggle that is continually going on among the wild creatures for their very existence; and one that teaches him that there is a mine of interest in every tree and shrub and flower that grows. He becomes a naturalist, and so acquires a capacity for enjoyment that others can never have.

Unlike the followers of any other game, if "game" this association with nature may be called, a man never grows tired of it. "Once a sportsman, always a sportsman" is well exemplified by the gray heads that are always seen at every sportsman's gathering, and the man at sixty and seventy, and in one case that I know of the man at ninety-five, is as interested in the game of the woods and the fields and the fish of the streams as the boy at fifteen. But there is this difference: the older man is the truest sportsman, the truest lover of nature, for his wish is to conserve and not destroy, while the boy's wish is to destroy and not to conserve. As the boy grows older, however, and takes his place among the real sportsmen of his community, his bloodthirstiness disappears, and he learns to know when to consider his basket full or when his bag is large enough. For the first thought of a true sportsman is to conserve, yet not to conserve only that he may kill, but to conserve that he may gratify his most primal instincts in the

pursuit of game that may be used. To the question "How may this conservation be best accomplished by us " there is only one answer, which is this:"By unity of thought, unity of purpose, unity of action, of all New Hampshire's sportsmen's clubs," and I am here to-day to make a plea for this unity.

There are I am told something like 16 different organizations of sportsmen in this state. With all due respect to them, what have they ever accomplished? How many were ever heard from? What do they find to do? Well, I'll tell you what they do—They get together and elect officers. Usually the best mark is chosen president and the easiest mark secretary (at least this is the case in our club.) Then everybody pays one dollar for dues, and then they have a supper and blow the dollar in, and then the business is over for the year.

But now the time has come when we would all like to see that sort of thing stopped, when we want to get down to business and really do something; and the way to do this is to form a sort of parent organization which will, under the inspiration of the local, lower bodies, direct the clamorings for game protection and game legislation along definite lines.

History has shown that in unity alone there is strength. Look for instance at Germany, as the land north and east of the Rhine was vaguely known up to the middle of the 18th century. See Prussia subdued by Napoleon with only 40,000 men. See the free cities of Hamburg and Bremen and the principalities of Bavaria and Wurtenburg and Saxony all struggling separately and to little or no purpose, merely for existence, with no hope or thought even of power. And then see

what has been accomplished since the formation of the German Empire in 1871, when under the leadership of the "Iron Chancellor," Bismark, they all came together as one nation, as one organization!

Why may we not apply this lesson, though remote, of the German states to ourselves, and resolve that we will form, if not a confederacy or an empire, at least an organization that can help to see that laws are intelligently enacted for the benefit of the sportsman, and that justice is done him.

Let us find a Bismark of our own, and let us send him delegates from all the clubs formed and to be formed, and then let us follow them and work with them until we have on our statute books the kind of laws we need. I am not going to take your time to discuss the exact nature of these laws, nor the things that should be done to help the partridges survive the winters, or to trap his natural enemies; or to induce the farmers to want us to shoot on their lands; or to mention the things that might be done to make wild ducks stay longer in our ponds and bayous.

This is an age of combinations and dissolutions, but such an organization as I mentioned will not be one in restraint of trade. This is an age of political machines, but our machine will have no political significance. This is an age of conservation, as is evidenced on all sides, conservation of the timber lands, of the water powers, of all our natural wealth and resources. Why should it not be for us an age of the conservation of New Hampshire game, when we have in our rivers and covers so much already done by nature herself! What better legacy can we leave to our children than

HELL GATE FALLS, DEAD DIAMOND RIVER.

a state whose woodlands are undiminished, whose rivers and streams are filled with trout and salmon, and whose covers abound with partridges and woodcock!

My friends, it is in our hands to leave this legacy if only we adopt and act upon our watch word of "Unity."

ADDRESS OF MR. PATTEE.

True sportsmanship, I take it, means fair dealing, a relation among men wherein no unfair advantage is sought or taken. As applied to fish and game the sportsman desires the privilege of hunting and fishing for the healthful exercise, both of mind and body which association with Nature and the conquest of natural forces provides. To hunt or fish for the sake of the spoils is business not Sportsmanship. It is not intended or thought of to promote fish and game culture as a business proposition. The financial gain to our people through people coming to the state for the purpose of fishing and hunting is incidental, not the primary purpose of the department.

Assuming therefore that the purpose of the department is not to build up a business enterprise in the slaughter of fish and game, or in catering to those who come from abroad to fish and hunt, we reach the conclusion that primarily our object is to propagate and preserve fish, bird and animal life for the pleasure and profit of our own people, and the extent to which it may properly be done is determined by the point beyond which the burden of it falls heavier than the benefit will bear. Manifestly to reduce the burden to the lowest point will correspondingly increase the extent to which the benefit may be extended.

Fish and game life are incidents of the open country and the burden of their maintenance falls on those who draw their sustenance from the open country. The birds and the beasts do whatever damage is done, be it little or great, to the farms and forests of the state. Whatever damage is suffered in the pursuit of fish and game falls in the same places. Is it sportsmanlike to ask any class to endure a loss, however small, for the pleasure of another class? How much less sportsmanlike to ask any class to suffer loss for the *profit* of another class! Consider the condition of New Hampshire farmers. They are as a class neither rich nor poor. Fairly prosperous, their income from the soil is relied upon to furnish food and raiment for their families, comforts for their homes and education for their children. The farmer depends upon one harvest a year and at best can expect but fifteen or twenty of such returns in a life time. Any considerable damage to a single crop involves an irreparable and important reduction of the results of his life work, one which the state has no right to impose upon so important an industry in which so many of her people are engaged. I make no point of the desirability of promoting rather than in the least jeopardising an industry whose prosperity is fundamental to all other industries.

Assuming then that the true sportsmen recognize and desire to protect the right and privileges of those whose living depends upon successful crop production, let us see how and to what extent the propagation of fish and game and the pursuit of these things imposes loss upon the class who bear the burden.

Loss to farmers arises through the nature of the

game and the methods of its capture. Let us consider the latter cause first.

No considerable loss can occur through the acts of real sportsmen, respectors of the rights of others. Unfortunately all hunters and fishermen are *not* real sportsmen in this respect. In-as-much as the privileges of the real sportsmen carry with them opportunities for vandalism, such loss as these acts cause must be charged off against the gain of a system which gives rise to them. The benefit of the one is lessened by the burden of the other. Loss to the farmers arises from the acts of alleged sportsmen who fall into three classes:

1. Heedless.
2. The indifferent.
3. The mischievous.

The heedless man, who without thought to the annoyance or damage he may do, tears down fences, tramples crops, lights and leaves fires, and shoots promiscuously at whatever catches his eye, is no true sportsman. He should be suppressed. You should help suppress him. Don't ask farmers to help build up a system which brings careless, irresponsible men afield, who shoot first and look afterward. Don't ask us to encourage conditions that make it unsafe for a man to go his pasture for his cows without wearing a uniform of colors that may protect him from bullets but endanger him from his bull. Don't ask us to encourage hunting by men who don't know or care for the difference between a Jersey cow and a buck deer.

Many so called hunters fall into the heedless class.

Less fall into the indifferent class, those who, knowing better, molest and destroy if it is easiest or quickest that way simply because the rights of others conflict with their purposes, and they *don't care*. There may be some excuse for those who do not know any better, there is none for those who know and do not regard the rights they violate. They are not true sportsmen. They should be suppressed and you should help do it in the interests of true sportsmanship and for your own reputation. Don't expect the farmer to welcome such enlargement of the fish and game life of the state as will draw out onto his land the indifferent, to-hell-with-the-farmer class of hunters and fishermen.

But what of the mishievous? There are some who like to destroy for the sake of destruction, who will deliberately do damage for the excitement they get out of it. To this class belong a set of alleged sports who hunt and fish with bottles, not rods or guns. Rum and rifles make a mighty bad combination. So long as hunting and fishing are made occasions to cover drunken carousals do not expect the farmers to enter with enthusiasm upon a program that will largely increase that practice. For the sake of true sportsmanship, which suffers by these acts, help us put liquor and licenses far apart.

So long as the presence and propagation of fish and game subject farm life to these classes of people don't ask us to materially increase them. We like to hunt and fish. We live nearer and enjoy more of these privileges than you. We want them continued. They add to our pleasure, help us sell our farms in some cases, but we don't want to increase the burdens im-


HANCOCK, N. H.


FROM BUCKEYE

posed by such as abuse their privileges. If the state shall by its laws foster a system that subjects us to these things, it should offset the losses that system imposes out of the income that system creates. When it licenses a man to shoot it should assume some responsibility that he shoots properly. It should not turn loose on us a class of people against whom we cannot protect our property and hardly our lives, people with no financial or moral responsibility, without assuming responsibility for the damage these men do. It is no protection against these that we may post our land. To protect it we would have to fortify it.

The damage done by birds and animals is hard to determine. It has been said to be so small that the demand for payment is merely an excuse for a privilege to shoot. There is damage done. I can show you now gardens destroyed and orchards ruined by deer. You can't replace a crop or a tree. You must wait for another. We take the ground that if the damage be small the state can afford to pay; if it be large it is a burden the state should not impose. You as true sportsmen do not want us to lose money for the sake of your fun. Your program calls for more animals and more birds. Don't expect us to bear a heavier burden until you, for whose benefit the burden is imposed, are willing to make us whole. It isn't fair and isn't sportsmanlike.

We are willing to join you in carrying whatever burden the payment for damage done by game imposes. If it be by state appropriation we will pay our share of the taxes. If taken from license fees we will pay our part when we get our licenses to hunt.

We rejoice in the fairmindedness of the sportsmen and of the Commission on allowing us imperfectly and without preparation to express the farmers views in these matters. We know the farmers of New Hampshire. For them we express our appreciation of the sportsmanlike attitude of the Commissioner in bringing out views that may not be pleasing but are none the less true. The best interests of all the people must in this as in all matters, prevail. As true sportsmen, as true citizens, you and we will work together for the common good. If it involves some sacrifice on our part, either in pleasure or in profit, show us it is right and we're for it. That's sportsmanship.

The address of W. Parker Straw of Manchester on "The Organization and Coordination of Local Fish and Game Association," was able and of high character, and portrayed effectively to every one present the great work these organizations can accomplish in the holding of public sentiment and in creating a greater activity in matters pertaining to Fish and Game. We are printing Mr. Straws address, it will be found on page nine.

The pertinent remarks of General Frank Battles and Superintendent of Schools L. J. Rundlett upon the subjects assigned them, were appreciated by the assemblage as both gentlemen are well known sportsmen long identified with fish and game interests and have for years given freely of their time and attention in bringing the greatest good to the greatest number in the proper enjoyment of sports afield.

GAME REFUGES.

Breeding game birds in captivity is in a measure

BIG GREENOUGH POND.

successful, although when we consider that by this method we are in a great degree detracting from the game proclivities of the bird, it is plain that we are defeating the object for which we strive.

A plan in which we are greatly interested, and which has been adopted in other states, is that of providing refuges where game may breed unmolested. Such sanctuaries may be obtained by the use of land that is owned by the state or corporations and we believe the use of such tracts would be donated to the State for this purpose. This means would eventually serve to increase the game supply in the surrounding territory. Wherever these refugees have been established, they have proven highly satisfactory. In fact, it is the only means by which ruff grouse (commonly called partridge, the best game bird on the face of the earth) can be successfully propagated.

Such movements as we have indicated are important and necessary, but they do not constitute the whole nor even the best means at our command for the perpetuation of wild life. Let us see to it that Nature's abundance is not impoverished by thoughtless sportsmen and find ourselves obliged to produce our game artificially.

The sportsman has for his inheritance the birds of the air and the game of the forests. Is he to conserve this birthright? Compare his case if you will, to that of the youth who has inherited a bank account. If he is a spendthrift and wasteful, he will be impoverished during his lifetime and leave his children in want; on the other hand, if he is economical, conserving his inheritance and using only a reasonable amount for

his comfort and luxury, he will increase his income and have something to transmit to his children.

Nature has bestowed this fortune on every man. In his explorations he should take only a reasonable toll. Enlightment teaches us that we are heirs to ancient privileges. Education insists that we shall administer those resources for generations unborn.

DEER.

Large numbers of deer have been killed during the seasons of 1913 and 1914. The limit to each person, regardless of age or sex, is two. In many states only bucks can be killed. In New Hampshire we have no such restrictions, and in several instances we have viewed the remains of a twenty-five or thirty pound fawn recently slain by a hunter. We, therefore, favor changing the present law so that only bucks may be killed. This requirement has proven highly satisfactory in other states, and no doubt it would increase the supply in New Hampshire.

RUFFED GROUSE.

Ruffed grouse, the famed drummer and the finest game bird, have increased somewhat in certain parts of the state during the last two years, but they are not by any means as numerous as they formerly were or as they should be in New Hampshire. With a system of refuges, proper protection and a limit to the bag, there is no reason why these game birds should not be plentiful.

BLUE HERON.

Blue heron should not be protected, since without

Deer taken out by party from Newburgh, New York in 1913—Abbott Brook, Dead Diamond.

DOE and FAWN

doubt they kill a great many more fish than do the fishermen themselves. At the hatcheries our superintendents have to be constantly on the watch to protect the fish from destruction by these birds.

GRAY SQUIRRELS.

These game animals increased wonderfully during the time they were protected. However the last legislature passed a law allowing the killing of squirrels during the month of October, without prescribing a bag limit. As a result thousands were slaughtered and this season they are not nearly as plentiful. There is no more attractive sight than to see these squirrels in public parks frisking about searching for peanuts that are offered them for food, and from their habits many object lessons can be gathered. If we are to have an open season on these animals, we should certainly prescribe a bag limit.

WOODCOCK.

These birds are not plentiful. Sportsmen that bag four or five in a day's hunt are considered as being especially fortunate.

REIMBURSEMENT OF FARMERS.

This is a matter that should receive our immediate attention, since land owners are posting their lands to a greater degree every year. This, if unchecked, will necessarily soon limit the hunting areas to such an extent as to entirely discourage the sportsman in his pursuits. A further result will also be the inevitable diminution in the amount received by the State from hunter's licenses.

We believe that the farmer should be reimbursed for the damage done to his property by animals that are protected, and by that class of hunters who are careless and do not have proper regard for their fellowmen. It is agreed and with truth that farmers can kill deer which damage their crops; but this is indeed a negative reimbursement, since the damage has already been done before the deer is killed. Furthermore, the law provides that the farmer must not appropriate the carcass until a deputy arrives to pronounce the killing warranted. By that time the meat is unfit for use.

The interests of the sportsman and the farmer are inter-related and each should lend a spirit of cooperation in the endeavor to regulate conditions by which neither shall suffer and both may profit.

The address of Mr. Richard Pattee, at the sportsmen's meeting, on the farmers' interests is convincing and reasonable and deserves our consideration. We are printing this address so that all may read it.*

*See page 13

DEPUTIES FOR ENFORCING THE FISH AND GAME LAWS.

Back of any law there must be a healthy public sentiment to insure its enforcement. Sportsmen must realize that to build up sentiment by educating the people is the most effective method of enforcing laws, and thus co-operating with our deputies they will be contributing to their own welfare.

DEPUTIES.

The appropriation for enforcement of the Fish and Game laws is so inadequate that it is impossible to

Bear Trapper of the Dead Diamond.

get the desired results. The system of having a deputy in each county can be very effective, but to make it so, sufficient money must be appropriated to employ competent men, possessing detective ability, who are able to devote their entire time to the work.

The first requisite of a deputy is that he is in sound physical condition and has plenty of energy supplemented by tact and good humor. The officer must be capable of conducting a suit before the judge in such a way as to bring out every point in the case. He must have a thorough disregard for hours and weather, as the professional violator works usually at night. He is like the burglar in this respect and weather never deters him when he sets out on his lawless errand. These deputies should hunt in pairs, as oftentimes evidence is necessary. The fact that some judges count the number of witnesses rather than their character, frequently causes the officer to lose his case. Deputies should have charge of the planting of all fish distributed by the state. It is a known fact that more fish are destroyed by not being properly planted than by all other means.

Trusting this important matter to men in the towns unfitted for the work, means that seventy-five per cent of the fish distributed are lost.

FISH AND GAME CLUBS.

The Fish and Game Clubs, we are very glad to report, are increasing, to the advantage of all concerned. The advantage and assistance of these associations in moulding public sentiment, and in educating the people to have greater respect for the law, cannot be overestimated. The organization and united work of the

sportsmen are bound to result, directly or indirectly, in the enactment of good laws for the protection and preservation of Fish and Game.

Your Commissioner feels the need of their cooperation, and any suggestions, whenever presented, will receive his profound consideration. We would recommend that clubs be formed in every town.

Nature has not in every location provided lakes and ponds, but in many instances these can be created artificially and are highly desirable, being very accessible. Furthermore, it teaches us how kindly Nature yields to the overtures of man. We have seen some of these the last year and we can assure you they are little kingdoms of which any man might justly feel proud.

A COMBINATION LICENSE GOOD FOR BOTH HUNTING AND FISHING.

In theory we do not believe in a license law, yet, if we are to continue the use of the present hunters license, there is certainly good reason for advocating the use of an angler's license. For a number of years hunters have been obliged to buy licenses, and the funds thus derived support this department. A share of these funds are used each year in the propagation of fish, and never to my knowledge has any portion of this money taken from the hunters been expended in game interests. As a result, both resident and non-resident fishermen are deriving the benefits of the system without any expense to themselves whatever.

What, I ask you, is the state at present giving the hunter in return for the money paid for his license?

BIG MILL FIELD POND.

Absolutely nothing! And worse than this, having been assured of the state's protection upon the payment of his fee, the hunter finds that any farmer or land owner can forbid him from hunting on his property.

There is a better argument in favor of an angler's license, namely: the fact that the state owns certain waters and can grant or give anglers a right to fish in these waters. After carefully considering the matter we believe the state should issue a combination license, good for hunting and fishing, at the price of $1.00, which has been paid hitherto for the hunter's privilege alone. For non-residents the price should be in the vicinity of one dollar and twenty-five cents. Exception should be made in the case of boys, girls, and women, irrespective of whether they are resident or non-resident. This will not cause the hunter any more expense but will oblige the fisherman to pay his just share in the support of this department.

INCOME TO THE STATE.

You inquire as to why we ask for so much money for this department? In reply, we ask you to consider for a moment, if you will, the resources which are ours to conserve, and the possibilities that they offer for income to our state. Without conservation, however, these possibilities are nil. If every lake, pond, and stream in the state were kept stocked to a maximum degree, thousands of sportsmen would be yearly attracted to our state, and in the days spent with us, they would leave large sums of money. If the hunting and fishing met their expectations they would decide

to spend all their vacations with us. That would necessitate the purchase of a building lot, the erection of a summer home, and the consequent tax assessment. Already thousands of dollars are annually brought into and distributed through all parts of the state. Abandoned farm sections, small neighborhoods, towns and cities, all derive more or less benefit from the visiting sportsmen. Considering the cost of this department, the state could not invest in anything which would pay greater dividends. Say nothing of the $40,000 received from Licenses, Permits, Fines and Forfeitures, the state receives more than $1,000,000 every year from those who enjoy the hunting and fishing.

Moreover, the thousands of pounds of fish which would result from well stocked ponds, would save many meat bills. Railroads, hotels, farmers, and all concerned, would profit by careful conservation.

For these reasons, therefore, as a business proposition New Hampshire should appropriate annually a sum sufficient for conserving these revenue sources of income, and guarding against their depletion. Funds invested in game sanctuaries, hatcheries, and detective work, will repay any State a hundred-fold.

AUDUBON SOCIETY.

We should not be performing our duty if we neglected to mention the great work that is being done by the Audubon Society. This Society is formed of ardent bird lovers and bird protectionists. The good they are accomplishing in the way of bird protection should command the admiration and support of all the people.

BOY SCOUTS.

Too much cannot be said in favor of the Boy Scout movement. This is a splendid organization, composed as it is of the young blood of our land—enthusiastic, brimful of vigor and adventure. These boys get more out of life than the man who puts through a big business deal. They wouldn't exchange places with the President, and are a better tonic than Science ever concocted. They wouldn't run up the white flag of distress even though a leg were broken, and they wonder why everybody is not just as happy and optimistic as they are. Glorious, isn't it? What more valuable asset than the enlistment of these boys on the side of conservation!

BOYS AND FIREARMS.

Boys should not be allowed the use of firearms until they are 16 years of age. Consider if you will the conditions in many families. If there are boys, they are often allowed the use of firearms at the early age of ten. Permission is then given them by their parents to have a hunter's license. At this period, the slaughter of wild life commences with the sole idea that the more of it is destroyed, the greater the achievement. The boys are not to blame since the value of wild life has not been instilled in them in the home. The same instruction has been neglected in the school and they consequently arrive at the conclusion that to destroy wild life is a great achievement. We believe, therefore, that the use of firearms at so early an age should be

prohibited; and that in the meantime, while approaching later youth, the boys should be duly instructed both at home and at school in the value of our wild animals. The result would be an excellent conservation movement, not only of our animals, but of the more important number of young lives now lost each year.

THIS DEPARTMENT SHOULD ISSUE A MAGAZINE.

We have been greatly interested in starting the publication in this department of a small magazine to be issued the first of every month. By means of this we would be able to get into closer touch with the sportsmen throughout the state. A means of creating greater activity and cooperation in fish and game interests would also be provided for. All sportsmen, whether hunters or fishermen, should be interested to contribute something during the year concerning their exploits. The paper would constitute a medium for the exchange of ideas, for the discussion of topics relative to fish and game, and for the spreading of news of clubs and associations. An opportunity, furthermore, would be afforded for informing our citizens of the work of this department. Excellent advantages for advertising would be offered, both for dealers in sporting goods and for summer houses and hotels. The price of the paper would not be over 50c. a year, and we believe that, after two or three issues, it could be made to pay.

Anglers who visited the streams of New Hampshire in earlier days are agreed that better fishing could not

HELL GATE.

ON THE CONTOOCOOK.

be found. All streams, ponds, and lakes abounded in that King of fish—the speckled brook trout. After the settlement of the state, in unguarded moments, other less desirable fish were introduced, until it is now a rare exception to find any water in the state where only brook trout can be found.

There is so much to be said in favor of fishing that every man who considers life worth living should demand that all waters of the state be kept stocked to a maximum degree.

A visit to any one of our hatcheries in the State will convince the doubter of the value of a liberal supply of fish. As one watches the fish in the troughs and tanks he may think of the fact, that when these are distributed they belong not to a corporation or a trust but to all the people. Here is a good food for the masses. The workman who earns from $1.50 to $2.50 per day cannot afford to provide his family with beef, lamb and pork. Add to this the consideration that the land which produces these meat foods is limited, and the consumers are increasing so rapidly that the price is not likely to decrease. Every day, therefore, the need of a cheaper food grows more imperative and we believe that fish, than which there is no more wholesome food in the world, is going to play a large part in meeting that need. Well stocked waters, then, we assert, will pay dividends to every man, woman, and child.

In order to accomplish this stocking of streams, it is certainly necessary that the state have suitable hatcheries where a large supply of fishes can be hatched every year, and a large proportion grown to the fingerling size before distribution. At present our hatcheries

are entirely inadequate to meet these demands, since in every instance, the water supply is very limited.

COLEBROOK STATION.

At the Colebrook hatchery fairly good results have been obtained. About two millions of fry were distributed from this hatchery last season, including brook trout, rainbow trout, and landlocked salmon. On account of having no suitable tanks, and a limited water supply, we could not undertake the growing of these fish to the fingerling size. An increased water supply can be obtained at this station, and with the addition of more troughs in the hatchery and cement tanks for raising fingerlings, satisfactory results could be obtained. Considering the fact that this part of our state furnishes unlimited resources along the line of streams, the water of which is especially adapted to brook trout, it would be advantageous to continue the use of this hatchery, and it would also be unwise to transport from another section of the state the large number of fish necessary to stock these waters.

LACONIA STATION.

At the Laconia hatchery it is impossible to obtain anything like good results, the water supply being far more limited than at Colebrook. Last spring we were subjected to a washout around the dam in which we lost about two millions of fish. This is the second catastrophe that has taken place in the last few years, owing to the dam not being properly constructed. What water we have at this station is continually contaminated with surface wash from the highway and

adjoining farms, thus rendering it deleterious to the culture of fish. The tanks are badly out of repair, as are other parts of the hatchery. There is not one good reason for continuing the use of this hatchery and your Commissioner recommends that, for the good of this department and the state, it be abandoned.

CONWAY STATION.

At Conway we have a small hatchery, the capacity of which is entirely inadequate to the needs of this section of the state We have a better water supply here as it is taken from the Town system. About one and one-half millions of eggs were hatched last season. Fry were distributed since this station has no tanks for growing fish. With a small outlay for additional troughs in the hatching house and a few cement tanks, good results could be obtained.

This calls for attention as it seems necessary to have a good distributing basis in this part of the state.

If protection and propagation in New Hampshire is to become an established policy, the people must speedily realize that funds derived from the sale of resident hunters' permits, non-resident licenses, guides' licenses, fines and forfeitures, must not be used in other departments or deflected from their legitimate channels, namely: the filling of streams, ponds and lakes with fish, establishing refuges where game may breed unmolested, and installing a system of competent deputies for enforcing the Fish and Game laws.

New Hampshire has ten thousand miles of streams containing water suitable for brook trout, fifteen hundred miles of rivers where many other species of fish

would thrive, and six hundred and sixty-three ponds and lakes. To furnish moderate stocking of fish for these waters would require at least fifteen millions of fish.

As to the propagation of game, experiments in several other states have proven that game refuges obtain better results than any other means, and that they are far more economical than breeding game in captivity. New Hampshire should have, to commence with, three of these sanctuaries, one located in Hillsborough County, one in Belknap, and another in Grafton or Coos. Such refuges should contain at least an area two miles square. The necessary land could be obtained without much expense. A line of wire marking the extent of the refuge, with necessary signs, and the constant services of three wardens would constitute the expense.

There is no state issuing a license where there is not a larger appropriation for detective work than in New Hampshire, the last appropriation being Seven Thousand Dollars. With a law requiring ten deputies, this leaves only Seven Hundred Dollars to each, inculding expenses. To enforce the Fish and Game laws or obtain any results from a sum so inadequate is an impossibility.

NEW HATCHERY.

It is an undeniable fact that, if New Hampshire intends to keep her streams, lakes, and ponds stocked to even a moderate degree, a new hatchery must be established. With this end in view, your Commissioner procured the services of Dr. Tarleton Bean, a noted fish

NEWFOUND LAKE
SHOWING "HELLO BILL'S" COTTAGE.

SILVER LAKE.

culturist of Albany, New York, who came to New Hampshire and inspected different locations.

After considering the advantages offered in several localities, it was concluded that the town of Warren, presented the most favorable site for a hatchery. In fact, it seems to be especially adapted by Nature as an ideal spot for hatchery purposes. The practically unlimited flow of spring water, so essential for hatching the eggs; the generous supply of brook water indispensable for growing fingerlings; the excellent lay of the land for construction of ponds and a hatchery house; all these desirable conditions present themselves at this site, which does not seem to have an equal in New Hampshire.

In the location of a hatchery we have felt it a matter of importance to select the ideal spot, in order that it may become a source of income to this department and to the State.

Now we come to the matter of construction, which is of no less importance than the choice of location. The propagation of fish, like all other business propositions, demands modern plants and tools rendered effectual by suitable methods and plans.

To secure the best results with the least possible expenditure, construction should be concentrated to as few plants as possible, and should embody the highest type of structural skill in meeting the requirement for the successful culture of fish. Tanks should be constructed of concrete, the hatchery house of brick, concrete and steel, thus rendering it practically indestructible, and eliminating the need of constant repairs. The Commonwealth of New Hampshire demands that all

structures shall be of the most substantial type, making them a credit and ornament to the State, as well as a necessary asset in the culture of fish.

DR. TARLETON BEAN'S REPORT.

Hon. Frank J. Beal,

Commissioner of Fisheries and Game,

Plymouth, N. H.

Dear Commissioner:—

I submit herewith a report upon the inspection of waters suggested for trout hatchery sites in your State and carried on from September 15 to 18, both inclusive.

The places visited were: Sugar Ball, Soucook River, Sucker Brook, Laconia Hatchery, Outlet of Winnipesaukee Lake at Lakeport, East Branch at Woodstock, Plymouth Hatchery site, springs on Smith Estate at Warren, Olivarian Brook and Berry Brook, at Pike. The springs on the Smith Estate were examined twice and the Soucook River was visited three times. General Battles accompanied us to one of the proposed locations on this river on September 18 and pointed out the place near the mouth of the stream where a dam had been proposed many years ago when the late Colonel Marshall McDonald was Commissioner of U. S. Fisheries. This proposed site was exhaustively studied by Mr. Charles G. Atkins under Commissioner McDonald's direction; but was rejected.

We may now take up the various locations in more detail.

LAKE TARLETON and CLUB HOUSE.

TROUT FISHING

Outlet First Connecticut Lake.

The first one, Sugar Ball, was found to possess very small springs without sufficient fall to warrant the establishment of a hatchery.

The Soucook River, which was very fully investigated at all the points supposed to be most favorable, is open to the objections that no springs can be found in the vicinity of the locations examined, and all of the places are remote from railroad stations. At Richardson's Mill there is an ample supply of good water and ponds could be constructed on either side of the river, but the mill is four and one half miles from Concord.

Sucker brook, at a point three miles from Webster Lake Station and five miles from Franklin, would furnish plenty of water including good spring water; but the remoteness from railroad communications is against this site.

The Laconia Hatchery is supplied from very small springs. If all the spring water in the vicinity were gathered up and conveyed to the present hatchery, there would still be insufficient water to maintain a hatchery adequate for the needs of the streams of the State. The dam holding back the water supply of this hatchery needs extensive repair, but even if this were fully restored it would not furnish water enough for the State requirements.

The outlet of Winnipesaukee Lake, at Lakeport, is not a practicable site for a water supply for a State Hatchery. The lower portion of the lake is too shallow and the water in summer would rise in temperature sufficiently to make trout culture impossible.

The big concrete dam on the East Branch at Woodstock, holds back a very large body of water;

but there is no land below the dam in which to locate ponds with sufficient fall to insure successful fish culture, and there is no spring water to be had in connection with the brook water. Spring water is highly desirable for the early stages of egg development and no locality which does not furnish both spring water and brook water is entitled to favorable consideration.

On the 17th of September we looked over the site of the old hatchery at Livermore Falls. Here, at this time, there is a very poor supply of spring water forming a small stream which flows into the Pemigewasset River. The site is now thoroughly overgrown with underbrush and briers. It is very certain that the springs here will at no time furnish one half enough water for the needs of the State, and there is no brook water in the vicinity.

Near Warren there are, on the Smith Estate, a number of large springs which flow into a moderate sized brook, and this brook sends a branch through the property of the Estate in such a manner as to provide an ideal location in connection with the springs. From an inspection of the grounds containing the springs and brook, it seems evident that a fall of about 7 feet can be obtained by placing a low dam at a point on the Smith Estate. This would be more than sufficient for the requirements of the hatchery, and the amount of water that could be so taken would be great enough to develop several millions of Brook Trout eggs to the eyed stage. The brook water can also be utilized for about eight months of the year in ponds mingled with spring water and thus made suitable for the rearing of brood fish. These springs are near the railroad station at Warren,

CRYSTAL LAKE, ENFIELD, N. H.

and this is altogether the best site examined by us during our inspection trips.

Olivarian Brook, near Pike, on account of the extreme danger from freshets and the lack of ground suitable for ponds as also the absence of spring water to be used in connection with the brook supply does not offer sites favorable for trout work.

Berry Brook, near Pike, is a very small spring stream without much fall and is not large enough to supply a hatchery for the State.

The essential requirements of a trout hatchery site are as follows: An abundant supply of pure spring water on ground having sufficient fall to circulate through the hatchery and ponds by gravity; a sizeable brook not subject to great freshets or considerable fluctuation in flow adjacent to the springs and capable of being utilized in ponds without pumping; nearness to a railroad system from which all parts of the State can be easily reached; absolute control of both spring water and brook water supplies so that no pollution of the water in any way will be possible.

Very respectfully,

TARLETON H. BEAN,

Fish Culturist.

WATER FARMING.

As the water of New Hampshire is especially adapted to raising trout great opportunities are at the command of the farmers in the way of water farming.

In most localities there exist opportunities whereby farmers, with but little expense, can construct artificial ponds containing at least one acre. From this amount

of water One Hundred and Fifty Dollars worth of fish can be raised every year. The fish, after their first installment, need but very little care, except protection from their enemies, such as muskrats, mink, etc. There is hardly a farm of any size that has not more than an acre of waste land; therefore, in creating this little pond you will not only add measurably to the food supply of the people, but to the beauty of the landscape. Fishing in the pond will also certainly be a constant source of recreation.

This department stands ready at any time to furnish the farmer with information as to construction of the ponds and care of the fish. In a very short time such ponds would be a source of profit, a delight to the whole household in the sport of fishing, and also an object lesson to children, with the opportunity to study the nature and habits of fish, and to so interest them that in after years they will be strong advocates of our Fish and Game laws.

FISH DISTRIBUTION.

Fish distributed during the year 1913:

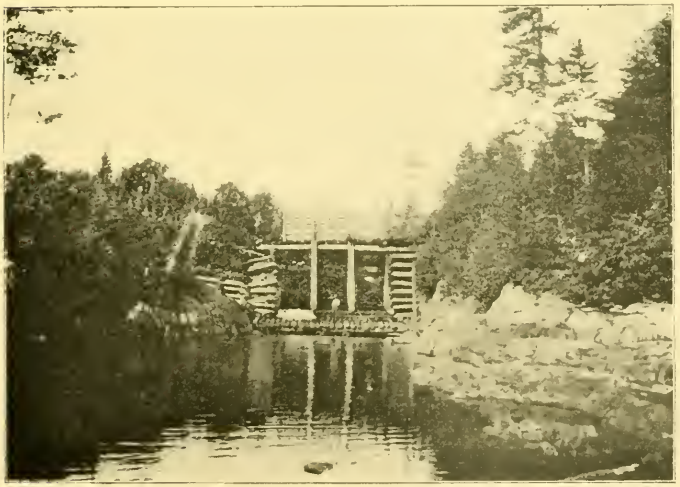
Brook Trout,	2,153,000

Your present Commissioner assumed the duties of the office June 1st, 1913, after the fish for the year were all distributed.

Fish distributed during the year 1914:

Brook Trout,	3,600,000
Rainbow Trout,	150,000

FORKS OF THE DIAMOND



HELL GATE.

Steelhead Trout,	100,000
Lake Trout,	200,000
Salmon,	175,000
White Perch,	1,200,000
	5,425,000

We intended that every town in the State having suitable water should have a supply of these fish, but owing to the fact that there were over thirty towns which did not recommend any one to plant them, we were obliged to abandon this idea and distribute the fish in towns that were interested and furnished help to do the planting. We hope every town will cooperate with us the coming season in the endeavor to keep our waters stocked as best we can with the limited distributing basis at our command.

The cost of these fish, including buying of eggs, hatching and raising the same with the cost of distribution, was two dollars and forty cents per thousand.

TROUT AND OTHER FISHING.

Brook trout fishing has been excellent. Your Commissioner and deputies have seen several baskets with the limit of ten pounds and hardly a trout less than six inches long. It is also very gratifying that reports received from most every section of the state indicate that the streams are filled with small trout. This not only indicates that our deputies and detectives have been doing excellent work, but it also proves that our sportsmen are realizing that respect of the law is a matter of common interest and necessity. With a law making six inches the legal length and provision for a

maximum stocking of waters every year, we might have, in a very short time, a veritable paradise for fishermen.

Lake and pond fishing, we believe, has been up to the average. Special mention should be made of the large number of trout and bass taken at Squam Lakes. Winnipesaukee, also, has furnished the usual number although they have not been as large this season as they have been heretofore.

From reports bass and salmon fishing at Sunapee has not been up to the standard this season.

We are paying particular attention to Newfound Lake as this offers advantages for the taking of spawn. Its water is especially adapted to salmon, and considering that this lake does not contain black bass there are great possibilities for the propagation of salmon. This lake also furnishes salmon spawn for stocking other waters of the state.

Fishing has been described by some as a pole, line, and hook, with a worm at one end and a fool at the other; but in those from whom this definition emanated the milk of human kindness must have soured. There is, certainly, no more health giving occupation than angling. In the days which are spent on our streams and lakes, Nature furnishes us with abundance of pure air, giving vigor to the blood, clearing the cobwebs from the brain, and bringing to the denizens of dusty streets and brick walls, the cool retreat of trout brooks, and the peaceful beauty of lakes nestling amid hills and mountains.

There are thousands of opportunities in New Hampshire which thrill the angler with visions of new life,

BIG DIAMOND POND.

and at the same time offer him the chance to fill his basket from the inhabitants of her sparkling waters. It brings to him a reverence born of intimacy with Nature in her profoundest aspects. The belief of the ancients that Nature had in her soverign bosom a cure for all physical ills, has found an echo in modern times in that exodus from city to country which is an annual occurrence.

Millet declared that if he could not get to the country he would lose both his power to paint and create. Nature pours out upon the earth her water courses, whose source is in cloudland. She gives to the mild olive its peculiar and entrancing beauty; to the pine its diapason, and to the poplar its shivering gold, blending into one the voices of earth, air and sea, whose voice is silent neither day nor night. She flings over the earth her starry banners. She makes of each recurrent morning a spectacle of beauty fresh from the Creator's hand. The streams are full of life, the beauty of wild life is upon a thousand hills, and the air vibrates with song. To this plethora of beauty the voice of Nature calls aloud to the weary of hand, heart, and brain, "Come up hither and I will do you good."

RECOMMENDATIONS FOR CHANGES IN THE FISH AND GAME LAWS.

We recommend the appropriation of at least Forty Thousand Dollars each year for the propagation of Fish and Game and detective work. Even with this amount we could not obtain the results that other states obtain by the use of much larger appropriations. This would

however, start the good work of conservation and propagation. After a few years our citizens will realize the great benefits thus derived and demand an increase in the appropriation. In no event should the annual appropriation be less than the amount collected by the State from their sources.

We recommend that the Fish and Game laws be revised and codified so that our citizens can interpret the same without being obliged to consult legal authority.

We recommend the prohibition of trapping as a business. It is not sportsmanlike. Furthermore, it tends towards the complete extermination of our fur bearing animals. The United States Bureau of Agriculture has issued a bulletin to the effect that unless a check is put upon the killing of foxes, skunks, racoons and the like, whose food consists chiefly of field mice, rats, ground squirrels, moles and grasshoppers, these pests are likely to become so general that it will be difficult to raise crops and grow trees. Farmers should be allowed the use of traps on their land in protecting their property and crops.

We recommend that the use of nets of every description be prohibited, with the exception of the landing net employed by those fishing with single hook and line. Our present law attempts to name all the different kinds of nets, with the result that man's ingenuity can change the construction, using different names, and thus evade the law. Dip nets for taking minnows, shiners or smelts for bait should be permitted under reasonable restrictions. No other nets should be used except with written permission of the commissioner.

We recommend a limit to the catch when fishing

through the ice—The present law sets a limit in the use of single hook and line, but places no restriction on fishing through the ice with ten hooks and lines.

We recommend that the basket limit in brook trout fishing be made six pounds instead of ten, and it would be well to consider making the legal length six inches.

We recommend that the law providing for a bounty on bears should be repealed.

We recommend that in the interests of good hunting, the state should pass a law restricting the bag limit to six birds; also, the same restriction should apply to grey squirrels, six.

We recommend a law prohibiting the killing of deer between sunset and sunrise.

We recommend that a Hatchery be established in the western part of the state. This section contains many excellent trout streams, numerous ponds and lakes, which should be kept stocked with fish. To do this it seems necessary to have a distributing basis in that part of the state on account of the long distance to transport fish from the other stations.

We recommend that trappers should be obliged to have their names stamped on all traps.

We recommend that guides should not be allowed to carry any kind of a gun when employed in that capacity.

We recommend that boys should not be allowed the use of firearms or be permitted to have a hunting license until they have reached the age of sixteen years.

We recommend that the laws governing the open season for hunting and fishing be made as nearly uniform as possible in all the counties of the state.

We recommend that the state establish game refuges or sanctuaries where game birds and game animals may breed unmolested. Funds collected from the sale of the hunters licenses has been expended in the stocking of our waters with fish. The propagation of game has been neglected. This calls for our attention out of justice to the hunter.

We recommend that the open season on deer in Coos, Grafton and Carroll counties should be from November 1st to December 1st.

