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Architect's Report To the Board of Trustees of the College of Agriculture, and the Mechanic Arts, of the State of Maine

Frederick Law Olmsted

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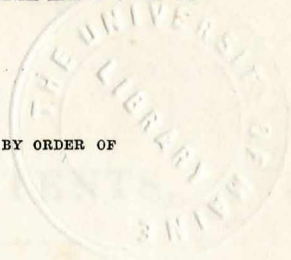
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THE LEGISLATURE

OF THE

STATE OF MAINE.

1867.

AUGUSTA:

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1867.

FORTY-SIXTH LEGISLATURE.

HOUSE.

No. 57.

ANNUAL REPORT

OF THE

STATE COLLEGE OF AGRICULTURE AND THE MECHANIC ARTS.

To the Senate and House of Representatives in Legislature assembled:

In the seventeenth section of the act establishing the State College it is provided, that "the Trustees shall cause to be made, annually, such report as is required by the fifth section of the act of Congress, and communicate the same, as therein provided."

The President of the Board of Trustees submits the following

REPORT.

By the Act of Congress of July 2, 1862, entitled "An Act donating Public Lands to the several States and Territories which may provide Colleges for the benefit of Agriculture and the Mechanic Arts," the State of Maine received scrip for 210,000 acres, a quantity equal to 30,000 acres for each Senator and Representative in Congress. By the same act it is provided, that all moneys derived from the sale of the lands aforesaid by the States, shall constitute a perpetual fund, the capital of which shall remain forever undiminished. The interest of which fund shall be devoted "to the endowment, support and maintenance of at least one College, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to Agriculture and the Mechanic Arts." "No portion of said fund, nor the interest

thereon, shall be applied, directly or indirectly, under any pretence whatever, to the purchase, erection, preservation or repair of any building or buildings."

The act provides further that, "any State which may take and claim the benefit of the provisions of this act shall provide, within five years, at least one College, as directed in the fourth section of this act, or the grant to such State shall cease."

The Legislature of Maine, by its act of March 25, 1863, accepted the Congressional grant with its conditions.

March 25, 1864, a resolve was passed authorizing the Governor of Maine to appoint a Commission to invite and receive donations and benefactions in aid of the College, and also proposals for the location thereof. Subsequently, Gov. Cony appointed Hon. W. G. Crosby, Hon. Jos. Eaton and Hon. Samuel F. Perley, a Board of Commissioners for the purposes indicated in the abovementioned resolve.

The Commissioners received several propositions for the location of the College, made the requisite examinations and submitted their report, which was published, and may be found in the Report of the Secretary of the Board of Agriculture for that year.

In February, 1865, the legislature passed "an act to establish the State College of Agriculture and the Mechanic Arts," naming sixteen persons, selecting one from each county in the State, to constitute a Board of Trustees. At the first meeting of the Board, Hon. Hannibal Hamlin was elected President of the Trustees.

The Trustees, at the invitation of parties, visited several farms in different parts of the State, which they examined with reference to their suitability for the permanent location and uses of the College. For this purpose they visited Topsham, Gorham, Augusta, Fairfield, Newport, Orrington and Orono. The several farms examined had each some of the qualifications requisite for the convenience and success of the institution. It was finally determined by the Trustees, in January, 1866, that the offer from Orono was the most advantageous one that had been made; and they then decided to accept that offer and locate the Industrial College at Orono, on the White and Goddard farms, a large and valuable estate of about three hundred and seventy acres, possessing high natural productiveness, sufficient diversity of soil for the various experimental purposes of an agricultural school, having a fine frontage on the Penobscot river, while the rear of the farm is rich in an extensive tract of hemlock and hard wood growth.

The site of the College is one of the most attractive in our State to a mind that appreciates natural beauty. It is one mile from the village of Orono with its churches, schools, stores, bank and vast water-power which furnishes a basis for manufacturing industry of various forms, and will be made tributary, no doubt, to the growth and success of the mechanical department of the College. Seven miles from Orono is the city of Bangor already noted for its ship-building interest and commerce, as well as for its interior trade and extensive lumbering operations.

When the department of marine architecture in the College shall have been established, the Bangor ship-yards will furnish the students with practical illustrations in every branch of the business.

As an evidence of their appreciation of the claims of the College, and as an acknowledgement of their immediate and prospective obligations to an institution of so much importance to the State, some of the leading citizens of Bangor voluntarily pledged and paid the handsome sum of fourteen thousand dollars in cash, which the Trustees politely acknowledge as the first instalment of the leading city of the east.

It is anticipated that, within a brief period, the European and North American Railroad will have a station within a mile of the President's house on the College farms.

As regards population, wealth and the agriculture of the State, it is conceded that the College is located somewhat remotely from the centre, yet it only serves to balance the whole State in an equitable distribution of public institutions that must be dependent, more or less, on appropriations furnished from a common source,—the taxes paid by the people!

If the history of successful railroad enterprizes, and of the various agencies of internal improvements furnish any trustworthy data upon which to predicate expectations of the growth, wealth and advancing steps of an energetic community, then the rational inference is that within the next generation, the State College may be in the center of the State, not only geographically as it now is, but in other and more important aspects, as one of the results of the E. and N. A. Railroad, which is now being pushed forward towards the national boundary line on the north-east, and also in consequence of the special work of the institution itself in imparting sound agricultural instruction combined with practical lessons on the farm, in the orchard, garden and field, amid flocks and herds, and in the work-shop where the cunning devices of the

brain and the skillful hand will unite in some useful invention that shall give to the State more than an equivalent for its generous endowment.

In April, 1866, at a meeting of the Trustees, in Bangor, the towns of Orono and Oldtown, through a committee appointed for the purpose, promptly and in good faith fulfilled the conditions of their offer, and gave to the State of Maine a warranty deed of "the White and Goddard farms," for the use and benefit of the Industrial College. The instrument of conveyance was examined and approved by P. Barnes, Esq., the Treasurer of the College. For so munificent a gift the citizens of Orono and Oldtown are certainly entitled to the acknowledgements of the people of the State.

