

1934

Horace Mann's influence of schoolhousing

Anthony. Lyons

University of Massachusetts Amherst

Follow this and additional works at: <https://scholarworks.umass.edu/theses>

Lyons, Anthony, "Horace Mann's influence of schoolhousing" (1934). *Masters Theses 1911 - February 2014*. 1747.
Retrieved from <https://scholarworks.umass.edu/theses/1747>

This thesis is brought to you for free and open access by ScholarWorks@UMass Amherst. It has been accepted for inclusion in Masters Theses 1911 - February 2014 by an authorized administrator of ScholarWorks@UMass Amherst. For more information, please contact scholarworks@library.umass.edu.

UMASS/AMHERST



312066006620294

HORACE MANN'S INFLUENCE OF SCHOOLHOUSING

LYONS 1934

LD
3234
M268
1934
L991

MASSACHUSETTS
STATE COLLEGE



DATE DUE

DATE DUE			

UNIV. OF MASSACHUSETTS/AMHERST
LIBRARY,

LD
3234
M268
1934
L991

HORACE MANN'S INFLUENCE ON SCHOOLHOUSING.

By

Anthony Lyons

Thesis Submitted for the Degree of Master of Science

Massachusetts State College

Amherst, Mass.

1934.

TABLE OF CONTENTS

Section	Page
	Introduction. 1
I	Schoolhouse Planning before Horace Mann 2
II	Factors Which Influenced Horace Mann. 16
III	The Establishment of the Board of Education. 21
IV	Horace Mann's Suggestions on Schoolhousing. 24
V	Signs of Reaction to Horace Mann's Sug- gestions on Schoolhousing. 35
VI	Schoolhousing at the Present Time 61
VII	Summary 72
	Bibliography. 74
	Acknowledgment 76

1934

ILLUSTRATIONS

	Page
I. Dedham School and Watch House.	5
II. Gardner Schoolhouse	14
III. Dr. William Alcott's Modern Schoolroom	20
IV. Horace Mann's Model Schoolroom	29
V. First Story of the East School in Salem.	40
VI. Second Story of the East School in Salem	41
VII. Injecting and Ejecting Ventilators	45
VIII. Ventilating Stove and Furnace.	47
IX. Method of Using Ventilating Stove, and Ejecting Ventilator	50
X. Wale's Desks and Seats	52
XI. The Newburyport Schoolhouse.	56

INTRODUCTION

Horace Mann in the History of Education stands out as America's foremost Educator. He gained this eminent position through his contributions to the revival of Education in Massachusetts, while Secretary of the Board of Education.

This thesis is written for the purpose of indicating definitely one of these contributions: namely, School-House Planning. In order that this influence may be clearly demonstrated the author has adopted the following plan: (a) School-House Planning before Horace Mann, (b) Horace Mann's direct and indirect influence on School-House Planning as Secretary of the Board of Education, (c) School-House planning today as it embodies the principles that Horace Mann suggested.

Besides a personal interest in this specific contribution of Horace Mann's to education, the author has an added urge to make this study because of the approaching centenary of his election to the Secretaryship of the Board of Education in Massachusetts. The year 1937 will mark the hundredth anniversary of Horace Mann's appointment and the beginning of a career in shaping the educational thought and educational program in this state, that has made him the central figure in American Education.

In view of this approaching anniversary the preparation of special studies of Mann's contributions is encouraged by the United States Educational Office. It is with much personal satisfaction that the author has been able to carry out this study in sympathy with this general movement.

SECTION I

SCHOOLHOUSE PLANNING BEFORE HORACE MANN.

The founders of Massachusetts Bay Colony brought with them the system of education which prevailed at the time in England. Thus the Dame School, Grammar School and College were established within a short time after their arrival. The Puritans were anxious to have all the children learn to read, so that they could become familiar with Holy Scripture, and early education was largely concerned with teaching the children to read. The success and rapid expansion of the Colony caused the Puritan leaders to fear "lest learning be buried in the graves of their forefathers" (1) with an eventual neglect of religious principles so important to them. For this reason the General Court in 1642 (2) enacted a law stating that all children in the Colony should be taught to read. Five years later in 1647 (3) a second law was enacted requiring all townships of fifty or more householders to appoint one from their group to teach the children to read and write. Furthermore townships of one hundred families or more were required to establish a grammar school so that the young men could prepare for Harvard College. In this way the grounds for a Common free school were provided by legislation. Schools, dependent in the previous seventeen years on the volition of the people, were now demanded by law.

The first schools were held in the meeting-house, or in a room of a private residence. The meeting-house, as originally established, was for all gatherings held by the people. Church services, town meetings, the law courts, and, finally, the school were held there. The meeting-house was well constructed,

often being better than the log houses of the people themselves. Likewise as repairs were needed, they were made, since the people themselves experienced the unpleasantness of broken windows or loose boarding. The meeting-house usually had one door, a window on each side, rather high up, and a chimney. The seats were without backs and thus could be used for school purposes.

The practice of using private homes for the school session grew out of the Dane school and the instruction of the children by the minister. In the former, the children gathered at the home of the Dane and while she knitted or carried on her household duties the children learned to read and write. In the Ministerial form of instruction the children were taught reading, writing, and religious principles at the home of the minister. The room in which the children gathered was frequently too small to accommodate them comfortably. There was no attempt to ventilate it properly, and in this unhealthy, unpleasant, and inadequate room the pupils were taught. People tired of having schools in their homes and private residence schoolrooms gradually disappeared and the school houses were constructed; but it is interesting to note that Salem Town in a letter to Henry Barnard describes a school which he attended in a private residence at Belchertown in 1786.(4) He described it as a room twelve or fourteen feet square, with the seats made out of slabs from a nearby sawmill and raised so high that the smaller children were unable to rest their feet on the floor.

The law of 1647, however, resulted in most towns building schoolhouses. Among the first to construct a building of this type was the town of Dedham. A description of this is given,

in as much as it typifies schoolhouse planning in this period.

In 1648, at a general meeting of the townspeople, it was voted to construct a schoolhouse and watch tower of the following specifications, (5)

The length 18 foote, being 14 foote beside the chimney the widness 15 foote, the studd 9 foote betwixt joynts, one floor of joyce, 2 convenient windows in the corner roome and one in the chamber, the plander layed, the floor planked, the stayers made, the sides boarded, feather edged and rabbited, the doors made and hinged.

The reader can readily see that there was as much attention given to the construction of this schoolhouse as would ordinarily be given to a shed or barn raised upon the property of any of these people. It is significant that almost without exception the construction of schoolhouses in the seventeenth, eighteenth and early nineteenth centuries was planned with a similar lack of detail.

The schoolhouses of this period were usually located in the center of the town or district. A surveyor was employed to locate the exact center. In the towns, through the seventeenth century, and with the exception of the larger centers such as Boston, Newburyport and Salem, the schoolhouse was located on the common land near the meeting house. In addition to its use for a school it frequently served as a watchhouse for the inhabitants. On Sunday, those who did not go home between services in the meeting-house went to the school. In the larger towns the schoolhouse was not so pleasantly located. Land in the center of the town was valuable and so the schoolhouse was located in out-of-the-way places.

The rise of the district system led to the substitution of



THE DEDHAM SCHOOL AND WATCH HOUSE.

the district school for the town school. There were two factors considered in selecting a site for a schoolhouse: the center of the district and the worthlessness of the land. The schoolhouse in almost every case was located at the intersection of two or more roads, frequently being placed on the very roadside itself. As a result, the scholars stepped from the schoolhouse into the road itself. (6) The land on which the schoolhouse was located was often wet and marshy. The schoolhouse without trees or shrubbery was exposed to the scorching rays of the summer sun and to the severe winds of the winter.

The health and comfort of the teacher and pupils were seldom considered in planning the location of the schoolhouse.

The schoolhouses of the first Massachusetts towns were located on common land, some part of which was available for a playground. The schools in the large towns were not usually favored with recreational tracts, since land was too valuable to assign any appreciable amount of it for a playground.

The district school was often placed on a plot just large enough to accommodate it. In such a case the only playground available for the scholars was the road or gardens and orchards of the neighbors. These people often complained about the inconveniences they suffered from the children's forays into their gardens and orchards, but they failed to recognize the obvious fact that the temptation could be removed by making provisions for a playground. When playgrounds were provided they were not enclosed to keep out the wandering cattle, or the teamsters who turned out from the center of the road to allow another to pass. No provision was made for the inclement weather, with the result

that the scholars found themselves exposed to the wind and snow of one season and the blazing sun of another. The lack of playgrounds prevented healthful and vigorous exercise. In their absence, the schoolroom itself was used for recreation, particularly during the luncheon period. The tumult was frequently reflected in the condition of the room itself.

In constructing a schoolhouse in this period, little thought was given to the number of pupils who would have to be accommodated. Usually no more consideration of this important phase of schoolhouse planning was found than has been indicated in the construction of the schoolhouse at Dedham. Few houses were less than sixteen feet by eighteen, fewer still were more than twenty four feet by thirty. Yet in schools of this size forty to one hundred scholars were housed during the winter session. Rev. Hemon Humphry (7), describing a school he attended, said it was sort of a juvenile penitentiary, being two small and low. To him, it seemed that the builders were more concerned with how small the space might be into which could be crowded the scholars rather than how comfortably they could be housed. He stated that sixty or seventy scholars were shut up in a room hardly large enough for thirty.