We have submitted this, our first report, with the aim of presenting to you only such changes as are of vital importance for the success of this department. Let greater activity and devotion to the interests of our native state be our slogan. This is only the suggestion leading to a more aggressive work, which should be promoted. Merely to stand still and hold our own is not enough. Neither should we be satisfied with the traditions of the past, however good they may be, but we should set up standards of our own that will make our generation excel the last.

Receipts for Fiscal year ending August 31, 1913,—

Fines and Forfeitures,	$ 1609.00
Guide Licenses,	257.00
Resident Hunters' Permits,	20061.22
Non-Resident Hunters' Licenses,	9140.00
Total receipts for year ending Aug. 31, 1913,	$31067.22

SECOND CONNECTICUT LAKE.

Expenditures for Fiscal year ending Aug. 31, 1913.

Salaries of Com'rs.	Appropriation,	$ 2600.00
Expended,		2400.00
Unexpended balance,		$ 200.00
Transportation,	Appropriation,	$ 250.00
Expended,		190.00
Unexpended balance,		$ 60.00
General Expense,	Appropriation,	$ 6500.00
Expended,		4746.70
Unexpended balance,		$ 1753.30
Clerical Expense,	(Indefinite)	
Expended,		$ 166.66
Personal Expense,	Appropriation,	$ 1500.00
Expended,		966.49
Unexpended balance,		$ 533.51
Detectives,	Appropriation,	$10000.00
Expended,		6405.07
Unexpended balance,		$ 3594.93
Incidentals,	Appropriation,	$ 200.00
Expended,		41.33
Unexpended balance,		158.67

Printing,	Appropriation,	$ 600.00
Expended,		590.08
Unexpended balance,		$ 9.92

FISH SCREENS.

Webster Lake,	Appropriation,	$ 350.00
Unexpended balance,		350.00
Suncook Pond,	Appropriation,	$ 350.00
Unexpended balance,		350.00

Receipts for Fiscal year ending August 31, 1914:

Fines and Forfeitures,	$ 1618.05
Guide Licenses, ,	170.00
Resident Hunters' Permits,	25336.10
Non-Resident Hunters' Licenses,	10210.00
Total receipts for year ending Aug. 31, 1914,	$37334.15

Expenditures for Fiscal year ending Aug. 31, 1914:

Salary of Commissioner,	Appropriation,	$ 1800.00
Expended,		1800.00
Unexpended balance,		0000.00
Transportation,	Appropriation,	$ 250.00
Expended,		180.00
Unexpended balance,		$ 70.00

General Expense,	Appropriation,	$ 7000.00
Transferred from Emergency fund,		2000.00
Total,		9000.00
Expended,		8689.75
Unexpended balance,		$ 310.25
Clerical Expense,	Appropriation,	$ 900.00
Expended,		755.00
Unexpended balance,		$ 145.00
Personal Expense,	Appropriation,	$ 1200.00
Expended,		318.82
Unexpended balance,		$ 881.18
Detectives,	Appropriation,	$ 7000.00
Transferred from Emergency fund,		2000.00
Total,		$ 9000.00
Expended,		8320.76
Unexpended,		$ 679.24
Incidentals,	Appropriation,	$ 100.00
Expended,		99.72
Unexpended balance,		.28

Printing,	Appropriation,	$ 300.00
Transferred from Emergency fund for 10,000 extra copies of laws,		175.00
Total,		$ 475.00
Expended,		368.14
Unexpended balance,		$ 106.86

FISH SCREENS and SPECIAL APPROPRIATIONS.

Webster Lake,	Appropriation,	$ 350.00
Expended,		300.00
Unexpended balance,		$ 50.00
Suncook Pond,	Appropriation,	$ 350.00
Unexpended balance,		350.00
Cherry Pond Dam,	Appropriation,	$ 100.00
Unexpended balance,		100.00
Squam Lake, (Paid for from General Expense Account),		$ 342.00

Contracts have been awarded for screening Crystal Lake in Enfield, Suncook Pond in Suncook, Tarleton Lake in Piermont, Newborynoosic Lake in Hancock, Silver Lake in Harrisville, but as these have not been installed we do not include these amounts.

Vouchers for all expenditures can be obtained at auditor's office.

LITTLE DIAMOND POND.

LIST OF LAKES AND PONDS.

LIST OF LAKES AND PONDS IN NEW HAMPSHIRE, EXCLUSIVE OF THE GREAT LAKES, WINNIPESAUKEE, SUNAPEE, OSSIPEE, CONNECTICUT, ETC., WITH THE SIZE, CHARACTER OF THE BOTTOM, AND SPECIES OF FISH FOUND IN THEM.

Towns.	Ponds.	Acres	Bottom.	Fish.
Acworth	Cole	200	Rocky	Bass, pouts, perch, pickerel
Alstead	Lake Warren	560	Mud, gravel	Pouts, perch, pick'l
Alstead	Pirce	8	Gravel	Trout
Alstead	Caldwell	4	Muddy	Pouts, pickerel
Alstead	Newell	5	Muddy	Pouts, pickerel
Alstead	Lilly	....	Muddy	Pouts, pickerel
Alstead	Brigham	....	Muddy	Pouts, pickerel
Alstead	Crane	8	Muddy	Pouts, pickerel
Alstead	Converse	....	Muddy	Pouts, pickerel
Alstead	Townsend	....	Muddy	Pouts, pickerel
Alton	Half Moon	320	.....	Bass (1877)
Alton	Woodman's	....	.....	.....
Alton	Hill's	....	.....	.....
Alton	Places	....	.....	.....
Amherst	Babboosic	300	Various	Perch, pick'l, bass
Amherst	Little	21	Muddy	Pickerel
Amherst	Diamon	10	Muddy	Pouts, pickerel
Andover	Bradley	100	Muddy	Pouts, pickerel
Andover	Highland Lake	400	Various	Bass, perch, pouts, pickerel
Andover	Horseshoe and Andover	100	Muddy	Pickerel, perch, pouts
Andover	Elbow	300	Hard	Pickerel, perch, pouts
Andover	Cold	20	Muddy	Trout
Antrim	Gregg	100	Various	Bass (1873)
Antrim	Dudley	31	Rocky	Perch, pouts
Antrim	Tilton	31	Muddy	Eels
Auburn	Massabesic	2500	Sand, rocks	Bass, perch, pick'l, salmon, smelt, suckers
Auburn	Little Massabesic	....	Muddy	Bass, perch, pick'l, salmon, smelt, suckers
Albany	Chocorua	....	.....	.....
Albany	Whitten's	....	.....	.....
Alexandria	Foster	....	Muddy	Pick'l, perch, pouts
Alexandria	Goose	....	Muddy	Pick'l, perch, pouts
Allenstown	Bear Hill	23	Muddy	Pickerel, horned pouts

LIST OF LAKES AND PONDS.—Continued.

Towns.	Ponds.	Acres	Bottom.	Fish.
Barnstead	Huntress	....	.....	.....
Barnstead	Brindle	....	.....	.....
Barnstead	Suncook	....	.....	Pickerel, perch, bass (1877)
Barnstead	Brandy	....	.....	.....
Barrington	Swain's	100	.....	Horn pouts, bass
Barrington	Ayer's	100	.....	Pick'l, pouts, bass
Barrington	Round	90	.....	Pouts, pickerel, perch, bass
Barrington	Rochester Reservoir	75	.....	Pouts, pickerel, perch, bass
Barrington	Bald Hill	50	.....	Pouts, pickerel, perch, bass
Barrington	Nippo	10	.....	Pouts, pickerel, perch, bass
Barrington	Stonehouse	5	.....	Pouts, pickerel, perch, bass
Barrington	Badger	26	.....	Perch, pick'l, bass
Bath	Perde	30	.....	Perch, pick'l, bass
Belmont	Winnipesaukee River	....	.....	Pick'l perch, bass
Belmont	Lake Winnisquam	....	.....	Pick'l perch, bass
Belmont	Gioga River	....	.....	Trout
Benton	Long	....	Muddy	Trout
Berlin (City)	Success	300	Sand, rocks ...	Brook trout
Bow	Tura	50	Muddy	Pick'l, perch, pouts
Boscawen	Long	300	Rocks, sand ..	Pick'l, perch, pouts
Boscawen	Boyce's	10	Muddy	Pick'l, perch, pouts
Bradford	Bradford	275	Sand, rocks ...	Bass, trout, salmon pickerel
Bradford	Todd's	200	Muddy	Pickerel, pouts, perch, eels
Brookfield	Cook's	350	Rocky	Pick'l, black bass, eels
Brookline	Potanipus	100	.....	Pickerel, red perch
Brookline	Lakiris	40	.....	Horn pouts
Canterbury	Clough's	30	Sandy	Pouts, bass, pick'l, barbel
Canterbury	Shakers (5)	60	.....	Pick'l, perch, pouts
Canterbury	Crane-neck	8	Muddy	Pick'l, perch, pouts
Canterbury	Forest	20	Muddy	Pick'l, perch, pouts
Canterbury	Morrill	20	Muddy	Pick'l, perch, pouts
Canterbury	Reservoir	35	Muddy	Eels, pick'l, perch, pouts
Canaan	Heart	1290	Sandy	Bass, pickerel
Canaan	Goose	1000	Muddy	Bass, pick'l pouts
Canaan	Clark	700	Muddy	Pickerel, pouts
Canaan	Mud	40	Muddy	Pickerel, pouts
Canaan	Ford's	50	Chalky	Trout
Campton	Great Perch	50	Muddy	Perch, horn pouts
Campton	Little Perch	30	Muddy	Perch, pouts
Campton	Campton Mill Pond (artificial	75	Muddy	Perch, trout, pouts
Center Harbor	Long	....	.....	.....
Center Harbor	Bear	....	.....	.....
Center Harbor	Hawkins	....	.....	.....
Center Harbor	Otter	....	.....	.....
Chatham	Kimball's	100	Mud, sand	Pickerel
Chatham	Mountain	100	Rocks, sand ...	Trout
Chatham	Province	10	Rocks, sand ...	Trout
Chesterfield	Spofford Lake	1500	White sand	Pike, bass, pick'l
Chesterfield	Round	....	.....	Pickerel
Chesterfield	Baker	....	.....	Pickerel

LIST OF LAKES AND PONDS.—Continued.

Towns.	Ponds.	Acres	Bottom.	Fish.
Chesterfield	Lily	30	Muddy	Trouts, eels, pick'l
Chichester	Pinkfield	....	.....	.....
Clarksville	Clarksville	35	Mud, gravel	Pickerel, pout
Clarksville	Carr	20	Muddy	Trout
Columbia	Lime	30	Lime	No fish
Columbia	Fish	50	Muddy	Trout, eels
Concord (City)	Penacook lake	340	Sand, rocks	Salmon, lake trout, perch, pick'l, bass
Concord (City)	Turtle	....	.....	Pick'l pouts, smelts
Concord (City)	Turkey	120	Muddy	Perch
Concord (City)	Little	....	.....	.....
Conway	Walker's	2560	Rocky	Pick'l, pouts, perch, eels
Conway	Pequawket	640	Muddy	Pick'l, pouts, perch eels
Croydon	Long	....	.....	Smelt, pick'l, perch
Croydon	Rocky	....	.....	Bass, smelt
Croydon	Governor's	....	.....	Bass
Croydon	Spectacle	....	.....	.....
Colebrook	Mathew's	8	Muddy	Trout
Coos	Strafford	20	Muddy	Trout
Coos	Hoskin's	10	Muddy	Pick'l, perch, pout
Coos	Hoskin's (2)	10	Muddy	Pick'l, perch, pout
Coos	Platt's	10	Muddy	Pick'l, perch, pout
Danbury	School	....	.....	Pouts, perch, pick'l
Danbury	Pleasant	800	.....	Horn pout, pickerel red roach
Danville	Long	....	.....	.....
Danville	Sub	100	Muddy	Pick'l, perch, pout
Deerfield	Pleasant	800	Sandy	Pick'l, perch, bass, pouts
Deerfield	Pruze's	150	Muddy	Pickerel, pouts
Deerfield	Deerfield	....	Muddy	Pickerel
Deering	Piccataquog reservoir	300	.....	Pick'l, perch, trout, pouts
Deering	Mud	50		Pick'l, perch, pout
Deering	Dudley	100	Rocky	Pick'l, perch, pout
Deering	Fulton	25	Muddy	Pick'l, perch, pout
Derry	Beaver	147	Sandy	Pick'l, bass, perch, pouts
Derry	Upper Shields	....	.....	.....
Derry	Lower Shields	....	.....	.....
Dixville	Trout	....	.....	Trout
Dixville	Moose	....	.....	Trout
Dorchester	Cummings	100	.....	Pickerel, pouts
Dorchester	McCutchins	20	Sandy	Pickerel, pouts
Dorchester	Reed	25	.....	Pickerel, pouts
Dorchester	Bryant's	20	.....	Pickerel, pouts
Dorchester	Reservoir	40	.....	Pickerel, pouts
Dublin	Monadnock Lake	250	Sandy, rocky	Trout
Dublin	Thorndike	300	Muddy	Pickerel, perch
Dublin	Night	50	Muddy	Pickerel, pout
Dublin	E. Reservoir	....	Muddy	Pickerel, trout
Dummer	Big Dummer	....	Gravel, sand	Pickerel, trout
Dummer	Little Dummer	100	Gravel, sand	Pickerel, trout
Dummer	Sessions	150	Gravel, sand	Trout, chub, suck'rs
Dunbarton	Gorham	75	Muddy	Perch, pick'l, pout
Dunbarton	Long	80	Muddy	Perch, pick'l, pout
Dunbarton	Kimball's	100	Sandy, rocky	Perch, pick'l, pout
Dunbarton	Purgatory	35	.....	Perch, pick'l, pout
Eaton	Walker	....	Rocky	Bass, trout, pick'l
Eaton	Crystal Lakes	90	Sandy	Bass, trout, pick'l
Eaton	Chase	40	Muddy	Bass, trout, pick'l
Eaton	Elwell	25	Muddy	Bass, trout, pick'l
Eaton	Lary	....	Rocky	Bass, trout, pick'l

LIST OF LAKES AND PONDS.—Continued.

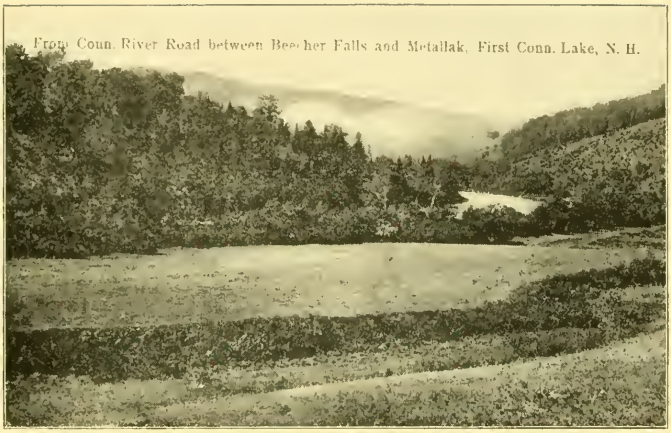
Towns.	Ponds.	Acres	Bottom.	Fish.
Eaton	Thurston	....	Sandy	Bass, trout, pick'l
Effingham	Province	1000	.....	.....
Effingham	Leech	....	.....	.....
Ellsworth	Ellsworth	100	.....	.....
Enfield	Mascoma Lake	500	Rocky	Bass, pick'l, perch
Enfield	Crystal Lake or East Pond	350	Rocky	Salmon, pout, bass, lake trout, pick'l
Enfield	Spectacle	150	Rocky	Pout, pick'l, perch (white perch 1902)
Enfield	George	50	Muddy	Pick'l, pouts, perch
Enfield	Smith	....	Muddy	Pick'l, pouts, perch
Epsom	Chestnut	35	Rocky, Sandy	Bass, pick'l, roach, perch, pouts
Epsom	Ordiorne's	15	Mud, sand	Bass, pick'l, roach, perch, pouts
Epsom	Round	1	Mud, sand	Bass, pick'l, roach, perch, pouts
Errol	Aker's	300	Muddy, rocky	Trout, pickerel,
Errol	Long	10	Muddy, rocky	Trout
Errol	Round	15	Muddy, rocky	Trout
Errol	Smealt	10	Muddy, rocky	Trout
Errol	Errol	10	Muddy, rocky	Trout
Errol	Mann	30	Muddy, rocky	Trout
Errol	Bearbrook	75	Muddy, rocky	Trout
Errol	Part of Winnibagog	....	Sandy, rocky	Trout, salmon Whitefish
Epping	Carpenter's	....	.....	Pouts, pick'l, bass
Fitzwilliam	South	300	Sandy	Pickerel, perch b. bass
Fitzwilliam	Scripp	200	Muddy	Pickerel, perch
Fitzwilliam	Rockwood's	100	Sandy	Pickerel, perch
Fitzwilliam	Collins	30	Muddy	Pick'l, perch, smelt
Francestown	Haunted	216	Sandy	Bass, perch, pick'l
Francestown	Pleasant	216	Sandy	Bass, perch, pick'l
Franklin	Webster Lake	100	Sandy	Salmon, pick'l perch, bass, horn pouts
Franconia	Echo Lake	....	.....	Trout, bass
Freedom	Loon Lake	475	Sand, gravel	Perch' pick'l, trout
Freedom	Round	8	Muddy	Perch, pick'l, horn pout, trout
Freedom	3 Danforth	250	Gravel, mud	Perch, pickerel
Freedom	Trout	6	Sandy	Trout
Fremont	Loon	30	Muddy	Pickerel, horn pout
Gilford	Saltmarsh	30	Gravel, mud	Pick'l, pouts, perch
Gilford	Lily	30	Muddy	Pick'l, pouts, perch
Gilmanton	Loon	....	.....	Black bass, pick'l
Gilmanton	Lougee	....	.....	Black bass, pick'l
Gilmanton	Young's	....	.....	Pickerel
Gilmanton	Rocky	....	.....	Pickerel
Gilmanton	Round	...	.....	Pickerel
Gilmanton	Shellcamp	....	.....	Pouts, pickerel
Gilsum	Converse	2	Muddy	Trout
Goshen	Rand's	60	Sand, gravel	Pick'l, perch, pouts bass, trout
Grafton	Grafton	100	Sand, gravel	Pick'l, perch, trout, pout, bass
Grafton	Kilton	100	Rocky	Bass, pout, pick'l
Grafton	Tewksbury	50	Muddy	Perch, pick'l, pouts (Rainbow 1903)
Grafton	Mud	20	.....	Pouts, pick'l
Grafton	Half Moon	50	Sandy	Pouts, pick'l
Grantham	Stocker	140	Mud, sand	Trout, perch, pouts pickerel
Grantham	Eastman	700	Mud, sand	Trout, perch, pouts pickerel

LIST OF LAKES AND PONDS.—Continued.

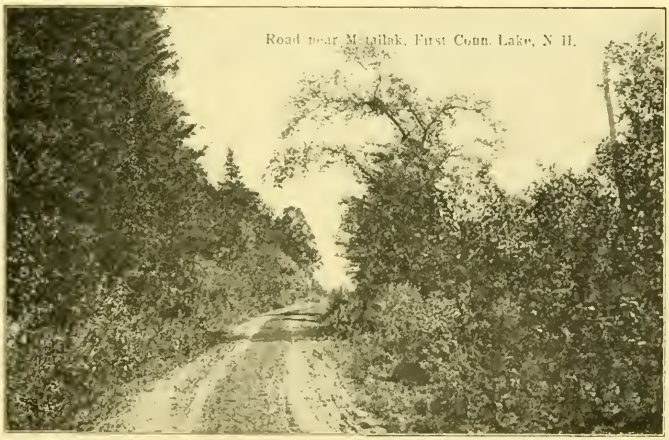
Towns.	Ponds.	Acres	Bottom.	Fish.
Grantham	Anderson	35	Mud, sand	Trout, perch, pouts, pickerel
Grantham	Butternut	160	Mud, sand	Trout, perch, pouts, pickerel
Grantham	Half Mile	40	Mud, sand	Trout, perch, pouts, pickerel
Grantham	Miller	140	Mud, sand	Trout, perch, pouts, pickerel
Grantham	Chase	12	Mud, sand	Trout, perch, pouts, pickerel
Grantham	Lily	10	Mud, sand	Trout, perch, pouts, pickerel
Grantham	Leavitt	80	Mud, sand	Trout, perch, pouts, pickerel
Grantham	Grass	5	Mud, sand	Trout, perch, pouts, pickerel
Greenfield	Pollard's	300	Mud, sand	Pick'l, perch, pouts
Greenfield	Gould's	150	Sandy	Pick'l, perch, pouts
Greenfield	Cragin's	150	Mud, sand	Pickerel, perch
Greenfield	Hogback	10	Muddy	Perch
Greenfield	Bridges	10	Muddy	Perch, pouts
Groton	Spectacle	100	Rocks, sand	Perch, pickerel
Groton	Little	4	Muddy	Perch, pickerel
Hampstead	Nash	250	Muddy	Bass, perch, pick'l, pout
Hampstead	Island	200	Muddy	Bass, perch, pick'l, pout
Hampstead	Angle	100	Muddy	Bass, perch, pick'l, pout
Hancock	Norway	47	Muddy	Perch, pick'l, pout
Hancock	Juggernet	15	Rocky	Perch, pick'l, pout
Hancock	Half Moon	60	Muddy	Perch, pick'l, pout
Hancock	Hunt	40	Rocky	Perch, pick'l, pout
Hancock	Long	200	Rocky, sandy	Perch, pick'l, pout
Hancock	Jack	4		Perch, pick'l, pout
Harrisville	Harrisville	125	Rocky	Bass, perch, pick'l, pout
Harrisville	Breed	100	Rocky, sandy	Bass, perch, pick'l, pout
Harrisville	North	300	Rocky	Bass, perch, pick'l, pout
Harrisville	Mud	....	Muddy	Pickerel
Haverhill	Woods	1	Muddy	Perch, pouts
Haverhill	French	5	Sandy, muddy	Perch, pouts
Henniker	Long	....	Muddy	Pickerel
Henniker	Middle	50	Various	Pickerel
Henniker	Upper	75	Various	Pickerel
Henniker	Whitaker's	100	Various	Pickerel
Henniker	Gove's	80	Hard	Pickerel
Henniker	Pheasant	75	Hard	Pickerel
Henniker	Buxton's	5	Muddy	Pickerel
Henniker	Morrill's	30	Muddy	Pickerel, trout
Henniker	Granny Hill	100	Hard	Bass, pick'l, perch
Henniker	Clough's	....	Muddy	Pickerel
Henniker	Mud	....	Muddy	Pickerel
Hill	Poverty	3	Sandy, muddy	Horn pout, pickerel
Hill	Bartlett's	....	Muddy	Horn pout, pickerel
Hillsborough	Loon	150	Muddy, rocky	Pick'l, bass, perch, pout, trout
Hillsborough	Contention	75	Muddy, rocky	Pick'l, bass, perch, pout, trout
Hillsborough	Gould	50	Muddy, rocky	Pick'l, bass, perch, pout, trout
Hillsborough	Ellenwood brooks & bog	....		Trout

LIST OF LAKES AND PONDS.—Continued.

Towns.	Ponds.	Acres	Bottom.	Fish.
Holderness	Squam Lake	6400	Rocks, sand	Salmon, trout, cusk pickerel
Holderness	Little Squam Lake	150	Rocks, sand	Perch, smelt, barbel eels
Holderness	Oak	80	Muddy	Pick'l, pouts, perch barbel
Hollis	Flint's	70	Mud, sand	Pick'l, perch, pouts
Hollis	Long	50	Sandy	Pick'l, perch, pouts
Hollis	Pennichuck	150	Sandy, rocky	Pick'l, bass, perch, pouts
Hollis	Rocky	75	Sandy, rocky	Pick'l, bass, perch, pouts
Hooksett	Larkin's	200	Muddy	Pick'l, pouts, perch
Hooksett	Clay	80	Muddy	Pick'l, pouts, perch
Hooksett	Hinman's	15	Muddy	Pick'l, pouts, perch
Hooksett	Sawyer's	10	Muddy	Pick'l, pouts, perch
Hooksett	Ten Acres	5	Muddy	Pick'l, pouts, perch
Hooksett	Pinnacle	45	Sandy	Pick'l, pouts, perch
Hopkinton	Clement's	300	Sandy	Pick'l, pouts, perch
Hopkinton	Grassy	100		Pick'l, pouts, perch
Hopkinton	Rolfe	200	Mud and sand	Pick'l, pouts, perch
Hopkinton	Smith's	30	Muddy	Pick'l, pouts, perch
Hudson	Otterwick	30	Mud and sand	Pickerel, perch
Hudson	Robinson	50	Mud and sand	Pickerel, perch
Jaffrey	Frost	100	Muddy	Ee's,, pouts
Jaffrey	Thorndike	50	Muddy, rocky	Pickerel, pouts
Jaffrey	Gilmore	200	Sandy, rocky	Pick'l, perch, pouts
Jaffrey	Long	400	Sand, mud	Eels, pouts
Jaffrey	Mud	....	.....	.....
Jefferson	Cherry	300	Muddy	Pickerel
Kensington	Muddy	10	Muddy	Pouts, pick'l, perch
Kingston	Little	300	Muddy	Trout, perch, pick'l
Kingston	Great	600	Gravel	Trout, perch, pick'l
Kingston	Country	800	Gravel	Trout, perch, pick'l
Kingston	Half Moon	....	.....	Perch
Lancaster	MartinMeadow	300	Muddy	Pick'l, pouts, perch, eels
Lancaster	Baker's	30	Muddy	Pick'l, perch, eels
Lancaster	Blood	50	Muddy	Pick'l, pouts, perch, eels
Laconia	Pickerel	30	Muddy	Pick'l, pouts, perch, eels
Langdon	Lily	40	Muddy	Pouts, pickerel
Lee	Wheelright's	160	Gravel, mud	Bass, perch, pouts pickerel, eels
Lempster	Long	700	Various	Pick'l, perch, pouts
Lempster	Sand	500	Sand, gravel	Pick'l perch, bass pouts
Lempster	Dodge	35	Muddy	Pick'l, flatsides, pouts
Lempster	Beaver	10	Muddy	Pickerel, trout
Lempster	Hurd	25	Muddy	Pick'l, flatsides,
Lempster	Duck	5	Muddy	Pickerel
Lincoln	Black	10	Muddy	Trout, horn pouts
Lincoln	Shoal	10	Muddy	Trout, horn pouts
Lincoln	Loon	50	Rocky, mud	Trout, horn pouts
Lisbon	Pearl Lake	100	Hard	Bass, pickerel
Lisbon	Streeter	90	Muddy	Pick'l, suckers, eels
Littleton	PartridgeLake	100	Hard	Bass, perch, horn pout, trout, pick'l
Litchfield	Darrah	14	Sandy	Pick'l, perch, pouts
Litchfield	Rich	4	Sandy	Perch, pouts
Litchfield	Common	5	Sandy	Perch, pouts
Londonderry	Kendall's	25	Muddy	Pick'l, perch, pouts
Londonderry	Scoby's	10	Muddy, rocky	.....
Loudon	Clough's	50	Gravel	Pick'l, perch, bass



From Conn. River Road between Beecher Falls and Metallak, First Conn. Lake, N. H.



Road near Metallak, First Conn. Lake, N. H.

LIST OF LAKES AND PONDS.—Continued.

Towns.	Ponds.	Acres	Bottom.	Fish.
Loudon	Crooked	25	Gravel, rocky	Pick'l, perch, pouts
Loudon	Sanborn	....	Muddy	Pick'l, perch, pouts
Loudon	Bog	....	Muddy	Pick'l, perch, pouts
Loudon	Hot Hole	....	Muddy	Pick'l, perch, pouts
Lyman	Duck No.	25	Sand, rocks	Bass, Pick'l, barbel
Lyman	Dodge	100	Muddy	Dace, Pick'l, pouts
Lyman	John Young	200	Rocky	Perch, pouts, dace
Lyman	Round	50	Muddy	Dace, pick'l, pouts
Lyman	Mountain	....	.....	Horn pouts, trout
Lyman	Flag	....	.....	Black bass, pouts
Lyman	The Cowin	50	Muddy	Pouts, dace, pick'l
Lyman	Duck No. 2	....	Muddy	Pickerel
Lyme	Trout	....	.....	Pickerel
Lyme	Pout	....	.....	Pouts
Lyme	Reservoir	200	Sandy	Perch, pickerel
Lyme	Mud	100	Muddy	Trout
Lyme	Posts's	200	Sandy	Bass, salmon, lake trout, pickerel
Lyndenborough	Badger	15	Muddy	Pickerel, pouts
Lyndenborough	Benton	25	Muddy	Pouts
Manchester	Massabesic	2500	Rocky, mud	White and yellow perch, smelt, bass pickerel, salmon
Manchester	Stevens	20	Muddy	Pout, carp, perch pickerel
Manchester	Nutts	20	Sandy	Perch, pick'l, pouts
Manchester	Long	30	Sand, mud	Perch, pick'l, pouts
Madison	Silver Lake	1858	Sandy	Various
Madison	Whitten	200	Sandy	Various
Madison	Pea Porridge	50	Sandy	Various
Madison	Pequawkett	30	.....	Various
Madison	Ledge	20	.....	Various
Madison	Davis	15	.....	Various
Madison	Elliott	100	.....	Various
Madison	Oak	....	.....	Various
Madison	Mack's	10	.....	Various
Madison	Douris	15	.....	Various
Madison	Round	10	.....	.....
Madison	Blue Pond	6	.....	.....
Madison	Drew	8	.....	.....
Madison	Danforth	5	.....	.....
Madison	Dursin	5	.....	.....
Madison	Mill's	8	.....	.....
Marlborough	Clapp's	30	Muddy	Suckers, perch, pickerel
Marlborough	Stone	100	Rock, gravel	Suckers, pouts, perch, shiners
Marlborough	Meeting-house	50	Muddy	Suckers, perch, pouts, shiners
Marlborough	Cummings	45	Muddy	Suckers, perch, pouts, shiners
Merrimack	Baboosic	....	Rocky	Pick'l, perch, pout, bass
Merrimack	Reed's	40	Gravel, mud	Pick'l, perch, pout, bass
Merrimack	Horseshoe	20	Muddy	Pick'l, perch, pout, bass
Merrimack	Green's (priv)	10	Muddy	Pick'l, perch, pout, bass
Meredith	Wickwash	700	Muddy	Pickerel, pouts
Meredith	Kelley	....	Muddy	Pickerel, pouts
Meredith	Page	....	Muddy	Pickerel, pouts
Meredith	Spectacle	....	.....	.....
Meredith	Waukawam Lake	700	Muddy	Pick'l, perch, pouts

LIST OF LAKES AND PONDS.—Continued.

Towns.	Ponds.	Acres	Bottom.	Fish.
Milan	Meed	2	Rocky	Bass, perch, pouts, pickerel
Milan	Nay's	75	Muddy	Trout
Milan	Cedar	100	Mud, gravel	Perch, pick'l, trout
Milton	Meeting-house	200	Rocks, sand, gravel	White perch, bass
Milton	Tri-Echo	1200	Rocks, sand, gravel, mud	Pickerel
Milton	Northeast	1200	Rocks, sand, gravel, mud	Perch, shiners, smelt, pout, suckers, eels, etc.
Middleton	Reservoir	500	Sand, mud	Bass, pick'l, trout
Millsfield	Millsfield	....	.....	Trout
Millsfield	Moose	....	.....	Trout
Millsfield	Rock	....	.....	Trout
Moultonboro	Long	400	Sandy	Pick'l, perch, horn pout
Moultonboro	Berry	200	Sandy	Pick'l perch, horn pout
Milford	Chickering or Osgood	70	Muddy	Pick'l, horn pout
Milford	Railroad	5	Muddy	Pick'l, horn pout
Marlow	Storm	30	Mud, sand	Pick'l, horn pout
Marlow	Trout	6	Mud, sand	Pick'l, trout, horn pout
Marlow	Gristin	10	Mud, sand	Trout, horn pout
Marlow	Tinker	6	Mud, sand	Pick'l, trout, horn pout
Nelson	Long	700	Muddy	Pickerel, perch
Nelson	Center	150	Muddy	Pickerel, perch
Nelson	Granite Lake	247	Sand, rocks	L. trout, b. bass
Nelson	Tolman	50	Muddy	Black bass
Nashua	Round	25	Sand, muddy	Pickerel, perch bream
New Boston	Bailey's	20	Muddy	Horn pouts, pick'l, perch
New Boston	Beard's	20	Muddy	Horn pouts, pick'l perch
New Boston	John Brown's	6	Muddy	Horn pouts, pick'l perch
New Boston	Marshall's	5	Muddy	Horn pouts, perch
New Durham	Shaw's	100	Gravel	Horn pouts
New Durham	March's	150	Gravel and mud	Horn pouts, pick'l, perch
New Durham	Merrymeeting	1050	Gravel	Salmon, L. trout pickerel, cusk
New Durham	Cold Rain	50	Muddy	Salmon, pick'l
New Durham	Downing's	95	Mud and gravel	Salmon, pick'l, pout
New Hampton	Spectacle	50	Muddy	Perch, pout, pick'l
New Hampton	Kelley	150	Muddy	Perch, pout, pick'l
New Hampton	Jackson	25	Gravel	Pickerel
New Hampton	Sky	5	Muddy	Pickerel, pout
New Ipswich	Pratt's	50	Muddy	Pickerel, pout
New Ipswich	Boar's	5	Rocky	Pickerel, pout
New London	Clark's	50	Muddy	Pickerel, pout
New London	Messer's	100	Muddy	Pickerel, perch pout, eels
New London	Otter	125	Rocks, mud and sand	Salmon, bass, smelt pick'l, pout, eels
New London	Pleasant	800	Sandy	Bass, pick'l, eels
New London	Little Sunapee	1200	Sandy	Bass, chub, eels perch, pick'l
Northfield	Chestnut	....	Sandy	Pick'l, pout, suckers
Northfield	Sandogardy	....	.....	.....
Northwood	Suncook	400	Sand, mud	Pick'l, perch, bass pouts

LIST OF LAKES AND PONDS.—Continued.

Towns.	Ponds.	Acres	Bottom.	Fish.
Northwood	Harvey's	200	Muddy	Perch, pick'l, bass, pouts
Northwood	Little Bow ..	100	Muddy	Perch, pick'l, bass, pouts
Northwood	Lucas	....	.....	Perch, pick'l, bass, pouts
Northwood	Jenness	300	Sandy	Perch, pick'l, bass, pouts
Northwood	Pleasant	....	Sandy	.....
Northwood	Long	....	Sand and mud .	.....
Nottingham ...	Pawtuckway .	*	Gravel, mud ...	Bass, pick'l pouts, perch, flatfish, eels
Nottingham ...	Dollar	600	Muddy	Pick'l, pouts, perch, flats
Nottingham ...	Round	40	Muddy	Pick'l, pouts, perch, flats
Nottingham ...	Quincy	95	Muddy	Pick'l, pouts, perch, flats
Nottingham ...	Demeritt	40	Muddy	Pick'l, pouts, perch, flats
Nottingham ...	Keniston	40	Muddy	Pick'l, pouts, perch, flats
Nottingham ...	Little and Big Mulekin ...	75	Muddy	Pick'l, pouts, perch, flats
Nottingham ...	Cyrus	25	Muddy	Pick'l, pouts, perch, flats
Nottingham ...	Prescott	25	Muddy	Pick'l, pouts, perch, flats
Nottingham ...	Langley	30	Muddy	Pick'l, pouts, perch, flats
Nottingham ...	Pea Porage ..	40	Muddy	Pick'l, pouts, perch, flats
Newbury	Chalk	39	White Chalk ..	Perch, pick'l, pouts cat fish
Newbury	Todd	168	Muddy	Perch, pick'l, pouts cat fish
Newbury	Gillingham, formerly Otter	14	Muddy	Perch, pick'l, pouts cat fish
Newbury	Pond on top. Sunapee Mt.	11	Muddy	No fish
No. Hampton ..	Great	3	Muddy	Pickerel
No. Hampton ..	Mill	3	Muddy	Pickerel
Odell	Trio	....	.....	.....
Odell	Cranberry ...	....	.....	.....
Orange	Orange	....	.....	.....
Orford	Brackett's ..	....	.....	.....
Orford	Rocky	....	.....	.....
Orford	Turtle	....	.....	.....
Orford	Baker's Upper	....	.....	.....
Orford	Reservoir ...	....	.....	.....
Orford	Indian	....	.....	.....
Ossipee	White	100	Sandy	Smelt
Ossipee	Duncan	100	Sandy	Pickerel pouts
Ossipee	Garland's ...	300	Rocky	Trout, pout
Ossipee	Connor	500	Rocky	Trout, pout
Ossipee	Bean	40	Rocky	Trout, pout
Ossipee	Dan's Hole ..	500	Rocky, very deep	Trout
Pelham	Long	600	Rocks and sand	Pick'l perch, pout
Pelham	Sunapee	100	Rocks, mud ...	Pick'l perch, pout
Pelham	White's	50	Sand, gravel ..	Pick'l perch, pout
Pelham	Island	200	Sandy	Pick'l perch, pout
Peterborough ..	Cunningham	30	Sandy	Pick'l perch, pout
Peterborough ..	Pierce	10	Sandy	Pick'l perch, pout
Piermont	Tarleton	900	Various	Trout, pick'l, bass, perch

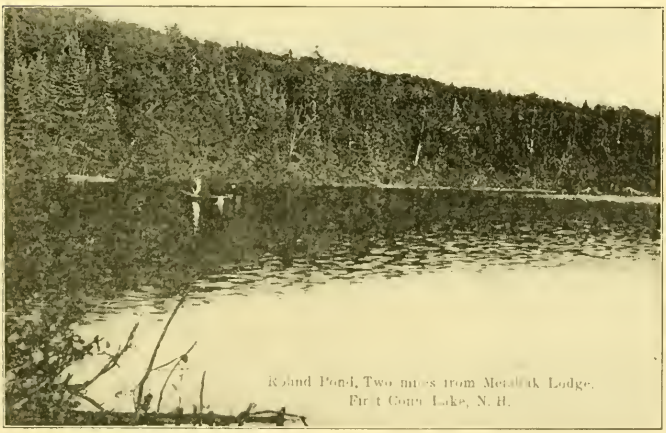
* 22,000 acres

LIST OF LAKES AND PONDS.—Continued.

Towns.	Ponds.	Acres	Bottom.	Fish.
Piermont	Little Tarleton	50	Various	Trout, pick'l, bass, perch
Piermont	Armengton or Fellows	50	Various	Bass, pick'l, perch, bream
Pittsfield	Berry's	25	Sand gravel	Bass, pick'l, perch, bream
Pittsfield	Eaton's	8	Sand, rocks	Bass, pick'l, perch, bream
Pittsfield	Wild Goose	350	Muddy	Bass, pick'l, perch, bream, pouts
Pittsfield	Blake	5	Muddy	Pouts, pick'l, perch, bream
Pittsfield	Horse	1	Muddy	Perch
Plainfield	Moses	40	Muddy	Pick'l, perch, pouts
Plymouth	Loon Lake	130	Various	Black bass, pick'l,
Portsmouth	BeverleyBrock	10	Gravel	Trout
Randolph	Safety	75	Muddy	Trout
Raymond	Onway Lake. or Jones Pond	125	Mud, sand	Pick'l, bass, pout, ee's
Raymond	Smith or Governor's	50	Mud, sand	Pick'l, bass, pout, ee's
Raymond	Page's	20	Mud, sand	Pick'l, bass, pout, ee's
Raymond	Loon	12	Mud, sand	Pick'l, bass, pout, ee's
Raymond	Dead	8	Mud, sand	Pick'l, bass, pout, ee's
Richmond	Sandy	20	Sandy	Perch, pick'l, pouts
Richmond	Wheeler	50	Sand and mud	Perch, pick'l, pouts
Rindge	Long	1000	Various	Perch, pick'l, sunfish, eels, shiners
Rindge	Grassy	100	Muddy	Perch, pick'l, sunfish, eels, shiners
Rindge	Bullet	30	Sandy	Perch, pick'l, sunfish, eels, shiners
Rindge	Emerson	140	Rocky	Perch, pick'l, sunfish, eels, shiners
Rindge	Hubbard	300	Various	Perch, pick'l, sunfish, eels, shiners
Rindge	Pool	80	Muddy	Pick'l, perch, pout, eels, shin'rs, sunfish
Rindge	Perley	300	Rocky	Pick'l, perch, pout, eels, shin'rs, sunfish
Rindge	Manomanack.	2600	Various	Pick'l, perch, pout, eels, shin'rs, sunfish
Rindge	Pecker	30	Rocky	Pick'l, perch, pout, eels, shin'rs, sunfish
Rindge	Toitoice	....	Sandy	Pick'l, perch, pout, eels, shin'rs, sunfish
Rindge	Reservoir	....	Muddy	Pick'l, perch, pout, eels, shin'rs, sunfish
Rochester	Ricker's	....	.....	.....
Rochester	Romia	....	.....	Black bass
Pollinsford	Cocheco	....	.....	Black bass (1898).
Rumney	Stinson's Lake	450	Sandy	Pick'l, perch, trout suckers, bass
Roxbury	Woodward or Echo lake.	108	Gravel	Pick'l, perch, trout suckers
Roxbury	Cummings	40	Muddy	Pick'l, pout, carp
Roxbury	Holman	10	Muddy	.....
Salem	Captain's	80	Muddy	Pick'l, perch, pout.
Salem	World's End	50	Muddy	Pick'l, perch, pout,
Salem	Fitty-Titty	50	Muddy	Pick'l, perch, pout,
Salem	Canobie Lake	*	Rocky	Pick'l, perch, pout, bass
Salisbury	Tucker	77	Hard	Pick'l, perch, pout.