At the same meeting, Dr. James C. Weston, formerly a member of the State Board of Agriculture from Penobscot County, was unanimously elected Secretary of the Board of Trustees.

The following gentlemen were elected an Executive Committee: Messrs. Dillingham, Goodale, Martin, John H. Gilman and B. P. Gilman, and were charged with the special care and supervision of the College property, and to make engagements with a suitable person to conduct the operations of the farm for the current year.

The Executive Committee were fortunate in finding a gentleman, one of the Trustees of the College, of large practical experience and a sound economist, whose services could be secured as farm-manager; and they at once engaged John H. Gilman, Esq., to act in that capacity from April, 1866, till April, 1867.

Occasional visits at the farm were made during the season, and uniformly the Trustees found Mr. Gilman at his post of duty, a real worker himself, leading and not following his men, in the various kinds of business peculiar to agricultural life.

It may be proper at this stage of the report to make a statement of the stock on the farm, of the crops raised, the improvements made, and the amount of help employed during the past season. This statement it is believed will be acceptable not only to the members of the legislature, but equally so to the farmers and mechanics of Maine, in whose special interest this College was established, and upon whose co-operation it must be largely dependent for its prospective usefulness.

It will be borne in mind that the Trustees did not propose last spring to accomplish at once any herculean tasks on the farm, nor to make extensive outlays in purchasing thorough-bred stock, re-

quiring large drafts on the treasury of a new, and to say the least, not a rich institution. They thought it a more judicious course to commence carefully and economically.

Stock on the College Farm, December 31, 1866.

- 23 Sheep ;
- 5 Cows ;
- 2 Two years old Heifers ;
- 2 Two years old Steers ;
- 3 Horses ;
- 4 Swine ;

Products of Farm, 1866.

- 80 Tons of Hay, about two-thirds of usual crop ;
- 1100 Bushels of Potatoes ;
- 93 Bushels of Barley, from two acres ;
- 4 Tons of Barley Straw ;
- 75 Bushels of Carrots ;
- 50 Bushels of Turnips ;
- 25 Bushels of Apples ;
- 5 Bushels of White Beans ;
- Received about \$60 00 for Pasturing.

Other Operations on the Farm.

Ploughed seven acres in June, turning under the grass ; harrowed and ploughed the same again in October. This ground is to be planted with potatoes next spring. Sixty loads of manure, coarse and not very valuable, were hauled out in October, and deposited near the seven acres.

Broke up in September two acres, nine inches in depth. On this piece fifty-eight loads of manure were dropped in heaps in the month of October. Aggregate amount of manure hauled out for next year's operations 118 loads.

Cleared off bushes, stumps and an indefinite number of old logs from twenty acres, to improve the pastures.

On eight acres of pasture land sowed and harrowed in 120 lbs. of western clover seed.

All hands, four in number, spent a full week immediately after haying, in gathering up and hauling off the small stones which were scattered over both farms.

Summer tilled three acres and a half, and ploughed in two successive crops of buckwheat.

Carefully dug around fifty apple trees, inverting the surface soil, and then applied leached ashes, about one hundred bushels to the fifty trees.

2200 lbs. Super-Phosphate of Lime—Cumberland Bone Company's manufacture,—and five tons of plaster of Paris, were used on the farm during the season.

In the spring, Mr. Gilman set out four hundred imported pear stocks, which were carefully cultivated and made fine growth. In the autumn he sowed apple-seeds for a nursery on a strip of land embracing about thirty square rods.

Anticipating the probable wants of the College, and knowing the extreme difficulty of finding well-seasoned pine lumber in the spring of the year, at the suggestion of the Trustees, about eight thousand feet of pine lumber were purchased; and it is now being seasoned in an unoccupied house on the farm. Preparations have been made for the erection of two or more brick buildings on the premises, by taking preparatory measures for the opening of a brick-yard. Under the supervision of an experienced brick-maker a yard was blocked out, clay was dug and deposited near the contemplated yard in sufficient quantity for the manufacture of 200 M. bricks. Wood enough for the same purpose has been placed in readiness for use next season.

The Trustees would not have felt justified in doing any less than they have done in the way of preparation for building. It would be a serious reflection on their foresight if the work of building should be delayed a whole year after the Legislature makes an appropriation for the College, on account of their neglect of an obvious duty.

The clay, sand, wood, and pine lumber, have been furnished and are on the ground; but they are cold and inert to-day. Let those, who truly represent the *people of Maine*, now in legislature assembled, but say "*the College of the Industrial Arts shall be built,*" and soon the various materials of construction will move and gradually assume forms of beauty and usefulness; and the temple of science and art standing on the sunrise side of our State will shed the rays of beneficence upon every home and fireside, every farm, garden and workshop in Maine.

Three men were regularly employed on the farm during the

season. Two men in addition were engaged eighteen days each in haying time.

At a meeting of the Trustees, held in Bangor, Sept. 26, 1866, W. A. P. Dillingham was elected President of the Board of Trustees, Mr. Hamlin having previously resigned. It was decided that the present number of Trustees is too large; so much so that it is difficult to get a quorum of nine members present at any meeting for the transaction of business, scattered as they are over the State. The Executive Committee was instructed at that time to petition your honorable body to reduce their number.

In November last, the President of the Board of Trustees, feeling the importance of initiating judicious methods and plans for the gradual and best development of the Industrial College, as regards the location, number, style and internal arrangement of the contemplated buildings, and the laying out of the grounds in accordance with the principles of correct taste, without sacrificing anything of use and convenience for agricultural operations, after consultation with a member of the Executive Council, decided to open a correspondence with Fred. Law Olmsted, of New York, and invoke the aid of his professional talents and experience in constructing a complete and exhaustive ground-plan of arrangements which could be worked out from time to time as the requirements and financial resources of the institution might justify.