The roof was low and slanting, covered with boards, but not always shingled. The exterior walls were usually made of board single light boards of an inferior quality. Occasionally they were clapboarded, but seldom painted. The boards frequently warped, pulling out the nails and leaving large vents for the wind and rain to filter through. There was only one entrance to most schoolhouses. Directly inside was an entry, running the

width of the schoolhouse. This entry was used for various purposes. In some schools the dry wood was stored here; in others, the refuse of the school was deposited, giving anything but a pleasant appearance. Nails were driven into the sides of the walls, to take care of the children's wraps. In most schools shelves were placed along one side of the wall, and on these the children set their lunches. The door leading to the outdoors was not always closed or in good repair and the snow and rain beat in, the cold penetrating to such a degree that the children's lunches were often frozen. These lunches sometimes provided an attractive feast for the wandering dogs.

In one corner of the entry was a door leading to the school-room. With few exceptions there was just one room for study and recitation. The room proper was frequently less than seven feet high, seldom more than eight. The ceiling was occasionally plastered or white-washed. The floor was made of soft lumber, loosely jointed, though this apparent defect was often a blessing in disguise, in that the openings helped to carry off the water from a leaky roof, or loose walls. Up to the early part of the nineteenth century no maps, pictures, or blackboards were to be found on the walls, and school apparatus was an unheard of feature of a school room.

In the center of the room, on a raised platform, was the teacher's desk. It was so placed in order that the master could have full view of the whole schools. It carried out the principle that was followed in the English schools. The desks and seats were arranged in three distinct ways. In one arrangement were two tiers of benches placed around the sides of the school and

the writing desks were placed directly in front of these benches. The pupils all faced the center of the room. The pupils in the rear used the wall for a back rest, while their writing desks formed a back rest for those in the next tier. Each bench was long enough to accommodate six or eight pupils. In another plan the benches were placed across the room and fronted the teacher's desk with an aisle in the center. The benches were about the same length as those just described. In front of these benches was a long writing bench. A third method found in most schools was to place the desks against the wall around three sides of the room, and benches, usually joined together, were placed before these desks. In this plan the pupils' backs were to the teacher and they faced the wall. No back rests were provided for these benches. In addition to this line of continuous benches and seats there was a row of smaller benches for the younger children. These benches could not be adjusted to the height of the individual child, since the frames were supported by pegs which could not be lengthened and only shortened by cutting off a portion of them. In many schools the benches were so far from the desks that the scholars found difficulty in writing comfortably. The children were forced to assume all sorts of positions to overcome the weariness they experienced from the lack of back rests. These desks were made of oak or pine wood, roughly finished, and seldom indicating careful and skilled workmanship.

The long seats were a source of considerable confusion. Where six or eight were seated on one bench, it was only natural that the pupils were disturbed by one in the center passing to and from his seat. When the teacher addressed those who faced

the wall, it was necessary for them to turn about, or to sit with their backs toward him. Children coming from muddy roads soiled the clothes of those sitting in the same bench. Changing position in this seating plan was particularly embarrassing to the girls. Some of the benches were so high up that the pupils were sometimes higher when sitting than when standing up. The desks were frequently inclined at such an angle that a book placed upon the desks would slide off. The children of this period were not favored with a comfortable or pleasant seating plan.

On that side of the room not occupied with seats and desks was the heating plant. In the early period--and in some schools down to the middle of the nineteenth century--the heating of the schoolroom was done by means of an open fireplace. Most schools had adapted stoves by the early part of the nineteenth century. Neither of these methods was satisfactory. Wood was burned in the stove and fireplace. The task of building and caring for the fire was delegated to the older boys. There was no janitor service. The wood was furnished by the parents of the scholars. Few schools were provided with dry wood. Often when school opened, the wood which was to be burned that winter was standing in the forest. In a few schools wood was stored in the entry, so that dry wood would be available for starting the fire. The wood which provided heat through the day was deposited in front of the schoolhouse by the parents contributing it. As it was needed it was taken from the pile, the snow brushed off, and in this wet condition placed in the fire. A defective flue caused the resultant smoke to spread out over the room and the black

grimy walls of many schoolhouses bore mute testimony of this defect. The description of Rev. Hemon Humphery of the schoolhouse he attended stated that the school was often adjourned for several days until wood was provided.

In the latter part of the eighteenth century stoves came into use and provided heat for many schoolhouses. As long as dry wood was used, these stoves were kept in good condition. Green wood was too frequently used, with the result that the stoves and stove-pipe rusted. The room became smoky, and many inconveniences were suffered. Holes that appeared in the stove-pipe were not repaired, nor was new pipe inserted. An even temperature was not maintained, those nearest the fire suffering from the intense heat, and those farthest away suffering from the opposite extremes. Sometimes it was necessary for these pupils to rotate, the resultant confusion proving a serious handicap to the teacher. Thermometers were not to be found in schoolrooms of this period.

Ventilation was neglected. In these small rooms, with their great congestion, there was no easy way for the teacher to change the air. Children became restless and weary, many suffering from headaches as a result of the impure air. In most schools the only ventilation experienced was through the cracks in the floor, the disjointed boards of the walls, the chimney of the fireplace, or through the door when it was opened at recess and before and at the close of session. The windows were raised from the bottom, but not always for the purpose of ventilation. Usually it was done to let the smoke pass out, or to cool off the room when it became too warm. In constructing a schoolhouse,

there was never an opening in the ceiling or in the walls to provide for ventilation. The following indicates the condition of the schools in regard to this problem of ventilation. In 1837, a Doctor Perry, examining schools in Boston, found a primary school in Boylston Square in which the pupils were allowed thirty four cubic feet of air apiece. At the same time, in the penitentiary at Charlestown, one hundred and seventy-one cubic feet of air was allowed for each prisoner and provision for free ventilation was made by drilling holes in the wall which could be closed throughout inclement weather. Dr. Perry stated that a child confined for six hours a day over a period of two years in a room of this sort would develop tuberculosis.(8) The sickness and ill health of many children could be traced to the repeated breathing of the impure air of rooms of this type.

The majority of the schoolhouses were poorly lighted. Usually there were two windows on either side of the schoolroom and at the end opposite the fire place or stove, and one in the entry. These windows were not well located being often so low that the children could look out at those passing by, with resultant distraction. Then too, when these windows were opened, the air rushing in caused an unfavorable draft. There was seldom a blind or a shade on the windows, so that the sunlight could be controlled. The position of the desks prevented the children from working under adequate light, and in some instances their backs shut off the light. A broken window was not always replaced promptly, but was stuffed with cloth to keep out the cold, keeping out the light itself also. The direction from which the light came meant little or nothing to those who erected the school-

houses of this period. Light, wholly inadequate, was merely provided for by inserting windows, with no thought given to their proper location.

Too little attention was given to the qualification of the instructor in this period. For the grammar school the instructor had to be a graduate of one of the colleges and give evidence of good moral character. A graduate of the grammar school generally taught the district school. These teachers were poorly paid, and while some had a deep interest in teaching, others used it to maintain themselves until they were able to take up another profession.

Many of the teachers had little interest in the appearance of the schoolhouse. They made no effort to prevent the carving of desks, seats, and walls of the building, or the destruction of the seats, benches, doors and windows. Once the mutilation started, it was allowed to go on. Of course, in the school of forty to one hundred pupils (and some of these schools frequently had an enrollment of this size) it was difficult for one teacher to prevent destruction. No effort was made in most schools to inform the pupils of the moral violation involved in the damaging of private property. The handicap which faced some teachers was the failure of the committee in charge of the school to carry out the needed repairs. A broken window, or a loose board was ignored, and no plea on the part of the teacher was successful in bringing about the needed improvement.

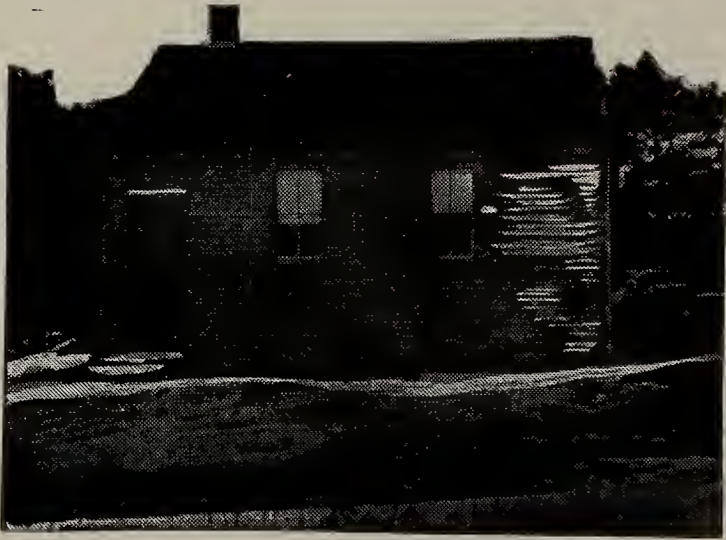
There were certain conditions in the schoolroom which the master could control, but in most cases they were ignored. One

was tidiness. Few school houses were clean. Refuse was allowed to collect during a session of winter and summer school. The floors, desks, and windows were frequently soiled. Again, teachers gave little attention to the general appearance of the pupils themselves.

When any consideration is given to the condition of the schools in this period, it is easy to appreciate the complaint of the Roxbury School-master. Writing to a member of the board of trustees of the Roxbury Latin School in 1681 he stated:(9) "Of inconveniences I shall instance no other, but that of the schoolhouse, the confused and snattered and nastie pasture that it is in, not fitting for to reside in, the glass broken and thereupon very raw and cold, the floor very much broken and torn up to kindle fires, the hearth spoiled, the seats some burned and others out of kilter, that one had as well nigh keep school in a hog stie as in it."

It is interesting to note the criticism of Henry Ward Beecher, about the school he attended in his youth, and its influence upon him.(10) He said concerning the school: "The most barren spot was chosen, the most utterly homely building was erected, without a tree or shrub, and those what could not do better passed their pilgrimage of childhood education there". The effect school days left upon him was an abhorrence of the thought of a school. He felt a great repugnance for district school, which he felt would not be overcome until he was laid in his grave. He looked on those who would revert to their school days with astonishment.