* 300 to 500 acres

Lake Shore Road near Metallak,
First Conn. Lake, N. H.



Round Pond, Two miles from Metallak Lodge,
First Conn. Lake, N. H.

LIST OF LAKES AND PONDS.—Continued.

Towns.	Ponds.	Acres	Bottom.	Fish.
Salisbury	Greenough	25	Muddy	Pick'l, perch, pout
Salisbury	Wilder	6	Hard	Pick'l, perch, pout
Sanbornton	Hunkin's	14	Various	Pick'l, perch, pout
Sanbornton	Cawley	10	Muddy	Pick'l, eels, perch, pout
Sanbornton	Drake	15		
Sanbornton	Spectacle	6		
Sandown	Lake Philip	425	Sand, mud	Pick'l, bass, roach shiners, perch, flatsides
Sandown	Angle	60	Sandy	Pick'l, bass, roach shiners, perch, flatsides
Sandown	Punch	25	Muddy	Pick'l, bass, roach shiners, perch, flatsides
Sandown	Cub	15	Muddy	Pick'l, bass, roach shiners, perch, flatsides
Sandown	Clark's	50	Muddy	Pick'l, bass, roach shiners, perch, flatsides
Sandown	Shourells	8	Muddy	Pick'l, bass, roach shiners, perch, flatsides
Sandown	Hunt's	10	Muddy	Pick'l, bass, roach shiners, perch, flatsides
Sandwich	Bear Camp	400	Muddy	Pick'l, perch, pout
Sandwich	Red Hill	300	Muddy	Pick'l, perch, pout
Sandwich	Little	150	Sand, rocks	Perch, pick'l, pouts
Somersworth	Cole's			Bass (1877)
Somersworth	Willard's			Smelt
Springfield	Kobellernook Lake	100	Sandy	Bass, perch, pick'l
Springfield	Stark Lake	75	Rocky	Trout, bass, perch
Springfield	Chalk	40		Bass, pouts
Springfield	Colby	20	Muddy	Pickerel, pouts
Springfield	Morgan	100	Muddy	Pickerel, pouts
Stark	North Lake, called Christine Lake	300	Springs	Trout, lake salmon eels
Stark	Smith		Muddy	Bass, pick'l, pout trout
Stark	Pike	30	Muddy	No fish
Stewartson	Black			Pickerel
Stewartson	Big Diamond	200	Muddy	Trout
Stewartson	SmallDiamond	75	Muddy	Trout
Stewartson	Ladd	8	Muddy	Trout
Stoddard	Granite Lake			Trout, bass, pick'l perch
Stoddard	Center	90	Rocks, sand	Trout, bass, pick'l perch
Stoddard	Taylor		Rocky	Bass, pick'l, perch
Stoddard	Oakland	300	Rocky	Bass, pick'l, perch
Stoddard	Mud	200	Muddy	Pouts, pick'l, perch
Stoddard	Stacey			Bass, pick'l, perch
Stoddard	Hutchinson			Bass, pick'l, perch
Stoddard	Wheel, Ingalls			Bass, pick'l, perch
Stoddard	Abbott			Pickerel, perch
Stoddard	Scott			Pickerel, perch
Stoddard	Nellie's			Pickerel, perch
Stoddard	Trout	40		Pickerel, perch
Stoddard	Barrett			Pickerel, perch
Strafford	Bow Lake	1600	Rocky	Pouts, bass, pick'l, perch

LIST OF LAKES AND PONDS.—Continued.

Towns.	Ponds.	Acres	Bottom.	Fish.
Strafford	LittleBowLake	50	Mud and sand	Pouts
Strafford	Wild Goose	40	Muddy	Pouts
Strafford	Trout	35	Sand, rocks	Pouts, trout
Success	Success	....	.....	.....
Sunapee	Ledge	300	Rocky	Bass, pick'l, perch
Sunapee	Perkins	250	Muddy	Pouts, pick'l, eels, suckers
Sunapee	Spectle	100	Muddy	Pickerel
Sullivan	Bolster	60	Muddy	Pick'l, perch, pout
Sullivan	Chapman	70	Muddy	Pick'l, perch, pout
Sullivan	Ellis Reservoir	100	Muddy	Pick'l, perch, pout
Sutton	Blaisdell's	150	Muddy	Pick'l, perch, pout
Sutton	Bilfings	25	Sandy	Salmon, pick'l, pout bass
Sutton	Russell	10	Muddy	Trout, pick'l, pout bass
Sutton	Keyser Lake	225	Muddy	Pick'l, perch, pout
Sutton	Guild	100	Muddy	Pick'l, bass, perch, pout
Sutton	Reservoir	150	Muddy	Pick'l, bass, perch, pout
Swanzey	Great	160	Swampy	Pick'l, bass, perch, pout
Swanzey	Locke's	....	Various	Pick'l, bass, perch, pout
Shelburne	Moose	7	Muddy	Horn pouts
Surry	Roger's	16	Muddy	Horn pout, pickerel
Surry	Lily	4	Muddy	Horn pout, pickerel
Surry	Keller (priv).	1	Muddy	Trout
Tamworth	Great Hill	150	Muddy	Pouts, pickerel
Tamworth	Chocorua	250	Mud, sand	Pouts, bass (1877)
Tamworth	Elliott	100	Muddy	Pouts, pickerel
Tamworth	White	175	Sandy	Pouts, pick'l, bass
Tamworth	Whitten	300	Rocky	Trout
Tamworth	Knowles	200	Muddy	Pickerel
Tamworth	Pequaet	100	Rocky	.....
Tamworth	Church	200	Muddy	Trout
Tamworth	Sawyer	100	Muddy	Trout
Tamworth	Jeem's	100	Muddy	Trout
Thornton	Picket Hill	10	Muddy	Trout, pouts
Thornton	Conec	5	Muddy	Pouts
Tuftonborough	Lower Beech.	....	.....	.....
Tuftonborough	Dishwater	....	.....	.....
Unity	Marshall	....	Rocky, mud	Pick'l, flatsides
Unity	Gilman	300	Gravelly	Pickerel, trout
Unity	Cold	....	.....	Flatsides, perch, trout
Wakefield	Great East	3000	Rocky	Pick'l, black bass (1869)
Wakefield	Horn's	....	.....	Pickerel, bass
Wakefield	Loyewell's	1200	Rocks	Pick'l, bass, trout, California salmon
Warren	Bagley's	22	Muddy	Pick'l, eels, perch
Warren	Bear	48	Rocky	Pickerel, pouts
Warren	Pleasant	20	Rocks, sand	Pick'l, pouts, perch bass
Warren	Tom's	34	Muddy	Pick'l, pouts, perch
Warren	Limmons	30	Rocky	Trout, pout
Warren	Day	12	Muddy	Pickerel, pout
Warren	Glen	55	Muddy	Trout
Warren	Meader	30	Muddy	Pout, suckers
Warren	Part of Tarleton Lake	....	.....	Lake trout, black bass
Washington	Island	400	Rocky	Bass, perch, pick'l, trout
Washington	North	50	Mud and sand	Bass, perch, pick'l, trout

FIRST CONNECTICUT LAKE.

LIST OF LAKES AND PONDS.—Continued.

Towns.	Ponds.	Acres	Bottom.	Fish.
Washington	May's	150	Hard	Bass, perch, pick'l trout
Washington	Ashuelot	500	Mud, sand	Bass, perch, pick'l trout
Washington	Mellen	180	Hard	Bass, perch, pick'l trout
Washington	Half-Moon	85	Various	Bass, perch, pick'l trout
Washington	Long	120	Muddy	Bass, perch, pick'l trout
Washington	Ayer's	40	Rocky, muddy	
Washington	Bacon	50	Muddy	
Washington	Bear	4	Muddy	Trout
Washington	Borden	80	Muddy	Perch, pout, trout, pickerel
Washington	Borney	10	Muddy	
Washington	Brockway's			
Washington	Free Island	15	Very muddy	Pouts
Washington	Fletcher	20	Very muddy	
Washington	Hedgehog	50	Very muddy	Suckers, pouts
Washington	Frog	75	Very muddy	Perch, pouts
Washington	Lang, part in Washington	400	Very muddy	Pick'l, perch, pouts bass
Washington	Newman	20	Very muddy	Pickerel, perch
Washington	Philbrick	15	Muddy	Perch, pouts
Washington	Smith	75	Muddy	Suckers perch pout
Washington	Trout	3	Muddy	Trout
Washington	Vickery	15	Very muddy	Pickerel, pouts
Webster	Long	320	Various	Bass, pick'l, perch, eels
Webster	Great	250	Various	Pout perch suckers eels
Weare	Mt. William	128	Rocky	Bass, perch, pick'l pout
Weare	Duck	50	Muddy	Pout, pickerel
Weare	Ferren's	40	Rocky	Pout, pickerel
Weare	Clough's	4		Pout, pick'l, perch,
Wentworth Loc.	Wentworth			
Wentworth	Rocky	20	Sand, rocks	Trout
Wentworth	Brown's	500	Muddy, rocky	Bass, pick'l, trout, pout, eels
Wentworth	Lime	300	Mud, sand	Bass, pick'l, trout, pout, eels
Wilmot	Moony			
Wilmot	White	10	Clear	Pick'l, perch, trout, chub, suckers, pout
Wilmot	Eagle	50	Sandy	Pick'l, perch, trout, chub, suckers, pout
Wilmot	Piper	40	Muddy, rocky	Pick'l, trout, pout
Windsor	White	75	Sand, rocks	Bass, pout, perch pickerel
Windsor	Black	50	Muddy	Pout, pick'l, perch
Windsor	Bagley	40	Muddy	Pout, pick'l, perch
Whitefield	Myror Lake	55	Rocks, mud	Pickerel, perch
Whitefield	Montgomery	250	Rocks, sand	Pickerel, perch
Whitefield	Little Cherry	25	Rocks, mud	Pick'l, pout, perch
Whitefield	Mud	10	Rocks, mud	Pick'l, pout, perch
Whitefield	Burns	250	Rocks, sand	Pick'l, pout, perch
Whitefield	Part of Forest Lake	500	Rocks, mud	Pick'l, pout, perch
Winchester	Humphrey's	150	Various	Pick'l, perch, pouts eels
Winchester	Round	8	Various	Pick'l, perch, pouts eels
Windham	Canobie Lake	1017	Muddy	Bass pick'l, perch, pouts, eels

LIST OF LAKES AND PONDS.—Continued.

Towns.	Ponds.	Acres	Bottom.	Fish.
Windham	Cobbett's	1000	Sandy	Bass, pick'l, perch, pouts, eels
Windham	Hiti-tity	....	Muddy	Bass, pick'l, perch, pouts, eels
Windham	Mitchell's	....	Muddy	Bass, pick'l, perch, pouts, eels
Windham	Golden	....	Sandy	Bass, pick'l, perch, pouts, eels
Windham	Simpson's	....	Muddy	Bass, pick'l, perch, pouts, eels
Woodstock	Loon	36	Various	Trout
Woodstock	Elbow	75	Various	Pick'l, pouts, trout
Woodstock	Hubbard's	30	Muddy	Pickerel
Woodstock	Russell	40	Mud, sand	Trout, pouts
Woodstock	Gordon	10	Muddy	Trout
Woodstock	Moran	20	Muddy	Trout
Wolfeboro	Lake Wentworth	....	Sand, rocks	Bass, cusk, salmon, perch
Wolfeboro	Rust	720	Sand, rocks	Bass, pick'l, perch
Wolfeboro	Crooked	320	Stony	Bass (171)
Wolfeboro	Smith's	5120	Sand, rocks	Bass, pick'l, smelt
Wolfeboro	Beach	480	Sandy	Pick'l, perch, bass, pouts
Wolfeboro	Sargent's	240	Muddy	Pick'l, perch, pout
Wolfeboro	Garland	120	Muddy	Pick'l, perch, pout
Wolfeboro	Barton	80	Muddy	Pout, eels
Waterville	Greeley Upper	10	Muddy	Brook trout
Waterville	Greeley Lower	5	Muddy	Brook trout
Walpole	Cobbins Mill	20	Soft	Pike

1914

FOURTH ANNUAL REPORT

OF THE

NEW HAMPSHIRE STATE TAX COMMISSION

TAX YEAR OF 1914

ALBERT O BROWN,
WM. B. FELLOWS,
JOHN T. AMEY,
} Commissioners

CONCORD, N. H.
1914

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REPORT.

CONCORD, N. H., November 2, 1914.

CHAPTER 1.

A YEAR'S WORK.

The labors of the tax commission during the present year, though they have been somewhat more arduous than before, have not differed greatly in character from those heretofore reported. The superior court has referred to it numerous petitions, arising in the different counties, for the abatement of taxes. Some of these have been heard and determined; some have been adjusted through the good offices of the commission and some are still pending,—the last awaiting the convenience of the parties for hearings.

In the report for 1911 at page 46 it is said, "The commission was established for the benefit and service of assessors rather than as a body to seek for faults and mete out punishment, and it invites the fullest coöperation on the part of all assessors in attaining the common end of full compliance with the law." This invitation has never been accepted with as little reserve as during this year. It would be interesting to know how many of the seven hundred and odd assessors in the state have called at the office in the state house, or upon the commissioners elsewhere for conference and counsel. It is safe to say a large majority has done so. To all assistance has been freely rendered, except in those instances where the requests were for valuations of specific pieces of property. In such cases the correct method has been explained and the result left with the local officials where it belongs.

For the accommodation of people in some of the lower counties an office was opened in the spring and has since been maintained, without expense to the state, in the Amoskeag Bank Building in Manchester. It has proved a convenience to many whose route would otherwise lie through that city and to many who go there primarily on private business. This office has also been used for hearings. The people in the upper counties have in a large degree been accommodated at Lancaster, and the long trip to Concord rendered unnecessary in many instances.

In December the commission attended the two days' conference of the New England State Tax Officials at the State House in Boston. Many subjects relating to taxation were discussed by the members and by others who were invited to participate.

On the twenty-first and twenty-second days of January the Association of New Hampshire Assessors, of which the commissioners are members, was in session at Manchester. It was an educational meeting. Assessors from nearly all of the cities and selectmen from all sections of the state were in attendance. The matters discussed were in the main those that pertain to the assessment of taxes as a practical proposition. Papers were read, addresses delivered, notes compared, methods explained and experiences related. Nothing could be more encouraging than to see the assembled tax officials of the state engaged in working out their common problems.

Beginning with the Thursday after the annual town meetings in March tax conferences were held successively in Concord, Keene, Claremont, Lebanon, Woodsville, Plymouth, Laconia, Berlin, Colebrook, Ossipee, Dover, Portsmouth and Manchester. These meetings were attended by more than nine tenths of all the assessing officers in the state, and a surprisingly large number took part in the discussions. It is believed that the local assessors are now much more familiar with their duties than at any previous time.

The work of local appraisal and assessment beginning

April first was completed for the most part in about three months, and altogether in four. Meanwhile the commission was attending to its duties of supervision. It has previously prepared and distributed inventory blanks in the new form required by the legislation of 1913.

As the inventories were returned by the cities and towns they were accepted and the results tabulated, or they were returned for correction or reappraisal as circumstances demanded.

In July blank returns were sent by the commission to 227 public service corporations, and in September, upon investigation, it was found that 180 of them were taxable here. Their property, after hearing those that desired to be heard including most of the larger concerns, was assessed accordingly. Then followed several re-hearings, some of which resulted in a partial abatement of taxes and some of which did not.

Then came the preparation of the matter for this report and the supervision of its publication.

Throughout the year the commission has endeavored to answer all inquiries received by mail, a task of no small magnitude and requiring in many cases much research.

Conferences have been held in many of the cities and towns with the assessing officers and the tax payers affected by their action.

Much field work has been done in the different sections of the state. This has generally been performed by the commissioners themselves or by one or two of them, and consequently very little extra expense has been incurred. The commission has thus been enabled to live well within its means, as will appear from an examination of the following table:

EXPENSES OF COMMISSION.

September 1, 1913, to September 1, 1914.

Salaries	$8,000.00
Clerical expenses	800.00

Expenses of commissioners	786.90
Incidentals, printing, expense of inventory books and blanks for towns and cities, etc	1,182.96
Printing report	465.56
	$11,235.42

Appropriation, $13,500.

CHAPTER 2.

Increase in Public Expenditures.

No power has constituted the members of the tax commission guardians of the public in respect to expenditures for the support of government, and they have no disposition to assume that role. Nevertheless, "economy being a most essential virtue in all states," and it being "the duty of legislators and magistrates * * * to countenance and inculcate the principles of * * * economy," all as set forth in the constitution of this state,* the commissioners believe themselves to be amply justified in urging, as they have so often urged before, the importance of this subject upon the voters of the state. The public revenue, state and municipal, is the voters' business and they are responsible, directly or indirectly, for every extravagance affecting it from the inception to the termination of the fund.

Every compulsory contribution levied by public authority upon people or property is in the broad sense of the term a tax, nor is it made less obnoxious or burdensome if called a fee or a fine. In the figures that follow therefore, all fees, fines, and other exactions, if any, are included with the taxes upon polls and estates. To illustrate the comparative importance of the two classes, it may be said that the taxes upon polls and estates represent about 95 per cent and all other income about 5 per cent of the total revenue of the state, and of the counties, cities, towns, districts and precincts therein.

Taxes as defined above have increased by leaps and bounds in recent years. In 1903 the sum of all the taxes assessed by and within the state of New Hampshire was $5,373,420.22; in 1913 it was $8,765,039.07, an increase of $3,391,618.85,

*See N. H. Const., Bill of Rights, (Art.) 36th.
N. H. Const., Part Second, [Art. 82 (83)].

or 63 per cent, in ten years. But these figures do not adequately represent the velocity the upward movement has now attained. To show that it is necessary to divide the ten-year period: The levy in 1908 was $924,388.79, or 17 per cent greater than in 1903, while that in 1913 was $2,467,230.06, or 39 per cent greater than in 1908. By so much did the advance in the last half of said period exceed that in the first half. These figures will be the more alarming if it is remembered that while taxes already sufficiently heavy were advancing 63 per cent, the population of the state increased only about 4½ per cent, and while the one was advancing 39 per cent, the other increased only about 2¼ per cent.

It is instructive to study the subject from another angle. In the ten years from 1904 to 1914, both inclusive, the annual increase in all taxes defined and limited as above was as follows:

1904	$34,459.91
1905	286,590.14
1906	115,468.39
1907	411,257.46
1908	76,612.89
1909	539,995.97
1910	787,565.31
1911	215,848.50
1912	296,216.85
1913	627,603.43

The average yearly increase for the whole period was $336,561.85. The upward trend is more plainly shown, however, by dividing, as before, the ten-year period in the middle and considering the halves separately. For the first five years the average annual increase was $184,877.76; for the last five years it was $493,446.01. It is surely pertinent to consider how long the little state of New Hampshire, almost stationary in wealth, can sustain a tax already burdensome and increasing at the rate of practically half a million

dollars a year without crippling her industries and impoverishing her people. Plainly it is a condition not calculated to attract capital from without the state or to encourage business within the same.

From the per capita standpoint the situation is not less disturbing. In 1903 there were assessed $12.88 in taxes for each man, woman and child in the state. Five years later there were assessed $14.75 for each individual, and in five years more $20.09. If in 1913 taxes had been equally distributed among all the people it would have meant a burden of $100 for each family of five members. Though in reality there was little such equality in the assessment there was much in the payment. The fact is that those who occupy, use or consume property, no matter who owns it, are those who in the last analysis pay most, if not all, of the taxes thereon. If the wage earner or the man of limited means understood he was in reality paying something like $100 a year in state and municipal and half as much more in federal taxes for the government of himself, his wife and three children his influence and his vote would more frequently make for economy in appropriations and expenditures than heretofore.

No statistics for the year 1914, appear in the above paragraphs for the reason that they are not yet at hand except in part.

CHAPTER 3.

Tenure of Office; Selectmen and Assessors; Exemption of Manufacturing Establishments.

The prevailing thought in the business world as well as in the management of governmental affairs is that length of service tends to efficiency, other things being equal.

This is evidenced by the general custom in towns of re-electing town officers, though the custom is not sanctioned by law.

The official term of the selectmen in the two hundred and twenty-four towns of the state expires annually at the March elections, and it may well happen that between sunrise and sunset of a second Tuesday of March the entire management of town affairs in the state shall pass into the hands of absolutely inexperienced persons.

That it does not so happen is due to the recognition of the folly of such procedure.

Local revolutions do occur, and while no argument can be made against the retirement of an inefficient or dishonest officer, yet the retirement of the whole board of selectmen for personal or political reasons solely is not for the best interests of a town.

Partisan politics enter less and less in the concerns of towns, but if a party wished to take advantage of a political upheaval they could do so within a reasonable length of time if the term of a selectman continues three years and but one person is elected each year.

A method which will insure the retention of two experienced men on the board at all times is beneficial, as appears in towns which keep in office a part or the whole of a board year after year.

If it is argued that no change of the law is necessary since the custom of long terms is so general, it may be said

that there is no assurance of a continuation of the custom, and a selectman cannot look forward to more than one year of service with any degree of certainty. While as a rule he does the work faithfully, he cannot outline a policy which requires time for its fruition.

Furthermore, one year's service hardly affords time for a passing acquaintance with the law directing and governing the duties of a town officer. Aside from the general management of town affairs the assessment of taxes is no light task and the law regulating the assessment and collection of taxes is far from simple.

It has been the observation of this commission since its creation in 1911 that better results in every way are manifest in towns and cities where a majority of the board of selectmen consists of persons re-elected to office.

The eleven cities of the state furnish good testimony in support of this assertion, although in two cities, Berlin (Laws 1897, c. 121) and Franklin (Laws 1893, c. 260), the boards of assessors, three in each city, are chosen annually by the city councils. In Berlin the assessors are chosen from each ward, while in Franklin ward lines are not considered in making the choice.

A two year's term prevails in Dover (Laws 1881, c. 256), where there are six assessors, one from each of the five wards and one at large, all chosen by the city council. Terms expire in rotation and three old members are continually in office.

In the following named cities the number of assessors is three, who are chosen without reference to ward lines for terms of three years by the city councils, except in the case of Portsmouth, where the election is by the people at the annual municipal elections, and the terms are made to expire so that two old members serve on the board each year: Keene (Laws 1883, c. 213), Laconia (Laws 1893, c. 241), Portsmouth (Laws 1909, c. 266), Rochester (Laws 1891, c. 241), Somersworth (Laws 1901, c. 209).

The three largest cities in the state, wherein is located nearly one third of the taxable property of the state and one third of the persons who pay poll taxes, have very recently sought legislation which provides for a six year's term for the three assessors in each city, the terms so overlapping that only one assessor is chosen at the same time. Reference is made to Concord (Laws 1909, c. 305), Manchester (Laws 1903, c. 314), Nashua (Laws 1913, c. 427).

In reply to an argument sometimes heard that a long term of office may fasten upon a town an incapable person, we do not hesitate to express a belief that the good sense of the voters of the state is ample guard against the election and continuation in office of three incompetent persons. If a mistake is made in one year it can be rectified in the following years by the choice of two competent men who will assume the complete management of affairs until the third person is deposed.

Ignorance of the law and of their duties is to be expected and is admitted, especially by untrained officials.

It is to afford the opportunity to become familiar with the law and its administration that the tax commission recommends a longer tenure of office for selectmen and the election of but one at a time so that two persons of some experience shall be constantly in service.

The enactment of the following amendment to section 5, chapter 43 of the Public Statutes would carry into effect the above recomendation.

AN ACT IN AMENDMENT OF SECTION 5, CHAPTER 43 OF THE PUBLIC STATUTES RELATING TO THE CHOICE OF SELECTMEN.

Be it enacted by the Senate and House of Representatives in General Court convened:

SECTION 1. That section 5, chapter 43 of the Public Statutes be amended by striking out the first seventeen words and inserting the following: "Every town, at the

annual meeting in March, 1916, shall choose, by ballot and by major vote, three selectmen, one to serve for the term of three years, one for the term of two years, and one for the term of one year from the time of said election, and thereafter at the annual meeting shall choose, by ballot and by major vote, one selectman who shall hold office for the term of three years from the time of his election. The selectmen," so that said section as amended shall read as follows: SECT. 5. Every town, at the annual meeting in March, 1916, shall choose by ballot and by major vote, three selectmen, one to serve for the term of three years, one for the term of two years, and one for the term of one year from the time of said election, and thereafter at the annual meeting shall choose, by ballot and by major vote, one selectman who shall hold office for the term of three years from the time of his election. The selectmen shall manage the prudential affairs of the town and perform the duties by law prescribed. A majority of the selectmen shall be competent to act in all cases.

EXEMPTION OF MANUFACTURING ESTABLISHMENTS.

The tax commission inserted in the report for 1913 the following recommendation: "Another tax amendment might well occupy the attention of the Assessors' Association and that of the legislature. Under the present statute relating to the exemption of manufacturing establishments it is possible for one town to appropriate all the manufacturing business of other towns by holding out inducements that the latter are not permitted to offer. It has more than once happened that a prosperous manufacturing concern, the business life of a community, affording employment and trade to many people, has been induced by an offer of ten years of exemption from taxes to pull up stakes and move elsewhere. All manufactories are subject to such seduction except those that have once yielded to it or at least have been previously

exempted from taxation by some town.' Shoe manufacturers, owing to the comparative ease with which they can remove from place to place, are often not able to resist this temptation. The law should be amended so as to exclude from its benefits all concerns that have previously done business in this state, or at least all capital previously employed by them here. In this way it is believed that one species, and an especially harmful species, of tax dodging can be prevented."

The commission is now of the opinion that said statute should also be so amended as to confine the exemption to local taxes. The amendment of 1909 (chapter 166, section 1) provides that the valuation of the exempted property "shall be added to the valuation of all other property in the town to determine the total valuation for the purposes of state and county tax." Since this provision went into effect it has been the practice in some localities, notably in Manchester, to exempt from local taxation only, in which case the manufacturer pays the state and county tax. In other places the vote has been by mistake or otherwise made broad enough to include all taxes, in which case the city or town pays the state and county tax. In some instances suggestions by the assessors that the manufacturer, notwithstanding the amplitude of the vote, submit to the assessment of a state and county tax, have not been very graciously received. But freedom from city or town taxes, as the case may be, is thought to be all the preference over other taxpayers that good policy will justify.

In the opinion of the commission, therefore, Public Statutes, chapter 55, section 11, should be amended by inserting the word "local" before the word "taxation" in the first line, and also by striking out all after the word "previously" in the last line and inserting in place of the part stricken out the words "erected or put in operation or said capital in some way used in this state," so that said section shall read as follows: "Towns may by vote exempt from local taxation for a

term not exceeding ten years any manufacturing establishment proposed to be erected or put in operation therein, and the capital to be used in operating the same, unless said establishment has previously been erected or put in operation or said capital in some way used in this state."

CHAPTER 4.

Report of Delegate William J. Starr to the Meeting of the National Tax Association, Denver, Colorado, September 8 to 11, 1914.

To his Excellency, The Honorable Samuel D. Felker, Governor of the State of New Hampshire, and to the Honorable Council:

As one of the delegates named by you to attend the Eighth National Conference on Taxation, of the National Tax Association held at Denver, Colorado, on September 8 to 11, 1914, I have the honor to report as follows:

The permanent organization of the Convention was perfected on the afternoon of September 8 at the Brown Palace Hotel, Denver, and Charles E. Galloway, Chairman Tax Commission of State of Oregon, was chosen permanent chairman. Hon. Elias M. Ammons, Governor of Colorado, delivered a most pleasing address of welcome to the more than two hundred delegates present, and the generous hospitality which he extended was at all times in evidence during our visit, both from the Chamber of Commerce of Denver and its citizens generally.

The delegates who responded to the call represented forty-one states, several universities, many public service corporations and the Canadian provinces, and was said to be as representative a body of men interested in tax problems as has ever assembled in the United States.

Eight sessions of the Conference were held during the afternoons and evenings from September 8 to 11 inclusive, every one of which was well attended and many excellent papers were read, notable addresses delivered and reports presented covering every field of taxation.

Particularly instructing and illuminating were the discussions indulged in at each session, in which the views ex-

pressed by the reader of any paper were subjected to the acid test of searching analysis and free criticism. It mattered little how learned the treatise or how distinguished the author, there was some knight of taxation present who was ready to break a lance with him and to dissent with his views. This added immensely to the interest of the sessions, and an air of expectancy as to who next was going to "get his" kept the delegates on edge, and keen in attendance.

Particularly practical and full of common sense was the address of John T. Brown, county assessor of Mesa County, Colorado, on the "Coöperation of the County Assessor and Tax Commission," who quaintly depicted his efforts in securing proper appraisals of personal and real property from the owners in the first instance, and his later trials in procuring a just apportionment of tax values for his county from the Tax Commission. This read like a page out of the book of our New Hampshire Tax Commission during the first year of its work.

Hon. Samuel T. Howe, Chairman of the Kansas State Tax Commission, enlightened his hearers concerning the methods by which his state increased its tax valuation some $300,000,000 under an efficient tax commission.

Charles V. Galloway, Chairman of the Oregon State Tax Commission, where the initiative and referendum hails from, and other exact methods are born, candidly assured the delegates that in the matter of apportionment between the several counties, the State Tax Commission arbitrarily fixed the amount of money each county should pay of State Tax, without regard to the valuation returned by the county assessors.

The session devoted to a discussion of the Federal Income Tax was perhaps the most notable of the Conference, and brought out a splendid paper by Prof. Charles J. Bullock of Harvard University, in criticism of several of its features, especially directed against that portion which provides for the collection of the income at the source; and the spirited defence of its provisions by Prof. E. R. A. Seligman of

Columbia University, president of the National Tax Association, who plead that in all fairness a little more time should be allowed for trial of a brand new law.

Nearly every phase of the taxation problem in the several states and Canada was presented by paper, address, question, or discussion; taxation of mines and mineral lands, of irrigated lands, of express companies, foreign corporations, of securities and the single tax, each had their inning, with an able exponent to advance new ideas or propound new methods.

The spirit of the discussions, the eminence of the men attending connected with the administration of tax laws as public officials, college professors and representatives of the great corporations, the opportunity for exchange of personal views with acknowledged experts in taxation, together with the cordiality of the Denver citizens, and last but not least, the enjoyment of the many beauties and delights of Denver and the surrounding country, all conspired to make the visit of the delegates a most happy, and I believe, a most profitable one.

Very respectfully,

WILLIAM J. STARR.

ADDRESS BY ALBERT O. BROWN, CHAIRMAN STATE TAX COMMISSION, BEFORE THE ASSOCIATION OF NEW HAMPSHIRE ASSESSORS, AT MANCHESTER, N. H., JANUARY 22, 1914.

Common Methods of Valuing Property for Taxation.

Mr. President and Members of the Conference:

In the brief period of two years the association of New Hampshire assessors has justified its existence. It was organized to promote among its members and in general an understanding of the principles of taxation. In many ways, including investigation and conference as well as an "open forum" for the discussion of tax subjects, it has sought to accomplish its object. No influence in the same time has achieved more and none has greater promise. With these facts in mind, the tax commission, learning of the purpose of the association to hold this conference, appointed a meeting of the assessing officers at this time and place, thereby discharging an important duty imposed by the law of 1911.

My part in this dual meeting is to discuss briefly the common methods of appraising property, the usual measures of value, so to speak.

But there are requirements that come before the valuation of property in the order of time, without the observance of which just taxation is impossible. There can be no appraisal worthy of the name unless the assessor is a man of great integrity and independence of action. He must be without relatives, friends or neighbors in his official capacity, and even oblivious of himself. If he is going to throw another weight into the scale that belongs wholly to value, he may as well be ignorant as informed, and upon him my words will be wasted.

It is not every upright and independent man, however,

who has the mental equipment necessary for an efficient selectman or assessor. All-round good judgment is an indispensable quality. Business experience and familiarity with the market values of all kinds of property are important, and so is tact or the ability to deal with men without an excessive amount of friction. A taxpayer can be reasoned with and placated in most instances. As soon as he sees he has been treated with perfect fairness and his property assessed like that of everyone else at full value, there is likely to be an end of complaint.

Competent assessors cannot always be found ready made; men with the requisite qualifications and acquirements are frequently not available. In such cases those who are at hand need much training after taking office. These considerations among others should make for long terms or successive terms of office, and also for the practice of having but one new member come upon the board in any one year.

It is fortunate for the new men and the old men alike that they are not left to their unaided selves in the performance of the most difficult of their duties, the assessing of property. There are certain helps, certain familiar rules of evidence which though not absolutely controlling, make the task much easier than it otherwise would be. Of these, as already suggested, it is my purpose to speak.

Nothing is better settled in our law of taxation than the proposition that property should be assessed at its actual, just full, fair, real, true and market value. It is a saying of remote origin that a thing is worth what it will bring. Here, then, is popular recognition of the principle that the value of property is measured by the purchase price, or viewed from the opposite angle, by the selling price thereof; in other words, by what it will bring. The top price, if you please, is the test, and that without deduction for the cost of selling or for any other charge whatever.

In 1880 Chief Justice Doe, in an important case involving the assessment of the real estate of a railroad, said: "The difficulty in appraising this road is in estimating, upon a

variety of circumstantial evidence, what is the highest price it could have been sold for on the first day of April, 1879." Again, in the same opinion, he said: "For the purpose of taxation in 1853, it should have been appraised at the highest price it could have been fairly sold for on the first day of April of that year. For the purpose of taxation this year, it should be appraised at the highest price it could have been fairly sold for on the first day of April of this year." . . . This ruling can be found in Railroad *v.* The State, 60 N. H. 133, 140, 142.

At a much later period Mr. Justice Chase, in a case involving the taxable value of real estate, said: "Such value is the market value or the price which the property will bring in a fair market, after reasonable efforts have been made to find the purchaser who will give the highest price for it." For these words, see Company *v.* Gilford, 67 N. H. 514, 517.

Here are two cases in the supreme court of this state holding that the highest price for which property can be fairly sold fixes its value for taxation. Other cases confirm these, and none is in conflict with them. The question, therefore, may be considered at rest.

It is not apparent how any other view could prevail. The highest price obtainable is the point where the minds of the buyer and the seller, the one contending for a lower and the other for a higher price, meet. It generally indicates the market value of the thing sold, which is its full and true value within the meaning of the statute. The buyer and the seller are usually men who by occupancy or by observation and investigation have become thoroughly familiar with the property traded in and are therefore best qualified to estimate its worth. Their combined judgment is entitled to the utmost respect.

It is not necessary or even preferable that a sale should be at auction in order to furnish an acceptable test of value. A public sale has the characteristics of a forced sale, and no one knows this better than the bidders in attendance.

That the trend is away from the auction sale, at least as a

superior test of value, is indicated by the movement on foot in many states and already successful in some, to require the true consideration to be expressed in deeds of real estate or reported for the benefit of assessors. New Hampshire accepts the price brought at a fair private sale as representing the true value of the property sold, and through the courts of probate authorizes the estates of deceased persons and of those under guardianship, to be disposed of by that method as well as at auction. In fact, nowhere, as far as my investigation goes, is an auction price regarded as the exclusive or even the best test of market value.* It is nevertheless important evidence and always to be considered.

Upon the authority of the statutes and the decisions of the court the tax commissioners have again and again, both orally and in writing, stated to the taxing officers the doctrine of full and true value as a requirement in the assessment of property, and of the highest price obtainable at a fair sale as a test of that value. This rule is believed to have been generally accepted and applied. Nevertheless there is observed in some quarters a tendency to modify it whenever property has brought more than the selectmen or assessors would give for it themselves or surmise it to be worth. It is unfortunate that this dangerous practice should prevail in the very class of cases where it is most harmful. Obviously the chief value of the rule lies in its capacity to lead to conclusions not otherwise easily reached. In the plainer cases where its utility is possibly no more than that of a mere check upon the judgments of the appraising officials, it is less im-

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* "The market value of an article or piece of property is the price which it might be expected to bring if offered for sale in a fair market; not the price which might be obtained on a sale at public auction or a sale forced by the necessities of the owner, but such a price as would be fixed by negotiation and mutual agreement, after ample time to find a purchaser, as between a vendor who is willing (but not compelled) to sell and a purchaser who desires to buy but is not compelled to take the particular article or piece of property." Black's Law Dictionary, (2d ed.) 761; *Company* v. *Gilford*, 67 N. H. 514, 517; *Muser* v. *Magone*, 155 U. S. 240, 249; *Company* v. *Franzell*, 109 S. W. 328, 333; *Kansas City* v. *Bacon*, 57 S. W. 1045, 1051; *Esch* v. *Railroad*, 72 Wis. 229, 39 N. W. 129, 130; *Sharpe* v. *U. S.*, 112 Fed. 893, 898; *Railway* v. *Woodruff*, 49 Ark. 381, 4 Am. St. Rep. 51, 55; *Company* v. *Neale*, 78 Cal. 63, 20 Pac. 372, 374; *Parmenter* v. *Fitzpatrick*, 135 N. Y. 190, 196-199; 15 Cyc. 685.

portant. Of course a light may be of slight service at midday, but it is indispensable to clear vision at midnight.

The reluctance to observe in some cases the test of the highest price obtainable at a fair sale may perhaps be attributed in part to the failure to appreciate the advance in values that is almost universal. The movement that is responsible for the present "high cost of living" is not confined to articles of food and clothing. It should be remembered that the taxable varieties of property have kept step with those that we eat and wear.

It is a curious fact that in almost three years of service as a tax commissioner there has not come to my knowledge a single instance of the rejection of an actual purchase price as a measure of value because the property appeared to have sold too low, and yet in the nature of things it must sell for a less sum than it is worth much more frequently than for a greater one. Forced sales are common, as, for instance, in a popular sense ordinary auction sales, and in a strict legal sense sales at auction upon executions, under mortgages and by administrators, executors, guardians and trustees in the settlement of estates. Private sales to some extent forced by circumstances occasionally occur. And it must not be forgotten that whenever the element of compulsion enters a transaction upon the selling side, it is at the expense of the price.

It is interesting to view the matter from a slightly different standpoint. In public sales the seller has no voice in the making of the price, which is committed to the buyer alone. Nor, in the judgment of experienced auctioneers, is the gain from the competition of bidders greater than the loss from their combination. Hence a downward tendency naturally results. In private sales, on the other hand, the owner has an equal part in the trade. The price is fixed by agreement of the opposing parties. These are the men who are most interested in the property and consequently have an incentive to know most about it; and they back their common judgment with their cash or its equivalent. Under such circum-

stances a price fairly commensurate with value may be expected.

Considering the foregoing it is not too much to say that public sales are apt to return prices that as tests of value are somewhat too low, and private sales, those that are not too high.

It follows that except in cases of fraud or weakness of intellect, a revision downward of a purchase price, whether established by auction or fixed privately, should be undertaken by the taxing officers with extreme caution.

If a public sale was not properly advertised, not held at a suitable time and place or well attended by bidders, if a private sale was made without reasonable effort to secure the highest paying purchaser, after but slight negotiation, or by parties not at arm's length, or, if in either case circumstances affecting the value of the property have changed materially, the evidence afforded by the price brought is weakened but not destroyed. It may still be the best and possibly the only index of worth. At all events it should be considered.

It is not necessary, however, that a particular property should change hands at all in order to be appraised by this method, for the price brought by similar property similarly situated will usually furnish a satisfactory guide.