Mr. Olmsted came, visited the College farm, inspected the buildings, spent a day marching and counter-marching over the broad estate, and penetrated the forests hung with the tapestry of newly fallen snow. When he had made a rough sketch on paper of his ideas of the capabilities of the place, in connection with many suggestive remarks, the Trustees present were satisfied that the work of improvement had been commenced at the right initial point.

Since Mr. Olmsted's return home he has written out and submitted to the College Trustees his Report, which is herewith presented for your consideration.

It was found necessary to have prepared a topographical map of the College farm. This work was entrusted to John F. Anderson, Esq., of Portland, a gentleman eminently qualified for such service.

Mr. Anderson is now engaged on the map, having already made the preliminary surveys.

In the 6th section of an act establishing the College, it is provided, that "the Governor and Council shall take measures, as soon as may be advantageously done after the passage of this act,

to sell the land scrip received by this State under the act of Congress, and to invest the same as required by the fourth section of said act."

At a meeting of Trustees, November 22, 1865, the following communication was prepared and signed by a majority of the Trustees and transmitted to the Governor.

"To His Excellency, SAMUEL CONY, Governor of Maine :

The undersigned, members of the Board of Trustees of the State College of Agriculture and the Mechanic Arts, take this method to indicate their views regarding the disposition of the land scrip for said College, viz : that it seems desirable to sell the same at an *early day*, at the best rates it may command."

Upon receipt of this communication, the Council passed an order, approved by the Governor, directing the Secretary of State to advertise for proposals for the same, to be received up to the first day of March, then next ensuing, in the following newspapers, viz : in State paper, published in Augusta, in Boston Daily Advertiser, in the New York Journal of Commerce, in the New York Daily and Weekly Tribune, in the Chicago Tribune, and in the St. Louis Democrat.

On the first of March, 1866, the Governor and Council examined the bids made for land scrip, which amounted, in the aggregate to 227,360 acres. The offers varied in amount from 10 cents per acre to 60 cents. Several of the bids were in the form of an alternative, —to take a small amount of scrip at a larger price, or a large amount at a smaller price.

It was determined by council to reject all bids below fifty-two and one-half cents, and to accept those at and above that sum.

The successful bids were for 112,360 acres, and those rejected for 125,000 acres. The successful bidders were duly notified by the Secretary of State that their offers had been accepted. From Charles Davis, of St. Louis, who bid for a large amount, no reply was received. Mr. McClure, of St. Cloud, in consequence of some delay in the mail, did not receive his notice in due season, which was that his bids for 15,360 acres had been accepted ; and he declined to take the scrip, having purchased elsewhere. However, he renewed his offer for 7,360 acres, which was accepted. Upon the bids made up to the first day of March only 19,360 acres of the land were sold.

On the 15th of March, D. Preston & Co., of St. Louis, applied

to duplicate their purchase already made, and on the 26th of the same month they offered to triplicate it on the same terms of their first purchase, which was agreed to by council; so that the sale to them amounted to 96,000 acres.

On the 15th of March, Wm. K. Lancy proposed to take 15,000 acres and General Franklin Smith offered to take 10,000 acres at 53 cents per acre. On the same day, John Kimball, for himself and others, proposed to take 5,000 acres at 53 cents per acre. These offers were severally accepted.

The foregoing sales, including those made on the bids up to March 1st, amounted in the aggregate to 193,600 acres.

The Trustees of the College having expressed a desire that a portion of the land scrip should be reserved for location, it was decided by the Governor and Council to retain the balance of the scrip. There now remain unsold 102 pieces of scrip of 160 acres each, or the amount of 16,320 acres.

Under the judicious management of Governor Cony, the land scrip so far as sold has brought fifty-three cents and a fraction per acre.

Although the College has not realized so large a sum of money from this source as was anticipated, yet Maine found quite as satisfactory market for her land as several of the other States. New Hampshire has just sold her scrip for 150,000 acres for \$80,000, or 53 cents per acre. Ohio sold for the same figure. West Virginia disposed of her scrip for 52 cents per acre; while New Jersey realized but 50 cents per acre.

For a statement of the action of the Governor in the investment of the proceeds of the sale of the scrip, and for information concerning receipts and disbursements of College Funds up to December 31, 1866, you are respectfully referred to the accompanying report of the Treasurer.

At a recent meeting of the Trustees, held in Augusta, January 22, a petition was prepared and submitted to the legislature, asking that the present number of Trustees be reduced from sixteen to five or seven; also suggesting that the new board be appointed by the Governor and Council, and that they be selected with special reference to their fitness for the office. The members present signified their willingness to resign whenever it shall be necessary so to do, that the purpose of their petition may be accomplished.

At the same meeting Phineas Barnes, Esq., of Portland, was unanimously elected President of the State College of Agriculture and the Mechanic Arts, with a salary of \$3000 a year.

Should he decide to accept the honorable and responsible position assigned him, the Trustees are confident that the institution will enter soon upon a career of the highest respectability and of unparalleled success in the history of any of the agricultural colleges in the country.

There are other topics pertinent to a report of this nature, did circumstances require their immediate consideration, that might be introduced and discussed here, such as the standard of scholarship for admission,—the branches of study to be pursued in the regular course of collegiate instruction and in special or abbreviated courses that may be instituted for some classes of students,—how far it is practicable to impress upon the College the characteristics of a home,—what relations between the College and the common schools may be profitably established,—whether it is desirable to merge the State Board of Agriculture in the College Board of Trustees and Faculty of Instruction;—but to-day there are subjects of more direct and pressing importance which challenge our attention.

The Industrial College should have a President, a man of power, culture, experience, executive ability, whose heart is in the work of giving a liberal education to the industrial classes, and also, it should receive a generous appropriation by the Legislature for the erection of College buildings the approaching summer.

W. A. P. DILLINGHAM,

President of Board of Trustees.

February 8th, 1867.

TREASURER'S REPORT.