The testimony of such men as Henry Ward Beecher bears out



the contention that schoolhouse planning was practically unknown in the seventeenth, eighteenth and early nineteenth centuries. The early settlers of this state had an interest in education, but with the introduction of the district system it waned to such a degree that the eighteenth and early nineteenth centuries have been called the low water mark in the educational history of this state.

SECTION II

FACTORS WHICH INFLUENCED HORACE MANN.

The most ardent admirers of Horace Mann do not claim for him an originality in those contributions which he made to the revival of common school education. Those factors which influenced him were direct and indirect. This section will consider these general factors which influenced him indirectly, and one factor which directly influenced his contribution to the school-house planning.

Indirect Factors,

The latter part of the eighteenth century and the early nineteenth century witnessed an increased interest in education in Europe, as a result of the Emile of Rousseau, The Lancastrian School, the Infant Schools and the widespread acceptance of the Pestolozzian principles of education. The improvements in education as a result of these various stimulants were not ignored in America, and particularly in Massachusetts.

Education was at a low point in this state, due in part, to the many evils rising out of the district system. As the Colony of Massachusetts spread out and new towns sprang up, it became impractical to maintain a Common School for all children, in as much as the settlement was widely scattered. At first, the towns were divided up into districts and a moving school established. School was kept for a short period in each section of the town. Finally, each district built its own school-house, the town assessing the people for school maintenance, and then appropriating this out to each district. In each district there was a committee to handle the school affairs, but in most cases

it failed to take much interest in education and very little attention was given to the condition of schools. It was only to be expected that the educational system throughout the state should decline. People who were able to defray the expense, sent their children to private schools. Academies sprang up throughout the state, primarily established to give to the fortunate children the education that most of the district schools were unable to provide. This condition of education throughout the state was the basis for the Horace Mann crusade to revive and re-establish interest in this field.

Horace Mann was not the first one to preach the need for reform. James G. Carter of Lancaster was influenced by the wave of European educational reform. As early as 1821 he was striving to draw the attention of the people to the decadence of the school system and was advocating remedies for its revival. Through the press and by means of open letters he showed how lack of interest in the schools had led to general deterioration and he worked unceasingly to correct these evils of the district system. He advocated teacher-training, and as early as 1827 he introduced a bill in the Legislature, of which he was a member, which would provide normal schools. Another suggestion, finally incorporated as a law in 1834, was that a school fund be created to help the communities of the state in meeting the expenses of their schools. That his advice and help was sought by Horace Mann is evident by the correspondence which was carried on between himself and Carter on various educational problems.(23)

The American Institute of Instruction, organized in 1830 and made up of teachers throughout New England, took a leading part

in the discussion of need of educational improvement. The members met in convention throughout leading centers of New England, and through these much knowledge was diffused in regard to education. It was this society which offered the prize for the best essay on school-house planning in 1831. The essay which was awarded the prize was presented by William A. Alcott, M.D. of Hartford, Connecticut and James G. Carter was chairman of the Committee of Judges. It was the first plan of a school-house brought to public attention in this state.

Direct Factors.

The plan of Doctor Alcott's referred to above influenced Mann. A brief description of it is given.(11) Horace Mann in his special report on schoolhouse described this as a very valuable paper.

The general arrangement and appearance of inanimate objects around us have an extensive influence in forming our character, and the objects surrounding children have a considerable influence in forming their disposition and determining their future character.

Schoolhouses should stand on an elevated spot of firm soil at a moderate distance from other buildings or roads. Trees and shrubbery should surround it. A large spacious playground should be located in the rear.

The ceiling of the schoolroom should be arched, the walls plastered or painted. There should be two entrances at the south of the building, one for boys and one for girls. Each entry should be provided with pegs.

Teacher's desk should be on a platform eighteen inches a-

bove the floor. The desk and seats of the pupils should be arranged in rows running north and south so that the pupils face the instructor. The aisles should be at least one foot and six inches wide. The desk for each individual should be two feet long and one and three-fourths feet wide, and a seat about one foot square. The seat should be adjusted to the height of the pupil. The smaller seats should be in the front of the room, the larger ones in the rear.

The stove should be near the entrance. It should be at least eight feet from the nearest desk. It is advisable to utilize the space between the stove and the desks for moveable blackboards.

The windows should be five feet from the floor. Light from these windows will not strike the eyes of the pupil directly. The broad space below the windows can be used for paintings, maps, and charts.

There should be holes or adjustable windows in the roof of every school to allow the impure air to escape. The room should be aired frequently.

The best way of heating a school is by means of air heated in an adjacent apartment and conveyed to the room by pipes. The fire should be built two hours before school is opened, and the temperature reduced gradually in the late afternoon to prevent the children leaving school in a highly heated condition.

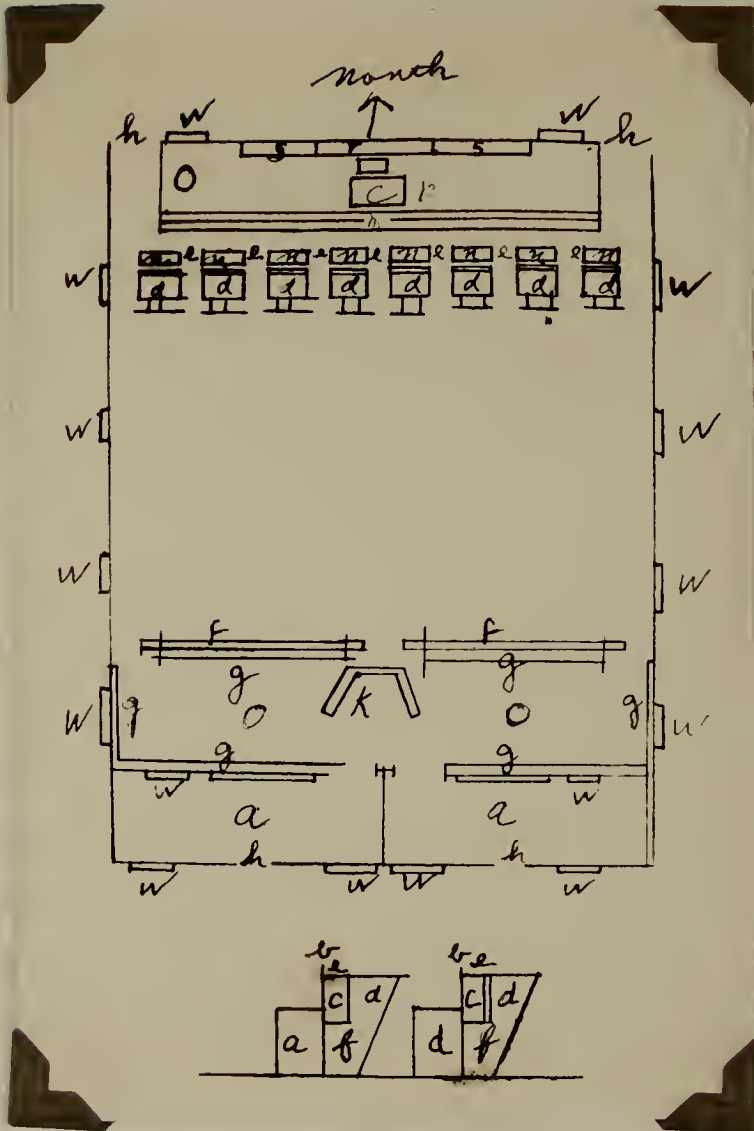


FIGURE II.
 a Seats.
 b Neck of seats
 c Case for books
 d Division for
 slates.
 e Lid to the book-
 case.
 f Form of support
 for each end of
 the desk.

MODEL SCHOOL ROOM, As Recommended by Dr. William Alcott.

FIGURE I.

- A Two Entries
- b Instructors Platform
- c Instructors Desk and Seat.
- d Desk; 2 feet by 14 inches.
- e Spaces Between Desks, $1\frac{1}{2}$ feet wide.
- f movable Blackboards.
- g Seats for those who are reading.
- h Doors.
- k Stove.
- m Steps for ascending the platform.
- n Seats for the small pupils.
- o Space for recitation.
- p Globe.
- r Library.
- s Place of deposit for museum.
- w windows.

SECTION III.

THE ESTABLISHMENT OF THE BOARD OF EDUCATION.

The work of James Carter did not cease with the establishment of the School fund. Believing that part of the income from this should be devoted to the supervision of the schools of Massachusetts, he urged that a Board of Education be established. His efforts were rewarded in 1837 when the Legislature, acting upon the recommendation of Governor Edward Everett, enacted a law which provided for a Board of Education made up of eight members, selected by the Governor.

The board was assigned simple duties, but no power. There was a law, already in existence, which required the school committee of each town to collect information on the condition of the town schools and turn this information over to the Secretary of the Commonwealth. This new law made provision for the Board of Education to receive the returns and prepare abstracts of them for publication. The law likewise required that there should be an annual report from the Board of Education describing the condition of schools in the state and including such suggestions for improvement as the Board found necessary. The Board was authorized to appoint a secretary, at a salary of one thousand dollars, and upon him should devolve the task of collecting information on conditions of the schools.

The board met for its first meeting on June 29, 1837, and Horace Mann, president of the State Senate, was selected for the position of Secretary. The following day, June 30, 1837, he accepted the invitation of the Board giving up a lucrative law practice and what appeared to be a successful political future.