Ever since their appointment the tax commissioners have insisted that the consideration paid for property, or for similar property in the vicinity, is very persuasive evidence and in most cases practically conclusive evidence of its value. But there is another test. Last year in a communication to the newspapers I said, "The rule which should obtain under all circumstances, and which is simple enough for a child to understand, is this: The true worth of property, to sell or to keep, for the most valuable use to which it is adapted." The principle has been much better stated in an opinion written by one of the great justices of the supreme court of the United States, in these words: "Now, it is a cardinal rule which should never be forgotten, that whatever property is worth for the purposes of income and sale it is also worth for the

purposes of taxation." See *Adams Express Co.* v. *Ohio State Auditor,* 166 U. S. 186, 220. It will be observed that an alternative which in many cases is also a cumulative test is here introduced.

Suppose the property in question has never been sold and no property in the same neighborhood and similarly situated has ever been sold, or if so, sold within a time recent enough and under circumstances favorable enough to shed any light upon present value. What then? Is the property to be omitted from the tax-list or appraised by guess? By no means. Recourse should be had to the income from the property, actual or prospective, under proper management. All property and all businesses are entitled to proper management, even though they often fail to get it.

It is net income to which reference is made, the balance that is left after paying the cost of economically and efficiently administering the business, including depreciation if the property has not been kept in condition, and taxes. Having ascertained this balance, it is easy to establish a valuation for taxation.

Assume the property in question earns or ought to earn $600 a year above charges, and that it is as safe principal and income as the best business blocks in our cities. Under these circumstances every $4 of net income represents $100 of principal and the whole $600 of income one hundred and fifty times as much or $15,000 of principal. If the property is less safe or the return less certain to an extent that suggests a 5 per cent estate, like a superior grade of tenements or flats, for instance, then the $600 of net income stands for $12,000 of taxable value. Again, if the holding has the weakness of a 6 per cent investment, as is true of much real estate in the cities, villages and rural districts, the same income indicates but $10,000 for assessment.

This is the well-known capitalization of net income method. The only element of discretion involved is the selection of the proper rate of return for the estate in question or for the class to which it belongs. That rate being determined,

it only remains to divide the net return by it and multiply the quotient by 100.

This is an ancient method of assessment and commonly employed whenever an assured income is a prominent feature of the case. Of such importance in the taxation of public utilities was it deemed to be by the legislature of 1911 that, lest it be forgotten, it was provided that "In any case where the market value of the stocks and bonds of any such (public service) corporation or company cannot be ascertained for want of actual market sales, or for any other reason, the net receipts of any such corporation or company, which shall be the difference between the gross earnings, whether by lease or by operation, and the operating expenses and taxes of the preceding year, capitalized at such per cent as appears to be equitable under all the circumstances, shall be considered as evidence of the value of the property and estate of such corporation or company." Laws 1911, c. 169, s. 14.

It is, however, not only for corporations or companies that the rule exists. It is a general principle applicable whenever there is or ought to be an annual income derived from taxable assets of any size or sort. Although it is possible that many of you never have formulated it with any exactness in your minds, you nevertheless employ it in substance upon all occasions on which you consider as affecting values the yearly proceeds of rented property or the profits of a farm.

A dozen years ago I had occasion to try a flowage case that involved the value of a meadow. No land of the same character or approaching it had ever been sold in the locality within the knowledge of any witness, and it was thought that this tract was practically unsalable. But the average quantity of hay produced, the cost of production and the market value thereof were easily ascertained, and the facts presented to the jury. The members of that tribunal capitalized the annual net profits of the meadow into a sum that was eminently satisfactory, and did it with such dispatch as to be able to take the earliest train for home. The jurors were of the material that selectmen are made of. If they had actually been

selectmen assessing the property for taxation at its full and true value it would have been their duty to be guided by precisely the same rule. Nevertheless, I have sometimes wondered since the days of my tax experience began whether they would really have reached the same result even under the same instructions of the court. In those days taxation was demoralized.

The capitalization of net income is a highly useful process, in that, like the considerations for transfers, it takes account of the obscure elements of value that reside in properties. Such elements spring from the use and method of use of tangible assets. Under our law of taxation they cannot be considered apart from the physical properties with which they are associated in business, so to speak.

If we except money on hand and at interest, mere obligations and promises to pay which form a class by themselves, intangible quantities, as such, are not taxable in this state because they are not designated in the taxing statutes. But indirectly they are taxed. Their worth is reflected in the increased values of the taxable material things with which they are united and exercised. These they invest with a capacity for new uses and old uses amplified. The Concord & Montreal Railroad, for example, the most important transportation line in this state, would be practically worthless without the intangible right of maintaining its tracks across the rivers and highways that lie in its course.

A farm may be so managed as to make its trade name a great though inseparable asset. It is possible so to select the varieties of the products of the soil, the barn and the dairy, so to improve their quality and increase their quantity and so to brand and market them as to make the land and buildings devoted to their production the source of a largely increased profit.

A hotel acceptably run through a long series of years may make its site and name and service pleasant memories and pleasant prospects to multitudes of guests who will continue to visit it and will add to its income.

A manufacturing establishment by the continued production of some particular articles of quality, as superior varieties of cloth, grades of shoes, kinds of cutlery, or the like, may establish a constant and habitual custom or patronage which will enhance the value of the land, machinery and stock in trade of the concern materially.

In each of these cases a non-physical element is created which, existing in connection with the material property, enriches it and enhances its value.

We may give this intangible creation the name of trade-mark, good-will, reputation or anything even less substantial that suits the fancy, but we cannot reduce its importance. It may be no more than habit, as I am reminded when I enter the barber shop that has held my trade for thirty years, although it has changed hands half a dozen times in that period.

Corporations have certain privileges under their charters not enjoyed by natural persons, of which the right of perpetual existence, the right to encumber highways and the right of eminent domain are examples. These and other grants of a similar nature are roughly called franchises. They are only useful when exercised in connection with tangible property, the financial significance of which they sometimes increase many fold. This is especially true of public service concerns whose charter rights confer a monopoly of business.

Attempts are frequently made to reduce the valuation of land, buildings, machinery, stocks in trade and other tangible subjects of taxation to the extent that the proprietor contends or the assessors imagine intangible elements have entered into it. This is wrong in principle and mischievous in practice. The result can be no better than a guess. The fact is that material property may derive a benefit from reputation, good-will, trade-marks, patents, privileges, rights, licenses, and franchises, that is, from intangible influences, by whatever name known, no less real than from physical improvements of an extensive and enduring character. The question is, does the value exist? not, what are its constituents?

There is nothing new or startling about this doctrine. It

is of constant application in every city and town. The full and true value of property however created is disclosed by the capitalization of its net income. The same disclosure is made by its market price which, indeed, is merely the result of the capitalization of net income, or of some benefit, by the public or by the parties to the trade at a rate appealing to them. Although these two tests, that is, purchase price and capitalization of net income, expose the entire worth of property, without regard to its composition, they are conservative methods and take notice of nothing imaginative or fanciful. They are universally recognized as furnishing evidence of value which should be given very great weight.

When corporations are assessed according to these rules, as well as by the stock and bond method which I reserve for another occasion, they are said to be taxed as going concerns. This means that they are taxed as living rather than dead properties, taxed with the intangible interests on rather than off.

This discussion of the relations of incorporeal to other property is introduced in the hope of preventing a repetition of some of the mistakes of the present year. In several towns and cities good substantial real estate and corporate values, properly determined, have been arbitrarily scaled down at the request of the owners on the ground that they were derived in part from franchise rights or other immaterial quantities. It is a plain proposition that taxable tangible property should be assessed at its real value regardless of the causes that contribute to that value.

Doubtless there are cases in which the intangible interests so predominate that the physical property is a mere incident. In the class of cases that I have in mind, real estate is not involved, and the business could be readily removed to a new location and there carried on with practically the same advantage, perhaps in a basement or a garret on a back street. Here the rule would be different.

It is true that the two methods discussed are not so clearly applicable in some cases as in others. It is difficult, for instance, to estimate the amount that some of the most elegant residences with their extensive and well-kept grounds

would bring in the market. Such estates have not heretofore frequently been offered for sale, or their values much discussed except in connection with taxation. They are, however, year by year acquiring a broader market and it will soon be possible, as it is even now to some extent, to fix their valuation according to the ordinary test of a purchase and sale price.

Meanwhile, it is legitimate to consider the cost to the proprietor who probably bought the land, erected the buildings and improved the premises. The sum of all the payments made by him is, in reality, his purchase price.

But you say the place would bring much less now. Are you sure? If the estate were to be sold upon execution, for instance, would not the proprietor pay for it something near what it cost him when he bought it piecemeal and put it together? It is not necessarily what property would bring at a sale by the owner that affords the true criterion, but what it would bring at a sale at which the owner, like every other man, is privileged to buy. To exclude the proprietor from participation would be to bar the most likely customer.

This kind of property rents more or less freely as is shown by the history of our summer colonies. Here, then, is an opening for the assessors for what it is worth. In most cases, however, such holdings are acquired for the personal use of the owner and his family, and are only rented when they desire to remove elsewhere temporarily. That there is ample return to the proprietor in health and comfort cannot be doubted. Nor can it be denied that the rent he actually pays himself for the premises is a sum equal at least to the interest on their cost at a fair rate per cent. These things are to be considered and given the weight to which they are entitled.

The three principle tests of assessable value have been enumerated in the order of their importance: first, the highest price obtainable at a fair sale; second, the capitalization of net income; and third, the cost of the property. If you observe these closely you will make but few errors, and as a general proposition property will not be assessed too low, which would be a great misfortune, or too high, which would be an equally great misfortune.

ADDRESS BY ARTHUR W. ROWELL, CLERK CITY ASSESSORS MANCHESTER, BEFORE THE ASSOCIATION OF NEW HAMPSHIRE ASSESSORS, AT MANCHESTER, N. H., JANUARY 21, 1914.

Tax Maps and Card Systems.

Correct analysis lies at the base of all modern success, and statistics based upon such analysis are playing an ever increasing part in guaranteeing success. Correct analysis and comparison would show what part of a taxing district, or what class of property was bearing an unjust portion of the tax burden. The intent of all general tax laws is to produce equality of tax burdens among tax payers by means of a fair and accurate assessment.

In our state eighty per cent. of the valuation, as returned by the assessors and selectmen, is represented by real estate, yet in our tax lists as compiled only ten per cent. of the headings are for real estate, and out of sixteen vital questions on our inventory blanks as sent out only one question has to do with real estate. The other ninety per cent. of the headings in our tax lists and the other fifteen questions on our inventory blanks have to do with personal property. Can a fair and accurate assessment of real estate be possible with so little attention paid to it by our inventories and tax lists unless some extra method of description and division be made by those assessing taxes?

That fair and accurate assessment of real estate will be promoted by the adoption of tax maps and the classification of real estate, such maps should show not only the boundaries and areas of each separate piece of land, but should also show what part of the land is adapted to different purposes as: 1st—land under cultivation, 2d—land not under cultivation, but capable of being ploughed, 3d—land covered with heavy growth of timber, 4th—land covered with orchards, 5th—

waste lands incapable of cultivation or of growing timber, 6th—mineral land, 7th—quarry land, 8th—land valuable by reason of other deposits, 9th—number of city or town lots, 10th—value of improvements apart from the land.

With such a classification and the areas of each we could then give the amount of the different kinds of land with the value of each kind, and then the person from another taxing district could easily compare the average values of this district with those of their own districts. The total stranger could then compare our assessments and do so intelligently, whereas now, with just two headings for real estate of all kinds, no person can tell whether there is an equal and fair assessment throughout the state on all kinds of land.

At the present time we give much attention and information in our tax lists in regard to some classes of personal property as horses, cows, hogs and sheep, giving the number of each and their value. Why should we not need much more to give the number of acres of the different kinds of land with their value, so that we could compare these, as we now do these classes of personal property, and see if they are being fairly taxed in all parts of the state. Such comparisons would be of inestimable value to our State Board in their work of keeping the different towns on an equal basis.

Such a classification was recommended at the Third Annual Conference of the National Tax Association.

Such a classification would only be possible by the use of tax maps, and with such maps and correct analyses and comparisons we would have the basis for correcting existing evils and making a greater equality of assessments.

In our state laws we find that we are required to describe lots by their number and range, if lotted, otherwise by such description as the land may be readily known by, and the number of acres. Also, when two or more tracts of land do not join, or are situated so as to become separate estates and have the same owner, we are required to describe each tract separately and cause such description and appraisal to appear in the invoice of the tax-payer.

This would seem to show the necessity of more accurate descriptions and greater care in preserving lot numbers in those descriptions if we would have our tax lists correct and tax sales valid under the law. How better can this be done than by having the map of the section required to be described before us with boundaries, acreage and lot number when making such description.

Tax maps are only an instrument, a means to an end, and that end is an accurate assessment. Tax maps are now required by law in thirteen states and are actually in use in twenty-eight states.

The Fourth International Conference of the National Tax Association considered this important need of assessing departments and were in favor of laws requiring local assessors to prepare tax maps showing boundaries, area, and kind of land in detail, all changes and alterations to be made prior to any new assessment. As the use of tax maps is not for the advantage of the locality where they are used alone but for the entire taxing district, they proposed to distribute the expense as follows: one-half of the expense to the town and one-half of the expense to the state, and such expense in any fiscal year not to exceed two and one-half per cent. of the total taxes levied on real estate in that year.

Such is the importance attached to tax maps made by men who compose the National Tax Association, men who are engaged in matters of taxation and constantly studying to arrive at some better way and the truly accurate and fair assessment.

How would this affect other assessments? By the correct analysis of our real estate tax, according to such a classification, we could then compare more intelligently with other classes of property, as stock in trade, machinery, live stock, etc., and be enabled to correct any unjust assessments as they may exist. In this way we would take away much political fuel from the politician who rides into office on the hobby of unjust taxation. It would even extend further than the

work of the local assessors and would greatly aid the state board in their work with the public service corporations.

The card system is of great advantage to the ones attending to the clerical work of an assessor's office. By means of the cards we are able by consulting the tax maps to get an accurate description of the property with the value of the land and improvements separate and in a form which can be easily preserved.

When any change in the property takes place it is simply necessary to make such change on the card with reference to the land value or the value of the improvements as the nature of the change may require. With a change of ownership it is simply necessary to make a new card for the new owner, copying the description and valuation.

Again, with the street index we can compare values on the same street and neighboring streets and see if they bear the proper relation to each other. With cards for the personal property it is much easier to arrange for writing the tax lists, which must be in alphabetical order, than by any other method known to the speaker. For an accurate analysis of the real estate valuation and the comparisons of the same the card system is an important ally of the tax maps, and these two important aids should be in the hands of every local assessor, that he may do his work intelligently.

An example of the gain in dollars and cents which may be accomplished by the use of tax maps is shown in the outlying parts of this city, where we found a strip of land which had never been taxed and probably never would have been discovered without the use of the maps, which showed a vacant spot in our city. The taxes on this piece for the seven years since it has been discovered have been $267.33.

Several other instances have been found where the ones making out the deeds have followed old descriptions and old figures as to the area of the piece deeded. By changes in the street lines and by mistakes in the computations they would have been taxed for a much smaller amount of land than they were found to possess. This has been found to be the case

not only in the outskirts of the city where the land is not of great value but also in the thickly settled parts where land would be worth several dollars per foot.

Taking what the owner has, or thinks he has, by reason of the information contained in his deed would be a very unsatisfactory and uncertain method and would continue to be so until the ones making out deeds used greater care and diligence in their descriptions and computations of areas. Too many deeds use the expression of "more or less" in stating the areas, and that expression "more or less" covers a multitude of mistakes.

The foregoing are only a few of the points in favor of the use of tax maps and card systems, but if these were all that could be advanced in their favor I think that it would be enough to make necessary the adoption of both by every one of our assessing boards.

Comparative Statements.

No. 1.

1913.

Total inventory valuation of towns, less arbitrary valuation of polls	$382,493,564.00
Total valuation of unincorporated places	4,045,000.00
	$386,538,564.00
Taxes assessed in towns	$6,367,756.16
Taxes assessed in unincorporated places	9,574.25
	$6,377,330.41
Average rate per $100	$1.60

1914.

Total inventory valuation of towns	$386,964,626.00
Total valuation of unincorporated places	3,913,000.00
	$390,877,626.00
Taxes assessed in towns	$6,691,155.04
Taxes assessed in unincorporated places	9,571.62
	$6,700,726.66
Average rate per $100	$1.65
Increase of inventory valuation in 1914 over 1913	$4,339,062.00
Increase of taxes in towns same period	$323,398.88
Decrease of taxes in unincorporated places same period	$2.63
Amount exempted to soldiers, 1907	$2,320,590.00
Amount exempted to soldiers, 1908	$2,351,449.00
Amount exempted to soldiers, 1909	$2,351,415.00
Amount exempted to soldiers, 1910	$2,307,837.00
Amount exempted to soldiers, 1911	$2,226,693.00
Amount exempted to soldiers, 1912	$2,270,215.00
Amount exempted to soldiers, 1913	$2,241,452.00
Amount exempted to soldiers, 1914	$2,035,925.00

No. 2.

INVENTORIES, LESS POLLS.

County.	1913.	1914.	Increase.	Decrease.
Rockingham	$46,468,487	$41,757,215	.....	$4,711,272
Strafford	28,592,903	28,953,811	$360,908	.....
Belknap	18,686,325	19,109,089	422,764	.....
Carroll	14,813,417	15,199,674	386,257	.....
Merrimack	45,019,959	44,532,818	.....	487,141
Hillsborough ...	113,802,068	117,411,028	3,608,960	.....
Cheshire	29,388,203	29,578,257	190,054	.....
Sullivan	16,978,488	17,607,696	629,208	.....
Grafton	38,266,705	39,915,926	1,649,221	.....
Coos	30,477,009	32,899,112	2,422,103	.....
	$382,493,564	$386,964,626	$9,669,475	$5,198,413
Unincorporated places	4,045,000	3,913,000	.....	132,000
	$386,538,564	$390,877,626	$9,669,475	$5,330,413
Net increase			$4,339,062	

No. 3.

TAXES.

County.	Taxes. 1913.	Taxes. 1914.	Increase.	Rate. 1913.	Rate. 1914.
Rockingham ...	$791,475.56	$784,053.48	$7,422.08	$1.65	$1.81
Strafford	524,927.00	537,270.63	12,343.63	1.77	1.78
Belknap	292,104.77	312,282.41	20,177.64	1.51	1.57
Carroll	207,359.02	231,209.12	23,850.10	1.35	1.46
Merrimack	720,823.59	746,441.85	25,618.26	1.55	1.61
Hillsborough ..	1,894,228.53	2,004,411.31	110,182.78	1.61	1.64
Cheshire	533,991.96	556,811.63	22,819.67	1.76	1.82
Sullivan	288,940.44	307,873.73	18,933.29	1.64	1.68
Grafton	638,013.16	677,101.82	39,088.66	1.61	1.63
Coos	475,892.13	533,699.06	57,806.93	1.51	1.56
Coos	475,892.13	533,699.06	57,806.93	1.51	1.56
	$6,367,756.16	$6,691,155.04	$323,398.88	$1.61	$1.66
Unincorporated places	9,574.25	9,571.62	*2.63	.23	.24
	$6,377,330.41	$6,700,726.66	$323,396.25	$1.60	$1.65

*Decrease.

No. 4.

STATE REVENUE FROM TAXES AND FEES, INCREASE AND DECREASE OF STATE DEBT ANNUALLY, AND AMOUNT OF STATE DEBT EACH YEAR.

Year.	Direct State tax.	Revenue from other sources.	Total revenue.	State Debt. Increase.	State Debt. Decrease.	Total State debt.
1900	$425,000.00	$264,264.19	$689,264.19	.....	$216,269.11	$1,118,798.84
1901	425,000.00	272,510.21	697,510.21	.....	110,166.03	1,008,166.03
1902	425,000.00	365,972.44	790,972.44	.....	252,200.55	756,432.36
1903	425,000.00	451,333.53	876,333.53	.....	109,621.40	646,810.96
1904	425,000.00	279,550.27	704,550.27	.....	29,041.99	617,768.97
1905	300,000.00	281,707.75	581,707.75	$171,191.31	.....	788,960.28
1906	425,000.00	302,964.96	727,964.96	109,175.28	.....	898,135.56
1907	500,000.00	399,977.04	899,977.04	229,996.63	.....	1,128,132.19
1908	500,000.00	405,823.01	905,823.01	62,766.68	.....	1,190,898.87
1909	500,000.00	478,038.75	978,038.75	230,902.31	.....	1,421,801.18
1910	800,000.00	894,636.54	1,694,636.54	.....	128,591.85	1,293,209.33
1911	600,000.00	836,314.34	1,436,314.34	170,638.35	.....	1,463,847.68
1912	700,000.00	1,007,201.37	1,707,201.37	.....	76,809.34	1,387,038.34
1913	800,000.00	1,194,901.77	1,994,901.77	.....	151,835.36	1,235,202.98
1914	800,000.00	1,414,388.20	2,214,388.20	.....	269,699.01	965,503.97

No. 5.

REVENUE RECEIVED BY COUNTIES, CITIES AND TOWNS IN ADDITION TO TAXES LOCALLY ASSESSED.

Year.	Insurance tax.	Railroad tax.	Savings bank tax.	Literary fund.	Liquor licenses.	Total.
1900	$10,260.00	$225,093.16	$293,627.85	$32,844.00	.....	$561,824.01
1901	10,216.50	224,622.94	311,191.62	34,274.13	.....	580,305.19
1902	10,256.48	223,782.96	328,854.97	33,929.50	.....	596,823.91
1903	10,185.96	229,553.05	347,351.99	39,780.16	.....	626,871.16
1904	10,124.84	224,277.54	361,961.99	36,529.90	$274,909.84	907,804.11
1905	10,143.82	237,106.66	380,725.38	36,817.00	366,266.43	1,031,059.29
1906	10,174.57	263,949.61	413,641.38	39,402.95	359,824.86	1,086,993.37
1907	10,152.59	276,897.62	446,872.57	40,352.11	363,256.53	1,137,531.42
1908	11,180.09	279,952.63	447,660.83	40,499.55	289,521.78	1,068,814.88
1909	11,411.63	306,701.19	457,340.91	40,348.98	289,302.57	1,105,105.28
1910	11,772.77	298,977.83	477,441.71	40,219.83	248,339.79	1,076,751.93
1911	12,541.15	275,593.92	492,560.27	41,403.12	249,103.48	1,071,201.94
1912	13,410.35	321,756.45	520,302.92	43,082.08	271,527.14	1,170,078.94
1913	14,413.51	320,007.38	548,793.65	43,644.57	265,947.78	1,192,806.89
1914	15,814.62	293,697.66	561,405.46	42,756.58	275,994.24	1,189,668.56

No. 6.

TOTAL REVENUE OF COUNTIES, CITIES AND TOWNS, AND AMOUNT OF DEBT ANNUALLY.

Year.	Taxes assessed locally, including state and county taxes.	Other taxes received by counties, cities and towns.	Total.	State, county, city, town, school and precinct indebtedness.
1900	$3,978,962.05	$561,824.01	$4,540,786.06	$9,598,832.99
1901	4,034,940.75	580,305.19	4,615,245.94	9,503,271.28
1902	4,219,694.55	596,823.91	4,816,478.46	9,597,437.63
1903	4,295,215.53	626,871.16	4,922,086.69	9,729,358.94
1904	4,262,678.73	907,804.11	5,170,482.84	9,566,415.51
1905	4,548,523.53	1,031,059.29	5,579,582.82	9,748,518.12
1906	4,586,800.63	1,086,993.37	5,673,794.00	9,921,365.99
1907	4,725,840.64	1,137,531.42	5,863,372.06	10,168,970.99
1908	4,823,171.12	1,068,814.88	5,891,986.00	10,287,518.86
1909	5,342,268.41	1,105,105.28	6,447,373.69	10,192,201.75
1910	5,250,240.82	1,076,751.93	6,326,992.75	10,166,541.63
1911	5,529,961.51	1,071,201.94	6,601,163.45	10,106,067.55
1912	6,047,762.79	1,170,078.94	7,217,841.73	9,978,682.35
1913	6,377,330.41	1,192,806.89	7,570,137.30	.....
1914	6,449,446.66	1,189,668.56	7,639,115.22	.....

No. 7.

VALUATION AND TAXES, PUBLIC SERVICE CORPORATIONS.

1913–1914.

	Valuation.		Taxes.	
	1913.	1914.	1913.	1914.
Boston & Maine R. R.	$45,842,780	$40,000,000	$695,136.03	$622,904.33
Glen Junction Transfer Co.	.....	20,000	.....	330.00
Grand Trunk R. R...	2,267,800	2,100,000	36,228.80	34,569.38
Portland & Ogdensburg Ry.	1,700,000	1,700,000	27,071.28	27,915.60
Upper Coos R. R.....	700,000	700,000	11,168.00	11,513.70
Street Railways	3,104,000	3,370,000	47,084.70	52,829.61
Telephones	3,610,050	3,945,050	57,760.80	65,093.32
Telegraphs	232,500	207,500	3,720.00	3,423.75
Express Companies.	470,000	328,800	7,520.00	5,425.20
Parlor Cars	232,300	200,000	3,716.80	3,300.00
Car Companies.....	129,834	120,350	2,077.34	1,985.77
	$58,289,264	$52,691,700	$891,483.75	$829,290.66

VALUATION AND ASSESSMENT, 1914.

TABLE 1.

RAILROAD CORPORATIONS.

	Full value.	Taxed locally.	Taxable valuation.	Tax. (Rate $1.65)
Boston & Maine R. R.	$9,862,080	$298,069	$9,564,011	$157,806.18
Boston & Lowell R. R. Corp. (½ Manchester & Keene).....	296,000	19,480	246,520	4,067.58
Connecticut River R. R. Co.....	575,520	42,555	532,965	8,793.92
Fitchburg R. R. Co...	3,126,020	162,716	2,963,304	48,894.52
Nashua & Acton R. R.	82,620	.....	82,620	1,363.23
Nashua & Lowell R. R. Corp.....	550,000	47,000	503,000	8,299.50
Concord & Claremont (N. H.) R. R.....	900,000	9,200	890,800	14,698.20
The Concord & Montreal R. R.....	15,875,730	1,552,952	14,322,778	236,325.84
Concord & Portsmouth R. R.....	1,054,180	.....	1,054,180	17,393.97
Franklin & Tilton R. R.	265,000	.....	265,000	4,372.50
Manchester & Lawrence R. R.....	1,700,000	36,550	1,663,450	27,446.92
Mt. Washington Ry. Co.	65,650	25,000	40,650	670.72
New Boston R. R. Co.	55,000	.....	55,000	907.50
Northern R. R.....	3,272,200	22,350	3,249,850	53,622.53
Pemigewasset Valley R. R.	600,000	1,000	599,000	9,883.50
Peterborough R. R...	220,000	4,000	216,000	3,564.00
The Peterborough & Hillsborough R. R...	95,000	900	94,100	1,552.65
Sullivan County R. R.	880.000	15,100	864,900	14,270.85
Suncook Valley R. R.	115,000	7,800	107,200	1,768.80
Wilton R. R. Co.....	440,000	3,550	436,450	7,201.42
Sub-total	*$40,000,000*	*$2,248,222*	*$37,751,778*	*$622,904.33*

	Full value.	Taxed locally.	Taxable valuation.	Tax. (Rate $1.65)
Glen Junction Transfer Co.	$20,000	.....	$20,000	$330.00
Grand Trunk Ry. Co. of Canada	2,100,000	$4,886	2,095,114	34,569.38
The Portland & Ogdensburg Ry.	1,700,000	8,145	1,691,855	27,915.60
Upper Coos R. R. (N. H.)	700,000	2,200	697,800	11,513.70
Sub-total	*$4,520,000*	*$15,231*	*$4,504,769*	*$74,328.68*
Berlin Street Ry.	$125,000	$6,000	$119,000	$1,963.50
Chester & Derry R. R. Association	50,000	.....	50,000	825.00
Citizens Railway Materials Co.	5,000	.....	5,000	82.50
Claremont Ry. & Lighting Co.	150,000	5,500	144,450	2,383.42
Dover, Somersworth & Rochester St. Ry. Co.	275,000	23,475	251,525	4,150.16
Exeter, Hampton & Amesbury St. Ry. Co.	135,000	40,750	94,250	1,555.12
Keene Electric Ry. Co.	120,000	2,280	117,720	1,942.38
Laconia St. Ry.	125,000	8,300	116,700	1,925.55
Manchester St. Ry.	1,450,000	.....	1,450,000	23,925.00
Massachusetts Northeastern St. Ry. Co.	375,000	75,000	300,000	4,950.00
Nashua St. Ry.	500,000	6,850	493,150	8,136.98
Springfield Electric Co. of N. H.	60,000	.....	60,000	990.00
Sub-total	*$3,370,000*	*$168,205*	*$3,201,795*	*$52,829.61*
Grand total	$47,890,000	$2,431,658	$45,458,342	$750,062.62

TABLE 2.

Telephones.

The quotation marks indicate that the company is an unincorporated one.

	Value for taxation. Full value.	Tax. (Rate $1.65)
Ammonoosuc Telephone Co.		
Paul R. Cole, Groveton	$1,200	$19.80
"Annett Manufacturing Co."		
Albert Annett, East Jaffrey	500	8.25
"Bakie-Currier Telephone Co."		
J. F. Currier, East Kingston	200	3.30
"Barrington & Strafford Telephone Co."		
Dana R. Berry, Rochester, R. F. D. 1	300	4.95
"Berlin Mills Telephone Co."		
Berlin Mills, Berlin	1,000	16.50
"Bradford Telephone & Telegraph Co."		
John B. Hay, Bradford, Vt.	500	8.25
Canterbury & Boscawen Telephone Co.		
Louis D. Morrill, Penacook, R. F. D.	5,500	90.75
Chester & Derry Telephone & Telegraph Co.		
Arthur H. Wilcomb, Chester	1,000	16.50
Chichester Telephone Co.		
Frederick B. Shaw, Chichester	2,500	41.25
Citizens Telephone Co.		
Stephen B. Cole, Lakeport	100,000	1,650.00
Cold River Telephone Co.		
John F. Charles, Chatham	1,200	19.80
"Contoocook Valley Telephone Co."		
George W. Lincoln, Hillsborough	15,000	247.50
Coos Telephone Co.		
Edmund S. Willard, 50 Oliver St., Boston, Mass.	215,000	3,547.50
"Cornish Flat Telephone Co."		
William H. Sisson, Cornish Flat	400	6.60
Dunbarton Telephone Co.		
Frederick L. Ireland, Goffstown, R. F. D.	2,000	33.00
"Errol Hill Telephone Co."		
A. E. Bennett, Errol	800	13.20
"Etna, alias Peoples' Telephone Co."		
A. L. Camp, Etna	500	8.25
Etna & Hanover Centre Telephone Co.		
O. B. Hurlbutt, Lebanon	500	8.25

	Value for taxation. Full value.	Tax. (Rate $1.65)
"Fairlee Telephone Co."		
C. E. Pierce, Fairlee, Vt.	$3,500	$57.75
Fairlee & Wentworth Telephone Co.		
N. D. Johnson, Wentworth	500	8.25
"Fairmount Telephone Co."		
A. J. Hamm, Leighton's Corners	600	9.90
"Forest Lake Telephone Co."		
Ansel L. Buchanan, Winchester	300	4.95
"Grafton Telephone Co."		
Leon H. Martin, Grafton	100	1.65
"Grafton Local Telephone Line."		
Leon G. Valia, Grafton	200	3.30
Henniker Telephone Co.		
Curtis B. Childs, Henniker	7,500	123.75
"Hollis Telephone Co."		
A. F. Hildreth, Hollis	6,000	99.00
"Hudson Centre & West Windham Telephone Co."		
A. G. Clark, West Windham	1,500	24.75
"Hurricane Telephone Co. of Keene & Westmoreland."		
Ernest L. Stanford, East Westmoreland	200	3.30
Jefferson Telephone Co.		
John W. Crawshaw, Jefferson	2,000	33.00
Kearsarge Telephone Co.		
Thomas R. Little, Salisbury	10,000	165.00
Lake Morey Telephone & Telegraph Co.		
C. C. Emerson, East Thetford, Vt.	300	4.95
"Lempster Telephone Co."		
F. A. Barton, Lempster	1,500	24.75
"Livermore Telephone Co."		
Charles G. Saunders, 95 Milk St., Boston, Mass.	500	8.25
Lyme People's Telephone Co.		
George E. Stark, Lyme Center	1,500	24.75
Madison Local Telephone Co.		
Frank B. Nason, Madison	1,500	24.75
Mascoma Valley Telephone Co.		
Edmund S. Willard, 50 Oliver St., Boston, Mass.	42,000	693.00
Meredith Telephone Co.		
Edmund S. Willard, 50 Oliver St., Boston, Mass.	15,000	247.50

"Meriden Telephone Co."		
Harold W. Chellis, Meriden	$1,700	$28.05
"Merrill, C. H., Telephone Co."		
Charles H. Merrill, Hancock, N. H.	350	5.77
Merrimack County Telephone Co.		
Charles H. Hardy, Warner	3,500	57.75
New Boston & Francestown Telephone Co.		
Fred A. Pettee, Francestown	1,000	16.50
New England Telephone & Telegraph Co.		
John Balch, Treas., 50 Oliver St., Boston, Mass. (taxed locally $75,000)	3,050,000	50,325.00
North Conway & Jackson Telephone Co.		
John Z. Shedd, North Conway	10,000	165.00
Nottingham Telephone Co.		
Fred Fernald, Nottingham	1,000	16.50
Ossipee Valley Telegraph & Telephone Co.		
Edmund S. Willard, 50 Oliver St., Boston, Mass.	29,500	486.75
Passumpsic Telephone Co.		
Edmund S. Willard, 50 Oliver St., Boston, Mass.	3,000	49.50
"Pelham Association."		
Henry M. Currier, Pelham	1,000	16.50
"Piermont Telephone Co."		
H. Eugene Morrison, Piermont	4,000	66.00
"Pine River Telephone Co."		
Mabel Avery, Mountainview	400	6.60
Sandown Telephone Co.		
Beaverly Seeley, Sandown	1,000	16.50
Sandwich Local Telephone Co.		
John S. Quimby, Sandwich Center	6,000	99.00
Shoals Cable Co.		
Robert Morton, 110 State St., Boston, Mass.	500	8.25
Southern Coos Telephone Co.		
W. E. Smith, Colebrook	2,500	41.25
"Stoddard Telephone Co."		
John T. McCoy, Hancock	500	8.25
Sugar River Valley Telephone Co.		
Dana S. Gross, Croydon	2,500	41.25
"Sunapee Telephone Co."		
D. W. Barton, Sunapee	6,000	99.00
"Tuftonborough Telephone Co."		
F. M. Fernald, 111 So. Main St., Attleboro, Mass.	800	13.20

	Value for taxation. Full value.	Tax. (Rate $1.65)
Union Telephone Co.		
B. F. Dow, Farmington	$12,000	$198.00
Wakefield Telephone Co.		
John H. Garvin, Sanbornville	1,500	24.75
"Washington & Cherry Valley Telephone Co."		
Wallace W. Dole, Washington	2,000	33.00
Weare Telephone Co.		
W. S. B. Herbert, Weare	5,500	90.75
West Hopkinton Telephone Co.		
Frank H. Carr, West Hopkinton	6,000	99.00
White Mountain Telephone & Telegraph Co.		
Allen Hollis, Concord	115,000	1,897.50
Wilton Telephone Co.		
W. H. Emerson, Wilton	25,000	412.50
Winnepesaukee Telephone Co.		
Edmund S. Willard, 50 Oliver St., Boston, Mass.	210,000	3,465.00
	$3,945,050	$65,093.32

TABLE 3.

TELEGRAPHS.

	Value for taxation. Full value.	Tax. (Rate $1.65)
American Telegraph Co.		
G. F. Barker, Keene	$2,500	$41.25
Commercial Union.		
Joseph J. Cardona, Secretary and Treasurer, 253 Broadway, New York City	20,000	330.00
The Great Northwestern Telegraph Co. of Canada.		
A. C. McConnell, Secretary, Toronto, Ontario, Can.	10,000	165.00
The Western Union Telegraph Co. (including Direct U. S. Cable Co.).		
B. Brooks, Vice-President, 195 Broadway, New York City	175,000	2,887.50
	$207,500	$3,423.75

TABLE 4.

EXPRESS COMPANIES.

	Value for taxation. Full value.	Tax. (Rate $1.65)
American Express Co. (including National Ex. Co.).		
William E. Powelson, Comptroller, 65 Broadway, New York City	$300,000	$4,950.00
Atlantic Express Co.		
H. C. Getchell, Mgr., Dover	5,000	82.50
Canadian Express Co.		
W. W. Williamson, Montreal, Canada	15,000	247.50
Manchester & Concord Express Co.		
Arthur N. Day, Concord	8,000	132.00
Richmond's Exeter & Boston Express Co.		
Martin S. Richmond, Exeter	800	13.20
	$328,800	$5,425.20

TABLE 5.

PARLOR CARS.

	Value for taxation. Full value.	Tax. (Rate $1.65)
Canadian Pacific Railway Co.		
N. S. Dunlop, Tax Commissioner, Montreal, Canada	$15,000	$247.50
The Pullman Co.		
A. S. Weinsheimer, Secretary, 79 East Adams St., Chicago, Ill.	185,000	3,052.50
	$200,000	$3,300.00

TABLE 6.

CAR COMPANIES.

	Value for taxation. Full value.	Tax. (Rate $1.65)
American Cotton Oil Co.		
27 Beaver St., New York City	$100	$1.65
American Refrigerator Transit Co.		
St. Louis, Mo.	1,200	19.80
American Tank Line of, The Grasselli Chemical Co.		
Cleveland, Ohio	200	3.30
Armour Car Lines.		
Chicago, Ill.	11,500	189.75

	Value for taxation. Full value.	Tax. (Rate $1.65)
Arms Palace Horse Car Co.		
McCormick Bldg., Chicago, Ill.	$1.000	$16.50
Barber Asphalt Paving Co.		
Land Title Bldg., Philadelphia, Pa.	500	8.25
Barrett Mfg. Co.		
17 Battery Place, New York City	350	5.77
Basic Extract Co.		
Basic City, Va.	100	1.65
Cedar Rapids Refrigerator Line.		
Cedar Rapids, Iowa	100	1.65
Champion Fibre Co.		
Canton, N. C.	300	4.95
Charleston Refinery Co.		
Charleston, S. C.	500	8.25
Cherokee Tanning Ex. Co.		
Andrews, N. C.	500	8.25
Chicago, New York & Boston Refrigerator Co.		
112 West Adams St., Chicago, Ill.	4,200	69.30
Chicago Refrigerator Despatch.		
Chicago, Ill.	500	8.25
Cochrane Chemical Co.		
40 Central St., Boston, Mass.	500	8.25
Cold Blast Transportation Co.		
4100 S. Ashland Ave., Chicago, Ill.	6,700	110.55
Cornplanters Tank Line.		
Warren, Pa.	500	8.25
Cudahy Milwaukee Refrigerator Line.		
Cudahy, Wis.	100	1.65
Cudahy Packing Co.		
111 West Monroe St., Chicago, Ill.	2,500	41.25
Cutting, F. A.		
79 Summer St., Boston, Mass.	500	8.25
Dairy Shippers Despatch.		
Chicago, Ill.	150	2.47
Decker Fresh Meat Express.		
Minneapolis, Minn.	200	3.30
Eastman Car Co.		
Charlestown, Mass.	23,500	387.76
Express Car Line.		
Chicago, Ill.	100	1.65
Frisco Refrigerator Line.		
St. Louis, Mo.	500	8.25

	Value for taxation. Full value.	Tax. (Rate $1.65)
General Electric Co.		
Schenectady, N. Y.	$100	$1.65
German American Car Co.		
Harris Trust Bldg., Chicago, Ill.	500	8.25
Gulf Refining Co.		
Pittsburg, Pa.	2,900	47.85
Heinz, H. J. Co.		
Pittsburg, Pa.	100	1.65
Imperial Oil Co., Ltd.		
Sarnia, Ont.	100	1.65
Indian Refining Co.		
Lawrenceville, Ill.	100	1.65
Keystone Coal & Coke Co.		
Huff Bldg., Greensburg, Pa.	200	3.30
Lehigh & Wilkes-Barre Coal Co., Mass.		
141 Milk St., Boston, Mass.	350	5.77
Libby, McNeill & Libby.		
Chicago, Ill.	300	4.95
Marden, Orth & Hastings Co.		
Boston, Mass.	100	1.65
Merrimac Chemical Co.		
33 Broad St., Boston, Mass.	250	4.12
Milwaukee Refrigerator Transit & Car Co.		
Milwaukee, Wis.	100	1.65
Missouri River Despatch.		
Chicago, Ill.	1,000	16.50
Morris & Co.		
U. S. Yards, Chicago, Ill.	1,600	26.40
New England Gas & Coke Co.		
111 Devonshire St., Boston, Mass.	10,000	165.00
New York Central & Hudson River Railroad Co.		
Acctg. Dept., Grand Central Terminal, New York City	10,000	165.00
Pacific Fruit Express Co.		
San Francisco, Cal.	1,400	23.10
Peerless Transportation Co.		
Cleveland, Ohio	200	3.30
Penn. Gas Coal Co.		
222 So. 3d St., Philadelphia, Pa.	350	5.78
Pennsylvania Coal & Coke Corporation.		
17 Battery Place, New York City	200	3.30
Pennsylvania Tank Line.		
Sharon, Pa.	350	5.78

	Full value. taxation. Value for	(Rate $1.65) Tax.
Portsmouth Cotton Oil Refining Corporation.		
Portsmouth, Va.	$100	$1.65
Purity Distilling Co.		
East Cambridge, Mass.	100	1.65
Santa Fe Refrigerator Despatch Co.		
Chicago, Ill.	2,000	33.00
Shippers Refrigerator Car Co.		
Chicago, Ill.	150	2.47
Southern Extract Co.		
Knoxville, Tenn.	100	1.65
St. Louis Refrigerator Car Co.		
St. Louis, Mo.	2,000	33.00
Street's Western Stable-Car Line.		
Chicago, Ill.	100	1.65
Swift Refrigerator Transportation Co.		
Union Stock Yards, Chicago, Ill.	9,400	155.10
Tanners & Dyers Extract Co.		
Charleston, West Va.	300	4.95
Texas Co.		
Chicago, Ill.	500	8.25
Titusville Oil Works.		
Titusville, Pa.	100	1.65
Union Petroleum Co.		
Philadelphia, Pa.	100	1.65
Union Refrigerator Transit Co.		
Milwaukee, Wis.	1,000	16.50
Union Tank Line Co.		
Jersey City, N. J.	14,500	239.25
United Refining Co.		
Warren, Pa.	100	1.65
Valvoline Oil Works, Ltd.		
East Butler, Pa.	100	1.65
Vera Chemical Co.		
Stoneham, Mass.	500	8.25
Western Heater Despatch.		
189 La Salle St., Chicago, Ill.	1,000	16.50
Western Live Stock Express Co.		
Webster Bldg., Chicago, Ill.	100	1.65
Westmoreland Coal Co.		
224 So. 3d St., Philadelphia, Pa.	1,200	19.80
White City Refrigerator Despatch.		
Postal Telegraph Bldg., Chicago, Ill.	300	4.95
Wilburine Oil Works, Ltd.		
Warren, Pa.	100	1.65
	$120,350	$1,985.77

TABLE 7.