To the Trustees of the State College
of Agriculture and Mechanic Arts:

The present report comprises all money transactions of the College, which have come under my cognizance as Treasurer, from the organization in April, 1865, down to December 31, 1866.

I. General Cash Accounts.

RECEIPTS.

1866—March 29.	Cash in part of the Bangor subscrip- tion of \$14,000,	\$1,000 00
May 31.	“ “ “	750 00
July 2.	“ “ “	500 00
	Further sums on account of the same, received and deposited in First Na- tional Bank, Bangor, at the dates fol- lowing:	
April 14.	Cash,	500 00
June 8.	“	2,300 00
June 22.	“	1,550 00
July 12.	“	2,150 00
Aug. 21.	“	900 00
Oct. 27.	“	1,700 00
Dec. 13.	“	350 00
Dec. 14.	“	750 00
Dec. 31.	“	250 00
		<hr/>
		12,700 00
	Sales of articles at Orono,	7 00
		<hr/>
	Total receipts,	12,707 00

EXPENDITURES.

Paid Trustees' travelling expenses :

Bradford Cummings,	\$191 45
Joseph Day,	67 55
Seward Dill,	111 90
W. A. P. Dillingham,	21 50
C. A. Everett,	105 50
Joseph Farwell,	112 95
S. L. Goodale,	109 75
Hannibal Hamlin,	63 40
N. T. Hill,	77 85
Robert Martin,	102 77
Dennis Moore,	75 00
S. F. Perley,	107 80

 1,147 42

Paid B. Thurston, printing Act and Circular, 38 95

Paid by direction of the Executive Committee to

Mr. John H. Gilman, for expenditures at Orono :

1866—May 5. Cash,	500 00
May 31. "	750 00
July 2. "	500 00
Oct. 19. "	2,500 00
	<hr/> 4,250 00

Total Expenditures, 5,436 37

Total Receipts, \$12,707 00

Total Expenditures, 5,436 37

 Balance of general cash account, 7,270 63

Of which there was on deposit in First National Bank, Bangor,
Dec. 31, 1866, \$7,173.30.

 II. *The Congressional Endowment.*

I have not been furnished with details of the sales of the Land Scrip, apportioned to this State for the College, by the act of Congress of July 2, 1862—particulars of which are with the Governor and Council, to whom the duty of selling the land was entrusted by the sixth section of the act of this State, establishing the Col-

lege. Of the whole amount of the scrip, 210,000 acres, it is stated that there remain unsold 17,320 acres.

The State Treasurer has transmitted to me a statement of the proceeds of sales, and of the investment of the same, giving results as follows :

Proceeds of sales,	\$102,759 20
Invested in Bonds of the State of Maine to the amount of \$104,500, costing,	102,564 50
	<hr/>
Surplus,	194 70
Interest received on this investment to Dec. 31, 1866,	2,773 47
Accrued interest paid on purchase of the Bonds,	1,167 92
	<hr/>
	1,605 55
	<hr/>

Cash in the State Treasury, - . \$1,800 25
of which, the net income, \$1,605.55 is subject to the disposal of the Trustees.

To observe, with certainty, the restrictions imposed by the act of Congress, upon the application of the Congressional endowment, and of its income, the accounts of this fund will require to be kept rigorously distinct from the accounts of means and income realized from other sources.

Respectfully submitted.

P. BARNES, *Treasurer.*

January 17, 1867.

ARCHITECT'S REPORT.

*To the Board of Trustees of the College of Agriculture, and the
Mechanic Arts, of the State of Maine.*

GENTLEMEN:—On the 20th of December, in the company of several of your number, I visited the land upon which your College is to be established, and made such study of it as was practicable under the circumstances, the ground being frozen and covered with snow. I then verbally suggested the main features of a plan for laying it out with reference to the location of buildings and other improvements designed to fit it for the purposes you have in view.

I was afterwards instructed to form a plan in accordance with these suggestions, which I shall proceed to do as soon as I receive the map of the property which is now in preparation.

The following preliminary report is made at this time at the request of your President. Having obtained my knowledge of the ground under the circumstances which have been mentioned, and having received no measurements or other exact advice in regard to it, my observations must be rather indefinite in character.

It will be convenient, in the first place, to look upon the property as if it were divided into two parts, which I shall designate respectively the eastern section, and the western section. The division between them would begin at the south line fence, a few hundred yards east of the public road, and be carried straight to the north line fence on a course which would take it well clear to the eastward of the large barn standing near the north end.

All of the cleared land on the east side of this dividing line has a surface on which a plough or reaping machine could be conveniently worked. That on the west side of it is considerably more undulating, and has several steep hill sides. It is bordered by the Stillwater river, the bank of which is a public footway, much used at certain times. There are several buildings standing upon it,

and it is divided into two long narrow strips by a broad and crooked public road. If this western section should be further divided into fields, therefore, and especially if the division of these fields should be made in such way that the whole of each could be conveniently cultivated and the crops upon it harvested at the same period, these fields would necessarily be very small, their boundaries very irregular, and their cultivation consequently inconvenient and expensive. This section is therefore much less desirable to be used for the cultivation of staple farm crops than the other.

A portion of the eastern section is covered by wood, but as many as eight rectangular fields, of about ten acres each, could, as I judged, be formed on the cleared land, in each of which, after improvement by draining, the whole surface might be advantageously occupied by one crop.

There would still remain a considerable area suitable for pasture and woodland.

It is obvious, under these circumstances, that the greater part of the section should be assigned exclusively to simple farming purposes, or that if any of it should be put to other uses, it should be only narrow gores along the boundaries, or a small part of the present woodland, which is all in that part of it at the greatest distance from the public road.

Suitable ground is found for an orchard on the north end of the western section, the public road here being carried so far toward the west side of the property, as to leave a considerable area for the purpose, the surface of which is on an easy slope to the south. It should be improved by a narrow but close plantation of evergreens along the north line fence, the effect of which would be to extend the season for the ripening of the fruit, and reduce the danger of injury to the trees, or the premature falling of their fruit in high winds.