Horace Mann was born in Franklin, Massachusetts, May 14, 1796. His early education was obtained in the district schools, being confined to stretches of six to ten weeks. Through his unceasing efforts and the aid of an itinerant schoolmaster, he was able to enter Brown University, from which he graduated in 1819. He tutored here for a while, but finally turned to law and was admitted to the practice in Massachusetts in 1823. In 1827 he was elected to the Massachusetts legislature, and was a member of the House of Representatives until 1833, when he was elected to the Senate. As a member of both houses he was prominently identified with the enactment of laws forbidding the use of alcoholic beverages, the use of lotteries, and it was largely through his efforts that a state hospital for the insane was established at Worcester.

From 1837 to 1847 he acted a Secretary to the Board of Education. This was a period of great achievement in the life of Horace Mann and the period is frequently referred to as the revival of the common school. Through his efforts, Normal Schools, Teachers Institutes, and Conventions were established. His suggestions led to the enactment of laws which helped to reestablish the common school. Libraries were to be found in almost every school in the state in 1848 as a result of his zealous efforts. This thesis will show another great contribution to the cause of learning as made by Mann.

Mann's great contributions came through the medium of the (1) Common School Journal, (2) His Annual Reports on Education, and (3) School Abstracts.

Through the common school journal Mann diffused knowledge

so that the common schools and other means of education would be improved.

In his annual reports he dwelt directly with facts and appeals to the people for the support of education.

Mann referred to his school abstracts as being the greatest accomplishment of his whole career. (12) The Edinburgh review (13) called them the most powerful influence in the state, inasmuch as each district saw its own attainments and deeds contrasted with those of all the other districts in the state. These contrasts operated powerfully on the spirit of emulation and the districts were stimulated to achieve something better in the succeeding year.

In 1848 Mann resigned so that he might assume the seat in the National House of Representatives, vacated by the death of John Q. Adams. His opposition to Daniel Webster caused his defeat in 1852. In 1853 he was invited to become president of the experimental Antioch College at Yellow Springs, Ohio. He accepted and remained as its president until his death in 1859. His years at Antioch were interesting, but great financial difficulties brought trying problems. His ardor and zeal were not diminished and his final charge to the graduating class at Antioch in 1859, "Be ashamed to die until you have won some victory for humanity," reveals a spirit that could never be suppressed by temporal difficulties.

SECTION IV

HORACE MANN'S SUGGESTIONS ON SCHOOLHOUSING

In the months following his appointment as Secretary, Mann arranged for conventions to be held in each county of the state. He appeared at each of these meetings and spoke on the defects of the educational system and suggested remedies for them. In discussing schoolhouses he criticized their present condition and stated that he had been informed by many eminent physicians that there was annual loss of life, destruction of health, and such anatomical distortions as to "render life hardly worth possessing" because of the bad construction of schoolhouses. He emphasized the need for proper ventilation, a good location, attractive appearance, comfortable seating, suitable apparatus, satisfactory heating and sufficient light in all schoolhouses(14).

Shortly after Mann sent his report for the year 1837 to the Board of Education, to be presented to the legislature, he forwarded a special communication to them regarding the condition of the schoolhouses in the state and described a model that could be followed in future planning. The essence of this report was as follows:(15)

Ventilation and Warming

A room properly ventilated requires that a current of fresh air flow into the room while a current of that which has been breathed flows out of it. A single room schoolhouse should have an aperture that would allow the respired air to escape. In a concave or dome shaped room one is sufficient, in a horizontal room there should be several of them. If this aperture leads into an attic the foul air can be led off through a skylight or

by means of the chimney. In a building of two stories, the apertures can be in the side walls next to the ceiling and ascend by flues, through the walls, into the attic. If the foul air cannot be led off through the walls, apertures can be made in the ceilings, next to the walls, and the air carried up into the attic by means of flues, enclosed in tight boxes.

When a school is provided with heating apparatus that permits the introduction of fresh warm air, it has an excellent apparatus for expelling foul air. The best way to heat a room is to have a cellar under the school, and to have a furnace in this cellar as well as the wood which is to be burned. Heat from a furnace keeps the room at an even temperature. There is not much danger of a fire from a furnace. If it is necessary to heat the room with a stove, it should be enclosed with sheet iron, rising from the floor on three sides. These sides should be on legs, permitting the air to come in, rise around the side, heated and sent out at the top. It is advisable to place the stove in the path of the current of air caused by opening the door. A thermometer should be placed in the coolest side of the school-room.

Size

From the point of view of ventilation, the room should be large. The large room is conducive to a satisfactory arrangement of the seats, so that the teacher can have a full view of the room and the pupils will have easy access to their seats. There should be an open space all around the walls at least two and one half feet in width. Space for the teachers desk and for recitations must be provided for also. Seats attached to

the wall, or moveable benches may be used for visitors.

Seats and Desks

A level floor is preferable to a slanting floor. The seats with desks should be arranged in parallel lines, lengthwise in the room, with an aisle between them, each seat and desk should accommodate but one pupil. Eighteen inches is a satisfactory width for the aisles. The front side of one seat may be the back of the next in the row. The desk ought to be two feet long by one and a half feet wide. The children will be more comfortable if the back of the seat slopes a little from them, at the shoulder blades, and the front part of the seat should be a little higher than the rear. The forward part of the desk should be level for three or four inches, the remainder should incline slightly. This slope should amount to one inch and a half for each foot. The desk may be in the form of a box, with cover hung upon hinges, or there may be a shelf under it for books. The former is preferable to the latter. The inkwell should be placed in the forward part of the desk. The edge of the seat and the desk should be in the same perpendicular line.

The child should have a resting place for his back and a support for his feet. The height of the desks and seats should be adjustable to the size of the pupils. The smallest pupils should sit near the teachers desk.

The place for hanging bonnets, hats and wearing apparel is dependent upon the construction of the house.

The instructor's desk should be on a raised platform, high enough to give him a view of all the pupils. It should be at the end of the room overlooking the playground. Nearby should

be cases for the library and apparatus. A teacher without apparatus is like a mechanic without a set of tools.

Where there is no separate recitation room, and there should be one in every large school, there ought to be an area for this purpose in the rear of the room, behind the scholars who are in their seats.

There should be a door and entry for the entrance and accommodation of each sex.

Location of School-Houses

External objects affect the temper and character. A healthful, comfortable, pleasing spot should be selected as the site for a schoolhouse. A location is desirable that will lessen the inclemency of the weather, with a grove to temper the summer heat, away from the public highway and noisy buildings and the house should be so located that it is free from all resorts for license or dissipation.

Children under eight or ten years of age should not have to travel over a mile to school. A school centrally located would accommodate a territory of four square miles. Above that age a child can go two miles to school and one house will accommodate all the elder children in a radius of sixteen square miles. Female teachers are available for the younger scholars, male teacher for the elder pupils. The union of districts to provide one central school would result in a better schoolhouse, more appropriate appurtenances, and a longer school year.

Light and Windows

The manner in which the schoolhouse is lighted is of considerable importance. Windows should be numerous enough to pro-

vide sufficient light at all times, and means furnished to exclude any excess. Window blinds and curtains are essential. Care must be exercised not to expose the eyes of the scholars to very intense light while reading or writing. Windows should be so high that objects and events outside the school should be invisible to the scholar. A better plan is to select a retired location and arrange the seats so that the scholars do not face the road. The windows should be so made that the upper sash can be lowered.

Yards or Play-grounds

There should be sufficient space around the building. The space ought to be at least a quarter of an acre and enclosed so as to keep out the cattle and give the children a safe and clean playground. Every schoolhouse lot should be large enough for the natural exercise which the children ought to have. It should be of sufficient size to allow for ornamental and fruit trees, with flower borders, which the children would learn to enjoy, and develop at the same time a respect for private property.

Duty of Instructors in Relation to School-Houses

If pupils are uncomfortably seated, the instructor should permit them to change their seats. The instructor ought to use his authority to protect the building from injuries. The instructors should take the management of the fire under their own control. The room should be heated comfortably before school begins. The instructor must take pains to see that the schoolroom is kept clean and should aim to develop in the pupil a respect for cleanliness, elegance, and decency in all things.

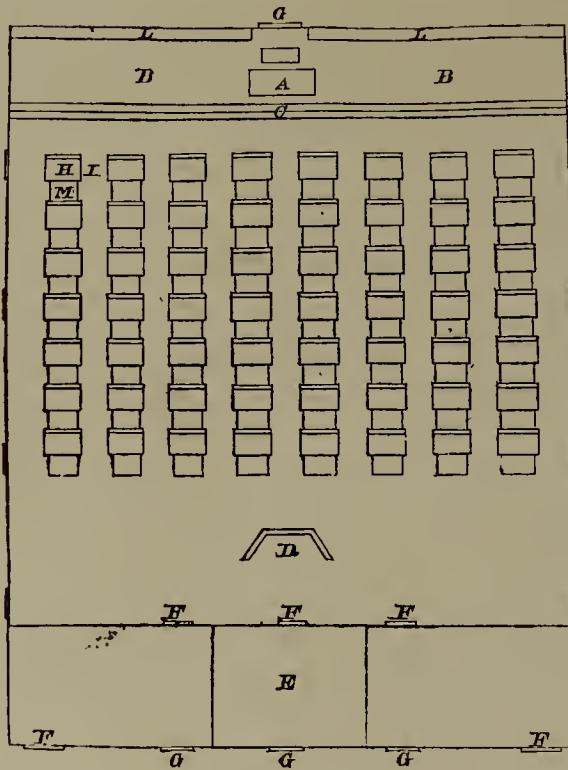
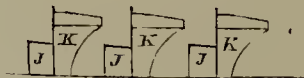


FIGURE II.



MODEL SCHOOL ROOM. As Recommended By Horace Mann.

FIGURE I.

- A Teacher's Desk.
- B Teacher's Platform.
- C Step for ascending the platform.
- LL Cases for Books, Apparatus, Cabinet, &c.
- H Pupil's Single Desks, 2 feet by 18 inches.
- I Pupil's Seats, 1 foot by 20 inches.
- I Aisles, 1 foot 6 inches in width.
- D Place for stove.
- E Room for Recitation.
- F Doors.
- G Windows.