RAILROAD CORPORATIONS.

NAMES.	Par value of stock.	Par value of bonds.	Average market value of stock.	Average market value of bonds.	Market value of floating debt.	Miles of road —total.	Miles of road in N. H.	Miles of track —total.	Miles of track in N. H.	N. H. assessed value less local assessments.
Boston & Maine R. R.	$42,655,191	$43,338,000	$23,783,195	$35,120,490	$26,759,639	725.43	254.25	1,375.04	389.47	$9,564,011
Boston & Lowell R. R. Corp., ½										
Manchester & Keene	7,679,400	6,528,000	13,208,568	6,114,840	.....	111.27	14.80	301.89	23.53	246,520
Connecticut River R. R. Co.	3,233,300	2,259,000	6,628,265	2,018,900	1,641,666	88.36	30.68	202.01	38.01	532,965
Fitchburg R. R. Co.	25,860,000	25,939,000	17,088,250	23,328,675	.....	394.14	78.52	831.19	110.62	2,963,304
Nashua & Acton R. R.	300,000	.....	*c* 300,000	.....	.....	20.12	4.98	23.53	6.48	82,620
Nashua & Lowell R. R. Corp.	800,000	.....	1,420,000	.....	.....	14.50	5.25	43.42	15.70	503,000
Concord & Claremont (N. H.) R. R.	412,400	500,000	.....	*c* 500,000	254,245	70.90	70.90	85.08	85.08	890,800
1 Concord & Montreal R. R.	8,257,600	7,023,000	9,527,144	6,615,200	.....	368.17	368.17	569.67	569.67	14,322,778
Concord & Portsmouth R. R.	350,000	.....	560,437	.....	.....	39.87	39.87	57.07	57.07	1,054,180
Franklin & Tilton R. R.	265,600	.....	*c* 265,600	.....	.....	4.95	4.95	8.28	8.28	265,000
Manchester & Lawrence R. R.	1,000,000	274,000	1,350,000	254,820	.....	22.39	22.39	34.62	34.62	1,663,450
Mt. Washington Ry. Co.	211,500	.....	*c* 74,025	.....	.....	3.17	3.17	3.34	3.34	40,650
New Boston R. R. Co.	84,000	.....	*c* 84,000	.....	.....	5.19	5.19	5.98	5.98	55,000
Northern R. R.	3,068,400	.....	3,497,976	.....	.....	82.91	82.67	109.66	108.67	3,249,850
Pemigewasset Valley R. R.	541,500	.....	568,575	.....	.....	22.93	22.93	35.10	35.10	599,000
Peterborough R. R.	385,000	.....	*c* 231,000	.....	.....	10.50	10.50	11.90	11.90	216,000
Peterborough & Hillsborough R. R.	45,000	165,000	.....	*c* 98,000	120,807	18.51	18.51	20.54	20.54	94,100
Sullivan County R. R.	500,000	357,000	800,000	335,580	.....	26.00	25.19	50.87	50.06	864,900
Suncook Valley R. R.	341,700	.....	*c* 119,595	.....	.....	17.41	17.41	21.18	21.18	107,200
Wilton R. R.	240,000	.....	450,000	.....	.....	15.50	15.50	21.12	21.12	436,450
Sub-total	*$96,230,591*	*$86,383,000*	*$79,956,630*	*$74,386,505*	*$28,776,357*	*2,062.22*	*1,095.83*	*3,811.49*	*1,616.42*	*$37,751,778*
Glen Junction Transfer Co.	$30,000	.....	.....	.....	$22,912	1.50	1.50	3.00	3.00	$20,000
Grand Trunk Ry. Co.	5,484,000	$3,438,000	7,675,000	.....	.....	166.72	52.06	251.08	71.80	2,095,114

Portland & Ogdensburg Ry.....	4,392,538	2,119,000	2,196,269	2,119,000	.....	110.44	57.98	154.15	76.83	1,691,855
Upper Coös R. R.....	350,000	1,043,000	350,000	1,029,000	.....	55.33	41.52	67.02	50.39	697,800
Sub-total	*$10,256,538*	*$6,600,000*	*$10,221,269*	*$3,148,000*	*$22,912*	*333.99*	*153.06*	*475.75*	*202.02*	*$4,504.769*
Berlin Street Railway.....	$110,000	$105,000	.....	*e* $94,500	.....	7.50	7.50	7.75	7.75	$119,000
Chester & Derry R. R. Asso.....	50,000	50,000	*e* $10,000	*e* 40,000	.....	7.75	7.75	8.08	8.08	50,000
Citizens Ry. Materials Co.....	.....	.....	.....	.....	.....	3.00	3.00	3.00	3.00	5,000
Claremont Ry. & Lighting Co...	160,000	150,000	*e* 30,000	*e* 120,000	$1,523	5.33	5.33	8.41	8.41	144,450
2 Dover, Somersworth & Rochester St. Ry. Co.....	375,000	300,000	*e* 93,750	*e* 240,000	4,640	20.00	20.00	20.82	20.82	251,525
Exeter, Hampton & Amesbury St. Ry. Co.....	137,000	113,000	*e* 35,000	*e* 98,000	2,572	20.721	20.721	20.721	20.721	94,250
3 Keene Electric Ry. Co.....	145,000	135,000	*e* 20,000	*e* 100,000	11,627	8.58	8.58	8.58	8.58	117,720
Laconia St. Ry.....	140,000	131,000	*e* 20,000	*e* 100,000	13,284	8.36	8.36	8.36	8.36	116,700
4 Manchester St. Ry.....	1,219,500	.....	1,500,000	.....	143,500	28.815	28.815	42.726	42.726	1,450,000
a Massachusetts Northeastern St. Ry. Co.	1,455,000	1,285,000	.....	1,000,000	837,279	117.95	40.64	125.70	43.99	300,000
5 Nashua St. Ry.....	325,000	150,000	*e* 347,750	135,750	17,017	14.605	14.605	16.126	16.126	493,150
b Springfield Electric Ry. Co. of N. H.	12,000	.....	.....	.....	.....	.....	.....	6.50	2.25	60,000
Sub-total	*$4,128,500*	*$2,419,000*	$92,234.399	$79,462,755	$29,830,711	2,638.821	1,414.191	4,564.013	2,009.253	$45,458,342
Grand total	$110,615,629	$95,402,000	*$2,056,500*	*$1,928,250*	*$1,031,442*	*242.611*	*165.301*	*276.773*	*190.813*	*$3,201.795*

1. 17.82 miles electric road not taxable.
2. 3.08 " " " " "
3. 2.30 " " " " "
4. 6.104 " " " " "
5. .611 " " " " " .

a. Consolidation; including Haverhill, Plaistow & Newton St. Ry. Co.
Hudson, Pelham & Salem St. Ry. Co.
Seabrook & Hampton Beach St. Ry. Co

b. Stock owned by and road leased to Springfield Electric Ry. Co. of Vermont.

e. Estimated. No sales.

TABLE 8.

TELEPHONE COMPANIES AND CORPORATIONS.

NAMES.	Par value of stock.	Par value of bonds and other indebtedness.	Market value of stock.	Cost of all property in N. H.	Total length of single wire mileage.	Length of single wire mileage in N. H.	Full value exclusive of exemptions.
Ammonoosuc	$1,125	.....	$1,125	.....	44	44	$1,200
"Annett Mfg. Co."	.....	.....	.....	$500	12	12	500
"Bakie-Currier"	.....	.....	.....	150	3	3	200
"Barrington & Strafford"	.....	.....	.....	600	5	5	300
"Berlin Mills"	.....	.....	.....	1,000	87	37	1,000
"Bradford"	.....	.....	.....	550	137	12	500
Canterbury & Boscawen	4,025	$2,430	4,025	.....	208	208	5,500
Chester & Derry	1,500	.....	750	.....	32	32	1,000
Chichester	2,100	.....	2,100	.....	48	48	2,500
Citizens'	100,000	.....	80,000	.....	2,104	2,104	100,000
Cold River	1,650	.....	1,650	.....	29	10	1,200
"Contoocook Valley"	.....	.....	.....	10,000	250	250	15,000
Coös	153,000	80,022	153,000	.....	4,972	4,664	215,000
"Cornish Flat"	.....	.....	.....	485	20	20	400
Dunbarton	1,750	400	1,750	.....	50	50	2,000
"Errol Hill"	.....	.....	.....	985	13	11	800
"Etna, alias People's"	.....	.....	.....	.....	.....	.....	500
Etna & Hanover Center	1,000	.....	300	.....	30	30	500
"Fairlee"	.....	.....	.....	.....	.....	.....	3,500
Fairlee & Wentworth	600	.....	500	.....	30	30	500
"Fairmount"	.....	.....	.....	.....	.....	.....	600
"Forest Lake"	.....	.....	.....	.....	.....	.....	300
"Grafton"	.....	.....	.....	100	.....	.....	100
"Grafton Local"	.....	.....	.....	302	15	15	200
Henniker	6,500	325	6,500	.....	208	208	7,500
"Hollis"	.....	.....	.....	3,250	87	87	6,000
"Hudson Center & West Windham"	.....	.....	.....	985	14	14	1,500
"Hurricane of Keene & Westmoreland"	.....	.....	.....	423	4	4	200
Jefferson	1,000	.....	1,000	.....	46	46	2,000

Kearsarge	11,850	2,500	5,925	.....	.....	.....	10,000
Lake Morey	1,720	500	.....	.....	72	6	300
"Lempster"	.....	.....	.....	1,095	61	61	1,500
"Livermore"	.....	.....	.....	186	4	4	500
Lyme People's	820	300	.....	.....	110	104	1,500
Madison Local	1,000	.....	.....	.....	66	56	1,500
Mascoma Valley	36,000	1,239	36,000	.....	982	982	42,000
Meredith	1,000	14,802	1,000	.....	393	393	15,000
"Meriden"	.....	.....	.....	.....	.....	.....	1,700
"Merrill, C. H."	.....	.....	.....	500	8	8	350
Merrimack County	3,625	1,000	1,740	.....	51	51	3,500
New Boston & Francestown	1,600	232	900	.....	44	44	1,000
New England	43,096,200	12,425,000	60,536,270	.....	1,146,238	64,468	3,050,000
North Conway & Jackson	5,000	3,375	.....	.....	153	153	10,000
Nottingham	720	.....	360	.....	14	14	1,000
Ossipee Valley	53,375	52,515	10,600	.....	1,590	486	29,500
Passumpsic	267,125	141,693	267,125	.....	8,504	58	3,000
"Pelham Association"	.....	.....	.....	1,000	46	46	1,000
"Piermont"	.....	.....	.....	.....	.....	.....	4,000
"Pine River"	.....	.....	.....	800	14	14	400
Sandown	700	.....	700	.....	12	12	1,000
Sandwich Local	7,000	.....	3,500	.....	200	200	6,000
Shoals Cable Co.	50,000	.....	.....	.....	.....	.....	500
Southern Coös	4,575	2,675	.....	.....	113	61	2,500
"Stoddard"	.....	.....	.....	580	12	12	500
"Sugar River Valley"	1,535	100	1,535	.....	130	130	2,500
"Sunapee"	.....	.....	.....	.....	.....	.....	6,000
"Tuftonborough"	.....	.....	.....	.....	.....	.....	800
Union	5,850	1,250	5,850	.....	273	273	12,000
Wakefield	1,000	.....	1,000	.....	36	32	1,500
"Washington & Cherry Valley"	.....	.....	.....	1,000	100	100	2,000
Weare	3,000	.....	3,600	.....	206	206	5,500
West Hopkinton	3,700	.....	3,700	.....	127	127	6,000
White Mountain	140,625	29,192	.....	.....	2,770	2,480	115,000
Wilton	10,000	.....	.....	.....	88	88	25,000
Winnepesaukee	200,000	37,149	.....	.....	3,492	3,492	210,000
Totals	$44,181,670	$12,796,699	$61,131,905	$24,491	1,174,447	82,105	$3,945,050

The quotation marks indicate that the company is an unincorporated one.

TABLE 9.

TELEGRAPH COMPANIES.

NAMES.	Par value of stock.	Par value of bonds.	Total length of single wire mileage.	Length of single wire mileage in N. H.	Value for taxation. Full value.
American	$14,050	.....	53	53	$2,500
Commercial Union...	500,000	.....	9,147	459	20,000
Great Northwestern..	125,000	.....	29,392	100	10,000
Western Union.....	99,817,100	$28,745,000	1,562,171	5,154	175,000
Totals	$100,456,150	$28,745,000	1,590,763	5,766	$207,500

TABLE 10.

EXPRESS COMPANIES.

NAMES.	Value of property owned.	Net earnings.	Total length of lines, miles.	Total length of lines in N. H.	Value for taxation. Full value.
American	$25,066,510	*$725,590	137,336	1,154	$300,000
Atlantic	13,100	307	342	40	5,000
Canadian	447,868	90,298	7,080	53	15,000
Manchester & Concord	5,290	*470	105	65	8,000
Richmond's Exeter & Boston	900	*329	51	17	800
Totals	$25,533,668	$90,605	144,914	2,329	$328,800

*Deficit.

TABLE 11.

PARLOR CAR COMPANIES.

NAMES.	Total value of car equipment.	Total number of car miles run.	Number car miles run in N. H.	Proportional value in N. H.
Canadian Pacific R. R.....	$48,000	1,487	126	$15,000
The Pullman Co.....	39,111,424	719,502,688	2,027,840	185,000
Totals	$39,159,424	719,504,175	2,027,966	$200,000

TABLE 12.

PRIVATE CAR COMPANIES.

NAMES.	Total value of car equipment.	Total number of car miles run.	Number car miles run in N. H.	Proportional value in N. H.
American Cotton Oil Co.....	$480,303	7,276,556	777	$100
American Refrigerator Transit Co.....	2,008,625	74,532,220	41,720	1,200
American Tank Line.....	.....	1,758,773	313	200
Armour Car Lines.....	6,167,976	325,060,000	603,796	11,500
Arms Palace Horse Car Co.	.....	5,622,142	22,635	1,000
Barber Asphalt Paving Co...	216,100	479,986	961	500
Barrett Mfg. Co.....	449,039	3,858,923	2,960	350
Basic Extract Co.....	3,500	.....	228	100
Cedar Rapids Refrigerator Line	43,280	4,327,485	4,410	100
Champion Fibre Co.....	30,000	157,236	1,456	300
Charleston Refinery Co.....	.....	.....	.....	500
Cherokee Tanning Ex. Co.....	.....	.....	.....	500
Chicago, New York & Boston Refrigerator Co.....	486,436	15,687,163	134,447	4,200
Chicago Refrigerator Despatch	.....	.....	.....	500
Cochrane Chemical Co.....	.....	.....	.....	500
Cold Blast Transportation Co.	1,062,051	43,646,189	273,226	6,700
Cornplanters Tank Line.....	.....	.....	.....	500
Cudahy Milwaukee Refrigerator Line	146,400	4,589,222	1,729	100
Cudahy Packing Co.....	950,463	50,486,948	181,861	2,500
Cutting, F. A.....	.....	.....	.....	500
Dairy Shippers Despatch.....	120,000	4,708,141	7,139	150
Decker Fresh Meat Express..	.....	.....	.....	200
Eastman Car Co.....	216,600	3,289,273	362,400	23,500
Express Car Line.....	4,000	190,500	2,534	100
Frisco Refrigerator Line.....	.....	28,791,533	3,192	500
General Electric Co.....	12,720	149,290	672	100
German American Car Co....	.....	14,679,228	3,260	500
Gulf Refining Co.....	1,019,700	8,399,924	23,796	2,900
Heinz, H. J. Co.....	53,700	1,267,416	430	100
Imperial Oil Co. Ltd.....	454,064	7,472,341	120	100
Indian Refining Co.....	686,300	10,906,421	548	100
Keystone Coal & Coke Co.....	.....	.....	.....	200
Lehigh & Wilkes-Barre Coal Co.	8,000	41,446	1,952	350
Libby, McNeill & Libby.....	55,000	2,167,821	12,740	300
Marden, Orth & Hastings Co.	2,500	.....	614	100
Merrimac Chemical Co.....	5,000	11,352	611	250
Milwaukee Refrigerator Transit & Car Co.....	150,000	21,000,000	1,638	100
Missouri River Despatch.....	.....	.....	.....	1,000
Morris & Co.....	999,950	59,997,456	96,107	1,600
New England Gas & Coke Co	76,340	216,211	28,189	10,000
New York Central & Hudson River R. R. Co.....	.....	.....	.....	10,000
Pacific Fruit Express Co.....	6,498,500	306,734,106	63,096	1,400
Peerless Transportation Co...	.....	.....	.....	200
Penn Gas Coal Co.....	375,000	14,972,627	13,796	350
Pennsylvania Coal & Coke Corp.	416,350	7,493,760	3,393	200
Pennsylvania Tank Line.....	101,247	478,398	1,566	350
Portsmouth Cotton Oil Refining Corporation	90,000	.....	200	100
Purity Distilling Co.....	.....	.....	.....	100
Santa Fe Refrigerator Despatch Co.	1,660	149,174,701	55,398	2,000

TABLE 12.—*Concluded.*

NAMES.	Total value of car equipment.	Total number of car miles run.	Number car miles run in N. H.	Proportional value in N. H.
Shippers Refrigerator Car Co.	100,000	3,333,834	4,776	150
Southern Extract Co.	35,091	552,192	1,200	100
St. Louis Refrigerator Car Co.	.....	.....	.....	2,000
Street's Western Stable-Car Line	1,492,750	96,390,422	4,805	100
Swift Refrigerator Transportation Co.	3,852,450	209,707,750	513,518	9,400
Tanners & Dyers Extract Co.	18,000	288,101	5,468	300
Texas Co.	.....	.....	.....	500
Titusville Oil Works	25,570	586,468	2,492	100
Union Petroleum Co.	.....	.....	.....	100
Union Refrigerator Transit Co.	1,163,700	73,403,684	64,661	1,000
Union Tank Line Co.	9,887,334	106,617,565	159,271	14,500
United Refining Co.	.....	.....	.....	100
Valvoline Oil Works, Ltd.	38,765	1,352,956	1,116	100
Vera Chemical Co.	.....	.....	.....	500
Western Heater Despatch	.....	.....	.....	1,000
Western Live Stock Express Co.	212,500	23,103,135	3,500	100
Westmoreland Coal Co.	750,000	22,241,997	35,714	1,200
White City Refrigerator Despatch	.....	.....	.....	300
Wilburine Oil Works, Ltd.	14,682	719,357	6,552	100
Totals	$40,981,646	1,717,862,249	2,756,983	$120,350

VALUATION AND TAXATION
1914

TABLE 13.

Number of Ratable Polls, Valuation, Live Stock, and Amount of Taxes in each Town as returned by the Assessors for 1914.

ROCKINGHAM COUNTY.

Towns.	HORSES.			ASSES AND MULES.			OXEN.			COWS.		
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.
Atkinson	133	$14,310	$107.59	..	.....	.....	4	$250	$62.50	278	$12,291	$44.21
Auburn	159	16,760	105.40	..	.....	.....	6	615	102.50	219	10,395	47.46
Brentwood	141	15,915	112.87	..	.....	.....	18	1,725	95.83	298	14,200	47.65
Candia	229	22,235	97.09	..	.....	.....	2	200	100.00	273	10,254	37.56
Chester	227	20,250	89.20	4	$225	$56.25	11	820	74.54	258	9,950	38.56
Danville	96	8,155	84.94	..	.....	.....	...	.....	.....	74	2,944	39.78
Deerfield	323	34,732	107.52	2	300	150.00	39	3,335	85.51	429	17,469	40.72
Derry	428	43,415	101.43	1	100	100.00	14	1,050	75.00	659	29,685	45.04
East Kingston	142	14,815	104.33	..	.....	.....	4	300	75.00	186	8,246	44.33
Epping	221	24,660	111.58	4	400	100.00	6	450	75.00	301	14,850	49.33
Exeter	329	39,795	120.95	1	200	200.00	...	.....	.....	316	15,680	49.62
Fremont	118	13,720	116.27	1	200	200.00	4	350	87.50	118	4,935	41.82
Greenland	168	22,470	133.75	4	600	150.00	...	.....	.....	567	29,640	52.27
Hampstead	176	19,010	108.01	..	.....	.....	...	.....	.....	297	15,175	51.09
Hampton	222	22,515	101.41	..	.....	.....	16	1,340	83.75	307	14,830	48.30
Hampton Falls	143	16,170	113.07	..	.....	.....	8	825	103.12	358	13,430	37.51

Kensington	146	14,260	97.67	..	.....	.....	4	315	78.75	460	18,447	40.10
Kingston	171	15,445	90.32	..	.....	.....	10	1,005	100.50	181	8,285	45.77
Londonderry	356	42,150	118.39	..	.....	.....	4	400	100.00	677	33,530	49.52
Newcastle	14	1,135	81.07	..	.....	.....	..	.....	.....	11	455	41.36
Newfields	51	5,350	104.90	..	.....	.....	..	.....	.....	76	3,490	45.92
Newington	140	19,510	139.35	..	.....	.....	..	.....	.....	279	13,830	49.56
Newmarket	227	26,235	115.57	..	.....	.....	18	1,425	79.16	359	15,400	42.89
Newton	131	11,620	88.70	..	.....	.....	..	.....	.....	135	6,175	45.74
North Hampton	217	25,876	119.24	1	75	75.00	6	610	101.66	561	28,804	51.34
Northwood	293	27,675	94.45	11	1,975	179.54	6	560	93.33	181	7,460	41.21
Nottingham	241	29,795	123.63	2	200	100.00	10	985	98.50	196	8,080	41.22
Plaistow	162	15,630	96.48	2	500	250.00	...	.....	.....	210	10,388	49.46
Portsmouth	580	64,160	110.62	8	1,000	125.00	...	.....	.....	652	29,625	45.43
Raymond	191	20,595	107.82	..	.....	.....	4	360	90.00	218	10,140	46.51
Rye	233	19,766	84.83	..	.....	.....	4	275	68.75	360	14,565	40.45
Salem	272	32,210	118.41	3	400	133.33	...	.....	.....	620	33,000	53.22
Sandown	76	7,455	98.09	..	.....	.....	4	435	108.75	108	4,322	40.01
Seabrook	95	6,500	68.42	..	.....	.....	...	.....	.....	86	3,115	36.22
South Hampton	95	8,930	94.00	2	150	75.00	...	.....	.....	140	6,005	42.85
Stratham	178	21,685	121.82	5	500	100.00	10	700	70.00	367	16,220	44.19
Windham	145	18,615	128.37	1	75	75.00	10	935	93.50	243	11,640	47.90
Totals	7,269	$783,524	$107.78	52	$6,900	$132.69	222	$19,265	$86.77	11,058	$506,950	$45.84

TABLE 13.—*Continued.*

ROCKINGHAM COUNTY.

Towns.	Other neat stock.			Sheep.			Hogs.			Fowls.		Vehicles and automobiles.	
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Number.	Valuation.
Atkinson	40	$1,489	$37.22	...	.....	....	7	$67	$9.57	685	$567	17	$3,975
Auburn	2[illegible]	705	30.65	...	.....	....	5	43	8.60	2,217	1,382	...	3,790
Brentwood	71	2,137	30.07	...	.....	....	9	180	20.00	280	225	5	1,525
Candia	30	805	26.83	79	$338	$4.27	5	40	8.00	905	589	17	6,083
Chester	31	1,041	33.58	17	79	4.64	4	52	13.00	1,251	1,215	20	8,760
Danville	[illegible]	65	21.66	9	36	4.00	....	.....	.....	355	178	11	4,650
Deerfield	88	3,975	45.17	94	465	4.94	21	313	14.90	390	420	...	4,240
Derry	45	1,310	29.11	9	45	5.00	4	65	16.25	975	775	206	56,400
East Kingston	24	882	36.75	2	6	3.00	7	90	12.85	300	200	29	3,175
Epping	40	1,200	30.00	32	160	5.00	12	240	20.00	1,025	655	36	11,700
Exeter	41	1,250	30.48	4	20	5.00	2	20	10.00	730	550	203	44,765
Fremont	18	435	24.16	22	88	4.00	....	.....	.....	75	30	35	14,800
Greenland	40	1,430	35.75	40	180	4.50	113	2,015	17.83	903	450	...	6,050
Hampstead	37	1,285	34.72	11	55	5.00	30	215	7.16	1,381	1,036	...	11,290
Hampton	22	645	29.31	...	.....	....	...	.....	.....	.....	670	...	13,375
Hampton Falls	67	1,865	27.83	53	237	4.47	[illegible]	30	15.00	730	545	...	9,400
Kensington	47	1,460	31.06	10	45	4.50	....	.....	.....	75	38	...	2,625

Kingston	4	150	37.50	...	.....	....	10	200	20.00	517	413	42	9,515
Londonderry	68	2,510	36.91	40	166	4.15	12	155	12.91	4,122	3,151	...	9,550
Newcastle	....	.....	.....	...	.....	....	....	.....	.....	.....	.....	26	2,400
Newfields	7	205	29.28	10	60	6.00	....	.....	.....	25	20	...	400
Newington	18	690	38.33	1	5	5.00	....	.....	.....	40	20	...	6,395
Newmarket	81	3,130	38.64	9	55	6.11	1	20	20.00	337	168	36	10,900
Newton	6	205	34.16	6	24	4.00	600	7,200	12.00	912	912	...	19,025
North Hampton	55	1,700	30.90	...	.....	....	452	5,880	13.00	4,177	1,102	35	14,275
Northwood	40	1,615	40.37	111	520	4.68	3	72	24.00	.....	.....	...	10,850
Nottingham	26	930	35.76	131	770	5.87	1	15	15.00	809	555	11	1,825
Plaistow	8	336	42.00	...	.....	....	10	150	15.00	1,180	726	54	8,052
Portsmouth	25	745	29.80	3	10	3.33	4	50	12.50	695	348	...	106,900
Raymond	32	885	27.65	1	5	5.00	2	35	17.50	650	460	36	13,300
Rye	26	518	19.92	23	92	4.00	....	.....	.....	250	526	...	14,008
Salem	22	650	29.54	21	126	6.00	28	720	25.71	4,465	3,810	51	12,000
Sandown	18	550	30.55	2	8	4.00	3	40	13.33	586	352	...	2,000
Seabrook	9	253	28.11	...	.....	....	....	.....	.....	415	332	33	3,035
South Hampton	12	455	37.91	10	80	8.00	3	40	13.33	455	310	...	1,120
Stratham	70	1,850	26.42	71	281	3.95	....	.....	.....	1,986	1,003	24	8,050
Windham	27	910	33.70	4	20	5.00	4	44	11.00	767	443	10	5,750
Totals	1,221	$40,624	$32.97	825	$3,976	$4.81	1,354	$17,991	$13.28	34,665	$24,176	940	$465,953

TABLE 13.—*Continued.*
ROCKINGHAM COUNTY.

Towns.	*a* Portable mills. *b* Boats.		Wood and lumber, Laws 1911, *c* 89.	Municipal bonds and notes.	Stock in national banks in this state.	Soldiers' exemptions.	Money on hand, at interest, or on deposit.	Stock in trade.
Atkinson	*a-b*	$375	$2,608	.....	.....	$3,000	$2,749	$2,050
Auburn	*a-b*	4,450	25,650	.....	.....	6,700	4,249	13,250
Brentwood	*a*	300	13,600	$5,000	.....	7,315	6,577	21,925
Candia	*a*	3,100	51,478	.....	$3,212	9,005	6,829	8,350
Chester	*a*	1,575	13,945	.....	5,000	17,515	3,351	5,400
Danville	*a*	600	22,750	3,700	.....	2,300	467	5,456
Deerfield	*a*	2,175	28,130	1,900	6,220	9,005	9,656	7,700
Derry	*a-b*	1,200	7,966	8,000	17,300	36,000	20,565	548,050
East Kingston	*a*	600	27,750	.....	.....	6,175	6,092	16,274
Epping	*b*	75	8,650	.....	286	14,000	7,741	62,825
Exeter	*b*	3,300	3,165	*323,000	5,100	23,600	322,895	339,075
Fremont	.....	.....	7,755	8,000	.....	4,375	5,402	27,410
Greenland	.....	.....	.....	500	1,325	2,000	6,227	3,350
Hampstead	*a*	200	6,950	.....	2,700	16,210	1,196	14,265
Hampton	*a-b*	3,540	29,300	14,500	1,938	24,420	25,037	34,280
Hampton Falls	*a-b*	645	34,870	105,320	2,300	888	19,870	8,725
Kensington	*a*	1,125	47,900	.....	.....	3,450	1,025	12,760
Kingston	*a*	1,500	31,835	.....	8,000	17,635	19,369	13,200
Londonderry	*a*	1,700	50,640	.....	3,200	11,450	8,790	31,515

Newcastle	*b*	400	.....	11,400	11,600	4,600	29,947	775
Newfields	*a*	50	.....	.....	1,962	4,200	7,243	4,300
Newington	*b*	2,000	340	500	7,555	350	4,555	265
Newmarket	*a-b*	3,750	10,850	.....	16,402	13,000	3,597	473,176
Newton	*a-b*	575	11,175	.....	.....	11,615	2,900	23,650
North Hampton	*a*	5,750	7,073	.....	28,640	4,000	50,018	10,598
Northwood	*a-b*	3,000	23,060	.....	1,793	16,796	4,288	15,100
Nottingham	*a*	7,200	89,550	.....	1,200	12,135	1,000	4,000
Plaistow	*a*	176	5,245	8,000	.....	2,000	1,288	19,200
Portsmouth	*b*	44,643	24,310	61,507	140,169	37,633	118,360	1,026,205
Raymond	*a*	400	20,905	.....	.....	7,900	9,983	62,415
Rye	*a-b*	2,650	11,025	5,970	4,600	5,635	3,823	3,500
Salem	*a-b*	2,500	30,300	.....	.....	21,100	3,900	38,550
Sandown		.....	.....	.....	2,400	5,450	7,012	12,040
Seabrook	*a-b*	1,600	3,860	.....	.....	8,900	1,330	6,270
South Hampton	*a*	750	3,500	1,135	.....	3,000	22,797	.....
Stratham	*a*	250	575	.....	2,000	9,565	5,193	2,391
Windham	*a-b*	1,175	8,420	.....	.....	3,525	19,205	7,800
Totals		$103,329	$665,130	$558,632	$264,902	$386,447	$774,526	$2,886,095

*Doomage.

TABLE 13.—*Continued.*
ROCKINGHAM COUNTY.

Towns.	Polls, number.	*a* Aqueducts. *b* Locks and canals. *c* Toll bridges. *d* Electric light lines. *e* Wharves, ferries.		Mills, factories, and machinery.	Improved and unimproved lands and buildings.	Amount of inventory.	Amount of taxes, including poll taxes.	Property rate per cent.
Atkinson	117		.....	$3,500	$342,067	$386,298	$6,530.66	$1,63
Auburn	211		.....	1,400	525,355	608,044	8,022.55	1.25
Brentwood	145		.....	11,500	306,490	401,297	5,707.50	1.35
Candia	228		.....	425	394,770	508,708	8,024.28	1.49
Chester	202		.....	3,045	466,310	541,018	9,060.29	1.60
Danville	147		.....	1,650	225,548	276,199	5,373.18	1.84
Deerfield	274		.....	1,600	480,190	602,820	10,313.68	1.62
Derry	1,593		.....	219,900	3,004,035	3,959,861	72,800.07	1.75
East Kingston	112		.....	125	222,984	301,539	3,963.08	1.24
Epping	406		.....	32,250	594,595	760,737	16,867.46	2.11
Exeter	1,049		.....	164,650	2,739,835	4,003,300	84,166.46	2.05
Fremont	155		.....	24,350	334,555	442,030	6,367.09	1.37
Greenland	141	*d*	$6,000	.....	415,060	495,297	7,724.60	1.50
Hampstead	200		.....	6,300	453,865	533,542	7,610.31	1.35
Hampton	378		.....	7,000	1,885,915	2,054,885	28,125.81	1.33
Hampton Falls	139		.....	2,760	329,201	546,393	5,905.85	1.03
Kensington	120		.....	.....	197,365	297,365	5,146.53	1.65
Kingston	286		.....	3,800	526,573	639,290	10,861.19	1.60
Londonderry	406		.....	15,350	766,378	969,185	19,808.06	1.96

Newcastle	93	*c-d*	5,440	.....	342,795	406,347	7,353.23	1.76
Newfields	116		.....	2,700	179,939	205,719	3,499.66	1.58
Newington	90		.....	1,100	288,710	345,475	4,705.19	1.31
Newmarket	867		.....	402,100	789,750	1,756,958	34,388.72	1.90
Newton	260		.....	14,050	404,705	502,216	8,915.90	1.67
North Hampton ..	213		.....	.....	1,080,996	1,261,397	14,376.13	1.10
Northwood	299		.....	1,660	461,930	561,558	12,671.50	2.15
Nottingham	212		.....	18,800	476,530	641,435	10,686.96	1.60
Plaistow	290		.....	22,000	575,462	667,153	12,255.17	1.75
Portsmouth	3,200		.....	356,350	8,935,653	10,910,035	246,420.74	2.20
Raymond	380		.....	2,550	580,721	722,754	15,215.08	2.00
Rye	275		.....	.....	1,352,491	1,433,809	18,342.11	1.24
Salem	600		.....	142,200	1,665,314	1,965,680	36,582.24	1.80
Sandown	125		.....	4,250	168,165	209,029	4,430.58	2.00
Seabrook	411	*d*	5,050	535	417,068	448,948	7,333.07	1.45
South Hampton ..	84	*d*	4,000	.....	165,435	214,707	3,818.02	1.70
Stratham	159		.....	350	382,750	443,798	8,617.21	1.87
Windham	164		.....	.....	657,357	732,389	12,063.32	1.60
Totals	14,147		$20,490	$1,478,250	$33,136,862	$41,757,215	$784,053.48	$1.81

TABLE 13.—*Continued.*

STRAFFORD COUNTY.

TOWNS.	HORSES.			ASSES AND MULES.			OXEN.			COWS.		
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.
Barrington	263	$26,000	$98.85	..	....	.....	18	$1,500	$83.33	353	$13,940	$39.49
Dover	726	92,150	126.92	2	$50	$25.00	14	1,100	78.57	784	32,895	41.95
Durham	180	24,160	134.22	..	....	.....	12	1,255	104.58	290	13,547	46.71
Farmington	346	44,320	128.09	2	200	100.00	21	2,100	100.00	402	16,745	41.65
Lee	160	22,910	143.18	..	....	.....	12	1,120	93.33	300	14,645	48.81
Madbury	129	13,310	103.10	..	....	.....	14	1,390	99.28	201	8,068	40.13
Middleton	77	7,445	96.68	..	....	.....	14	1,290	92.14	72	2,730	37.91
Milton	226	25,890	114.33	1	50	50.00	30	3,075	102.50	216	9,760	45.18
New Durham	125	13,280	106.24	..	....	.....	16	1,360	85.00	151	5,275	34.93
Rochester	697	74,610	107.04	1	50	50.00	28	3,000	107.14	732	31,310	42.77
Rollinsford	152	15,800	103.94	..	.. .	.....	..	....	....	308	16,046	52.09
Somersworth	263	38,915	147.96	..	....	.....	..	....	....	222	9,930	44.72
Strafford	290	29,515	101.77	..	....	.....	26	2,275	87.50	508	20,046	39.46
Totals	3,634	$428,305	$117.86	6	$350	$58.33	205	$19,465	$94.95	4,539	$194,937	$42.94

TABLE 13.—*Continued.*

STRAFFORD COUNTY.

Towns.	OTHER NEAT STOCK.			SHEEP.			HOGS.			FOWLS.		VEHICLES AND AUTOMOBILES.	
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Number.	Valuation.
Barrington	76	$2,550	$33.55	56	$281	$5.01	3	$60	$20.00	1,397	$824	17	$4,855
Dover	109	3,140	28.80	44	236	5.36	15	384	25.60	....	1,401	...	136,755
Durham	48	1,980	41.25	109	545	5.00	6	90	15.00	2,041	1,280	46	16,350
Farmington	71	2,435	34.29	29	103	3.55	5	60	12.00	360	189	108	16,900
Lee	57	1,575	27.63	89	460	5.16	4	60	15.00	1,284	1,030	8	1,900
Madbury	58	1,745	30.08	45	135	3.00	13	256	19.66	650	325	10	2,050
Middleton	28	1,295	46.25	60	260	4.33	..	.....	.....	....	.....	1	150
Milton	28	960	34.28	64	275	4.30	5	75	15.00	50	25	64	20,975
New Durham	56	1,295	23.12	4	20	5.00	..	.....	.....	400	200	7	2,150
Rochester	77	3,090	40.12	135	549	4.06	20	305	15.25	1,954	1,466	357	99,005
Rollinsford	10	530	53.00	44	360	8.18	..	.....	.....	300	175	11	4,100
Somersworth	4	825	206.25	2	8	4.00	13	161	12.38	275	192	211	45,387
Strafford	123	3,990	32.43	129	601	4.65	..	.....	.....	....	50	...	2,835
Totals	745	$25,410	$34.10	810	$3,833	$4.73	84	$1,451	$17.27	8,711	$7,157	840	$353,412

TABLE 13.—*Continued.*

STRAFFORD COUNTY.

Towns.	*a* Portable mills. *b* Boats.		Wood and lumber, Laws 1911, *c* 82.	Municipal bonds and notes.	Stock in national banks in this state.	Soldiers' exemptions.	Money on hand, at interest, or on deposit.	Stock in trade.
Barrington	*a*	$2,965	$32,579	$1,000	$400	$9,020	$4,220	$12,040
Dover	*a-b*	3,595	26,020	13,951	79,542	40,259	73,505	1,561,620
Durham	*a-b*	1,850	18,430	.....	16,125	2,450	4,428	4,000
Farmington	*a*	3,325	23,700	30	23,996	45,715	7,864	173,056
Lee	*a*	600	9,395	.....	3,100	3,570	9,775	2,250
Madbury	*a*	1,600	8,268	.....	6,911	2,304	7,118	800
Middleton	*a*	600	18,742	.....	.....	2,525	95	.....
Milton	*a-b*	2,950	63,605	2,800	1,200	20,850	25,748	83,890
New Durham	*a-b*	2,075	.....	.....	.....	3,495	435	30,829
Rochester	*a-b*	3,100	49,158	18,885	39,303	26,800	52,098	714,664
Rollinsford	*a*	300	.....	.....	54,814	1,800	67,928	227,139
Somersworth	...	.....	.....	9,305	107,335	7,650	171,118	514,214
Strafford	*a*	3,700	35,152	1,200	1,700	14,245	491	3,400
Totals		$26,660	$285,049	$47,171	$334,726	$180,683	$424,823	$3,327,902

TABLE 13.—*Continued.*

STRAFFORD COUNTY.