The most convenient place for the barns, stables and other farm-buildings would be east and south of this orchard, near where there is a large barn at present. At this point they would be between the farming land on one side and the orchard and the public road on the other, and a lane on the north side of the farming land would connect them directly with the pasture and wood-land.

There is a farm-house now standing near this position, pleasantly situated, and facing southwardly. Its front door is on the side

toward the public road, and its back door toward the ground assigned to the barns and orchard. It is in a suitable position therefore for the residence of the Farm Superintendent.

The only other dwelling-house on the property occupies a commanding position west of the public road, near the south line. By making some changes, which could be accomplished at moderate cost, this house might be assigned, until the institution is more liberally endowed, for the residence of the President. It stands upon a table from which the ground falls in every direction. This circumstance suggests that the Arboretum and Botanic Garden which will be a necessary part of the institution should be formed in this vicinity, it being desirable that ground of different exposures should be appropriated to this purpose in order to accommodate plants of different degrees of hardiness; to give to some the advantage of shade and prolonged protection of snow, to others that of early spring, and defence from the north winds. In no other part of the property can these advantages be had.

From considerations of taste and economy all ground devoted to horticultural or gardening purposes, except the kitchen garden, should be connected with the Arboretum and Botanic Garden. To accomplish this it would be best to change the course of the public road so that it should avoid the hill which it now ascends for no purpose except to approach a single house. Carried near the foot of the slope to the eastward it will have easier grades, without increased distance, and the property will be better divided.

The kitchen garden may be placed upon the ground sloping south from the site assigned to the barns, where not only the exposure but the soil is suitable for it.

Between the hill assigned to the Botanic Garden and the slope proposed to be occupied by the orchard, the Farm Superintendent's house and the kitchen garden, the river sweeps in nearer to the farm fields than at any other point, and between the road and the river there is a piece of low ground which is slightly flooded in times of high freshet. Owing to this circumstance it is in rough condition, and somewhat encumbered with drift-stuff. Its liability to overflow could be prevented by throwing up a low embankment for a short distance on the river bank, and the ground could then be easily made good meadow land. Thus improved it would form a suitable green and parade ground for the military drill of the students, which is required by law. It would not be larger than

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Between the hill assigned to the Botanic Garden and the slope proposed to be occupied by the orchard, the Farm Superintendent's house and the kitchen garden, the river sweeps in nearer to the farm fields than at any other point, and between the road and the river there is a piece of low ground which is slightly flooded in times of high freshet. Owing to this circumstance it is in rough condition, and somewhat encumbered with drift-stuff. Its liability to overflow could be prevented by throwing up a low embankment for a short distance on the river bank, and the ground could then be easily made good meadow land. Thus improved it would form a suitable green and parade ground for the military drill of the students, which is required by law. It would not be larger than

is necessary for that purpose, and being too low for building sites, it is required for no other purpose remaining unprovided for.

The library, museum, laboratory, lecture and class rooms of the institution should be situated, as nearly as practicable, at a point which shall be generally central to the farm fields, the barns and stables, the orchards, the Botanic Garden and the vegetable garden. Such a point is found upon the nearest elevated ground to the centre of the proposed green, and opposite the middle of the bend of the river. The public road passes at the foot of the slope of this ground, and the buildings would front upon it, and toward the green.

The houses in which the students would board and lodge could be conveniently placed adjoining these buildings.

A suitable position for workshops would be formed on the west side of the road, and between it and the river, north of the green.

Should the above suggestions be carried out, the present public road would become the street of a village, with the workshops and the Farm Superintendent's house at one end, the President's house at the other, the chapel, library and museum forming the centre.

In my judgment such an arrangement would be in the best taste, and would be more convenient, while it would be less expensive than any other.

The chief advantage it offers is that the students would receive their education, and especially that their tastes would be cultivated and habits formed under conditions corresponding, so far as it would be possible to make them correspond to the ordinary circumstances in which they must be expected to live afterwards, if the College should accomplish its object of giving a liberal education to men who are to remain members of the industrial classes.

The arrangement has also the advantage of being adapted to a very small or a very large establishment. That this last is a desideratum of considerable value will appear from the following considerations:

The first and most important study of your College will be a study of means and methods for giving a liberal education to young men without unfitting them for or disinclining them to industrial callings. This is a simple matter in theory, but the fact is that it has never yet been accomplished in any establishment large enough to accommodate forty students. What is most important then at the outset is to secure to your President and his assistants of the

faculty, opportunity to feel their way, gradually, safely and surely, toward a system which shall be thoroughly well adapted to secure the end for which the College has been founded. The State of Maine has an unusual proportion of worthy men among its citizens, who have acquired great wealth in the pursuit of the industrial callings. It is impossible that they should not have a special respect for and sympathy with the purpose of your College. But such men are proverbially cautious and distrustful of theoretical conclusions and experimental undertakings. When the practical success of your faculty has once been fully demonstrated on a small scale, and the public confidence has thus been fairly earned, it may reasonably be hoped that the institution will be abundantly endowed by the public liberality. The scale of the system can then be enlarged to any extent that may be desirable.

It may, however, be questioned whether I have allowed ground room enough for the buildings which will be eventually required. It becomes necessary therefore, to form some idea of a limit to the process of enlargement.

Accepting the views so ably presented last year by Mr. Barnes in the *Maine Farmer*, and since incorporated in the Report of the Secretary of your State Board of Agriculture, no larger number of students will ever need to be accommodated than can be worked during such part of each day as would be necessary for them to fairly earn their board in ordinary agricultural operations upon the land of the institution. It is true that more land may be acquired, but beyond a certain point, the area to be worked cannot be extended without taking the students an inconvenient distance from their lecture and class rooms. There is a corresponding point, therefore, beyond which the number of students to be accommodated here will never be extended. If an additional number should still need to be provided for it would be better to take a farm in another part of the State, and form another or branch College. It is not necessary to determine exactly what this maximum number would be, it being obvious that it would not exceed that for which ample building accommodations might be provided within the area which has been designated.