FIGURE II.

- J Pupil's Seats.
- K Shape of the Boards, forming the sides and supports of the desks.

The instructor should guard against the development of loose and foolish playfulness and restless discontent among the pupils. The pupils should be allowed to decorate the room in order to give it a cheerful appearance. Instructors and parents should unite to check the tendency to mark school property with lewd and profane objects.

General Comments and Suggestions

In his report for 1838 Mann cites an investigation, by a reputable physician, which aimed to show the relative value of a good and poor location of a schoolhouse. One house was located on dry land and well ventilated. Over a period of forty-five days, five pupils from this school were absent because of sickness, with a total loss of twenty days. In the other school, located on damp ground, and so situated as to make ventilation impossible, nineteen children were absent because of sickness, their absence amounting to one hundred and forty-five days.

In the Common School Journal of 1839 (16) Mann devotes an editorial to the ways by which the teachers can help to secure better schoolhouses. He states that it rests upon the teachers to act as school missionaries, so that all the appurtenances of the school may be secured. The teacher can point out to the parents the consequence of bad schoolhouses upon the health, mental activity, the proficiency, the temper and disposition of the pupils. If the teacher will draw out the benefits to be derived from a good schoolhouse, no sensible and humane man can shut his eyes to the truth. Mann stated further that could the attention of the parents be steadily fixed upon their schoolhouses, as to realize their unfitness; could they be made to

contrast them with their meeting houses, their own houses, and even with some of their barns, two out of three schoolhouses in the state would not survive, in their present condition for a single twelve-month.

In this same year Mann stated in his annual report that he felt sure that there was no other class of buildings in the state so inconvenient, so uncomfortable, or so dangerous to health as were the schoolhouses. At the rate of one hundred a year it will take more than a quarter of a century to renovate them all.

In his report for 1840, Mann states that many people who own land, centrally located, have not been agreeable to selling a part of the property so that it could be used for a schoolhouse site. However, when land is wanted for a turnpike, or a railroad, a man's land can be taken from him, or his house moved to give a right of way, but a half acre of land for a schoolhouse cannot be taken. In matters of a material interest, the Legislature has made it possible to take a man's property; but in regard to the spiritual and moral interests of youth, no such provision has ever been made by the Legislature.

In the Common School Journal of 1841 (17) Mann employs satirical humor in commenting on the antiquity of certain schoolhouses. He states there, "The date of erection of some of the schoolhouses in Massachusetts, like that of the pyramids, was lost in remote antiquity."

In the Common School Journal of 1842 (18) Mann recalls several instances in travelling over the state, where he has witnessed barns, piggeries and other outbuildings, that have been

erected according to the most approved style of Gothic Architecture, but until recently, the models followed in constructing schoolhouses were not copied from Greece or Rome, but rather from the Pequots and the Narragansetts.

He adds that the recent report of the Commissioner of Agriculture describes a hog sty of one farmer in the state. This building was two stories high; there was a promenade for each story, covered with a roof; and the floors of the eating and sleeping apartments are made perfectly tight. The building is one hundred feet long by thirty four feet wide and will accommodate one hundred twenty pigs. Mann comments, "A promenade for pigs, but no playground for children. Twenty-eight square feet for each hog, while in some of our schoolrooms slave ship stowage is practiced."

In his report for 1846, Mann describes an effective method to convince those opponents of a new schoolhouse. When the discussion concerning the need of a new schoolhouse is carried on in the old schoolhouse and the inconveniences, cold, and pain-wracking seats are experienced, the opponents, though insensible to arguments addressed to reason and conscience, are won over to the need of a new building when they themselves have undergone the colds, crumps and exhaustion brought on by the defects of the old.

Throughout the whole period of his secretaryship, Mann employed every possible device to bring before the people the need for better schoolhouses. He impressed upon them that before the schools could be improved it was necessary to rebuild or renovate the houses which contained them. That he did not labor in vain

will be demonstrated in the following sections.

It is evident that Mann ignored the important subject of sanitation. The author was unable to discover any suggestion or comments that he made on this importance phase of school-housing. His failure to include it may be due to his reluctance to discuss such a personal subject before public meetings or through the channels of the Common School Journal or Secretary's Report.

SECTION V

SIGNS OF REACTION TO HORACE MANN'S SUGGESTIONS ON
SCHOOLHOUSINGS.

The special communciation on schoolhousing was distributed to all the school committees of the towns in the state of Massachusetts. The reports of the committees for the year 1838 (19) indicate definitely that Mann's appeal had not fallen on deaf ears with few exceptions the reports included a criticism of the condition of the schoolhouses in the various towns. From this time until the end of Mann's secretaryship in 1848 there is evidence of a new interest in schoolhousing. The various committees strove constantly to bring about an improvement. Sometimes it was necessary for the requests for improvement to be suggested year after year, before the people would vote for renovation or rebuilding. Mann continued to advertise the reluctance of these people through the medium of the abstracts of the School Returns and where reason and argument failed to convince the people shame and pride were successful.

Some of the evidence which shows the influence of Mann is both direct and indirect. It is indicated under these headings:

Direct Evidence

The report from Danvers in 1838 (19) states that the report of the Secretary of Education from 1837 proves that schoolhouse should be made comfortable and convenient. The committee recommends changes in the schoolhouses of the various districts so that they may be made comfortable and convenient.

In 1839 the committee in the town of Groveland (20) calls the attention of the people to the special report of Mann's on

schoolhousing and recommends that the town build schoolhouses according to the model suggested by Mann.

In 1840 there was an attempt made to abolish the Board of Education. A majority of the committee which heard the proposal voted in favor of it. There was a minority report, however, which upheld the Board of Education and among other things spoken in its behalf was the following (21) "It is well known to every one who ever went to common public school that a very large proportion of the schoolhouses in this state have not been, in times past, what they ought to be. In very many instances they have been cold, cheerless, badly constructed and located, and much in need of repair; either unfit for study or health. Parents have often kept their children at home rather than send them to such a place. During the first year of the Board of Education's existence, a report on the subject of schoolhouses was prepared and published by their Secretary. The report has probably caused the rebuilding or remodelling of hundreds of schoolhouses in this state. It has been widely circulated in this country, reprinted in England, and commended in the English journals. Now in respect to this subject of schoolhouses, the Board has exercised no control. Every district has followed its own inclinations in building new houses or repairing its old ones. This is an instance of their effecting much good, without exerting any control, or attempting any interference."

The Chelsea school committee report for 1844 credits the annual reports of the Board of Education and the Abstracts of the School Returns with infusing new life into the educational movement all over the state. The fear of having the people of

Massachusetts, and even of the world, know what poor accommodations were to be found in many towns, has led to the speedy demolition of many an apology for a schoolhouse and the erection of many a well found and beautiful edifice in its stead.

In a letter to Mann, in 1845, Austin Ellery, a member of the school Committee in Hopkinton, describes the improvement made through the year. The town has experienced considerable opposition from some of the residents over its proposal to build schoolhouses, but the plans which they about to accept carry out those measures which Mann has recommended in his reports.(23)

The memorial to the Maine legislature in 1846 (24) requesting that it create a Board of Education cites the improvement in Massachusetts since the establishment of a Board there. It states that schoolhouses having been erected at a cost of eight or ten thousand dollars.

On the occasion of the dedication of a new schoolhouse in Cambridge in 1848 (25) the Cambridge Chronicle remarked that the building was first-class, and so superior to anything known before the revival of free schools, which is coeval with the establishment of the Board of Education, that Reverend Mr. Stearns, in giving the didicatory address, stated "The erection of such a building would, a few years ago, undoubtedly have excused a committee from service the ensuing year."

William B. Fowle, in a review of "School Architecture by Henry Barnard (26), states that any who know Barnard will not be surprised at such a complete manual in a department of Education, almost unthought of until the Massachusetts Board of Education in their first annual Report declared that no improve-

ment could be expected in the schools until the schoolhouses were adapted to the purposes of education.

Indirect Evidence

The most striking reaction to Mann's report on schoolhousing and his lectures before the County Convention is the consideration given to this problem throughout the state. Many of the improvements resulting are not specifically connected with Mann and so they are considered under this heading.

In the school returns for 1838 the committees criticize the schools and the statement is made by some of them that the districts seemed to have regarded the cost of the house more than the health and learning of the pupils. The committee from New Salem informs the townspeople that the schoolhouses are not fit to be used. Caustic criticism of this type was continued in the towns with the hope that the schoolhouses would be improved. In the returns for 1839 the report on the committee in Kingston informs the people that there is not a single public schoolhouse in the town that is not a disgrace to them, and the cause of sickness and ill health to the children. The schoolhouse in District Number Six, is not as comfortable as some of the barns and stables in the neighborhood. All through this period of Mann's secretaryship there is evidence that there are some people in each and every town who have come to realize the need of good schoolhouses and who are not easily disheartened by selfish interests, (or by those who feel that because the school was good enough for them when they attended it, then it is good enough for their children.)

In most of the towns within a short time after Mann became

secretary there is evidence of liberal and progressive attitude on the question of schoolhouses. The School Returns for 1840 reveals that many towns are engaged in a rebuilding or renovating program. The committee from Wenham report three new schoolhouses and one thoroughly repaired. In commenting on these new buildings they state: "How much better it is to have our schoolhouses so inviting in their appearance both within and without, so convenient in their construction and so comfortable, instead of being cold, cheerless and repulsive to all who behold them. What pleasing associations will be awakened in their minds as they hereafter look back to the room where their intellectual powers were unfolded and disciplined, and where they laid the foundation of their usefulness and happiness in life." Comments of this sort, showing an increased appreciation, became more frequent in the succeeding years of Mann's secretaryship.