Towns.	Polls, number.	*a* Aqueducts. *b* Locks and canals. *c* Toll bridges. *d* Electric light lines. *e* Wharves, ferries.	Mills, factories, and machinery.	Improved and unimproved lands and buildings.	Amount of inventory.	Amount of taxes, including poll taxes.	Property rate per cent.
Barrington	276	.....	$4,800	$117,916	$555,930	$12,782.46	$2.20
Dover	2,837	.....	981,808	7,786,945	10,795,097	205,522.91	1.85
Durham	259	.....	.....	568,240	672,280	11,610.62	1.65
Farmington	831	.....	36,775	1,185,388	1,537,186	36,624.06	2.28
Lee	144	.....	11,500	295,580	376,200	6,263.34	1.60
Madbury	121	.....	.....	214,525	266,501	3,173.51	1.10
Middleton	94	.....	.....	98,185	130,792	3,060.21	2.20
Milton	508	.....	294,700	798,460	1,334,438	19,306.51	1.37
New Durham ...	203	.....	19,000	258,080	333,999	6,652.07	1.87
Rochester	2,503	.....	643,905	4,368,073	6,102,571	117,905.36	1.85
Rollinsford	404	.....	358,400	535,560	1,281,152	17,462.95	1.30
Somersworth ...	1,723	.....	1,625,730	2,495,725	5,018,845	86,256.94	1.65
Strafford	248	.....	2,900	440,965	548,820	10,649.69	1.85
Totals	10,151	.....	$3,979,518	$19,493,642	$28,953,811	$537,270.63	$1.78

TABLE 13.—*Continued.*

BELKNAP COUNTY.

Towns.	HORSES.			ASSES AND MULES.			OXEN.			COWS.		
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.
Alton	342	$44,980	$131.52	9	$1,475	$163.88	30	$2,340	$78.00	433	$17,447	$40.29
Barnstead	327	33,370	102.04	1	150	150.00	16	1,300	81.25	409	20,785	50.81
Belmont	295	30,094	102.01	3	200	66.66	8	680	85.00	449	18,048	40.19
Center Harbor..	142	13,680	96.33	2	300	150.00	12	1,140	95.00	189	7,840	41.48
Gilford	215	25,962	120.75	..	.....	.....	26	2,606	100.23	382	19,354	50.66
Gilmanton	308	29,978	97.33	..	.....	.....	62	4,932	79.54	519	20,292	39.09
Laconia	664	84,907	127.87	..	.....	.....	32	2,145	67.03	463	23,220	50.15
Meredith	263	29,513	112.21	2	150	75.00	38	3,548	93.36	457	18,365	40.18
New Hampton..	191	18,705	97.93	2	100	50.00	40	3,530	88.25	343	13,980	40.75
Sanbornton	296	34,230	115.64	4	430	107.50	23	2,080	90.43	540	22,310	41.31
Tilton	230	24,660	107.21	1	50	50.00	...	.....	.....	291	13,755	47.26
Totals	3,273	$370,079	$113.07	24	$2,855	$118.95	287	$24,301	$84.67	4,475	$195,396	$43.66

TABLE 13.—*Continued.*

BELKNAP COUNTY.

Towns.	OTHER NEAT STOCK.			SHEEP.			HOGS.			FOWLS.		VEHICLES AND AUTOMOBILES.	
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Number.	Valuation.
Alton	73	$2,059	$28.20	44	$207	$4.70	29	$341	$11.75	1,194	$662	68	$19,800
Barnstead	174	6,392	36.73	173	803	4.64	...	.....	.....	110	90	8	3,825
Belmont	124	4,274	34.46	74	416	5.62	15	182	12.13	320	182	17	6,450
Center Harbor.	35	1,725	49.11	34	196	5.76	16	262	16.37	....	925	...	11,015
Gilford	263	8,762	33.31	286	1,476	5.16	10	200	20.00	684	374	14	4,100
Gilmanton	278	8,300	29.85	317	1,412	4.45	11	142	12.90	1,100	550	14	4,300
Laconia	38	1,200	31.57	61	366	6.00	39	517	13.25	....	1,056	...	123,946
Meredith	135	4,999	37.02	76	307	4.03	6	56	9.33	175	100	95	14,580
New Hampton.	72	2,270	31.52	54	300	5.55	6	80	13.33	475	350	...	1,350
Sanbornton ...	128	4,490	35.07	396	1,580	3.98	12	150	12.50	....	85	9	5,670
Tilton	47	1,395	29.68	143	636	4.44	...	.....	.....	....	250	...	25,875
Totals	1,367	$45,866	$33.55	1,658	$7,699	$4.64	144	$1,930	$13.40	4,058	$4,624	225	$220,911

TABLE 13.—*Continued.*

BELKNAP COUNTY.

Towns.	*a* Portable mills. *b* Boats.		Wood and lumber, Laws 1911, *c* 82.	Municipal bonds and notes.	Stock in national banks in this state.	Soldiers' exemptions.	Money on hand, at interest, or on deposit.	Stock in trade.
Alton	*a-b*	$27,025	$44,905	$16,000	$2,200	$19,690	$12,303	$56,350
Barnstead	*a*	1,900	17,280	.....	10,314	11,330	8,401	27,150
Belmont	*a-b*	1,600	7,346	.....	900	12,500	3,870	31,850
Center Harbor	*a-b*	8,735	6,050	12,500	800	2,400	27,449	19,500
Gilford	*a-b*	6,400	3,218	12,000	500	7,800	23,708	2,530
Gilmanton	*a*	2,600	10,760	14,664	600	10,808	2,860	16,510
Laconia	*a-b*	80,645	32,522	14,974	88,386	60,830	231,646	926,771
Meredith	*a-b*	21,344	13,500	.....	3,712	9,200	72,863	70,922
New Hampton	*a*	3,875	11,675	.....	700	6,780	4,519	23,750
Sanbornton	*a-b*	4,930	23,430	.....	700	9,860	9,370	4,000
Tilton	*b*	350	8,400	.....	25,164	5,600	61,158	174,913
Totals		$159,404	$179,086	$70,138	$133,976	$156,798	$458,147	$1,354,246

TABLE 13.—*Continued.*

BELKNAP COUNTY.

Towns.	Polls, number.	*a* Aqueducts. *b* Locks and canals. *c* Toll bridges. *d* Electric light lines. *e* Wharves, ferries.		Mills, factories, and machinery.	Improved and unimproved lands and buildings.	Amount of inventory.	Amount of taxes, including poll taxes.	Property rate per cent.
Alton	390	*a*	$20,000	$11,850	$1,091,170	$1,371,114	$21,583.65	$1.51
Barnstead	300		.....	19,125	510,120	661,005	12,762.49	1.84
Belmont	356		.....	51,550	714,352	871,994	15,535.90	1.70
Center Harbor	132		.....	.....	500,482	612,599	8,533.03	1.35
Gilford	228	*a*	200	.....	802,640	914,030	12,155.58	1.28
Gilmanton	299		.....	3,014	417,698	538,612	11,908.85	2.10
Laconia	3,432		.....	1,213,678	6,543,960	9,369,939	152,098.05	1.55
Meredith	498		.....	30,250	1,315,179	1,629,388	29,116.30	1.72
New Hampton	209	*a*	10,080	1,250	459,795	556,309	10,230.85	1.76
Sanbornton	252		.....	1,200	586,190	700,845	11,016.68	1.50
Tilton	513	*a*	20,000	179,850	1,346,798	1,883,254	27,341.03	1.39
Totals	6,609		$50,280	$1,511,767	$14,318,384	$19,109,089	$312,282.41	$1.57

TABLE 13.—*Continued.*

CARROLL COUNTY.

Towns.	HORSES.			ASSES AND MULES.			OXEN.			COWS.		
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	head.
Albany	216	$40,916	$189.42	..	.....	.....	4	$320	$80.00	34	$1,224	$36.00
Bartlett	182	19,682	108.14	..	.....	.....	...	.....	.....	216	9,606	44.47
Brookfield	81	9,796	120.93	2	$250	$125.00	38	2,918	76.78	147	5,926	40.31
Chatham	102	11,695	114.65	..	.....	.....	28	2,275	81.25	132	4,420	33.48
Conway	468	62,382	133.29	..	.....	.....	24	2,026	84.41	478	20,116	42.08
Eaton	81	8,238	101.70	..	.....	.....	43	3,474	80.79	146	5,658	38.75
Effingham	190	21,300	112.10	..	.....	.....	15	1,495	99.66	188	7,120	37.87
Freedom	156	18,200	116.66	..	.....	.....	44	4,530	102.95	255	9,620	37.72
Hart's Location	12	1,700	141.66	..	.....	.....	...	.....	.....	4	500	125.00
Jackson	145	15,738	108.53	..	.....	.....	16	1,274	79.62	229	9,180	40.08
Madison	123	13,395	108.90	..	.....	.....	16	1,505	94.06	107	4,259	39.75
Moultonborough	356	51,925	145.85	..	.....	.....	45	3,671	81.57	297	12,325	41.49
Ossipee	364	42,365	116.38	1	25	25.00	26	2,915	112.11	304	11,559	38.02
Sandwich	383	43,500	113.57	1	24	24.00	88	9,000	102.27	429	18,096	42.18
Tamworth	342	42,052	122.95	2	800	400.00	32	2,965	92.65	300	13,117	43.72
Tuftonborough	158	20,627	130.55	..	.....	.....	37	3,745	101.21	297	11,174	37.62
Wakefield	269	31,895	118.56	..	.....	.....	50	4,750	95.00	283	11,985	42.34
Wolfeborough	381	53,469	140.33	..	.....	.....	34	3,330	97.94	423	20,215	47.78
Totals	4,009	$508,875	$126.93	6	$1,099	$183.16	540	$50,193	$92.95	4,269	$176,100	$41.25

TABLE 13.—*Continued.*

CARROLL COUNTY.

Towns.	OTHER NEAT STOCK.			SHEEP.			HOGS.			FOWLS.		VEHICLES AND AUTOMOBILES.	
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Number.	Valuation.
Albany	2	$50	$25.00	...	.....	....	12	$240	$20.00	....	.....	...	$1,950
Bartlett	41	1,202	29.31	43	$206	$4.79	2	22	11.00	....	.....	...	11,750
Brookfield	29	908	31.31	96	440	4.58	4	70	17.50	....	$240	6	2,700
Chatham	48	1,380	28.75	16	48	3.00	7	75	10.71	72	50	10	2,825
Conway	105	3,698	35.21	37	166	4.48	38	532	14.00	467	234	164	39,278
Eaton	35	1,171	33.45	34	154	4.52	6	93	15.50	290	100	8	3,600
Effingham	25	1,035	41.40	...	.....	....	1	20	20.00	....	.....	...	1,725
Freedom	69	2,800	40.57	76	322	4.23	...	.....	.....	....	.....	17	3,775
Hart's Location	1	100	100.00	...	.....	....	1	20	20.00	....	.....	...	185
Jackson	40	1,332	33.30	91	340	3.73	35	400	11.42	....	.....	53	9,580
Madison	28	1,220	43.57	88	336	3.81	1	8	8.00	331	248	10	4,950
Moultonborough	59	2,295	38.89	58	249	4.29	14	310	22.14	25	25	47	13,920
Ossipee	74	3,353	45.31	6	28	4.66	10	194	19.40	....	530	35	16,537
Sandwich	135	6,354	47.06	166	1,070	6.44	4	66	16.50	224	130	28	9,500
Tamworth	50	2,120	42.50	62	269	4.33	11	142	12.90	746	565	72	11,875
Tuftonborough	134	5,241	39.11	27	98	3.62	...	.....	.....	....	.....	9	3,250
Wakefield	56	1,700	30.35	65	360	5.53	6	100	16.66	625	325	70	18,245
Wolfeborough	136	4,678	34.39	43	209	4.86	12	178	14.83	425	225	123	33,626
Totals	1,067	$40,637	$38.08	908	$4,295	$4.73	164	$2,470	$15.06	3,205	$2,672	652	$189,271

TABLE 13.—*Continued.*
CARROLL COUNTY.

Towns.	*a* Portable mills. *b* Boats.		Wood and lumber, Laws 1911, *c* 82.	Municipal bonds and notes.	Stock in national banks in this state.	Soldiers' exemptions.	Money on hand, at interest, or on deposit.	Stock in trade.
Albany		.....	$8,544	.....	.....	$600	.....	$7,288
Bartlett	*a*	$800	5,300	.....	.....	2,600	$494	42,650
Brookfield	*a*	1,000	25,845	.....	.....	850	1,550	.....
Chatham	*a*	1,000	.....	.....	$200	3,805	1,405	10,630
Conway	*a-b*	3,592	1,366	$17,400	17,150	23,500	60,370	297,966
Eaton	*a*	1,275	1,578	.....	.....	6,125	1,355	2,150
Effingham	*a-b*	4,400	57,141	.....	2,973	4,025	1,934	4,400
Freedom	*a-b*	2,775	8,840	.....	3,000	2,780	3,320	6,300
Hart's Location		.....	.....	.....	.....	.....	.....	50
Jackson	*a*	1,000	300	.....	300	1,000	5,424	6,400
Madison	*a*	740	2,820	.....	3,700	4,500	1,157	25,050
Moultonborough	*a-b*	20,100	12,125	9,500	700	4,750	246,660	13,650
Ossipee	*a-b*	5,800	6,115	5,200	1,425	10,100	23,132	83,655
Sandwich	*a-b*	5,384	19,370	.....	.....	12,570	47,886	14,100
Tamworth	*a*	1,825	19,107	.....	.....	8,000	22,368	35,431
Tuftonborough	*a-b*	14,678	16,200	.....	.....	.....	4,726	14,946
Wakefield	*a-b*	4,450	29,180	9,150	1,900	9,000	26,220	94,825
Wolfeborough	*a-b*	47,800	13,850	.....	14,200	16,400	77,397	134,856
Totals		$116,619	$227,681	$41,250	$45,548	$110,605	$525,398	$794,347

TABLE 13.—*Continued.*
CARROLL COUNTY.

Towns.	Polls, number.	*a* Aqueducts. *b* Locks and canals. *c* Toll bridges. *d* Electric light lines. *e* Wharves, ferries.	Mills, factories, and machinery.	Improved and unimproved lands and buildings.	Amount of inventory.	Amount of taxes, including poll taxes.	Property rate per cent.
Albany	49	*a* $500	*$40,000	$289,668	$390,700	$4,607.61	$1.15
Bartlett	331	*a* 700	7,760	670,790	770,962	10,848.76	1.32
Brookfield	85	*b* 3,500	.....	164,970	220,113	3,119.51	1.34
Chatham	86	.....	50	182,582	218,635	3,232.91	1.40
Conway	1,142	.....	166,350	2,008,626	2,701,252	44,423.53	1.56
Eaton	100	.....	3,025	189,205	221,076	4,975.24	2.16
Effingham	194	.....	10,900	306,785	421,228	8,391.96	1.90
Freedom	157	*a* 500	4,000	318,647	383,629	6,694.24	1.66
Hart's Location	13	.....	.....	111,100	113,655	522.00	.43
Jackson	140	*a* 2,350	3,154	487,576	544,348	6,816.42	1.20
Madison	145	.....	4,575	372,800	436,763	7,278.21	1.60
Moultonborough	240	.....	.....	1,074,565	1,462,020	10,714.14	.70
Ossipee	394	*a* 9,160	.....	801,867	1,013,860	18,631.94	1.76
Sandwich	289	.....	4,520	967,360	1,146,360	15,317.29	1.30
Tamworth	292	*a* 500	3,000	960,094	1,116,230	17,327.45	1.50
Tuftonborough	204	.....	1,900	582,768	679,353	9,239.63	1.30
Wakefield	428	.....	18,300	808,825	1,062,210	17,747.35	1.59
Wolfeborough	724	.....	14,500	1,866,747	2,285,280	41,292.43	1.74
Hale's Location	....	.....	.....	12,000	12,000	28.50	.24
Totals	5,013	$17,210	$279,034	$12,176,975	$15,199,674	$231,209.12	$1.46

*Lumber R. R.

TABLE 13.—*Continued.*

MERRIMACK COUNTY.

Towns.	HORSES.			ASSES AND MULES.			OXEN.			COWS.		
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per
Allenstown	72	$8,100	$112.50	1	$100	$100.00	...	.....	.....	94	$4,070	$43.29
Andover	272	34,145	125.53	4	600	150.00	36	$3,565	$99.02	330	14,044	42.55
Boscawen	187	19,005	101.63	..	.....	.....	16	1,375	85.93	259	10,265	39.63
Bow	172	23,735	137.99	..	.....	.....	18	2,025	112.50	347	16,436	47.36
Bradford	193	19,000	98.44	6	1,125	187.50	33	3,760	113.93	379	17,830	47.04
Canterbury	165	23,235	140.81	3	375	125.00	22	2,155	97.95	409	17,734	43.35
Chichester	188	18,670	99.30	..	.....	.....	4	350	87.50	354	15,035	42.47
Concord	1,301	160,805	123.52	2	400	200.00	25	2,475	99.00	1,112	54,245	48.78
Danbury	175	15,496	88.54	..	.....	.....	65	5,990	92.15	350	12,700	36.28
Dunbarton	133	14,970	112.55	5	450	90.00	12	1,085	90.41	309	14,301	46.28
Epsom	248	26,705	107.68	..	.....	.....	26	2,405	92.50	494	21,126	42.76
Franklin	461	51,785	112.33	14	1,935	138.21	11	1,000	90.90	386	17,000	44.04
Henniker	319	32,625	102.27	..	.....	.....	45	4,360	96.88	710	31,424	44.25
Hill	134	14,385	107.35	2	400	200.00	13	1,265	97.30	128	5,332	41.65
Hooksett	234	23,470	100.29	..	.....	.....	10	725	72.50	354	15,830	44.71
Hopkinton	348	34,990	100.54	6	900	150.00	34	2,875	84.55	572	23,390	40.89
Loudon	301	31,820	105.71	..	.....	.....	16	1,555	97.18	550	24,515	40.93

Newbury	158	20,060	126.96	1	175	175.00	38	4,050	106.57	199	8,815	44.29
New London	246	27,440	111.54	6	700	116.66	35	3,300	94.28	346	15,075	43.56
Northfield	211	28,037	132.87	..	.....	.....	6	625	104.16	299	12,998	43.47
Pembroke	269	24,624	91.53	4	500	125.00	12	1,040	86.66	414	16,576	40.03
Pittsfield	381	39,525	103.74	2	150	75.00	2	225	112.50	405	18,960	46.81
Salisbury	159	14,840	93.33	2	150	75.00	30	2,860	95.33	275	10,816	39.33
Sutton	194	16,990	87.57	..	.....	.....	40	3,630	90.75	284	11,596	40.83
Warner	250	26,895	107.58	..	.....	.....	22	1,965	89.31	447	17,680	39.55
Webster	176	15,400	87.50	7	775	110.71	25	2,010	80.40	224	8,835	39.44
Wilmot	189	19,858	105.06	..	.....	.....	30	2,896	96.53	226	9,042	40.00
Totals	7,136	$786,610	$110.23	65	$8,735	$134.38	626	$59,566	$95.15	10,256	$445,670	$43.45

TABLE 13.—*Continued.*

MERRIMACK COUNTY.

Towns.	Other neat stock.			Sheep.			Hogs.			Fowls.		Vehicles and automobiles.	
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Number.	Valuation.
Allenstown ..	6	$275	$45.83	....	.....	....	...	.....	.....	250	$125	9	$3,600
Andover	99	4,207	42.49	233	$1,161	$4.98	13	$174	$13.38	3,329	2,023	32	6,780
Boscawen	33	1,005	30.45	151	586	3.88	23	375	16.30	.....	115	17	6,230
Bow	60	2,335	38.91	29	145	5.00	2	30	15.00	305	160	5	1,416
Bradford	127	5,025	39.56	391	2,050	5.24	10	123	12.30	644	389	22	7,150
Canterbury ..	88	3,325	37.78	194	927	4.77	1	22	22.00	.....	35	18	5,050
Chichester ...	103	3,237	31.42	183	726	3.96	2	30	15.00	300	150	7	2,550
Concord	154	4,510	29.28	70	550	7.85	99	1,210	12.22	.....	365	....	252,500
Danbury	193	9,024	46.75	207	672	3.24	2	18	9.00	495	252	3	1,000
Dunbarton ...	73	2,679	36.69	28	109	3.89	...	.....	.....	.....	363	....	1,000
Epsom	94	3,505	37.28	56	210	3.75	...	.....	.....	2,042	1,440	9	2,650
Franklin	31	1,120	36.12	33	121	3.66	17	221	13.00	990	741	333	71,560
Henniker	130	3,657	28.13	53	292	5.50	13	215	16.53	794	497	41	10,200
Hill	32	1,338	41.81	250	1,242	4.96	13	164	12.61	770	536	11	3,450
Hooksett	35	910	26.00	17	95	5.58	40	439	10.97	.....	160	28	10,150
Hopkinton ...	196	5,470	27.90	208	830	3.99	19	239	12.57	480	275	48	16,675
Loudon	224	7,414	33.09	89	445	5.00	2	50	25.00	750	525	10	4,550

Newbury	76	3,070	40.38	153	785	5.13	6	106	17.66	600	435	21	5,300
New London..	146	5,880	42.00	153	520	3.39	21	270	12.85	240	230	106	20.655
Northfield ...	84	2,801	33.34	33	166	5.03	8	95	11.87	685	512	24	6,600
Pembroke	68	1,928	28.35	....	.....	....	29	368	12.66	305	171	127	20.800
Pittsfield	113	3,590	31.76	114	690	6.05	11	170	15.45	2,865	1,825	80	18,600
Salisbury	90	3,152	35.02	425	2,029	4.77	2	34	17.00	656	326	9	1,500
Sutton	140	5,590	39.92	141	556	3.94	14	258	18.42	285	160	13	4,075
Warner	114	4,195	36.79	256	1,225	4.78	1	10	10.00	192	146	51	14,100
Webster	44	1,680	38.18	268	1,097	4.09	...	.....	.....	100	50	3	1,775
Wilmot	78	3,936	50.46	211	724	3.43	3	24	8.00	681	342	8	800
Totals	2,631	$94,858	$36.05	3,946	$17,953	$4.54	351	$4.645	$13.23	17,758	$12,348	1,035	$500,716

TABLE 13.—*Continued.*

MERRIMACK COUNTY.

TOWNS.	*a* Portable mills. *b* Boats.	Wood and lumber, Laws 1911, *c* 82.	Municipal bonds and notes.	Stock in national banks in this state.	Soldiers' exemptions.	Money on hand, at interest, or on deposit.	Stock in trade.
Allenstown	*a*	$1,200	$8,700	.....	.....	$5,450	$941	$94,050
Andover	*a*	2,700	35,637	.....	$7,950	4,403	28,001	109,499
Boscawen	*a*	1,000	23,050	.....	.....	5,900	734	86,200
Bow	*a*	2,350	21,035	$125	2,300	1,525	7,426	400
Bradford	*a*	1,830	25,622	.....	2,100	2,820	7,630	31,365
Canterbury	*a*	800	19,350	.....	.....	5,470	3,748	2,800
Chichester	*a*	710	9,050	.....	9,067	6,265	8,597	3,700
Concord	*a-b*	3,300	19,160	327,735	204,652	75,150	274,817	1,917,305
Danbury		.....	12,376	.....	1,000	3,640	1,054	11,100
Dunbarton	*a*	565	12,515	3,000	1,517	3,250	6,304	2,000
Epsom	*a*	3,600	58,448	.....	1,800	4,135	8,367	13,939
Franklin	*a-b*	925	24,036	500	45,168	19,011	188,758	554,796
Henniker	*a*	2,600	2,635	1,500	5,100	7,100	19,816	43,650
Hill	*a*	2,800	20,475	.....	.....	5,555	12,287	8,800
Hooksett	*a*	575	5,765	.....	1,800	13,400	1,500	30,950
Hopkinton	*a*	2,195	30,035	3,200	5,631	14,035	10,064	38,260
Loudon	*a*	3,025	2,842	.....	1,200	4,700	7,432	22,825
Newbury	*a-b*	32,640	26,334	.....	2,986	6,970	6,693	6,700

New London	*b*	8,950	3,035	.....	1,550	6,250	7,785	12,870
Northfield	*a*	1,000	48,052	.....	5,700	9,490	6,385	147,050
Pembroke	*a*	1,500	7,000	17,000	4,700	11,000	42,667	151,150
Pittsfield	*a*	13,000	.....	15,300	5,570	18,100	147,455	68,100
Salisbury		.....	2,150	.....	.....	5,950	1,376	4,100
Sutton	*a*	3,685	10,800	7,000	200	14,797	50,784	19,530
Warner	*a*	600	31,310	10,547	4,288	16,225	48,164	42,125
Webster	*a-b*	4,300	20,775	.....	.....	5,575	2,125	2,250
Wilmot	*a*	4,750	12,940	4,000	12,200	11,114	2,404	10,100
Totals		$100,600	$493,127	$389,907	$326,479	$287,280	$903,314	$3,435,614

TABLE 13.—*Continued.*

MERRIMACK COUNTY.

TOWNS.	Polls, number.	a Aqueducts. b Locks and canals. c Toll bridges. d Electric light lines. e Wharves, ferries.	Mills, factories, and machinery.	Improved and unimproved lands and buildings.	Amount of inventory.	Amount of taxes, including poll taxes.	Property rate per cent.
Allenstown	331	*a* $40,000	$417,000	$428,350	$1,006,511	$15,759.76	$1.50
Andover	342	.....	1,550	618,395	870,431	12,239.80	1.32
Boscawen	251	.....	77,000	559,175	786,115	20,505.06	2.54
Bow	210	.....	.....	891,857	971,775	14,845.95	1.49
Bradford	220	.....	1,100	497,867	623,966	8,299.97	1.26
Canterbury	160	.....	.....	570,175	649,731	11,479.29	1.72
Chichester	168	.....	100	320,117	392,089	5,825.25	1.40
Concord	5,735	.....	214,300	15,739.099	19,177,428	316,447.67	1.59
Danbury	177	.....	4,852	247,366	322,900	6,037.04	1.76
Dunbarton	140	.....	.....	343,950	404,808	6,552.20	1.55
Epsom	198	.....	11,167	424,161	579,523	9,088.78	1.50
Franklin	1,846	.....	1,177,100	2,860,946	4,997,712	85,725.24	1.65
Henniker	392	.....	73,400	769,770	1,001,741	18,614.99	1.78
Hill	212	.....	10,725	333,495	416,694	7,091.10	1.60
Hooksett	457	.....	327,800	865,892	1,286,061	18,661.64	1.38
Hopkinton	442	.....	73,900	920,810	1,169,739	25,428.51	2.09
Loudon	261	.....	4,900	530,990	644,088	10,183.32	1.50
Newbury	169	*e* 2,500	1,400	887,600	1,009,649	11,416.50	1.10

New London ...	218		.....	1,965	1,033,333	1,143,558	18,147.49	1.55
Northfield	350	*a*	50,000	168,850	821,455	1,300,326	18,710.64	1.38
Pembroke	641	*a*	10,500	415,300	963,846	1,679,670	26,477.05	1.50
Pittsfield	637		.....	76,200	1,048,660	1,458,020	32,621.40	2.15
Salisbury	143		.....	2,600	284,120	330,053	5,731.87	1.65
Sutton	231		.....	3,900	465,271	604,025	8,966.48	1.40
Warner	350		.....	17,100	738,230	958,580	20,846.34	2.10
Webster	119		.....	800	381,405	443,277	4,670.77	1.00
Wilmot	177		.....	11,550	208,782	304,348	6,067.74	1.88
Totals	14,577		$103,000	$3,094,559	$33,755,117	$44,532,818	$746,441.85	$1.61

TABLE 13.—*Continued.*

HILLSBOROUGH COUNTY.

Towns.	HORSES.			ASSES AND MULES.			OXEN.			COWS.		
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.
Amherst	327	$46,362	$141.77	3	$500	$166.66	2	$100	$50.00	529	$26,210	$49.54
Antrim	296	32,710	110.50	2	125	62.50	14	1,180	84.28	341	16,290	47.77
Bedford	431	48,150	111.71	..	.....	.....	8	805	100.62	817	37,755	46.21
Bennington	80	10,375	129.68	2	250	125.00	8	725	90.62	122	5,595	45.86
Brookline	112	11,875	105.58	..	.....	.....	2	200	100.00	69	2,990	43.33
Deering	131	15,280	111.64	..	.....	.....	22	2,305	104.77	250	10,780	43.12
Francestown	201	24,810	123.43	..	.....	.....	4	325	81.25	352	18,105	51.43
Goffstown	337	43,172	128.10	4	400	100.00	13	1,070	82.30	628	30,072	47.88
Greenfield	121	18,135	149.87	..	.....	.....	14	1,270	90.71	346	19,345	55.91
Greenville	131	15,832	120.85	..	.....	.....	...	.....	.....	110	5,281	48.00
Hancock	238	23,730	99.70	1	25	25.00	10	710	71.00	381	18,840	49.44
Hillsborough	356	42,606	119.67	..	.....	.....	16	1,080	67.50	462	19,436	42.06
Hollis	362	42,060	116.18	2	200	100.00	10	700	70.00	613	29,695	48.40
Hudson	265	28,760	108.52	..	.....	.....	2	160	80.00	534	25,163	47.12
Litchfield	93	13,900	149.46	..	.....	.....	2	250	125.00	208	10,440	50.19
Lyndeborough	196	21,320	108.77	..	.....	.....	19	1,760	92.63	478	23,508	49.18
Manchester	2,182	335,030	153.54	..	.....	.....	...	.....	.....	612	27,125	44.32

Mason	82	7,555	92.13	..	.....	.....	...	.....	.....	123	5,245	42.64
Merrimack	183	20,630	112.73	..	.....	.....	8	650	81.25	324	15,085	46.55
Milford	511	58,135	113.76	3	650	216.66	2	90	45.00	512	22,550	44.04
Mont Vernon	135	16,140	119.55	..	.....	.....	6	650	108.33	186	8,752	47.05
Nashua	936	100,550	107.42	2	150	75.00	...	.....	.....	459	18,020	39.25
New Boston	295	34,875	118.22	2	200	100.00	22	1,475	67.04	821	40,088	48.82
New Ipswich	201	25,238	125.56	4	710	177.50	...	.....	.....	285	13,440	47.15
Pelham	233	27,170	116.60	2	400	200.00	2	200	100.00	717	33,275	46.40
Peterborough	465	53,885	115.88	..	.....	.....	5	390	78.00	394	21,080	53.50
Sharon	27	2,980	110.37	..	.....	.....	...	.....	.....	15	595	39.66
Temple	124	14,425	116.33	2	200	100.00	4	300	75.00	189	7,485	39.60
Weare	385	44,359	115.21	4	300	75.00	50	4,682	93.64	520	21,658	41.65
Wilton	336	40,979	122.08	3	330	110.00	6	700	116.66	493	24,090	49.27
Windsor	30	3,835	127.83	6	1,300	216.66	...	.....	.....	7	350	50.00
Totals	9,802	$1,224,863	$124.96	42	$5,470	$136.66	251	$21,777	$86.76	11,897	$558,343	$46.93

TABLE 13.—*Continued.*

HILLSBOROUGH COUNTY.

Towns.	OTHER NEAT STOCK.			SHEEP.			HOGS.			FOWLS.		VEHICLES AND AUTOMOBILES.	
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Number.	Valuation.
Amherst	63	$2,347	$37.25	....	.....	....	18	$281	$15.59	.....	$2,951	...	$12,945
Antrim	67	2,360	35.22	142	$805	$5.66	5	66	13.20	2,245	1,178	33	5,350
Bedford	77	2,765	35.90	4	17	4.25	29	377	13.00	5,408	4,027	163	12,795
Bennington ..	8	285	35.62	12	60	5.00	1	20	20.00	420	334	25	5,347
Brookline	9	190	21.11	....	.....	....	7	140	20.00	865	615	43	3,030
Deering	163	5,145	31.56	14	65	4.63	7	107	15.28	.....	.....	3	950
Francestown..	58	2,445	42.15	52	220	4.23	8	80	10.00	1,420	994	50	3,700
Goffstown ...	63	1,942	30.82	54	225	4.16	130	2,072	15.93	5,479	4,095	53	16,850
Greenfield ...	83	3,055	36.80	48	281	5.85	27	377	13.96	2,580	1,420	15	8,335
Greenville ...	2	101	50.50	....	.....	....	2	44	22.00	654	604	117	18,302
Hancock	157	4,965	31.62	138	560	4.05	8	80	10.00	7,950	4,770	18	5,875
Hillsborough.	165	4,483	27.16	98	489	4.98	10	130	13.00	.....	124	...	15,650
Hollis	82	2,755	33.59	20	125	6.25	....	.....	.....	5,166	2,823	...	3,700
Hudson	48	1,505	31.35	29	120	4.13	18	240	13.33	2,815	2,130	23	10,775
Litchfield	14	430	30.71	1	3	3.00	12	270	22.50	200	100	5	1,800
Lyndeborough	67	2,395	35.77	33	157	4.75	46	510	11.08	8,415	5,049	...	4,795

Manchester ..	27	700	25.92	3	15	5.00	219	3,666	16.73	.....	1,690	...	569,058
Mason	16	372	23.25	....	.....	....	....	.....	.....	202	153	...	450
Merrimack ...	20	740	37.00	....	.....	....	5	80	16.00	5,462	3,275	35	14,350
Milford	71	2,275	32.04	3	15	5.00	12	162	13.50	13,987	10,533	180	30,790
Mont Vernon	41	1,485	36.21	15	60	4.00	....	.....	.....	1,480	1,170	13	5,800
Nashua	29	830	28.62	23	70	3.04	28	295	10.53	4,190	2,095	...	243,920
New Boston..	106	3,830	36.13	102	541	5.30	360	5,331	14.80	1,991	1,210	...	14,705
New Ipswich.	21	787	37.47	4	24	6.00	4	28	7.00	1,635	1,305	...	9,975
Pelham	75	2,705	36.06	2	12	6.00	32	525	16.40	6,070	4,550	...	6,350
Peterborough.	64	2,880	45.00	61	244	4.00	36	443	12.30	.....	796	...	22,375
Sharon	....	.....	.....	....	.....	....	6	120	20.00	75	75	...	500
Temple	34	880	25.88	99	346	3.49	....	.....	.....	2,859	2,001	...	1,550
Weare	121	6,530	53.96	472	2,435	5.15	8	80	10.00	1,919	3,572	32	8,126
Wilton	56	1,790	31.96	44	116	2.63	70	815	11.64	3,568	2,358	121	18,575
Windsor	3	105	35.00	2	7	3.50	....	.....	.....	.....	.....	...	.....
Totals ...	1,810	$63,077	$34.84	1,475	$7,012	$4.75	1,108	$16,339	$14.74	87,055	$65,997	929	$1,076,723

TABLE 13.—*Continued.*

HILLSBOROUGH COUNTY.

Towns.	*a* Portable mills. *b* Boats.		Wood and lumber, Laws 1911, *c* 82.	Municipal bonds and notes.	Stock in national banks in this state.	Soldiers' exemptions.	Money on hand, at interest, or on deposit.	Stock in trade.
Amherst	*a-b*	$2,275	$19,250	$138,316	$23,992	$8,455	$29,375	$70,890
Antrim	*a*	750	18,120	.....	6,000	10,205	14,890	67,645
Bedford	*a*	4,585	41,360	.....	1,100	6,650	2,421	1,800
Bennington		.....	1,250	2,400	200	7,000	14,152	179,348
Brookline	*a*	650	4,400	.....	.....	8,575	4,150	49,650
Deering	*a*	3,000	38,500	.....	.....	1,920	150	50
Francestown	*a*	2,650	56,750	.....	200	8,275	11,303	6,250
Goffstown	*a*	2,200	37,367	.....	6,500	19,050	36,159	49,232
Greenfield	*a*	800	3,900	.....	1,200	2,775	4,011	55,695
Greenville		.....	14,450	.....	.....	5,500	17,598	98,930
Hancock	*a-b*	1,300	22,800	.....	12,073	1,500	7,247	18,050
Hillsborough	*a*	2,050	28,450	.....	52,100	14,550	22,494	97,950
Hollis		.....	2,325	3,000	10,100	5,960	18,835	23,925
Hudson	*a*	2,100	3,800	4,456	3,950	17,500	16,505	36,370
Litchfield	*a*	700	21,300	.....	8,550	625	16,720	.....
Lyndeborough		.....	5,265	1,446	3,900	10,500	15,226	26,522
Manchester	*b*	3,090	.....	535,748	178,684	53,764	297,571	7,920,160
Mason	*a*	275	13,890	3,000	.....	4,410	8,639	600

Merrimack		.....	9,530	.....	6,300	11,700	9,195	32,974
Milford	*a*	3,300	22,100	.....	48,966	18,312	51,458	277,923
Mont Vernon	*a*	1,425	4,000	4,500	2,700	3,560	49,778	2,100
Nashua	*b*	650	.....	74,975	80,100	55,775	402,760	3,409,535
New Boston	*a*	4,935	45,573	1,225	400	6,600	22,605	17,325
New Ipswich	*a*	665	18,505	.....	.....	3,300	20,931	11,681
Pelham	*a*	600	22,155	.....	1,000	7,145	39,530	3,450
Peterborough		.....	.....	16,745	53,237	9,500	270,501	110,811
Sharon	*a*	100	14,000	.....	.....	50	.....	.....
Temple	*a*	1,275	13,528	.....	.....	3,000	1,974	2,500
Weare	*a*	3,268	37,674	.....	3,154	12,026	9,824	47,600
Wilton	*a*	2,700	30,325	82,110	4,949	8,215	68,514	66,614
Windsor	*a*	2,600	7,000	.....	.....	.....	.....	.....
Totals		$47,943	$557,567	$867,921	$509,355	$326,397	$1,484,516	$12,685,580

TABLE 13.—*Continued.*

HILLSBOROUGH COUNTY.

TOWNS.	Polls, number.	a Aqueducts. b Locks and canals. c Toll bridges. d Electric light lines. e Wharves, ferries.		Mills, factories, and machinery.	Improved and unimproved lands and buildings.	Amount of inventory.	Amount of taxes, including poll taxes.	Property rate per cent.
Amherst	284		.....	$6,700	$859,782	$1,242,276	$20,148.69	$1.58
Antrim	397		.....	81,800	677,400	926,669	19,838.68	2.05
Bedford	326		.....	.....	875,770	1,033,727	15,641.04	1.45
Bennington	233	*a*	$20,000	278,850	263,215	782,406	10,246.23	1.25
Brookline	169		*46,000	9,800	359,814	493,504	8,978.97	1.75
Deering	426		.....	630	243,745	320,707	5,543.92	1.65
Francestown	173	*a*	1,600	2,475	275,649	407,556	8,350.40	1.96
Goffstown	633		.....	161,100	1,362,240	1,754,696	31,109.07	1.70
Greenfield	138		.....	5,100	297,242	420,166	7,047.21	1.61
Greenville	343		.....	290,835	437,627	899,604	15,169.62	1.61
Hancock	201		.....	3,350	423,020	547,395	9,160.29	1.60
Hillsborough	660		.....	171,250	1,041,915	1,500,207	30,089.39	1.92
Hollis	254	*a*	9,200	.....	692,510	841,953	10,951.44	1.23
Hudson	388		.....	17,000	900,971	1,054,005	21,856.10	2.00
Litchfield	87	*a*	15,000	7,600	293,795	390,858	3,517.86	.85
Lyndeborough	174		.....	3,790	363,663	479,306	7,729.45	1.54
Manchester	20,246	*b*	650,000	13,568,468	44,707,069	68,798,074	1,131,097.32	1.58
Mason	100		.....	.....	289,458	329,637	4,355.43	1.26

Merrimack	356		.....	137,600	728,475	978,884	13,437.82	1.30
Milford	1,268		.....	337,250	2,336,916	3,203,113	54,520.42	1.62
Mont Vernon	112		.....	1,000	469,645	569,205	7,054.48	1.20
Nashua	8,485		.....	6,852,749	11,453,076	22,639,775	453,479.80	1.93
New Boston	284		.....	17,100	662,705	874,123	14,214.77	1.56
New Ipswich	221		.....	143,067	642,345	888,701	13,150.58	1.43
Pelham	254		.....	4,300	577,765	723,987	9,630.24	1.26
Peterborough	603		.....	158,240	1,597,253	2,308,880	27,989.00	1.16
Sharon	27		.....	.....	147,650	166,020	1,796.68	1.05
Temple	67		.....	.....	218,145	264,609	4,764.67	1.75
Weare	418		.....	20,750	839,654	1,053,666	16,219.74	1.46
Wilton	460	*a*	390	81,330	1,033,350	1,460,035	26,470.61	1.75
Windsor	16		.....	.....	42,087	57,284	851.39	1.43
Totals	37,503		$742,190	$22,362,134	$75,113,951	$117,411,028	$2,004,411.31	$1.64

*Ice houses, etc.