The minimum of accommodation to be had in view in the first buildings to be erected is a more difficult question. It would not for instance be worth while to build at all for the accommodation of one or two scholars; nor would it be sound economy to build houses barely large enough for ten pupils next year, even though

it should be determined to receive no more than that number, when it might be reasonably anticipated that, after three or four years, accommodation would be needed for a hundred or more.

A class of from five to ten students, well prepared by a superior common-school education, so that no time need be lost in studies which might just as well be pursued elsewhere, might be formed next spring, some temporary accommodation, suitable for the summer, being provided for them, before any of the College buildings proper are erected. These students would have special advantages in living on the ground, while the mechanics were employed upon the buildings, and the preliminary improvements of the farm were being planned and undertaken, and these advantages, together with the more intimate personal intercourse they would have with their instructors, would offset the lack of buildings, of apparatus, and well-organized methods. A second class might be taken on the following year; and each succeeding year, as the faculty acquired experience and confidence, and the methods of instruction and discipline were perfected, the number of the freshman class could be enlarged with advantage, until the whole number of students be as large as the faculty could at any time be expected to efficiently supervise. As long as the number of the faculty shall not exceed that which can be fairly paid by so much of the income from the present endowment as you could probably afford to appropriate to this purpose, I presume that you will hardly think it advisable to allow more than forty students to a class, a number which would probably be reached within a few years. In that case it would be bad economy to form any classroom even next year, of a size barely large enough for a smaller number than forty.

Allowing for the occasional accommodation of the Trustees and other visitors in each room, and for standing-room for apparatus which it may be desired to place before the classes, the following would seem to be the minimum of accommodation which could be economically provided for class rooms and halls for general meetings of the College respectively :

Each room for class instruction, seats for fifty.

Each hall for special meetings, seats for two hundred.

An idea of the minimum of accommodation for boarding and lodging cannot be reached until a plan of government and discipline for the College has been formed, which involves a duty that can hardly be definitely undertaken with much profit except by

the person upon whom the chief responsibility for success in these all important respects will eventually devolve.

If the object were merely to accommodate the students at the least possible expense, the more they were dealt with at wholesale, (that is to say, the more nearly the arrangements approached in character to those which would be economical if it was shelter and feed for so many head of live stock that was to be provided,) the better. In that case, unquestionably the whole would be brought under the roof of one common barn or barrack-like building. But it is absolutely essential to the success of the institution that during the four years in which students shall be subject to its direct influence, certain tastes, inclinations and habits shall be established with them. These tastes, inclinations and habits are such as they can afterwards continue to follow, exercise and gratify under the conditions which ordinarily surround citizens who are actively and usefully and satisfactorily engaged in the pursuit of the common industrial avocations of an American community. So far as the College shall fail in this respect it must fail to accomplish the sole end had in view in its endowment. In making a plan of arrangements for the board and lodging of the students, therefore, we are most imperatively bound to consider the question of economy, not as with reference merely to the least possible cost of keeping so much live stock, but with reference to the probable result upon the character, tastes, inclinations and habits of young men.

The useful, influential and successful followers of the industrial callings lodge neither in barns, barracks nor monasteries. Ninety-nine times out of a hundred they lodge with a family which occupies a detached house with a domestic territory of its own, in which each of the inmates of the house has his own special interest and enjoyment, while he also shares with all the others in certain common means of comfort.

It is true that a close similarity in all respects to the ordinary conditions of family life cannot be expected to be secured to the students in the arrangements for their board and lodging. There are no necessities to be provided for similar to many which control the furniture and the method of housekeeping appropriate to the home of a family. In respect to internal arrangements therefore, the necessity for something different must be acknowledged, and must be met as a problem by itself. But in all other respects the arrangements for board and lodging should, it appears to me, ap-

proximate as nearly as practicable to those which would be considered models of healthy, cheerful, convenient family homes.

With regard to the internal arrangements, on the other hand, it must be considered that to a certain extent, the government and discipline of the college is required to be of a military character. Of course there must be a military organization. It will probably be found best to form companies of about forty. It will be absolutely necessary, from considerations of economy, that the officers of these companies should be students themselves. It follows that within certain limits the students must be a self-governed body. In all the military schools of which I have knowledge this is the case. In one which I have recently visited, to which students come from all parts of the country and from abroad (the greater part of whom are younger, of less orderly habits, and less advanced in education than yours will unquestionably be), I found that the direct government of the students in their lodgings, and generally in respect to all that which does not come within the care of teachers of our common schools, was entirely in the hands of officers chosen from among themselves, and that the efficiency of these officers, and the loyalty of the students in respecting their authority, was all that could be desired.

If the minimum number of persons to be accommodated in each lodging-house be fixed at twenty, this will allow one commissioned officer, and one full platoon of rank and file to be quartered in each.

The general character of the houses might in that case be similar to that of the cottages commonly built for officers' quarters in the cantonments of our western military stations. The two cottages of one company might be placed near each other, the gable ends toward the road. In the rear of the ground between them might stand a house with its gables at right angles to these, containing the company kitchen and mess-room, commissary store-room and office, a sick-room and a study-room. To show the advantages of such an arrangement I must discuss still further the question of a plan of administration adapted to meet the end designed to be secured by the national endowment.