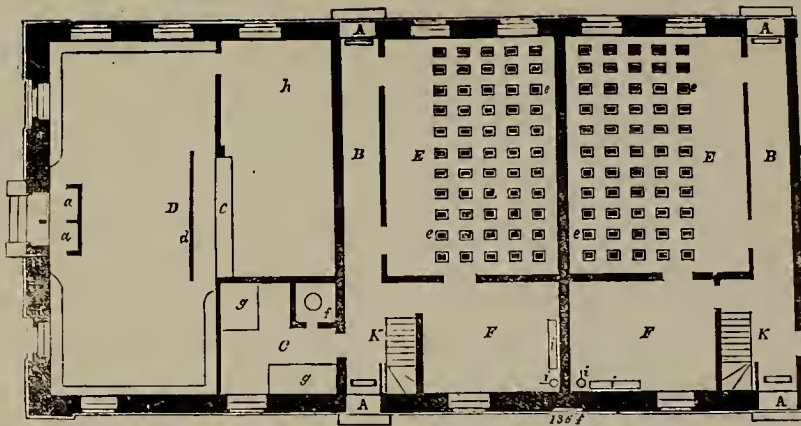
One of innovations of this period in regard to schoolhousing is worthy of a brief comment. In 1839 a new schoolhouse was opened at Chelsea and also at Hanover. At each of these there was a dedicatory exercise to which the public was invited and at which an appropriate address was delivered by some clergyman. It led Horace Mann to state (27), that a few years previous, "A public announcement of the dedication of a barn would have excited little more surprise than that of a schoolhouse." For Mann, it constituted a new era in the history of schoolhousing. Within a short while it was expected that each new school house should be properly dedicated and the dedication of these gave incentive to neighboring districts and communities to build better schoolhouses. At the dedicatory exercise of the East schoolhouse in

Salem in 1842, leaders in education from many towns,--Boston, Lowell, Roxbury, Newburyport and others--gathered to congratulate the citizens of Salem on their great advancement. Horace Mann described this schoolhouse as the most perfect one in the country (28). That the dedication of a schoolhouse had become an important event by the end of Mann's secretaryship is evidenced at the dedication of a schoolhouse in Cambridge in 1848. (25) One of the speakers on this occasion was the president of Harvard College, who gave a lengthy address on the educational development in this state.

Shortly after the report on schoolhousing, the towns, with enlightened and wise liberality, began to expend money for building new and renovating old schoolhouses. When it is recalled that at this time the country at large was experiencing a financial panic, it serves to indicate that a pronounced interest had been developed.

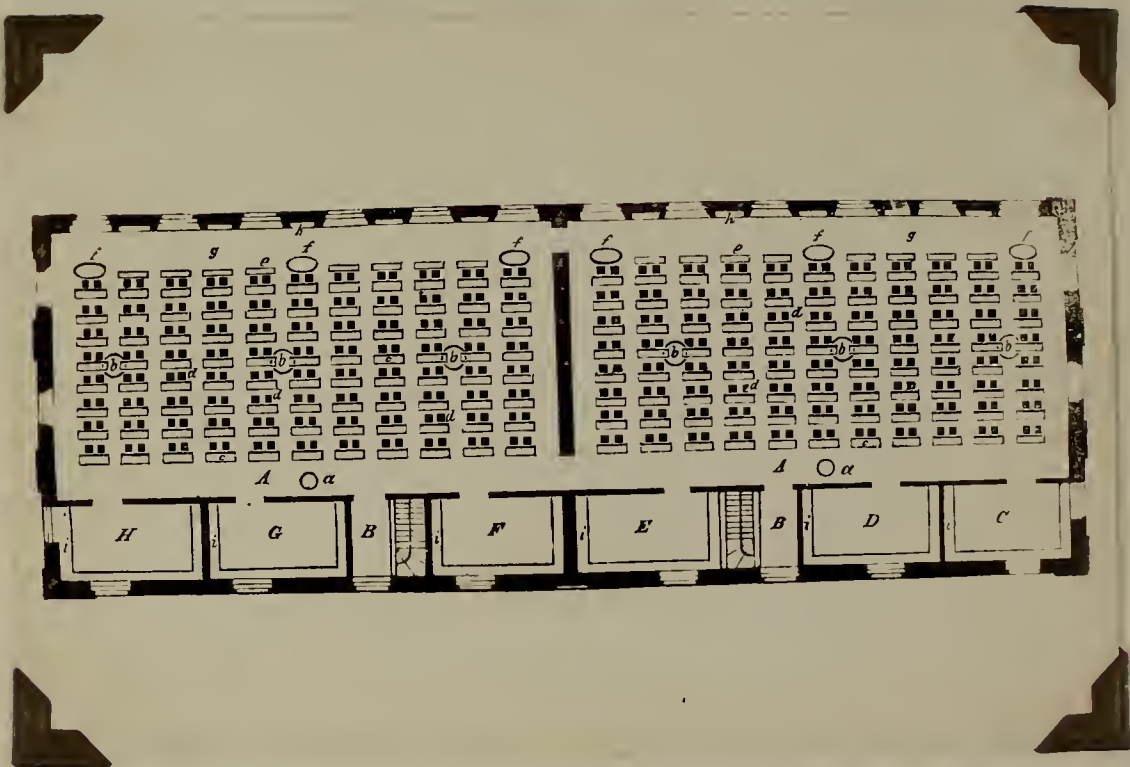
In the town of Greenfield in 1837, (29) eight hundred dollars was raised for the schools, in 1839, one thousand seven hundred dollars was raised. In this same year the central district in Greenfield provided itself with a large and healthful house at an expense of three thousand three hundred dollars. In Phillipston, four thousand dollars was spent in schoolhouses alone. The city of Boston in this same year was engaged in erecting twelve large and commodious schoolhouses one of which cost twenty thousand dollars and was constructed throughout on the most approved plan.

During the year 1840, there were more schoolhouses built than in the ten years previous to 1838, (30) Mann states that



FIRST STORY OF THE EAST SCHOOLHOUSE IN SALEM.

- AAAA School entrances.
- B, B Passages, 5 feet wide.
- C, C Furnace and fuel rooms, 15 by 13 feet.
- E, E Primary schools, 36.6 by 24.3 feet.
- e, e Seats in primary schoolrooms.
- F, F Ante-rooms, 15 by 19 feet.
- K, K Stairs to second story.
- f, f Furnaces.
- g, g Fuel and ash bins.
- i, i, i, i, Pumps and sinks.



SECOND STORY OF THE EAST SCHOOL HOUSE IN SALEM.

- AA School rooms 65 feet by 36
- BB Entries and stairs from the first story.
- C, D, E, F, G, H, Recitation rooms.
- a, a Hot Air entrances.
- b, b Ventilators.
- c, c Desks.
- d, d Seats.
- e, e Settees.
- f, f Tables for teachers.
- g, g Platform.
- h, h Recesses, containing books.
- i, i Seats occupying three sides of recitation rooms.

many of these are admirable models of schoolhouse architecture.

In 1841, the building and renovating of schoolhouses was carried on. Salem and the village of Cabotville in Springfield erected buildings which were highly praised by Mann.(31) The latter building, in the opinion of Mann was far superior to any other in the middle or western part of the state.

The Secretary's report for 1843 reveals a remarkable progress in the number of schoolhouses rebuilt and repaired. During the five years immediately following the communication of the report on schoolhouses, two hundred and ninety of the three hundred and eight towns in the state expended \$654,326.80 for the erection of new and the repair of old schoolhouses. For erecting new houses, including the prices of land, fixtures, and appurtenances, \$511,122.74 was spent. The amount spent on repair of old schoolhouses amounts to \$118,204.06. The report states that if the City of Boston is left out the expenditures are without doubt greater than the value of all the schoolhouses in the State at the time of the organization of the Board. The number of new schoolhouses created in the towns heard from is 405. The number of old ones on which substantial and permanent repairs have been made is 429.

The town of Northboro set a fine example for the other small communities of the State when it expended \$8000 in 1844 to provide every district with a new and beautiful schoolhouse.(32) In his report for the year 1844, Mann states that since the year 1837 between nine hundred thousand and a million dollars has been expended for building and repairing the schoolhouses.

Mann estimates that through the year 1845 there has been

\$150,000 expended for building and repairing schoolhouses.(33) The report from Boston for this year estimates that \$50,000 has been spent on schoolhouses.(34) In the report from Harvard for the same year the committee speaks of the great improvement in the schools in the State during the last ten years as a result of the new schoolhouses and the repaired old ones.

In the Secretary's report for 1848 in reviewing the improvement in schoolhouses Mann states that if all the wretched, pain-inflicting, disease-creating structures called schoolhouses in 1837 could have been destroyed at once, a hundred schoolhouses would not have been left standing in the Commonwealth. Two hundred and ninety seven of the three hundred and thirteen towns in the state made returns in April on the value of their schoolhouses. The value of the schoolhouses owned by the public was \$2,572,213. With those which have been built since the returns were made, the present value of the schoolhouses was about \$2,750,000. At least \$2,200,000 of this sum has been raised and expended since the report on schoolhouses and schoolhouse architecture in 1838. In the Common School Journal of 1848 (35) a Reverend Mr. Stearns in speaking of schoolhouses in Cambridge stated that in 1832 when he came to Cambridge there were six schoolhouses, and eight schoolrooms. In 1848 there were seventeen schoolhouses and thirty five schoolrooms. The Cambridge Chronicle in reviewing these statistics states, "Will those who deny that the establishment of the Board of Education has had anything to do with the resuscitation and reformation of our schools, account in some other way for the prodigious increase and improvement?" In this same journal a communication to the

Editor declares that the improvement to a higher degree in the public schools of Massachusetts within the last ten or twelve years is obviously indicated in the houses in which they are now kept.