TABLE 13.—*Continued.*

CHESHIRE COUNTY.

TOWNS.	HORSES.			ASSES AND MULES.			OXEN.			COWS.		
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.
Alstead	296	$36,094	$121.93	1	$10	$10.00	32	$2,832	$88.50	338	$18,642	$55.15
Chesterfield	316	35,035	110.87	4	575	143.75	6	550	91.66	472	22,905	48.52
Dublin	180	19,045	106.39	..	.....	.....	4	375	93.75	170	9,302	54.71
Fitzwilliam	229	23,385	102.11	3	500	166.66	2	275	137.50	252	11,170	44.32
Gilsum	148	13,079	88.37	3	225	75.00	14	1,340	95.71	101	4,587	45.41
Harrisville	152	18,485	121.61	2	150	75.00	2	175	87.50	87	3,855	44.31
Hinsdale	267	33,410	125.13	2	500	250.00	4	360	90.00	327	13,527	41.36
Jaffrey	320	33,878	105.86	2	256	128.00	6	388	64.66	407	23,117	56.79
Keene	896	110,170	122.95	..	.....	.....	16	1,525	95.31	659	32,915	49.94
Marlborough	177	20,514	115.89	1	24	24.00	4	310	77.50	212	9,388	44.28
Marlow	142	14,642	103.11	6	950	158.33	28	2,892	103.29	123	6,122	49.77
Nelson	71	6,948	97.85	..	.....	.....	12	950	79.16	75	2,983	39.77
Richmond	116	12,140	104.65	2	275	137.50	2	150	75.00	111	4,515	40.67
Rindge	214	23,585	110.21	2	250	125.00	2	200	100.00	266	15,186	57.09
Roxbury	30	3,012	100.40	..	.....	.....	...	.....	.....	22	826	37.54
Stoddard	98	13,310	135.81	..	.....	.....	12	1,035	86.25	79	3,555	45.00
Sullivan	119	14,515	121.97	4	675	168.75	4	400	100.00	161	6,748	41.91

Surry	134	14,970	111.71	2	300	150.00	6	490	81.66	212	13,770	64.95
Swanzey	370	38,005	102.71	2	225	112.50	6	510	85.00	405	16,930	41.80
Troy	149	18,815	126.27	..	.....	.....	6	775	129.16	180	8,170	45.38
Walpole	553	61,446	111.11	2	90	45.00	34	2,602	76.52	888	41,162	46.35
Westmoreland	280	32,570	116.32	..	.....	.....	14	1,155	82.50	827	37,320	45.12
Winchester	414	46,600	112.56	6	600	100.00	20	2,140	107.00	601	23,708	39.44
Totals	5,671	$643,653	$113.49	44	$5,605	$127.38	236	$21,429	$90.80	6,975	$330,403	$47.36

TABLE 13.—*Continued.*

CHESHIRE COUNTY.

TOWNS.	OTHER NEAT STOCK.			SHEEP.			HOGS.			FOWLS.		VEHICLES AND AUTOMOBILES.	
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Number.	Valuation.
Alstead	89	$3,322	$37.32	228	$1,006	$4.41	19	$230	$12.10	....	481	...	$11,876
Chesterfield	86	3,100	36.04	45	255	5.66	30	545	18.16	....	325	...	7,450
Dublin	13	515	39.61	67	198	2.95	26	360	13.84	520	260	...	19,050
Fitzwilliam	34	1,370	40.29	2	15	7.50	10	130	13.00	1,044	703	...	11,450
Gilsum	32	835	26.09	25	81	3.24	...	.....	.....	525	353	5	436
Harrisville	23	580	25.21	12	42	3.50	...	.....	.....	....	.....	...	5,800
Hinsdale	53	1,444	27.24	13	39	3.00	10	159	15.90	1,210	560	31	15,025
Jaffrey	43	2,308	53.67	45	294	6.53	7	92	13.14	....	179	...	21,890
Keene	129	5,085	31.66	104	449	4.31	29	510	17.58	....	405	...	125,480
Marlborough	37	1,264	34.16	89	364	4.08	2	30	15.00	150	132	...	9,150
Marlow	63	2,790	44.28	11	48	4.36	6	80	13.33	....	60	...	2,974
Nelson	19	605	31.84	158	495	3.13	1	15	15.00	148	122	5	975
Richmond	12	290	24.16	11	50	4.54	9	140	15.55	296	222	...	3,600
Rindge	16	875	54.68	1	7	7.00	...	.....	.....	....	978	...	14,650
Roxbury	6	136	22.66	....	.....	....	...	.....	.....	....	.....	2	1,400
Stoddard	49	635	33.42	129	597	4.62	9	117	13.00	....	179	...	1,625

Sullivan	45	1,660	36.88	118	458	3.88	5	93	18.60	95	80	...	2,525
Surry	45	1,635	36.33	....	.....	....	15	300	20.00	280	450	16	2,800
Swanzey	74	2,675	36.14	124	620	5.00	9	150	16.66	1,385	835	23	10,800
Troy	11	280	25.45	....	.....	....	...	.....	.....	50	50	...	3,925
Walpole	162	5,360	33.08	579	2,035	3.51	7	118	16.85	1,079	542	97	10,484
Westmoreland	129	4,350	33.72	20	107	5.35	19	366	19.26	1,412	885	...	2,220
Winchester	53	1,740	32.83	44	260	5.90	23	291	12.65	....	394	...	15,900
Totals	1,193	$42,854	$35.92	1,825	$7,420	$4.06	236	$3,726	$15.78	8,194	$8,195	179	$301,485

TABLE 13.—*Continued.*

CHESHIRE COUNTY.

TOWNS.	*a* Portable mills. *b* Boats.		Wood and lumber, Laws 1911, *c* 82.	Municipal bonds and notes.	Stock in national banks in this state.	Soldiers' exemptions.	Money on hand, at interest, or on deposit.	Stock in trade.
Alstead		.....	$9,872	$1,900	$2,000	$9,500	$8,798	$13,554
Chesterfield	*a*	$6,275	150	.....	1,803	5,785	25,837	10,765
Dublin	*a-b*	2,275	12,163	.....	9,163	1,200	65,802	6,750
Fitzwilliam	*b*	125	15,135	.....	9,322	13,000	5,770	31,105
Gilsum	*a*	650	12,398	.....	4,980	6,061	1,200	5,553
Harrisville	*b*	470	5,625	.....	400	2,375	25,089	31,640
Hinsdale	*a-b*	2,915	15,556	2,250	23,600	14,950	17,791	77,596
Jaffrey	*a*	800	4,800	.....	36,191	1,353	47,712	104,650
Keene		.....	.....	98,580	614,300	53,950	255,112	965,200
Marlborough		.....	2,000	7,920	23,768	10,350	37,960	47,144
Marlow		.....	4,500	.....	10,844	3,930	13,714	7,310
Nelson	*b*	100	7,600	.....	.....	6,400	5,403	1,800
Richmond	*a*	1,500	.....	600	.....	.....	7,178	21,950
Rindge	*a*	1,000	14,360	.....	10,420	7,810	79,488	8,400
Roxbury	*a*	530	1,200	.....	.....	.....	.....	.....
Stoddard	*a-b*	1,900	.....	.....	.....	5,905	1,245	5,270
Sullivan	*a*	1,425	6,850	.....	4,031	3,796	3,814	600
Surry	*a*	2,000	34,000	.....	200	300	14,222	1,400

Swanzey	*a-b*	1,620	22,170	3,000	10,000	6,650	3,970	58,755
Troy	*a*	1,200	15,724	.....	8,065	6,945	18,606	44,300
Walpole	*a-b*	2,280	14,440	1,850	14,004	13,000	12,772	166,700
Westmoreland	*a-b*	875	9,875	.....	3,817	7,265	8,253	8,505
Winchester	*a-b*	2,175	5,800	.....	27,583	13,200	23,865	240,417
Totals		$30,115	$214,218	$116,100	$814,491	$193,725	$683,601	$1,859,364

TABLE 13.—*Continued.*

CHESHIRE COUNTY.

TOWNS.	Polls, number.	*a* Aqueducts. *b* Locks and canals. *c* Toll bridges. *d* Electric light lines. *e* Wharves, ferries.	Mills, factories, and machinery.	Improved and unimproved lands and buildings.	Amount of inventory.	Amount of taxes, including poll taxes.	Property rate per cent.
Alstead	211	.....	$9,950	$512,401	$632,968	$10,739.38	$1.63
Chesterfield	217	*d* $5,000	8,400	788,135	917,105	14,649.12	1.55
Dublin	172	.....	900	1,383,950	1,530,108	24,825.73	1.60
Fitzwilliam	343	.....	26,820	691,280	828,555	18,231.35	2.12
Gilsum	115	.....	.....	194,379	240,096	6,221.90	2.50
Harrisville	213	.....	59,850	447,920	600,081	10,327.33	1.65
Hinsdale	564	.....	1,141,571	842,865	2,189,168	34,403.35	1.52
Jaffrey	511	.....	196,330	1,123,827	1,596,712	31,359.53	1.90
Keene	2,847	.....	586,000	7,164,279	9,960,010	175,014.17	1.70
Marlborough	392	*a* 1,500	52,300	588,186	801,954	19,228.94	2.30
Marlow	125	.....	8,200	192,276	267,402	5,865.44	2.10
Nelson	65	.....	4,750	227,603	260,349	3,940.35	1.50
Richmond	109	.....	.....	510,093	562,703	8,377.34	1.45
Rindge	174	.....	3,660	638,957	812,016	13,340.26	1.60
Roxbury	26	*a* 17,500	.....	114,035	138,639	1,923.63	1.35
Stoddard	72	.....	3,000	247,682	280,150	4,206.35	1.45
Sullivan	77	.....	3,500	165,803	213,177	4,056.46	1.83
Surry	85	.....	500	184,245	271,282	4,103.59	1.45

Swanzey	538		.....	89,650	987,625	1,247,540	24,440.58	1.80
Troy	392		.....	221,950	601,940	943,800	17,772.40	1.80
Walpole	697	*a*	10,000	.....	2,362,016	2,707,901	67,204.57	2.43
Westmoreland	208		.....	3,740	479,072	593,110	11,507.15	1.87
Winchester	729		.....	194,700	1,397,258	1,983,431	45,072.71	2.25
Totals	8,882		$34,000	$2,615,771	$21,845,827	$29,578,257	$556,811.63	$1.82

TABLE 13.—*Continued.*

SULLIVAN COUNTY.

TOWNS.	HORSES.			ASSES AND MULES.			OXEN.			COWS.		
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.
Acworth	200	$18,480	$92.40	..	.....	.....	36	$2,755	$76.52	340	$14,011	$41.20
Charlestown	335	44,500	132.83	4	$600	$150.00	8	830	103.75	741	34,060	45.96
Claremont	720	93,600	130.00	..	.....	.....	34	3,370	99.11	1,075	48,950	45.53
Cornish	365	42,938	117.63	6	750	125.00	28	2,436	87.00	543	26,026	47.93
Croydon	164	21,060	128.41	*58	5,800	100.00	24	2,710	112.91	211	8,685	41.16
Goshen	114	10,375	91.00	..	.....	.....	14	1,310	93.57	151	6,330	41.92
Grantham	85	9,145	107.58	..	.....	.....	19	1,900	100.00	127	4,915	38.70
Langdon	135	14,792	109.57	..	.....	.....	6	606	101.00	249	11,340	45.54
Lempster	142	14,015	98.69	..	.....	.....	26	2,395	92.11	210	8,925	42.50
Newport	611	78,744	128.87	..	.....	.....	34	2,872	84.47	517	23,400	45.26
Plainfield	344	37,675	109.52	2	400	200.00	71	6,844	96.39	663	27,014	40.74
Springfield	149	13,505	90.63	2	200	100.00	38	3,360	88.42	156	6,470	41.47
Sunapee	237	26,580	112.15	2	250	125.00	21	2,050	97.61	259	10,876	41.99
Unity	229	24,900	108.73	..	.....	.....	42	3,870	92.14	421	20,250	48.09
Washington	131	15,986	122.03	2	400	200.00	16	1,596	99.75	189	8,468	44.80
Totals	3,961	$466,295	$117.72	76	$8,400	$110.52	417	$38,904	$93.29	5,852	$259,720	$44.38

* Includes 56 buffaloes.

TABLE 13.—*Continued.*
SULLIVAN COUNTY.

TOWNS.	OTHER NEAT STOCK.			SHEEP.			HOGS.			FOWLS.		VEHICLES AND AUTOMOBILES.	
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Number.	Valuation.
Acworth	120	$4,015	$33.45	259	$965	$3.72	4	$60	$15.00	90	$45	6	$4,325
Charlestown ...	179	6,034	33.71	158	806	5.10	11	175	15.90	1,534	1,092	28	12,625
Claremont	251	7,390	29.44	59	380	6.44	..	.....	.....	175	150	186	80,700
Cornish	316	12,120	38.35	191	1,008	7.14	10	120	12.00	325	219	33	7,750
Croydon	112	3,110	27.76	141	624	4.42	10	115	11.50	....	.....	32	1,900
Goshen	81	2,845	35.12	7	24	3.42	..	.....	.....	....	.....	7	500
Grantham	33	1,550	46.96	238	976	4.10	2	20	10.00	....	.....	4	1,000
Langdon	94	3,926	41.76	124	500	4.03	10	150	15.00	1,539	1,126	1	100
Lempster	65	2,441	37.55	99	308	3.11	2	35	17.50	1,344	805	9	3,400
Newport	168	5,998	35.70	116	542	4.67	3	42	14.00	363	226	177	35,254
Plainfield	162	5,653	34.89	663	2,317	3.49	12	157	13.08	100	85	14	7,150
Springfield	56	2,930	52.32	134	553	4.12	..	.....	.....	55	35	1	200
Sunapee	153	4,550	29.73	56	194	3.46	17	264	15.52	250	240	55	12,950
Unity	85	2,543	29.91	10	57	5.70	6	115	19.16	610	379	2	300
Washington	35	1,302	37.20	350	1,806	5.16	9	136	15.11	1,000	1,000	5	3,400
Totals	1,910	$66,407	$34.76	2,605	$11,060	$4.24	96	$1,389	$14.46	7,385	$5,402	560	$171,554

TABLE 13.—*Continued.*

SULLIVAN COUNTY.

TOWNS.		*a* Portable mills. *b* Boats.	Wood and lumber, Laws 1911, *c* 82.	Municipal bonds and notes.	Stock in national banks in this state.	Soldiers' exemptions.	Money on hand, at interest, or on deposit.	Stock in trade.
Acworth	*a*	$1,500	$14,192	.....	$1,700	$5,950	$400	$6,250
Charlestown	*a-b*	875	15,077	.....	22,400	13,700	40,294	53,426
Claremont		.....	6,900	$6,500	119,300	21,800	98,580	926,115
Cornish	*a*	2,476	1,976	.....	3,100	9,640	46,408	15,742
Croydon	*a*	100	2,200	.....	2,472	3,385	21,304	13,925
Goshen		.....	2,875	.....	500	4,800	3,460	3,900
Grantham	*a*	1,975	500	.....	1,450	2,840	670	10,575
Langdon	*a*	1,900	13,262	4,000	.....	1,000	17,324	159
Lempster	*a-b*	950	20,940	.....	1,250	6,362	2,630	12,300
Newport	*a*	450	8,426	7,570	71,000	17,800	18,076	314,870
Plainfield	*a*	1,600	29,583	.....	7,890	15,756	60,255	6,855
Springfield	*a*	425	6,570	.....	1,050	3,995	2,479	3,220
Sunapee	*b*	67,300	800	.....	6,400	3,200	8,258	88,500
Unity	*a*	3,325	22,180	.....	2,600	5,900	500	.....
Washington	*a*	1,200	29,300	.....	.....	7,700	1,380	4,650
Totals		$84,076	$174,781	$18,070	$241,112	$123,828	$322,018	$1,460,478

TABLE 13.—*Continued.*

SULLIVAN COUNTY.

TOWNS.	Polls, number.	*a* Aqueducts. *b* Locks and canals. *c* Toll bridges. *d* Electric light lines. *e* Wharves, ferries.		Mills, factories, and machinery.	Improved and unimproved lands and buildings.	Amount of inventory.	Amount of taxes, including poll taxes.	Property rate per cent.
Acworth	154		.....	$3,600	$271,990	$344,288	$7,021.00	$1.95
Charlestown ..	430	*c-d-e*	$52,000	35,650	*936,560	1,257,004	27,896.25	2.15
Claremont ...	2,394		.....	1,465,200	4,472,640	7,329,775	131,081.52	1.72
Cornish	264	*c*	11,000	11,950	709,508	895,527	14,444.14	1.55
Croydon	103		.....	2,100	314,975	401,080	5,139.28	1.23
Goshen	90		.....	.....	173,140	205,259	3,927.21	1.83
Grantham ...	90		.....	500	223,130	258,306	4,174.97	1.55
Langdon	90		.....	950	168,564	238,690	4,119.86	1.64
Lempster	108		.....	3,000	192,575	265,969	5,269.45	1.90
Newport	1,534	*d*	150,000	233,934	2,205,092	3,156,496	50,415.44	1.50
Plainfield	261	*a-b-d*	12,700	2,100	577,648	785,926	12,153.70	1.48
Springfield ...	108		.....	1,600	371,825	414,422	7,385.50	1.73
Sunapee	323	*e*	3,000	50,000	1,129,510	1,411,722	24,927.65	1.72
Unity	168		.....	.....	256,545	337,564	5,713.51	1.59
Washington ..	100		.....	2,000	233,044	305,668	4,204.25	1.31
Totals ...	6,217		$228,700	$1,812,584	$12,236,746	$17,607,696	$307,873.73	$1.68

*Includes doomage $86,550.

TABLE 13.—*Continued.*

GRAFTON COUNTY.

TOWNS.	HORSES.			ASSES AND MULES.			OXEN.			COWS.		
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.
Alexandria	166	$18,894	$112.85	3	$600	$200.00	40	$3,820	$95.50	267	$10,423	$39.03
Ashland	233	29,343	125.93	4	866	216.50	14	1,480	105.71	165	8,587	52.04
Bath	382	49,330	129.13	..	.....	.....	6	754	125.66	921	43,192	46.89
Benton	75	8,471	110.28	1	50	50.00	20	1,784	89.20	224	8,876	39.62
Bethlehem	364	49,358	135.59	1	150	150.00	6	460	76.66	653	28,649	43.87
Bridgewater	76	9,258	121.81	2	500	250.00	24	2,448	102.00	109	5,412	49.65
Bristol	205	25,225	123.04	2	250	125.00	40	3,645	91.12	260	10,530	40.50
Campton	284	28,391	99.96	1	100	100.00	28	2,830	101.07	336	13,516	40.22
Canaan	405	40,310	99.53	4	550	137.50	20	1,625	81.25	699	28,985	41.46
Dorchester	100	12,695	126.95	..	.....	.....	10	800	80.00	129	5,063	39.24
Easton	109	14,340	131.55	2	150	75.00	8	630	78.75	125	5,035	40.28
Ellsworth	59	9,015	152.79	4	800	200.00	4	400	100.00	20	590	29.50
Enfield	204	37,500	183.82	..	.....	.....	31	2,635	85.00	549	22,645	41.24
Franconia	172	21,655	125.90	..	.....	.....	...	.....	.....	227	11,555	50.90
Grafton	191	19,470	101.93	4	525	131.25	39	3,770	96.66	325	13,839	42.58
Groton	96	9,728	101.33	2	40	20.00	28	2,610	93.21	100	3,856	38.56
Hanover	438	52,600	120.09	..	.....	.....	20	1,796	89.80	790	40,048	50.50

Haverhill	790	96,500	122.15	7	650	92.85	10	740	74.00	1,873	82,806	44.21
Hebron	64	6,961	108.76	2	300	150.00	14	1,524	108.85	117	4,458	38.10
Holderness	203	19,086	94.01	2	400	200.00	38	3,540	93.15	227	9,414	41.47
Landaff	146	19,546	133.87	..	.....	.....	14	930	66.42	328	15,254	46.50
Lebanon	726	80,223	110.50	2	200	100.00	30	3,150	105.00	1,189	50,079	42.11
Lincoln	304	48,210	158.58	..	.....	.....	...	.....	.....	17	970	57.05
Lisbon	583	69,985	120.04	1	120	120.00	2	160	80.00	1,074	47,305	44.04
Littleton	751	84,591	112.63	6	400	66.66	4	230	57.50	1,353	63,396	46.85
Livermore	48	3,120	65.00	..	.....	.....	...	.....	.....	3	120	40.00
Lyman	181	19,372	107.02	..	.....	.....	4	340	85.00	538	20,601	38.29
Lyme	345	38,765	112.36	1	50	50.00	17	1,575	92.64	783	30,894	39.45
Monroe	212	25,682	121.14	2	400	200.00	...	.....	.....	544	21,084	38.75
Orange	53	5,135	96.87	..	.....	.....	32	2,714	84.81	90	3,959	43.98
Orford	330	37,488	113.60	2	250	125.00	24	2,035	84.79	697	32,271	46.29
Piermont	262	31,195	119.06	..	.....	.....	8	735	91.87	765	35,281	46.11
Plymouth	327	43,626	133.41	2	450	225.00	36	4,102	113.94	353	16,116	45.65
Rumney	323	39,424	122.05	2	250	125.00	20	2,100	105.00	331	13,056	39.44
Thornton	186	24,165	129.91	2	300	150.00	21	2,075	98.80	148	5,920	40.00
Warren	200	21,734	108.67	1	125	125.00	14	1,141	81.50	273	10,373	37.99
Waterville	42	6,700	159.52	..	.....	.....	...	.....	.....	6	180	30.00
Wentworth	190	19,585	103.07	..	.....	.....	32	2,720	85.00	347	14,736	42.46
Woodstock	231	31,134	134.76	..	.....	.....	6	500	83.33	117	4,381	37.44
Totals	10,056	$1,207,810	$120.10	62	$8,476	$136.70	664	$61,798	$93.06	17,072	$743,455	$43.54

TABLE 13.—*Continued.*

GRAFTON COUNTY.

TOWNS.	OTHER NEAT STOCK.			SHEEP.			HOGS.			FOWLS.		VEHICLES AND AUTOMOBILES.	
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Number.	Valuation.
Alexandria	131	$7,152	$54.59	85	$424	$4.98	13	$198	$15.23	....	$25	4	$985
Ashland	32	1,328	41.34	48	230	4.79	3	25	8.33	1,249	846	127	12,655
Bath	409	14,042	34.33	424	2,584	6.09	49	613	12.51	....	47	....	9,188
Benton	32	673	21.03	23	92	4.00	...	.....	.....	....	.....	11	1,700
Bethlehem	43	1,518	35.30	135	767	5.68	42	404	9.61	....	476	....	18,704
Bridgewater	52	2,212	42.53	56	218	3.89	2	22	11.00	....	....	5	1,450
Bristol	68	1,900	27.94	35	141	4.02	...	.....	.....	700	350	87	22,750
Campton	115	4,503	39.15	116	618	5.32	3	30	10.00	....	.....	....	6,375
Canaan	83	2,800	33.73	49	210	4.28	12	145	12.08	....	75	....	9,150
Dorchester	21	698	33.23	45	185	4.11	...	.....	.....	....	110	....	934
Easton	40	1,550	38.75	5	20	4.00	7	87	12.42	....	.....	....	700
Ellsworth	8	475	59.37	20	66	3.30	...	.....	.....	....	.....	....	.....
Enfield	100	3,615	36.15	96	390	4.06	7	70	10.00	....	25	....	10,100
Franconia	16	595	37.18	1	5	5.00	4	45	11.25	158	120	42	7,800
Grafton	106	4,307	40.63	121	533	4.40	5	114	22.80	175	131	32	3,585
Groton	33	1,232	37.33	43	170	3.95	1	10	10.00	65	36	3	700

Hanover	227	9,000	39.64	281	990	3.52	28	426	15.21	....	.....	130	16,000
Haverhill	561	17,726	31.59	182	890	4.89	58	803	13.84	....	485	130	38,490
Hebron	72	2,540	35.27	113	460	4.07	7	74	10.57	105	94	3	650
Holderness	56	2,020	36.07	37	254	6.86	14	238	17.00	858	768	51	20,422
Landaff	76	2,910	38.28	35	196	5.60	23	670	29.13	....	.....	....	3,950
Lebanon	158	4,866	30.79	481	2,000	4.15	16	272	17.00	1,540	1,227	259	54,318
Lincoln	....	.....	.....	....	.....	....	33	465	14.09	....	.....	32	21,400
Lisbon	486	12,394	25.50	432	2,036	4.71	15	206	13.73	100	50	....	19,350
Littleton	117	3,890	33.24	225	1,021	4.54	53	710	13.39	....	.....	....	45,175
Livermore	....	.....	.....	....	.....	....	2	40	20.00	....	.....	....	575
Lyman	40	1,208	30.20	72	288	4.00	14	137	9.78	....	.....	4	1,225
Lyme	315	8,169	25.93	332	1,104	3.32	55	651	11.83	1,125	562	....	8,440
Monroe	320	10,476	32.73	225	1,300	5.77	39	506	12.97	....	140	....	2,532
Orange	11	375	34.09	78	383	4.91	...	.....	.....	145	95	3	1,100
Orford	169	6,018	35.60	72	237	3.29	14	270	19.28	....	75	....	3,540
Piermont	163	4,078	25.26	204	526	2.57	57	669	11.73	304	190	8	2,450
Plymouth	62	2,437	39.30	163	542	3.32	28	424	15.14	288	144	....	26,744
Rumney	49	2,056	41.95	107	322	3.00	4	40	10.00	....	.....	....	7,200
Thornton	49	1,732	35.34	60	230	3.83	7	73	10.42	....	.....	5	1,350
Warren	54	1,466	27.14	129	477	3.69	1	12	12.00	300	150	19	2,250
Waterville	....	.....	.....	....	.....	....	6	72	12.00	....	.....	....	150
Wentworth	41	1,278	31.17	155	667	4.30	6	96	16.00	105	53	7	1,375
Woodstock	5	216	43.20	29	87	3.00	33	340	10.30	....	.....	60	12,646
Totals	4,320	$143,455	$32.51	4,714	$20,663	$4.38	661	$8,957	$13.55	7,217	$6,274	1,022	$398,108

TABLE 13.—*Continued.*

GRAFTON COUNTY.

TOWNS.		*a* Portable mills. *b* Boats.	Wood and lumber, Laws 1911, *c* 82.	Municipal bonds and notes.	Stock in national banks in this state.	Soldiers' exemptions.	Money on hand, at interest, or on deposit.	Stock in trade.
Alexandria	*a*	$490	$6,780	.....	.....	$4,232	$770	$1,750
Ashland	*a-b*	8,465	390	$2,350	$4,400	13,000	24,629	129,715
Bath	*a-b*	2,080	20,640	.....	4,855	3,951	6,574	25,437
Benton	*a*	3,150	7,750	.....	300	2,750	954	500
Bethlehem	*a*	1,802	.....	.....	3,400	5,976	8,260	28,362
Bridgewater	*a-b*	1,200	14,950	.....	.....	.....	1,938	200
Bristol	*a-b*	2,100	6,000	10,915	32,600	5,000	21,066	135,044
Campton	*a*	5,800	31,500	.....	2,100	6,125	23,959	22,260
Canaan	*a-b*	2,275	100	1,720	1,700	12,020	19,382	49,050
Dorchester	*a*	1,130	5,500	.....	.....	1,788	662	1,284
Easton	*a*	1,275	600	7,870	3,740	2,130	1,425	5,138
Ellsworth		.....	890	.....	.....	.....	.....	.....
Enfield	*b*	775	300	.....	6,100	14,250	5,040	90,765
Franconia	*a*	1,050	19,250	.....	4,055	3,000	88,150	9,350
Grafton	*a*	3,300	20,288	1,089	800	6,650	8,019	16,127
Groton	*a*	1,650	5,180	.....	.....	2,000	20	980
Hanover	*a-b*	3,000	22,960	20,840	57,840	9,360	106,498	90,272
Haverhill	*a*	3,095	5,125	20,550	45,128	24,205	119,676	228,781

Hebron	*a-b*	1,524	8,800	200	.....	800	5,576	1,800
Holderness	*a-b*	23,260	870	12,430	400	3,986	31,422	9,550
Landaff		.....	90	.....	.....	3,811	2,900	53,460
Lebanon	*a-b*	2,400	13,382	46,976	85,238	15,125	179,646	457,455
Lincoln		.....	10,000	1,082,120	.....	.....	1,949,659	216,199
Lisbon		.....	10,000	.....	4,996	17,000	47,008	160,500
Littleton	*a*	1,000	5,475	7,943	48,360	22,450	20,459	354,874
Livermore	*a*	4,000	.....	.....	.....	.....	.....	40,650
Lyman	*a*	3,300	500	.....	.....	3,837	25	7,000
Lyme	*a*	2,185	250	.....	.....	10,660	24,220	24,925
Monroe	*a*	1,194	2,850	.....	7,400	3,600	16,070	1,680
Orange	*a*	3,775	8,590	.....	.....	1,590	515	8,200
Orford	*a-b*	750	4,300	.....	.....	4,225	14,185	10,200
Piermont	*a-b*	3,225	12,730	.....	.....	3,150	2,850	12,650
Plymouth	*a*	740	1,870	8,390	25,062	10,100	82,612	158,226
Rumney	*a*	3,820	26,010	.....	500	9,648	5,749	36,459
Thornton	*a*	3,900	11,084	.....	.....	3,000	930	22,927
Warren	*a*	950	4,625	.....	4,800	2,500	2,343	21,145
Waterville		.....	55,330	.....	.....	.....	.....	2,000
Wentworth	*a*	2,200	14,742	.....	.....	4,042	7,771	15,375
Woodstock	*a*	500	1,466	.....	.....	2,600	1,437	48,770
Totals		$101,360	$361,167	$1,223,393	$343,774	$238,561	$2,832,399	$2,499,060

TABLE 13.—*Continued.*

GRAFTON COUNTY.

TOWNS.	Polls, number.	*a* Aqueducts. *b* Locks and canals. *c* Toll bridges. *d* Electric light lines. *e* Wharves, ferries.	Mills, factories, and machinery.	Improved and unimproved lands and buildings.	Amount of inventory.	Amount of taxes, including poll taxes.	Property rate per cent.
Alexandria	143	.....	$3,200	$273,047	$328,558	$8,947.89	$2.64
Ashland	426	.....	133,700	774,734	1,133,743	23,371.10	1.98
Bath	272	*a* 1,250	15,000	554,585	750,171	15,842.55	2.04
Benton	54	.....	.....	140,189	174,489	2,550.81	1.40
Bethlehem	326	*a* 27,500	.....	1,373,748	1,543,558	28,072.65	1.78
Bridgewater	77	.....	200	235,092	275,100	3,345.96	1.16
Bristol	392	*a* 13,232	95,118	671,794	1,052,660	22,480.08	2.06
Campton	272	.....	44,250	519,896	706,128	12,026.22	1.63
Canaan	411	*a* 9,350	6,500	849,255	1,023,182	20,437.67	1.92
Dorchester	69	.....	1,000	182,549	212,610	4,411.46	2.01
Easton	60	.....	.....	138,490	181,050	2,835.90	1.50
Ellsworth	26	.....	.....	110,620	122,856	1,194.58	.93
Enfield	460	.....	108,042	767,295	1,055,297	19,591.12	1.76
Franconia	154	*a* 4,500	2,800	607,150	778,080	12,757.28	1.60
Grafton	202	.....	5,765	408,235	509,897	6,369.73	1.17
Groton	89	.....	1,500	143,140	170,852	3,595.04	2.00
Hanover	542	*a* 2,500	.....	2,709,226	3,133,996	50,236.13	1.57
Haverhill	1,055	.....	126,650	1,912,660	2,700,755	51,654.79	1.83

Hebron	68		.....	720	175,038	210,719	2,474.98	1.11
Holderness	234	*c*	100	3,200	1,038,010	1,175,384	18,333.83	1.52
Landaff	221		.....	2,000	289,284	391,190	7,719.04	1.86
Lebanon	1,624	*a*	16,330	847,512	2,883,240	4,728,514	81,919.28	1.66
Lincoln	826		.....	517,232	729,142	4,575,397	21,326.17	.43
Lisbon	789	*a*	35,000	87,690	1,350,629	1,847,429	45,619.37	2.38
Littleton	1,229	*c*	4,250	.....	2,215,246	2,857,020	71,203.89	2.41
Livermore	47		.....	1,500	575,990	625,995	1,852.12	.28
Lyman	115		.....	2,600	204,944	261,540	5,433.04	1.98
Lyme	264	*a*	700	3,500	664,658	810,648	13,093.04	1.55
Monroe	118	*c*	5,000	4,500	326,334	427,148	5,703.49	1.28
Orange	67		.....	7,960	127,051	169,852	2,707.60	1.50
Orford	211		.....	500	495,900	608,019	12,278.37	1.95
Piermont	182		.....	9,000	399,926	515,505	11,189.60	2.10
Plymouth	660		.....	91,450	1,356,288	1,819,223	35,671.29	1.90
Rumney	328		.....	20,976	444,529	602,491	10,295.85	1.60
Thornton	175		.....	.....	260,270	334,956	7,152.09	2.03
Warren	222	*a*	1,000	18,100	373,947	464,638	9,272.14	1.90
Waterville	93		.....	.....	606,353	670,785	3,137.45	.44
Wentworth	186		.....	3,195	272,492	356,285	6,037.13	1.59
Woodstock	379		.....	43,820	464,909	610,206	14,961.09	2.33
Totals	13,068		$120,712	$2,209,180	$27,625,885	$39,915,926	$677,101.82	$1.63

TABLE 13.—*Continued.*

COOS COUNTY.

TOWNS.	HORSES.			ASSES AND MULES.			OXEN.			COWS.		
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.
Berlin	610	$83,435	$136.77	..	.....	.....	..	.....	.....	321	$11,950	$37.22
Carroll	161	20,505	127.36	10	$200	$20.00	4	$350	$87.50	181	8,168	45.12
Clarksville	163	17,914	109.90	..	.....	.....	..	.....	.....	364	17,762	48.79
Colebrook	740	84,780	114.56	33	4,000	121.21	6	525	87.50	1,310	65,450	49.96
Columbia	307	34,680	112.96	..	.....	.....	2	140	70.00	691	30,303	43.85
Dalton	213	22,595	105.49	1	100	100.00	18	930	51.66	511	23,505	45.99
Dummer	157	20,850	132.80	..	.....	.....	4	250	62.50	202	7,585	37.54
Errol	126	16,210	128.65	2	220	110.00	2	190	95.00	86	3,210	37.32
Gorham	270	34,870	129.14	..	.....	.....	..	.....	.....	160	8,540	53.37
Jefferson	396	51,554	130.18	..	.....	.....	1	80	80.00	994	54,772	55.10
Lancaster	691	91,107	131.84	..	.....	.....	14	1,405	100.35	1,588	74,825	47.11
Milan	345	44,010	127.56	..	.....	.....	12	950	79.16	402	13,158	32.73
Northumberland	359	55,830	155.51	..	.....	.....	..	.....	.....	411	15,895	38.67
Pittsburg	249	27,440	110.20	2	290	145.00	..	.....	.....	592	24,936	42.12
Randolph	53	6,730	126.97	2	60	30.00	..	.....	.....	61	2,340	38.36
Shelburne	91	11,050	121.42	..	.....	.....	..	.....	.....	165	6,512	39.46
Stark	195	27,494	140.99	..	.....	.....	4	328	82.00	185	6,630	35.83

Stewartstown ...	367	43,505	118.54	..	.....	.....	2	200	100.00	770	34,430	44.71
Stratford	437	60,500	138.44	..	.....	.....	..	.....	.....	372	15,425	41.46
Wentworth's Loc'n	14	1,450	103.57	..	.....	.....	..	.....	.....	6	235	39.16
Whitefield	362	46,046	127.19	3	220	73.33	10	980	98.00	673	30,614	45.48
Totals	6,306	$802,555	$127.26	53	$5,090	$96.03	79	$6,328	$80.10	10,045	$456,245	$45.42

TABLE 13.—*Continued.*

COOS COUNTY.

TOWNS.	OTHER NEAT STOCK.			SHEEP.			HOGS.			FOWLS		AUTOMOBILES. VEHICLES AND	
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Number.	Valuation.
Berlin	4	$145	$36.25	....	.....	....	32	$285	$8.90	...	$100	...	$78,750
Carroll	44	1,406	31.95	....	.....	....	27	378	14.00	...	....	71	13,000
Clarksville	4	162	40.50	250	$1,778	$7.11	1	12	12.00	...	....	2	300
Colebrook	158	6,865	43.44	641	4,730	7.37	76	1,380	18.15	...	....	...	30,700
Columbia	118	3,525	29.87	186	873	4.69	32	398	12.43	...	....	23	9,150
Dalton	191	6,640	34.76	75	452	6.02	1	15	15.00	...	....	...	2,100
Dummer	17	385	22.64	70	254	3.62	13	195	15.00	...	....	5	4,885
Errol	32	983	30.71	120	436	3.63	14	170	12.14	...	....	10	3,000
Gorham	4	170	42.50	20	102	5.10	8	90	11.25	350	170	98	20,200
Jefferson	100	4,036	40.36	131	868	6.62	5	60	12.00	43	36	22	7,066
Lancaster	159	6,181	38.87	213	1,048	4.92	21	298	14.19	...	....	...	50,345
Milan	48	1,235	25.72	59	236	4.00	7	74	10.57	...	....	22	7,375
Northumberland.	77	2,685	34.87	91	633	6.95	25	150	6.00	...	....	41	16,150
Pittsburg	30	1,131	37.70	369	2,030	5.50	...	.....	.....	100	50	7	1,575
Randolph	15	510	34.00	83	334	4.02	...	.....	.....	50	26	7	800
Shelburne	9	330	36.66	13	56	4.30	5	50	10.00	...	....	15	2,250

Stark	28	822	29.35	62	308	4.96	8	56	7.00	300	150	18	3,050
Stewartstown ..	116	4,351	37.50	296	1,720	5.81	12	194	16.16	...	....	...	7,075
Stratford	20	1,020	51.00	30	145	4.83	23	420	18.26	...	....	17	6,550
Wentworth's Le'n	1	25	25.00	....	.....	....	...	.....	.....	...	....	...	200
Whitefield	111	4,251	38.29	76	456	6.00	14	144	10.28	...	....	47	17,200
Totals	1,286	$46,858	$36.43	2,785	$16,459	$5.90	324	$4,369	$13.48	843	$532	405	$281,721

TABLE 13.—*Continued.*

COOS COUNTY.