It is very doubtful if real family government, parental administration or domestic order is possible in any large boarding-school or College, and, if not, it is certain that any system of management which assumes to be of that character must be felt to be false, and held in contempt, concealed or avowed, by those who

are expected to be subordinate to it. It must consequently breed bad manners and immorality. The students of the Agricultural College will be generally of that intermediate age between childhood and manhood when, in a healthy natural development of the character, there is the strongest impulse to independent self-control and self-guidance, and consequently the strongest inclination to question the right and propriety of all merely personal authority. For the same reason however that pupils at this age are strongly indisposed to yield a filial subordination to instructors who have no claim upon their filial gratitude and affection, they are most disposed to respect any degree of authority which is systematically measured by the responsibility of those exercising it, because such authority implies entire respect for the personal responsibilities of those subject to it. Now this is the ruling principle of military authority. In the largest and most powerful military system of modern times if an officer neglects to return the salute of a private the private can compel him to be brought before a court martial, and to suffer punishment for his want of respect to the rights of a subordinate. We have lately seen the efficiency of this system of discipline. In a three months' campaign it has conquered an empire, and to-day it holds every power in Europe at defiance.

It is clearly the intention of the act of congress to secure as an incidental advantage of the national system of Industrial Colleges, the preparation of a certain number of young men in each state for acting as officers and instructors of volunteer forces, and thus to save the nation from ever again being so completely unprepared for the duty of self-defence as it was found to be at the outbreak of the rebellion.*

* "The great object," says Prof. Turner, in a pamphlet recently published "that we had in view in this [the military] provision [of the Industrial College Act] was that these universities should furnish to the States, in times of peace, a strong and able corps of teachers, to diffuse the same practice and the same spirit through all the lower schools of the nation, and in times of war, a corps of officers to drill and marshal them at once for the battle-field."

"We regard," says Adjutant General Haynie in the same publication, "justly too, intelligence as the great safeguard of the people and the nation. Not intelligence upon one branch of knowledge but upon all branches. Yet it is a startling fact that anterior to 1861, whilst any other knowledge might be obtained at our institutions of learning, the knowledge how to preserve the government in times of war had been so utterly neglected that not one man in a thousand knew how to 'shoulder arms.' And it was, I believe, taught as a part of the system of education at no schools except government schools, so that when our armies were organizing in 1861 and 1862, the first eighteen months were spent in what could have been taught the boy at school much cheaper."

A careful study of the subject, which I made as an official duty during the war, led me to the conclusion that the element of their theoretical responsibility in which regimental and company officers at its commencement most failed; in which they most needed instruction; in which they acquired instruction by experience with the most difficulty; and in which their ignorance caused the most misery, the greatest waste of the national resources and the most melancholy loss of life, was just this of boarding and lodging. I remember once being informed that a Maine regiment had been without food for twenty-four hours, simply because the officers were ignorant of the routine to be pursued in procuring it. I reported the fact at the head-quarters of the department, where it was received with apparent satisfaction, and I was told that nothing but starvation would teach the volunteer officers their duty in this respect. That many men died in this and every other volunteer regiment on account of the imperfect provision for maintaining them in health and vigor which was at that time universal, there can be no doubt.

I would respectfully suggest, therefore, that the arrangements for providing food for your students should be as nearly as practicable similar in character to those of the army. There should be a superintending commissary of the institution, who would of course not be a student; but the students should each in turn be required to perform the duties of an acting assistant commissary for their respective companies. The forms required by the army regulations for obtaining supplies for troops in barracks should be used, and no student should be graduated with honor who could not construct and use a camp oven and a camp kitchen, or who was not prepared to undertake himself and to instruct others in all the duties of a regimental commissary officer.

This plan could, it strikes me, be accommodated to the suggestions of Mr. Barnes in regard to the self-support of the students better than any other. By establishing the company fund system, an *esprit du corps* would almost certainly be developed which would supply the best possible security for honesty and economy. As, therefore, each company, upon this plan, would have its own commissary officer, I suggest that each should have its own commissary store-room and office, its own kitchen and its own mess-room.

Accepting the general scheme of administration thus outlined,

the economical minimum of accommodation for lodging and boarding may be approximately estimated as follows :

Three (3) cottages (one story and a half,) each 56x26 feet, including verandah and storm-house, for each forty students ; that is to say, twelve such cottages to be built during the first four years after the first class is organized.

As I have before stated, there is nothing in the military arrangement of the boarding and lodging-houses proposed which would be inconsistent with a perfectly domestic character in their architecture and all their exterior arrangements. It is desirable to give the latter this character as much as possible, and especially does this apply to the laying out of the grounds about them. I can do no better than repeat the advice I have already given to the Trustees of the Massachusetts Agricultural College in this regard :

“ Each house should have a little lawn between it and the road, with a few additions of a domestic character, such as arbors, trellises, summer-houses, dove-cotes, martin-boxes, bowling or croquet greens, terraces, hedges, ice-houses, &c.; constructions which would supply in every case real additions to the comfort and health of the proposed inmates, and at the same time aid their *education in the art of making a home cheerful and attractive*. There should be pots of window plants, a Wardian case or two, cages of singing birds, and some not expensive musical instruments in each house ; a bed of hardy ferns and delicate evergreens on the north side, and a few tender shrubs on the lawn, which would require to be laid down or strawed up for the winter. The care of these things—the mowing of the lawn—the trimming of the hedges—the rolling and sweeping of the gravel—the training of the vines on the trellises—and even the occasional painting, white-washing and glazing of the houses, should be a part of the duty and of the education of the students.”

A squad from each platoon would of course be detailed at a certain hour each day for police duty. After putting their respective houses in order in all respects, those so detailed should be allowed a certain time for taking care of their lawn, their gravel walks, and all the ground and fittings in connection with their quarters and mess-room. An honorable rivalry between companies would doubtless secure great care on the part of each to give the best possible appearance to the ground before its quarters, open to constant observation, as it would be, by the public, passing along the road,

and thus a most valuable system of self-education would be established.

Among all the means of education which can be obtained for this peculiar establishment—we must constantly bear in mind, and I shall therefore be excused for repeating once more that—means for establishing certain tastes and habits are of more importance than any other, because if the institution fails in this respect, it fails in the primary object for which it is founded, the Board of Trustees fail to meet their responsibility to the State, and the State fails to meet the obligations which it assumed to the nation in accepting the land grant.