Mann's recommendation of a union of two or more districts to form a center school in his Report on Schoolhousing, was followed quite generally. Mann saw an opportunity through such unions to weaken the district system and provide better schooling and schoolhousing for the children.

The letter quoted previously, from Austin Ellery (23) stated that all the districts in Hopkinton had been done away with and the town had taken over the schools. The school built in Cabotville (31) accommodated two districts that had joined together. There was considerable hesitation on the part of these districts to join with the others, but as they saw the greater opportunities for their children, and the removal of the burden of assuming a responsibility for the maintenance of a school, they gradually consented to join together. It was many years after Horace Mann had left the Secretaryship before his hope to abolish the districts system was fully realized. Mann took great pleasure in 1845 in reporting (33) that many large towns had abolished their districts, purchased all the schoolhouses and assumed the legal liability of providing houses and teachers in their corporate capacity. Mann declared that this step had "introduced a system which will shortly lead to equally good houses and equally good schools in all of the towns."

In the Construction of new and the repairing of old schoolhouses particular attention was given to the features described

in the model which Mann included in his report for 1837. The effect upon schoolhousing will be described under those same headings.

Ventilation and Warming.

The danger attendant upon the pupils from poor ventilation was appreciated by some of the people when it had been explained to them. Many towns took steps to correct the condition that existed in their schoolhouses.



Ejecting Ventilator.



Injecting Ventilators.

The Committee reports for the year 1838 indicate that the people throughout the state have awakened to the dangers of their poorly-ventilated schoolhouses. The Committees in recommending new schoolhouses or the renovating of old ones advise that provision be made to ventilate each one properly. During this same year every schoolhouse in Nantucket was provided with good ventilators. Provision was also made in Salem to improve the ventilation of the schoolhouses.(36) The benefits from good ventilation were quickly observed, once it had been introduced. The Report from the committee in Lee in 1839,(37) states that the schoolhouse in District number 19 is now well ventilated. The schools are much better for it, since there is no longer a

stuporous and sleepy condition to be observed among the pupils during the school day. These benefits, experienced by those who had experienced them and divulged through the medium of the school returns, stirred up those who had been tardy. In 1846, the School Committee of Boston appointed a committee to inspect the schoolhouses under its care and make a report on their condition together with any suggestions for improvement. (38) As a result of their investigation, \$4000 was appropriated to secure proper ventilation in summer and winter in all the schoolhouses that were inadequately ventilated.

Various devices were invented to serve as ventilators, and served the purpose quite well; but the most satisfactory, by far, was the ejecting and injecting ventilator invented by Frederick Emerson of Boston in 1843. It was used in many of the schoolhouses built in the last five years of Mann's Secretaryship.

The ejecting ventilator consisted of a frustrum of a cone attached to the top of a tube, open in its whole extent, and surmounted by a fender, supported on rods. It kept out the rain and so directed a blast of wind upon the structure that regardless of what direction it fell, a uniform and constant upward draft resulted. The ventilator was fixed upon the end of a tube or ventiduct that extended through the roof into the open air and downward into the room to be ventilated. This tube was constructed on that side of the room opposite the stove or orifice from the furnace, and extended from the ceiling to the floor. At the ceiling and at the floor were two apertures for the escape of air. The opening at the bottom was larger than that at the top.



VENTILATING STOVE.



FURNACE.

The ventiduct of the injector led into the warm air chamber of a ventilating stove, or into a furnace, so that in the cold season the fresh air became warm before it entered the room.

In some schools only the ejector was used and it ventilated the room sufficiently. It had to be used with a ventilating stove or furnace, the quantity of the air admitted into the room was equal to the air withdrawn. Emerson insisted upon these ventilators being used only in schoolhouses that were supplied with fresh warm air.

In a room containing less than fifty pupils, the tube of the ceiling ventilator was fourteen inches in diameter. A room seating up to one hundred scholars required a tube eighteen inches in diameter. A room seating up to two hundred pupils required tubing twenty-four inches in diameter.

The means of heating most of the schoolhouses was termed unsatisfactory by the majority of the towns in reporting on the condition of the schools in 1838. In constructing new schoolhouses, Mann's suggestion to have the schoolhouse heated by a furnace in the cellar was frequently followed. In those towns which built schoolhouses of two or more rooms the furnace was usually used to heat them. In the East School in Salem, previously mentioned, each room was heated by a separate furnace. Most of the new schoolhouses built in Boston were heated by furnaces.(43) Where it was possible to provide a furnace it was done. However, in the smaller towns where new schoolhouses were built, or old ones renovated, it was necessary to use a stove. Most districts in these towns provided the schoolhouse with a ventilating stove. The Committee report from Phillipston in 1841

describes the use of ventilating stoves which keep the air in the room pure and is a superior method of ventilation. The Committee in Worcester in this same year speaks of four houses which use ventilating stoves made by Henry Miller of that city. These are considered an immense improvement as regards purity of atmosphere and constant ventilation. They believe that every school in that community should be provided with them.

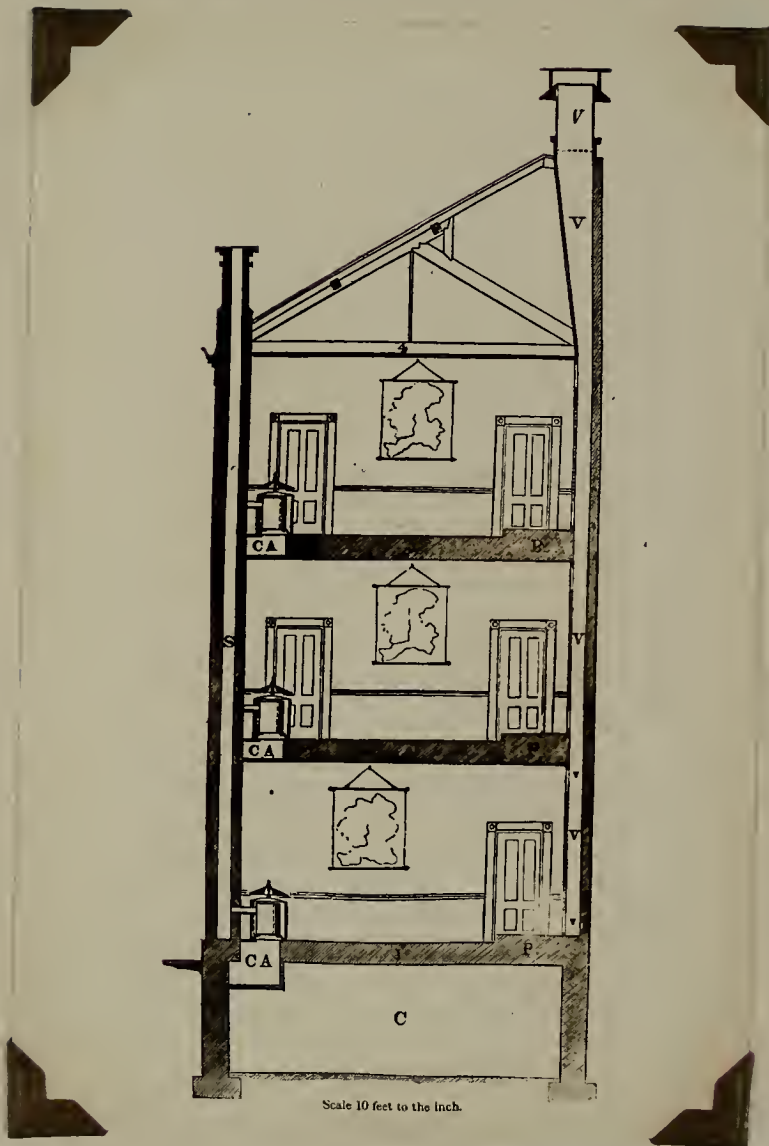
Thermometers were placed in many of the schoolrooms and in this way the judgement of the teacher, with regard to the heat, was displaced by an accurate indicator of the temperature of the room.

The Miller and the Wheeler ventilating stoves were quite commonly used and the principle of these is illustrated in an accompanying print. The Chilson furnace, which was found in many of the schools using furnaces, is likewise described.

Size

Few of the committees are able to state in their reports for 1838 that the schoolhouses in their committees are of sufficient size. The Chelmsford committee reports all schoolhouses in District Number Two is only two thirds as large as it should be. The Waltham committee recommends more spacious schoolhouses. The committee from Fairhaven declares its schoolhouses are too low. The committee from Medway reports that its schoolhouses are too small and as a result overcrowded.(19) Those committees that indicate the insufficient size of their schoolhouses recommend that they be either rebuilt or repaired.

The reports of the next year 1839 indicate that an effort has been made by some of the towns to carry out the recommenda-



C Cellar.
CA Cold-air boxes, opening under the stoves.
Cl Clock.
P Teacher's Platform.
V Ventiduct, emptying into the ventilator on the roof.
v, v, Ventiduct registers.
V Ventilator.

tions of their committees. Stoneham reports that a new schoolhouse has been built in District Number Three that is larger than any other schoolhouse that has previously been built in that town. Pawtucket has built a new schoolhouse in District Number Five which is thirty one feet long, twenty two feet wide, and the room - eleven feet high.(37) By the year 1848 many of the new schoolhouses were making provisions for future increase in the school enrollment.

Another feature of the new schoolhouses, demonstrated in the East School in Salem, is the provision for separate entrances for the two sexes. Spacious entries were provided for each of these, and the clothing of the children conveniently cared for. Another improvement indicated in this same school, and found in many of the new schoolhouses was the provision for recitation rooms. This resulted in much better instruction and discipline.