TOWNS.		*a* Portable mills. *b* Boats.	Wood and lumber, Laws 1911, *c* 82.	Municipal bonds and notes.	Stock in national banks in this state.	Soldiers' exemptions.	Money on hand, at interest, or on deposit.	Stock in trade.
Berlin		.....	.....	$5,500	$62,717	$5,775	$34,910	$1,429,444
Carroll	*a*	$1,920	$13,134	.....	.....	4,000	3,515	8,636
Clarksville		.....	2,784	.....	.....	590	1,900	.....
Colebrook	*a*	800	5,425	1,900	114,825	13,340	91,410	89,315
Columbia		.....	32,540	.....	.....	3,190	.....	3,535
Dalton		.....	8,220	.....	.....	2,525	689	825
Dummer	*a*	6,900	164,912	.....	.....	1,200	2,250	1,635
Errol	*a-b*	5,575	374,743	.....	.....	.....	1,873	4,825
Gorham		.....	.....	.....	37,700	6,800	6,504	468,880
Jefferson		.....	.....	5,770	300	1,600	11,592	19,150
Lancaster	*a-b*	1,160	3,375	11,900	52,255	23,450	155,077	210,565
Milan		.....	207,007	.....	8,600	4,655	81,080	20,800
Northumberland		.....	.....	.....	7,495	8,375	2,484	192,613
Pittsburg		.....	45,282	.....	.....	2,475	2,375	8,350
Randolph	*a*	300	.....	.....	200	.....	2,075	50
Shelburne	*a*	2,400	4,095	28,000	3,200	500	22,086	1,500
Stark		.....	.....	27,000	1,900	300	4,200	18,226
Stewartstown		.....	7,224	3,000	.....	8,076	5,190	21,528

Stratford		.....	99,500	1,050	15,740	4,700	46,500	30,850
Wentworth's Location	*a-a*	500	8,592	.....	.....	.....	.....	850
Whitefield	*a-b*	800	2,000	3,200	.....	15,200	22,780	122,195
Totals		$20,355	$978,833	$87,320	$304,932	$106,751	$498,490	$2,653,772

TABLE —*Continued.*

COOS COUNTY.

TOWNS.	Polls, number.	*a* Aqueducts. *b* Locks and canals. *c* Toll bridges. *d* Electric light lines. *e* Wharves, ferries.	Mills, factories, and machinery.	Improved and unimproved lands and buildings.	Amount of inventory.	Amount of taxes, including poll taxes.	Property rate per cent.
Berlin	3,825	.....	$3,496,025	$4,545,825	$9,749,086	$188,010.15	$1.85
Carroll	147	.....	.....	1,608,080	1,679,292	14,971.64	.87
Clarksville	80	.....	.....	540,924	583,536	5,995.36	1.00
Colebrook	595	.....	51,000	1,191,265	1,744,370	36,778.47	2.04
Columbia	151	.....	1,900	460,420	577,464	8,617.48	1.44
Dalton	156	*c* 1,200	.....	191,405	258,676	6,131.85	2.25
Dummer	88	*b* 11,000	475	279,135	500,711	7,185.94	1.40
Errol	107	*a-b* 36,200	.....	533,024	980,659	14,629.77	1.47
Gorham	666	*a* 7,000	1,029,200	2,025,406	3,638,832	56,642.25	1.52
Jefferson	287	*a* 200	.....	732,233	887,717	15,665.08	1.70
Lancaster	874	*a* 37,500	99,400	1,672,830	2,469,271	43,779.00	1.70
Milan	231	.....	6,100	529,226	919,851	10,580.36	1.10
Northumberland	718	*c* 1,500	208,850	722,505	1,226,790	24,604.45	1.88
Pittsburg	179	.....	.....	2,880,475	2,993,934	28,800.37	.95
Randolph	46	.....	.....	225,680	239,105	3,320.06	1.35
Shelburne	70	.....	.....	475,697	557,226	5,766.67	1.01
Stark	181	.....	5,800	351,076	447,040	5,726.48	1.20
Stewartstown	306	.....	2,500	578,527	709,444	11,682.12	1.56

Stratford	250	*a-d*	15,900	8,350	758,490	1,060,440	13,755.32	1.25
Wentworth's Loc'n	12		.....	500	431,900	444,252	3,578.01	.80
Whitefield	504	*a*	500	19,030	961,000	1,231,416	27,478.23	2.15
Totals	9,473		$111,000	$4,929,130	$21,695,123	$32,899,112	$533,699.06	$1.56

TABLE 13.—*Continued.*

SUMMARY.

COUNTIES.	HORSES.			ASSES AND MULES.			OXEN.			COWS.		
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.
Rockingham..	7,269	$783,524	$107.78	52	$6,900	$132.69	222	$19,265	$86.77	11,058	$506,950	$45.84
Strafford	3,634	428,305	117.86	6	350	58.33	205	19,465	94.95	4,539	194,937	42.94
Belknap	3,273	370,079	113.07	24	2,855	118.95	287	24,301	84.67	4,475	195,396	43.66
Carroll	4,009	508,875	126.93	6	1,099	183.16	540	50,193	92.95	4,269	176,100	41.25
Merrimack ..	7,136	786,610	110.23	65	8,735	134.38	626	59,566	95.15	10,256	445,670	43.45
Hillsborough.	9,802	1,224,863	124.96	42	5,740	136.66	251	21,777	86.76	11,897	558,343	46.93
Cheshire	5,671	643,653	113.49	44	5,605	127.38	236	21,429	90.80	6,975	330,403	47.36
Sullivan	3,961	466,295	117.72	76	8,400	110.52	417	38,904	93.29	5,852	259,720	44.38
Grafton	10,056	1,207,810	120.10	62	8,476	136.70	664	61,798	93.06	17,072	743,455	43.54
Coös	6,306	802,555	127.26	53	5,090	96.03	79	6,328	80.10	10,045	456,245	45.42
Totals ...	61,117	$7,222,569	$118.17	430	$53,250	$123.83	3,527	$323,026	$91.58	86,438	$3,867,219	$44.73

TABLE 13.—*Continued.*

SUMMARY.

COUNTIES.	OTHER NEAT STOCK.			SHEEP.			HOGS.			FOWLS.		VEHICLES AND AUTOMOBILES.	
	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Average per head.	Number.	Valuation.	Number.	Valuation.
Rockingham	1,221	$40,264	$32.97	825	$3,976	$4.81	1,354	$17,991	$13.28	34,665	$24,176	940	$465,953
Strafford...	745	25,410	34.10	810	3,833	4.73	84	1,451	17.27	8,711	7,157	840	353,412
Belknap....	1,367	45,866	33.55	1,658	7,699	4.64	144	1,930	13.40	4,058	4,624	225	220,911
Carroll.....	1,067	40,637	38.08	908	4,295	4.73	164	2,470	15.06	3,205	2,672	652	189,271
Merrimack..	2,631	94,858	36.05	3,946	17,953	4.54	351	4,645	13.23	17,758	12,348	1,035	500,716
Hillsborough	1,810	63,077	34.84	1,475	7,012	4.75	1,108	16,339	14.74	87,055	65,997	929	1,076,723
Cheshire....	1,193	42,854	35.92	1,825	7,420	4.06	236	3,726	15.78	8,194	8,195	179	301,485
Sullivan....	1,910	66,407	34.76	2,605	11,060	4.24	96	1,389	14.46	7,385	5,402	560	171,554
Grafton....	4,320	143,455	32.51	4,714	20,663	4.38	661	8,957	13.55	7,217	6,274	1,022	398,108
Coös	1,286	46,858	36.43	2,785	16,459	5.90	324	4,369	13.48	843	532	405	281,721
Totals..	17,550	$609,686	$34.73	21,551	$100,370	$4.65	4,522	$63,267	$13.99	179,091	$137,377	6,787	$3,959,854

TABLE 13.—*Continued.*

SUMMARY.

COUNTIES.	*a* Portable mills. *b* Boats.	Wood and lumber, Laws 1911, *c* 82.	Municipal bonds and notes.	Stock in national banks in this state.	Soldiers' exemptions.	Money on hand, at interest, or on deposit.	Stock in trade.
Rockingham	$103,329	$665,130	$558,632	$264,902	$386,447	$774,526	$2,886,095
Strafford	26,660	285,049	47,171	334,726	180,683	424,823	3,327,902
Belknap	159,404	179,086	70,138	133,976	156,798	458,147	1,354,246
Carroll	116,619	227,681	41,250	45,548	110,605	525,398	794,347
Merrimack	100,600	493,127	389,907	326,479	212,130	903,314	3,435,614
Hillsborough	47,943	557,567	867,921	509,355	326,397	1,484,516	12,685,580
Cheshire	30,115	214,218	116,100	814,491	193,725	683,601	1,859,364
Sullivan	84,076	174,781	18,070	241,112	123,828	322,018	1,460,478
Grafton	101,360	361,167	1,223,393	343,774	238,561	2,832,399	2,499,060
Coös	20,355	978,833	87,320	304,932	106,751	498,490	2,653,772
Totals	$790,461	$4,136,639	$3,419,902	$3,319,295	$2,035,925	$8,907,232	$32,956,458

TABLE 13.—*Concluded.*

SUMMARY.

COUNTIES.	Polls, number.	*a* Aqueducts. *b* Locks and canals. *c* Toll bridges. *d* Electric light lines. *e* Wharves, ferries.	Mills, factories, and machinery.	Improved and unimproved lands and buildings.	Amount of inventory.	Amount of taxes, including poll taxes.	Property rate per cent.
Rockingham	14,147	$20,490	$1,478,250	$33,136,862	$41,757,215	$784,053.48	$1.81
Strafford	10,151	.....	3,979,518	19,493,642	28,953,811	537,270.63	1.78
Belknap	6,609	50,280	1,511,767	14,318,384	19,109,089	312,282.41	1.57
Carroll	5,013	17,210	279,034	12,176,975	15,199,674	231,209.12	1.46
Merrimack	14,577	103,000	3,094,559	33,755,117	44,532,818	746,441.85	1.61
Hillsborough	37,503	742,190	22,362,134	75,113,951	117,411,028	2,004,411.31	1.64
Cheshire	8,882	34,000	2,615,771	21,845,827	29,578,257	556,811.63	1.82
Sullivan	6,217	228,700	1,812,584	12,236,746	17,607,696	307,873.73	1.68
Grafton	13,068	120,712	2,209,180	27,625,885	39,915,926	677,101.82	1.63
Coös	9,473	111,000	4,929,130	21,695,123	32,899,112	533,699.06	1.56
Totals	125,640	$1,427,582	$44,271,927	$271,398,512	$386,964,626	$6,691,155.04	$1.66
Unincorporated places	.....	.....	.....	.....	3,913,000	9,571.62	.24
					$390,877,626	$6,700,726.66	....
Poll taxes	.....	.....	.....	.....	.....	251,280.00	....
Property taxes	.....	.....	.....	.....	.....	$6,449,446.66	$1.65

TABLE 14.

Equalized Valuation upon which the Apportionment of State and County Taxes is made, and the sum to be paid by each Town on each $1,000 of the State Tax, 1915.

ROCKINGHAM COUNTY.

Towns.	Amount of inventory.	Insurance stock.	Deposits in savings banks.	Railroad stock, right of way and buildings.	Equalized valuation, 1915.	Equalized valuation, 1913.	Proportion to each $1,000 of tax.	
							1915.	1913.
Atkinson	$386,298	$1,200	$27,395	$9,056	$423,949	$423,437	$0.87	$0.88
Auburn	608,044	.....	221,910	3,324	833,278	829,301	1.72	1.73
Brentwood	401,297	.....	104,272	6,358	511,927	563,569	1.06	1.18
Candia	508,708	1,100	263,129	6,464	779,401	754,157	1.61	1.57
Chester	541,018	.....	287,003	5,069	833,090	890,889	1.72	1.86
Danville	276,199	.....	67,487	2,033	345,719	371,575	.71	.77
Deerfield	602,820	.....	204,816	5,980	813,616	870,552	1.68	1.82
Derry	3,959,861	300	596,739	50,871	4,607,771	4,680,569	9.53	9.75
East Kingston	301,539	5,300	19,393	7,044	333,276	359,329	.69	.75
Epping	760,737	4,600	209,272	28,140	1,002,749	1,057,712	2.07	2.20
Exeter	4,003,300	32,725	747,351	218,445	5,001,821	4,953,023	10.35	10.33
Fremont	442,030	250	126,074	10,725	579,079	576,066	1.19	1.20
Greenland	495,297	.....	98,168	17,442	610,907	622,191	1.26	1.30
Hampstead	533,542	.....	43,296	12,968	589,806	598,259	1.22	1.25
Hampton	2,054,885	.....	115,264	25,951	2,196,100	1,929,728	4.54	4.02

Hampton Falls	546,393	13,125	31,808	6,710	598,036	585,417	1.24	1.22
Kensington	297,365	1,500	31,712	1,415	331,992	368,792	.68	.77
Kingston	639,290	400	63,918	9,982	713,590	719,368	1.47	1.50
Londonderry	969,185	1,400	297,461	13,323	1,281,369	1,301,686	2.65	2.72
Newcastle	406,347	250	113,134	2,737	522,468	578,145	1.08	1.21
Newfields	205,719	2,600	70,891	39,715	318,925	342,552	.65	.72
Newington	345,475	.....	111,226	9,400	466,101	467,277	.96	.97
Newmarket	1,756,958	400	166,361	14,894	1,938,613	2,065,119	4.01	4.31
Newton	502,216	.....	5,128	13,989	521,333	521,220	1.07	1.08
North Hampton	1,261,397	8,000	146,690	3,900	1,419,987	1,445,566	2.93	3.01
Northwood	561,558	1,000	277,718	943	841,219	841,954	1.74	1.76
Nottingham	641,435	.....	102,013	340	743,788	760,563	1.54	1.58
Plaistow	667,153	1,200	5,041	37,541	710,935	683,041	1.47	1.42
Portsmouth	*10,955,035	180,100	2,827,629	521,450	14,484,214	14,604,757	29.98	30.46
Raymond	722,754	900	301,972	10,543	1,036,169	1,022,066	2.14	2.13
Rye	1,433,809	2,600	413,578	6,912	1,856,899	1,882,220	3.84	3.93
Salem	1,965,680	1,000	40,247	45,295	2,052,222	1,828,883	4.24	3.82
Sandown	209,029	.....	24,758	4,266	238,053	255,184	.49	.54
Seabrook	448,948	.....	5,114	6,421	460,483	457,078	.95	.95
South Hampton	214,707	.....	10,046	176	224,929	219,427	.46	.45
Stratham	443,798	1,100	117,605	13,802	576,305	602,500	1.19	1.26
Windham	732,389	.....	72,459	13,941	818,789	6,726,162	1.69	14.00
Totals	$41,802,215	$261,050	$8,368,078	$1,187,565	$51,618,908	$57,759,334	$106.69	$120.42

*Includes $45,000, subject to state and county taxes only.

TABLE 14.—*Continued.*

STRAFFORD COUNTY.

Towns.	Amount of inventory.	Insurance stock.	Deposits in savings banks.	Railroad stock, right of way, and buildings.	Equalized valuation 1915.	Equalized valuation 1913.	Proportion to each $1,000 of tax.	
							1915.	1913.
Barrington	$555,930	.....	$185,377	$10,064	$751,371	$900,291	$1.54	$1.88
Dover	*10,910,097	$12,325	3,309,447	439,321	14,671,190	14,721,164	30.35	30.70
Durham	672,280	.....	131,274	36,046	839,600	836,738	1.72	1.74
Farmington	1,537,186	1,425	618,791	17,250	2,174,652	1,988,055	4.50	4.14
Lee	376,200	.....	97,502	16,947	490,649	550,166	1.00	1.14
Madbury	266,501	.....	143,583	18,162	428,246	433,294	.87	.90
Middleton	130,792	.....	15,432	.....	146,224	181,374	.29	.38
Milton	1,334,438	750	471,733	5,383	1,812,304	1,605,209	3.75	3.35
New Durham	333,999	250	102,688	2,805	439,742	461,105	.89	.96
Rochester	6,102,571	18,825	2,241,988	159,702	8,523,086	8,236,434	17.63	17.18
Rollinsford	1,281,152	350	388,658	34,385	1,704,545	1,895,759	3.52	3.95
Somersworth	5,018,845	4,750	1,187,813	98,140	6,309,548	6,157,705	13.05	12.84
Strafford	548,820	.....	194,638	.....	743,458	808,164	1.52	1.68
Totals	$29,068,811	$38,675	$9,088,924	$838,205	$39,034,615	$38,775,458	$80.63	$80.84

*Includes $115,000 exempted since 1909.

TABLE 14.—*Continued.*

BELKNAP COUNTY.

Towns.	Amount of inventory.	Insurance stock.	Deposits in savings banks.	Railroad stock, right of way, and buildings.	Equalized valuation 1915.	Equalized valuation 1913.	Proportion to each $1,000 of tax.	
							1915.	1913.
Alton	$1,371,114	$500	$209,374	$71,080	$1,652,068	$1,601,646	$3.40	$3.34
Barnstead	661,005	10,900	321,601	13,689	1,007,195	1,032,517	2.07	2.15
Belmont	871,994	1,000	207,865	17,073	1,097,932	1,141,234	2.26	2.38
Center Harbor	612,599	75	154,676	560	767,910	743,945	1.57	1.55
Gilford	914,030	1,000	117,326	12,436	1,044,792	966,308	2.15	2.01
Gilmanton	538,612	.....	197,739	342	736,693	770,737	1.51	1.61
Laconia	*9,404,939	36,450	1,842,042	282,921	11,566,352	10,745,188	23.92	22.40
Meredith	1,629,388	13,000	422,765	24,100	2,089,253	2,078,327	4.31	4.33
New Hampton	556,309	300	135,666	4,815	697,090	712,854	1.43	1.49
Sanbornton	700,845	.....	234,867	8,753	944,465	923,060	1.94	1.92
Tilton	1,883,254	4,350	615,170	293,638	2,796,412	2,847,866	5.77	5.94
Totals	$19,144,089	$67,575	$4,459,091	$729,407	$24,400,162	$23,563,682	$50.33	$49.12

*Includes $35,000 exempted since 1909.

TABLE 14. *Continued.*

CARROLL COUNTY.

Towns.	Amount of inventory.	Insurance stock.	Deposits in savings banks.	Railroad stock, right of way, and buildings.	Equalized valuation 1915.	Equalized valuation 1913.	Proportion to each $1,000 of tax.	
							1915.	1913.
Albany	$390,700	.....	$3,188	.....	$393,888	$425,086	$0.80	$0.89
Bartlett	770,962	.....	43,923	$34,909	849,794	825,979	1.75	1.72
Brookfield	220,113	.....	53,223	1,800	275,136	252,985	.56	.53
Chatham	218,635	.....	642	.....	219,277	241,179	.44	.50
Conway	2,701,252	$1,050	304,828	62,959	3,070,089	3,417,899	6.35	7.13
Eaton	221,076	.....	8,063	.....	229,139	216,577	.47	.45
Effingham	421,228	.....	34,734	.....	455,962	478,856	.94	1.00
Freedom	383,629	.....	18,612	.....	402,241	423,223	.82	.88
Hart's Location	113,655	.....	3,768	9,019	126,442	149,772	.25	.31
Jackson	544,348	725	31,045	.....	576,118	568,528	1.19	1.18
Madison	436,763	325	32,520	5,554	475,162	485,710	.97	1.01
Moultonborough	1,462,020	.....	197,397	2,430	1,661,847	1,307,914	3.42	2.73
Ossipee	1,013,860	100	279,141	15,346	1,308,447	1,206,256	2.70	2.52
Sandwich	1,146,360	2,200	160,431	15,361	1,324,352	1,271,827	2.73	2.65
Tamworth	1,116,230	.....	112,757	.....	1,228,987	1,166,611	2.54	2.42
Tuftonborough	679,353	200	40,792	.....	720,345	717,075	1.48	1.49
Wakefield	1,062,210	4,350	431,277	55,492	1,553,329	1,502,988	3.21	3.14

Wolfeborough	2,285,280	4,200	278,726	26,635	2,594,841	2,602,006	5.36	5.42
Hale's Location ..	12,000	.....	.....	.....	12,000	12,000	.02	.02
Totals	$15,199,674	$13,150	$2,035,067	$229,505	$17,477,396	$17,272,471	$36.00	$36.00

TABLE 14.—*Continued.*

MERRIMACK COUNTY.

Towns.	Amount of inventory.	Insurance stock.	Deposits in savings banks.	Railroad stock, right of way, and buildings.	Equalized valuation 1915.	Equalized valuation 1913.	Proportion to each $1,000 of tax.	
							1915.	1913.
Allenstown	$1,006,511	$1,200	$115,254	$13,777	$1,136,742	$1,163,539	$2.35	$2.43
Andover	870,431	1,075	354,108	32,214	1,257,828	1,190,032	2.60	2.48
Boscawen	786,115	1,750	218,140	46,191	1,052,196	1,115,618	2.17	2.32
Bow	971,775	.....	236,598	8,430	1,216,803	2,235,310	2.51	4.66
Bradford	623,966	4,600	310,967	32,815	972,348	935,710	2.01	1.95
Canterbury	649,731	.....	278,296	7,041	935,068	1,009,670	1.93	2.10
Chichester	392,089	.....	253,825	57,508	703,422	803,521	1.45	1.67
Concord	*19,302,428	296,150	7,565,642	2,155,560	29,319,780	28,771,388	60.69	59.99
Danbury	322,900	.....	209,465	13,762	546,127	594,204	1.13	1.24
Dunbarton	404,808	.....	183,188	11,213	599,209	623,357	1.23	1.30
Epsom	579,523	2,600	285,216	10,960	878,299	890,342	1.81	1.86
Franklin	4,997,712	9,250	1,339,486	†250,020	6,596,468	6,363,317	13.65	13.27
Henniker	1,001,741	30,700	421,372	79,807	1,533,620	1,671,543	3.17	3.49
Hill	416,694	.....	123,227	7,182	547,103	515,539	1.13	1.07
Hooksett	1,286,061	12,700	263,088	31,613	1,593,462	1,627,511	3.29	3.40
Hopkinton	1,169,739	4,325	591,052	25,837	1,790,953	1,843,717	3.70	3.84
Loudon	644,088	1,000	420,039	25,011	1,090,138	1,186,645	2.25	2.47
Newbury	1,009,649	300	114,517	6,006	1,130,472	938,027	2.33	1.96

New London	1,143,558	.....	171,369	19,157	1,334,084	1,323,064	2.76	2.76
Northfield	1,300,326	.....	235,545	16,020	1,551,891	1,463,650	3.21	3.05
Pembroke	1,679,670	$21,125	609,021	25,939	2,335,755	2,369,696	4.83	4.95
Pittsfield	1,458,020	5,375	630,116	45,441	2,138,952	2,165,119	4.42	4.52
Salisbury	330,053	.....	175,104	790	505,947	510,445	1.04	1.06
Sutton	604,025	.....	169,228	2,579	775,832	775,925	1.60	1.62
Warner	958,580	14,000	463,283	138,561	1,574,424	1,575,112	3.25	3.28
Webster	443,277	.....	246,873	17,218	707,368	740,286	1.46	1.54
Wilmot	304,348	500	124,896	7,912	437,656	419,772	.89	.87
Totals	$44,657,818	$406,650	$16,108,915	$3,088,564	$64,261,947	$64,822,059	$132.86	$135.15

*Inciudes $125,000 exempt since 1909.

TABLE 14.—*Continued.*

HILLSBOROUGH COUNTY.

Towns.	Amount of inventory.	Insurance stock.	Deposits in savings banks.	Railroad stock, right of way, and buildings.	Equalized valuation, 1915.	Equalized valuation, 1913.	Proportion to each $1,000 of tax.	
							1915.	1913.
Amherst	$1,242,276	$500	$257,566	$43,326	$1,543,668	$1,510,207	$3.19	$3.13
Antrim	926,669	4,050	324,802	15,334	1,270,855	1,231,149	2.62	2.56
Bedford	1,033,727	1,600	286,369	21,773	1,343,469	1,323,182	2.78	2.75
Bennington	782,406	1,500	114,717	38,598	937,221	844,860	1.94	1.76
Brookline	493,504	.....	30,278	9,772	533,554	587,641	1.10	1.22
Deering	320,707	.....	81,620	2,110	404,437	414,335	.83	.86
Francestown	497,556	9,350	170,945	10,330	598,181	616,540	1.23	1.28
Goffstown	1,754,696	12,700	771,618	48,367	2,587,381	2,656,317	5.35	5.53
Greenfield	420,166	1,875	82,340	22,587	526,968	489,117	1.08	1.01
Greenville	899,604	7,700	149,279	12,493	1,069,076	1,080,829	2.21	2.25
Hancock	547,395	100	221,032	6,653	775,180	796,708	1.60	1.66
Hillsborough	1,500,207	300	613,865	37,815	2,152,187	2,190,513	4.45	4.56
Hollis	841,953	13,750	45,851	13,652	915,206	940,122	1.89	1.96
Hudson	1,054,005	4,000	166,737	50,903	1,275,645	1,349,922	2.64	2.81
Litchfield	390,858	2,700	116,959	1,605	512,122	494,059	1.05	1.03
Lyndeborough	479,306	.....	65,357	9,712	554,375	547,785	1.14	1.14
Manchester	*72,039,273	631,125	13,015,335	2,274,774	87,960,507	83,786,574	182.07	174.69
Mason	329,637	.....	25,261	5,466	360,364	343,606	.71	.71

Merrimack	† 1,173,013	.....	323,939	45,082	1,542,034	1,460,446	3.19	3.04
Milford	3,203,113	45,200	545,901	139,432	3,933,646	3,592,584	8.14	7.49
Mont Vernon	569,205	.....	36,322	5,093	610,620	617,129	1.26	1.28
Nashua	‡22,639,775	302,725	1,846,639	876,518	25,665,657	25,445,097	53.12	53.05
New Boston	874,123	1,400	423,829	13,118	1,312,470	1,395,553	2.71	2.90
New Ipswich	888,701	.....	100,999	5,923	995,623	935,092	2.05	1.94
Pelham	723,987	.....	18,721	33,254	775,962	734,656	1.60	1.53
Peterborough	2,308,880	56,900	819,782	84,777	3,270,339	2,845,255	6.76	5.93
Sharon	166,020	.....	4,571	.....	170,591	110,467	.35	.23
Temple	264,609	.....	30,384	272	295,265	295,176	.61	.61
Weare	1,053,666	3,300	439,032	7,721	1,503,719	1,555,507	3.11	3.24
Wilton	1,460,035	6,475	170,870	63,060	1,700,440	1,752,160	3.52	3.80
Windsor	57,284	.....	9,972	.....	67,256	51,551	.13	.10
Totals	$120,846,356	$1.107,250	$21,310,892	$3,899,520	$147,164,018	$141,994,139	$304.46	$296.05

*Includes $3,241,199, subject to state and county taxes only.
†Includes $194,129, subject to state and county taxes only.
‡Includes $950,712, subject to state and county taxes only.

TABLE 14.—*Continued.*

CHESHIRE COUNTY.

Towns.	Amount of inventory.	Insurance stock.	Deposits in savings banks.	Railroad stock, right of way, and buildings.	Equalized valuation, 1915.	Equalized valuation, 1913.	Proportion to each $1,000 of tax.	
							1915.	1913.
Alstead	$632,968	.....	$59,347	.....	$692,315	$721,522	$1.43	$1.50
Chesterfield	917,105	$200	23,494	.....	940,799	940,281	1.94	1.96
Dublin	1,530,108	.....	142,713	$414	1,673,235	1,642,893	3.46	3.43
Fitzwilliam	828,555	1,250	30,821	7,527	868,153	872,137	1.79	1.82
Gilsum	240,096	500	36,229	18	276,843	268,205	.56	.56
Harrisville	600,081	.....	33,103	3,700	636,884	667,030	1.31	1.39
Hinsdale	2,189,168	4,425	27,442	121,499	2,342,534	2,358,342	4.84	4.92
Jaffrey	1,596,712	900	276,526	9,554	1,883,692	1,831,296	3.89	3.82
Keene	*10,113,010	210,175	729,927	297,515	11,350,627	11,219,598	23.49	23.40
Marlborough	801,954	2,400	89,618	5,520	899,492	976,806	1.86	2.04
Marlow	267,402	.....	32,159	.....	299,561	324,368	.61	.67
Nelson	260,349	.....	22,414	.....	282,763	261,875	.58	.54
Richmond	562,703	2,600	12,943	.....	578,246	628,365	1.19	1.31
Rindge	812,016	.....	83,984	3,620	899,620	1,030,245	1.86	2.15
Roxbury	138,639	.....	4,432	200	143,271	140,919	.29	.29
Stoddard	280,150	.....	47,908	.....	328,058	325,994	.67	.68
Sullivan	213,177	.....	41,443	.....	254,620	254,706	.52	.53
Surry	271,282	.....	25,990	300	297,572	270,668	.60	.56

Swanzey	1,247,540	2,300	59,718	13,807	1,323,365	1,485,829	2.73	3.10
Troy	943,800	500	41,576	6,336	992,212	1,010,415	2.05	2.11
Walpole	2,707,901	3,000	135,015	36,531	2,882,447	3,463,857	5.96	7.22
Westmoreland ...	593,110	900	46,566	8,218	648,794	651,502	1.34	1.36
Winchester	1,983,431	250	32,611	12,340	2,028,632	2,127,273	4.19	4.43
Totals	$29,731,257	$229,400	$2,035,979	$527,099	$32,523,735	$33,474,126	$67.16	$69.79

*Includes $153,000, exempted since 1909.

TABLE 14. *Continued.*

SULLIVAN COUNTY.

Towns.	Amount of inventory.	Insurance stock.	Deposits in savings banks.	Railroad stock, right of way, and buildings.	Equalized valuation, 1915.	Equalized valuation, 1913.	Proportion to each $1,000 of tax.	
							1915.	1913.
Acworth	$344,288	$200	$24,983	.....	$369,471	$428,407	$0.75	$0.89
Charlestown	*1,170,454	.....	12,253	$33,471	1,216,178	1,633,479	2.51	3.40
Claremont	7,329,775	7,050	170,069	41,207	7,548,101	7,414,849	15.62	15.47
Cornish	895,527	.....	35,194	1,900	932,621	911,250	1.92	1.91
Croydon	401,080	.....	27,295	520	428,895	326,027	.87	.68
Goshen	205,259	.....	21,033	.....	226,292	226,514	.45	.47
Grantham	258,306	.....	19,932	1,185	279,423	282,642	.56	.59
Langdon	238,690	.....	21,577	.....	260,267	245,420	.52	.51
Lempster	265,969	.....	19,858	316	286,143	262,457	.58	.55
Newport	3,156,496	26,700	410,699	199,298	3,793,193	3,780,295	7.85	7.88
Plainfield	785,926	.....	85,283	7,185	878,394	851,579	1.81	1.78
Springfield	414,422	.....	27,895	79	442,396	448,348	.91	.93
Sunapee	1,411,722	100	136,338	4,596	1,552,756	1,522,560	3.21	3.17
Unity	337,564	.....	12,938	.....	350,502	353,839	.71	.73
Washington	305,668	.....	72,431	1,121	379,220	356,524	.78	.74
Totals	$17,521,146	$34,050	$1,097,778	$290,878	$18,943,852	$19,044,190	$39.05	$39.70

*$86,550, local doomage deducted.

TABLE 14.—*Continued.*

GRAFTON COUNTY.

Towns.	Amount of inventory.	Insurance stock.	Deposits in savings banks.	Railroad stock, right of way, and buildings.	Equalized valuation, 1915.	Equalized valuation, 1913.	Proportion to each $1,000 of tax.	
							1915.	1913.
Alexandria	$328,558	.....	$82,015	$1,044	$411,617	$426,886	$0.85	$0.89
Ashland	1,133,743	$2,725	234,146	9,012	1,379,626	1,427,807	2.85	2.98
Bath	750,171	200	126,012	9,244	885,627	843,430	1.83	1.76
Benton	174,489	.....	15,653	1,385	191,527	276,862	.39	.58
Bethlehem	1,543,558	.....	240,758	39,165	1,823,481	1,785,181	3.78	3.72
Bridgewater	275,100	.....	54,956	3,640	333,696	328,643	.69	.68
Bristol	1,052,660	3,750	507,757	35,525	1,599,692	1,637,273	3.30	3.41
Campton	706,128	500	132,892	14,212	853,732	908,180	1.76	1.89
Canaan	1,023,182	1,500	198,000	41,830	1,264,512	1,355,772	2.61	2.83
Dorchester	212,610	.....	17,253	395	230,258	204,319	.47	.43
Easton	181,050	.....	57,865	.....	238,915	215,564	.49	.45
Ellsworth	122,856	.....	3,157	.....	126,013	56,714	.26	.11
Enfield	1,055,297	200	199,642	71,247	1,326,386	1,324,922	2.74	2.76
Franconia	778,080	.....	185,733	10,078	973,891	879,050	2.01	1.84
Grafton	509,897	.....	186,171	11,634	707,702	688,698	1.46	1.43
Groton	170,852	.....	23,633	.....	194,485	184,058	.40	.38
Hanover	3,133,996	1,925	402,863	15,063	3,553,847	3,271,118	7.35	6.82
Haverhill	2,700,755	175	418,967	104,151	3,224,348	3,314,736	6.67	6.92

TABLE 14.—*Continued.*

GRAFTON COUNTY.

Towns.	Amount of inventory.	Insurance.	Deposits in savings banks.	Railroad stock, right of way, and buildings.	Equalized valuation, 1915.	Equalized valuation, 1913.	Proportion to each $1,000 of tax.	
							1915.	1913.
Hebron	210,719	.....	59,720	780	271,219	260,880	.56	.54
Holderness	1,175,384	.....	111,922	3,199	1,290,505	1,242,190	2.67	2.59
Landaff	391,190	.....	61,859	1,069	454,118	514,176	.94	1.07
Lebanon	4,728,514	5,700	655,923	115,962	5,506,099	5,180,565	11.39	10.80
Lincoln	4,575,397	.....	91,931	2,181	4,669,509	4,082,029	9.66	8.51
Lisbon	1,847,429	.....	599,759	11,566	2,458,754	2,455,688	5.09	5.12
Littleton	2,857,020	250	1,018,559	20,337	3,896,166	3,842,429	8.06	8.01
Livermore	625,995	.....	1,756	.....	627,751	345,803	1.29	.73
Lyman	261,540	.....	26,738	.....	288,278	328,894	.59	.68
Lyme	810,648	2,300	149,931	2,216	965,095	1,003,924	1.99	2.09
Monroe	427,148	.....	9,358	.....	436,506	400,045	.90	.83
Orange	169,852	.....	16,656	949	187,457	186,974	.38	.39
Orford	608,019	.....	38,773	.....	646,792	689,438	1.34	1.44
Piermont	515,505	.....	29,041	.....	544,546	592,762	1.12	1.24
Plymouth	1,819,223	19,300	563,651	138,642	2,540,816	2,465,402	5.26	5.14
Rumney	602,491	3,000	234,771	14,845	855,107	768,782	1.77	1.60
Thornton	334,956	.....	40,343	5,266	380,565	367,267	.78	.77
Warren	464,638	1,000	87,947	26,858	580,443	584,619	1.20	1.22

Waterville	670,785	.....	145	.....	670,930	532,215	1.38	1.11
Wentworth	356,285	1,500	113,212	22,017	493,014	506,586	1.02	1.06
Woodstock	610,206	200	52,067	19,714	682,187	833,678	1.41	1.74
Totals	$39,915,926	$44,525	$7,051,535	$753,226	$47,765,212	$46,313,559	$98.71	$96.56

TABLE 14.—*Continued.*

COOS COUNTY.

Towns.	Amount of inventory.	Insurance stock.	Deposits in savings banks.	Railroad stock, right of way, and buildings.	Equalized valuation, 1915.	Equalized valuation, 1913.	Proportion to each $1,000 of tax.	
							1915.	1913.
Berlin	$9,749,086	$2,900	$449,549	$35,710	$10,237,245	$8,865,316	$21.19	$18.48
Carroll	1,679,292	.....	67,764	31,217	1,778,273	1,829,998	3.67	3.82
Clarksville	583,536	.....	5,177	.....	588,713	585,323	1.21	1.22
Colebrook	1,744,370	1,100	242,425	14,070	2,001,965	2,004,566	4.14	4.18
Columbia	577,464	.....	17,092	5,907	600,463	655,995	1.24	1.36
Dalton	258,676	.....	38,816	6,591	304,083	305,223	.62	.63
Dummer	500,711	.....	12,362	491	513,564	379,956	1.05	.79
Errol	980,659	.....	6,861	.....	987,520	929,828	2.03	1.94
Gorham	3,638,832	400	372,185	46,809	4,058,226	1,943,530	8.40	4.05
Jefferson	887,717	100	100,966	10,550	999,333	982,331	2.06	2.07
Lancaster	2,469,271	3,750	852,493	109,715	3,435,229	3,303,030	7.11	6.88
Milan	919,851	.....	67,861	3,453	991,165	810,657	2.04	1.69
Northumberland..	1,226,790	.....	146,926	42,459	1,416,175	1,332,243	2.93	2.78
Pittsburg	2,993,934	.....	9,777	.....	3,003,711	3,785,781	6.21	7.89
Randolph	239,105	.....	8,916	9,861	257,882	268,357	.53	.56
Shelburne	*528,326	.....	45,263	7,133	580,722	557,791	1.19	1.16
Stark	447,040	.....	57,559	5,647	510,246	445,684	1.04	.93
Stewartstown	709,444	.....	38,211	7,092	754,747	758,922	1.55	1.58

Stratford	1,060,440	.....	104,623	38,487	1,203,550	1,229,355	2.48	2.56
Wentworth's Loc'n	444,252	.....	38	.....	444,290	238,462	.91	.50
Whitefield	1,231,416	.....	241,769	43,134	1,516,319	1,673,489	3.13	3.49
Totals	$32,870,212	$8,250	$2,886,633	$118,326	$36,183,421	$32,885,837	$74.73	$68.56

*$28,900 deducted for land acquired by the U. S.

TABLE 14.—*Continued.*

UNINCORPORATED PLACES IN COOS COUNTY.

	Number of acres.	Equalized valuation, 1915.	Equalized valuation, 1913.	Proportion to each $1,000 of tax.	
				1915.	1913.
Bean's Grant	3,300	$125,000	$125,000	$0.25	$0.26
*Bean's Purchase	8,529	30,000	15,000	.06	.03
Cambridge	30,710	667,000	667,000	1.38	1.39
Chandler's Purchase	10,000	60,000	60,000	.12	.12
Crawford's Purchase	5,817	100,000	87,000	.20	.18
Cutts' Grant	7,680	60,000	40,000	.12	.08
†Dixville	31,242	1,258,160	558,000	2.60	1.17
Dix's Grant	12,230	200,000	125,000	.41	.26
Erving's Grant	2,388	75,000	52,000	.16	.11
Gilmanton and Atkinson Academy Grant	12,194	156,000	156,000	.32	.33
Hadley's Purchase	6,400	52,000	64,000	.10	.13
Kilkenney	17,055	35,000	35,000	.07	.07
Millsfield	26,574	350,000	304,000	.72	.64
Odell	29,926	300,000	175,000	.62	.37
‡Pinkham's Grant	1,809	14,000	10,000	.02	.02
Sargent's Purchase	15,000	175,000	375,000	.36	.79
Second College Grant	26,225	250,000	200,000	.51	.41

Success	34,732	460,000	460,000	.95	.96
Thompson and Meserve's Purchase	12,000	200,000	200,000	.41	.41
§Totals	293,811	$4,567,160	$3,708,000	$9.38	$7.73

*Thirty-one thousand acres acquired by the United States in 1913.
†Includes $160 savings bank deposits.
‡About nine hundred acres acquired by the United States in 1911.
§Low & Burbank's Grant, Green's Grant and Martin's Location acquired by the United States in 1914.

TABLE 14.—*Concluded.*

SUMMARY.

COUNTIES.	Amount of inventory.	Insurance stock.	Deposits in savings banks.	Railroad stock, right of way, and buildings.	Equalized valuation, 1915.	Equalized valuation, 1913.	Proportion to each $1,000 of tax.	
							1915.	1913.
Rockingham	$41,802,215	$261,050	$8,368,078	$1,187,565	$51,618,908	$57,759,334	$106.69	$120.42
Strafford	29,068,811	38,675	9,088,924	838,205	39,034,615	38,775,458	80.63	80.84
Belknap	19,144,089	67,575	4,459,091	729,407	24,400,162	23,563,682	50.33	49.12
Carroll	15,199,674	13,150	2,035,067	229,505	17,477,396	17,272,471	36.00	36.00
Merrimack	44,657,818	406,650	16,108,915	3,088,564	64,261,947	64,822,059	132.86	135.15
Hillsborough	120,846,356	1,107,250	21,310,892	3,899,520	147,164,018	141,994,139	304.46	296.05
Cheshire	29,731,257	229,400	2,035,979	527,099	32,523,735	33,474,126	67.16	69.79
Sullivan	17,521,146	34,050	1,097,778	290,878	18,943,852	19,044,190	39.05	39.70
Grafton	39,915,926	44,525	7,051,535	753,226	47,765,212	46,313,559	98.71	96.56
Coös	32,870,212	8,250	2,886,633	418,326	36,183,421	32,885,837	74.73	68.56
Unincorporated places	4,567,000	.....	160	.....	4,567,160	3,748,000	9.38	7.81
Totals	$395,324,504	$2,210,575	$74,443,052	$11,962,295	$483,940,426	$479,652,855	$1,000.00	$1,000.00