The two most important classes of means with reference to this end must be, in my judgment, the library and the gardens; one with reference to indoor recreations, the other with reference to out of door recreations. The records of your Board of Agriculture show that timely consideration has been given to the first. The second, I submit, is of no less importance. We hear regrets expressed every day that our best young men are deserting the country and rushing to the cities. In many rural towns of New England it is said that there are no middle-aged people left of those farmers' families which twenty or thirty years ago were notable for their thrift, cultivation and intelligence. So far as this is true, the reason of it, in my judgment, will be found not less in the character of the men than in that of the women. If a young woman who has had good educational advantages marries a farmer, let him be ever so thrifty and so successful in his pursuit, she is apt to find but little that is gratifying to her tastes in the circumstances of her residence, or the habits of her husband. Out of doors he is given up to his interests in his crops and stock; indoors he cares more for food and rest and speculations upon the prospects of his crops and the markets, than for anything with which a woman has a womanly sympathy. Consequently his wife is often lonely; there is but little relief to the drudgery of her housekeeping duties; during the working days she seldom goes out of the house, because there is nothing to draw her out, and she finds her life monotonous and dull beyond endurance. She pines for the variety of interest, the stir and society of town life. Against this misfortune there is but one precaution that you can take. It is to establish tastes in your students with which young women of refined impulses can cordially sympathize, and to offer them facilities for training themselves in ways of gratifying these

tastes, which young women can admire, encourage, contribute to and be grateful for.

For these, among other reasons, a domestic character in the exterior of the habitations of the students, and surroundings to these habitations which shall be of a model character with reference to the ground which a farmer or mechanic may, without excessive trouble, keep in order for the gratification of his family about his house, constitute desiderata in your general plan really of more importance than any other which it comes within my province to consider. To provide for them, the general village-like arrangement which I have proposed of all the buildings to be erected either within a few years or in the distant future is almost essential, and this village-like arrangement cannot be appropriately realized unless all your buildings should correspond in size and general style exteriorly with those which would appropriately meet the ordinary requirements of a rural community. If this view is adopted, all the buildings which you erect will, in important respects, themselves form models and veritable means of practical instruction to your students, as well as serve each its more obvious special purposes.

The minimum of recommendation for a completely organized College upon the plan which I shall therefore recommend for your adoption, providing for four classes of forty students each, with a moderate margin for contingent requirements in the halls, of a more public character, may be thus roughly estimated :

I.

A fire-proof building, 42x24, with rooms as follows :

1st story.—(a) Library.

(b) Librarian's room, lobby and staircase.

2d story.—(a) Reading room, drawing and writing rooms.

(b) Packing room and staircase.

II.

A fire-proof building, 42x40 feet :

1st story.—(a) Chemical Laboratory and Lecture room.

(b) Professor's private room, Janitor's room, wash room, packing room and closets.

2d story.—(a) Museum.

(b) Special cabinets and offices.

III.

One two-story building, 50x24 feet, containing
On each story—Two Lecture rooms, entrance hall, staircase, and
two private rooms for the use of the Professors.

IV.

A building, 56x36, containing in a half-basement story, an armory,
drill-room, closets and staircase.
Above this—a Hall for chapel and general meetings of the College,
room for faculty meetings, office and staircase.

V.

Two cottage residences for members of the Faculty, each two sto-
ries, 40x32.

VI.

Eight cottages, each 56x26, for the students to live in, as before
described.

VII.

Four cottages, each 56x26, for mess rooms, &c., as before de-
scribed.

VIII.

Shops, barns, stables, granaries and out-houses according to re-
quirements, with regard to which data are yet wanting.

The walls and partitions of the first four buildings are proposed to be so arranged that whenever necessary they may be lengthened, and the halls to be used by the students enlarged one half. Should additional room afterwards be found wanting for the scientific collections and the Library, it will probably be found best to supply it in the form of additional buildings, especially designed for particular purposes. For instance, a building may eventually be found desirable to contain a special library and collections with reference to navigation, ship-building and ship-timber. This might contain, besides books on naval construction, navigation and seamanship, drawings and models of all classes of vessels; a collection of specimens of ship-timber, cordage and canvas from all parts of the world; drawings and models of marine engines, paddles and screws; of cranes, derricks, dry docks, jury rudders, naval camels

and rafts; illustrations of the agencies destructive of ship-timber, and the means of guarding against, and counteracting them; of whaling gear; of apparatus for laying submarine telegraphs; of communicating with wrecked vessels, and for life-saving, etc. If, again, through the liberality of individuals or the public, the general botanical collection should become very large and valuable, as is not at all unlikely, considering the number of the citizens of Maine whose calling carries them all over the world, and the ease with which they could bring home interesting illustrations, especially of economic botany, it would no doubt be best to provide a special Botanical museum and Library building.

The extent to which I have assumed that the military element in the administration of the institution should affect the character of the plan may possibly be thought at first to be of questionable advantage. It should be remembered, however, that I have referred to but a few conditions of the military system as embodied in our national army regulations, and that these regulations are in fact the result of the most varied experience, and of the most careful study of thousands of men of the greatest genius and practical ability among all civilized nations for hundreds of years; that our own Washington and our own Grant have contributed to them, and that each has added all he could to perfect their adaptation to their purpose. It should also be considered that the intention of the army regulations is simply to secure the greatest practicable economy, efficiency and power in the leadership, the maintenance and the security for health and strength of bodies of men; and this not merely with reference to large bodies of men on active campaign duty, but also of companies and battalions of men, living in garrison, and in times of peace. There was a great prejudice and outcry against this system in its application to volunteers six years ago, but it was maintained, and many of those who were loudest in their objections to it became convinced, through the hardest experience, that it was so simple, just, economical and efficient in all respects that no essential change in it could be confidently proposed.

Respectfully,

FRED. LAW OLMSTED.

OLMSTED, VAUX & Co.,

Landscape Architects.

110 Broadway, New York, }
22d January, 1867. }