Desks and Seats

When the dangers of the poor desks and seats had been impressed upon the people, there was an immediate response. In his report for 1838, Mann states that there has been two thousand dollars expended for the reconstruction of seats in the schools of Salem. In 1839 the committee from Cambridge reports that the stools which have been used for seats have been removed and chairs put in their place. Children in these schools now have a backrest for their seats. The committee from Newton in the same year reports that the seats in the northwest schoolhouse have been replaced by more comfortable ones, placed on a more level plane. The Shelburne committee reports that seats and desks have been provided for the scholars by which they can



WALLES' SINGLE DESK AND SEAT.



WALLES' DOUBLE DESK AND SEAT.

sit and study with more ease.(41) The reports from West Bolyston for 1843 speaks of the renovating of the schoolhouse in the south district. The old awkward seats and desks were removed and replaced with desks and single seats, firmly attached to the floor. The report from the Conway Committee in 1845 states that in a good schoolhouse the seats must be low, adapted to the size of the scholars, at a comfortable distance from the desks and always with comfortable supports for the back.

The desks and seats manufactured by James Kimball, by Joseph L. Ross, and by S. Wales were most widely used throughout the state. The use of the single and double desks manufactured by the latter was ^{so} general that a description and illustration of the two types are given. These came in seven different sizes. The chair is based upon a single pedestal of iron, the woodwork is fastened to the top of the pedestal, and the whole is firmly screwed to the floor of the schoolroom, In the two types of desks the supports are of iron, constructed so as to not interfere with the movements of the scholars, secured to the woodwork at the top and screwed to the floor of the schoolroom.

Location

The reports of the various committees for the year 1838 reveal an interest that had not existed previously, on the subject of schoolhouse location. The Roxbury committee speaking of its schoolrooms in the town hall, states that they are spacious, but the neighborhood is unfavorable to literary exertion. The committee from Granby says that the schoolhouses should be more inviting in appearance to the youthful mind. The committee from Marblehead calls the attention of the town to the bad location

of the schoolhouses. The report from Brookfield says that nothing is pleasant in or around most of the buildings. They are close by the roadsides.(19) In the next year 1839 the committee in Seekonk in recommending new schoolhouses advises that particular attention should be given to their location. In this same year the committee in Dudley reports that one of the schoolhouses has been moved to a more pleasant and central location.(41)

In 1840 the committees from the various towns in speaking of new schoolhouses that have been built comment at length upon their improved location over the old schoolhouses. The Wenham committee in speaking of three new schoolhouses refers to them as suitably located, at a safe distance from the street and in their external appearance they compare favorably with the schoolhouses in the larger towns and cities.(39) The towns vied with one another in the construction of new schoolhouses and it is not uncommon to read in the various annual committee reports where a town, having built new schoolhouses, ranks them as the best in that section of the state, or in some cases the new schoolhouses are considered as good as any in the country. It indicates a new pride in the appearance of this type of public building. The report from Barnstable in 1841 mentions the objectives which should be considered in building a new schoolhouse, and it states that in its exterior appearance it should be neat and respectable, for, by the traveller, it is considered a sure indicator of the moral and intellectual character of the inhabitants of the district in which it is located.

People soon learned of the advantage to be secured from a location that was dry, quiet, pleasant, and healthy. To secure

these the people were willing, if necessary, to select a site which was not in the center of the district. The tendency now was to choose a spot which would not be exposed to the winds of the winter nor the blazing sun of the summer. In the smaller towns several districts combined and a schoolhouse built which was more appropriately furnished and located than those which were to be found in any of these districts.

In the Newburyport schoolhouses, built in 1847, the location is particularly good. It was situated opposite the ocean, back from the street, and presented a very favorable appearance with its red brick construction.

During the year 1840, Mann had importuned the Legislature to grant the towns of the Commonwealth the opportunity to exercise the right of eminent domain when they sought a favorable site for a schoolhouse. The new interest in schoolhouse location resulted in a petition to the Legislature in 1848 by Ebenezer Davis and others requesting that body to provide the towns with this right. This was enacted into a law that same year, but only after a stormy session. It was a very definite step in the direction of improved location for schoolhouses.

Light and Windows

The reports for 1838, (19) on the condition of the schoolhouses throughout the state, indicate that some of the towns have awakened to the insufficient lighting of their schoolhouses. Only a few schoolhouses had a sufficient number of windows, and as the committee from Holden states, it is a rarity to witness a schoolhouse with the needed number of windows, and none of them have shutters, blinds or curtains. In the new schoolhouses



THE UNIVERSITY BUILDING.

and in renovating the old, more windows are added. It was customary in these new buildings to have windows on two sides of the room. The report for 1840 from Reading speaks of one of the new schools and adds that there is a sufficient number of windows all of which are furnished with substantial curtains by which the glare of the sunshine may be excluded.

The schoolhouse at Newburyport demonstrated how well the new schoolhouses are arranged for light so as to admit an abundance to every part of the room and prevent the inconvenience of any excess, glare or reflection. For each of these windows there was a shade which would eliminate dangerous light. The windows were placed high in the walls so as to distribute the light steadily and equally. When the windows were placed three and a half or four feet from the floor there was little opportunity for the children to be attracted by events outside the room. The windows were now placed in the rear and side of the schoolhouse. The danger of a direct stream of light in the eyes of the children resulted in the side of the room which the pupils faced being devoid of windows. People now realized that a lack or an excess of light was injurious to the delicate sight of the pupils.

Yards or Playgrounds

The first reports from the committees throughout the state (19) indicate a general lack of suitable yards or playgrounds. The location of the schoolhouses on the roadside or in narrow and limited ground, depriving the pupils of a yard was criticized by the committee. The need for a playground is emphasized in recommending new schoolhouses. The next year in reporting the construction of new schoolhouses it is interesting to note how well

their recommendations have been carried out. The report from Pawtucket (37) states the lot on which a new schoolhouse has been erected contains one quarter of an acre for a playground and it is enclosed. In 1842 the committee from Conway reports that a yard has been provided for the schoolhouse in District Number Three and an enclosure made in the yard to form a shady retreat for the children in the summer months.(40) The committee report from Lowell in 1844 (32) that in constructing new schoolhouses ornamented playgrounds must receive patient and constant consideration. The committee report from New Bedford in 1846 (41) states that in order to improve the schoolhouse yards so as to render them suitable places for recreation, it had planted fifty elm trees on the yards of the Middle, Charles, and Maxfield schools. In the elementary playgrounds apparatus, such as the horizontal bar, the parallel bar, plunes, and rotary springs were introduced. The yards of the new schoolhouses and many of the old were enclosed so as to protect the children. The schoolhouses and many of the old were enclosed so as to protect the children. The schoolhouse at Newburyport illustrates the improved playgrounds of this period.

Duty of Instructors in Relation to Schoolhouses

With the construction of new and the repairing of old schoolhouses it became necessary to require careful use of the improved facilities and to create a respectful attitude among the pupils toward the improved schoolhouses. There is evidence that this attempt was successful. The report from the Committee in Hopkinton in 1840 states that the new schoolhouses in the town have been kept in a very neat manner which speaks well for the teach-

ers and pupils. The report from the committee in Reading in 1841 relates that in the renovated schoolhouse in District Number Six, neither the rooms, desks, nor articles of furniture have received hardly a blemish. In the Cambridge report for 1845 (34) the committee suggests that the teachers exercise constant vigilance so that the schoolhouses and the fixtures shall be at all times kept in good condition. The report adds that the committee is gratified in believing that there has been a great improvement within the past few years and that instances of intentional injury to the schoolhouses are comparatively rare. The rules and regulations adopted by the school committee of Quincy in 1848 (42) offer the following:

"It shall be the duty of the instructors to take care that the schoolhouses, and all the public property pertaining thereto, shall receive no damage from cutting, or marking, or other modes of defacing and injuring the same.

"The teachers of the several schools, shall prescribe such rules for the use of yards connected with their schoolhouses as shall insure their being kept in a new and proper condition."

Many committees had established rules which made it the duty of the instructors to supervise the condition of the schoolhouses.

Apparatus

Mann stated on this subject that a teacher without apparatus is like a mechanic without tools. The period of his Secretaryship reveals that many of the committees and people of the state came to view this topic in the same light. Blackboards, charts, maps, globes and other necessary apparatus became a part of a

large number of schoolhouses. Not alone the towns, but also private individuals contributed to provide the schoolhouses with apparatus. The Committee returns for 1844 (22) from Brookline relates that through the efforts of the principal of one of the schools in that town, five hundred dollars has been obtained by individual subscription for the purchase of a good philosophical apparatus. The tenth report of the Secretary of the Board of Education shows very well how well the people have provided their schoolhouse with apparatus. The amount now found in the schools is one hundred times greater than it was in 1837. Of the three thousand four hundred and seventy-five schools there are three thousand one hundred and fifty provided with blackboards, leaving quite a goodly number without this indispensable means of thorough instruction. The number of globes in the schools of the state is 220. There is an equivalent number of schools with outline geographical maps. About the same number of schools have philosophical apparatus of a pneumatic, chemical, astronomical, electrical and electro-magnetic type. Geometrical blocks and diagrams are found in a similar number of schools.

It is seen from these figures that though there was still a need for more apparatus, yet many towns had seen fit to provide their schools with this essential medium of instruction.

SECTION VI

SCHOOLHOUSING AT THE PRESENT TIME.

Schoolhousing has advanced tremendously since the days of Horace Mann. In constructing a schoolhouse today there are many rules and regulations, which must be conformed with. These are enforced and supervised by the Department of Public Safety. Schoolhouses which have been in existence for many years and are a threat to the safety of the children that are housed within them can be condemned by this Department.

A schoolhouse today is composed of many other rooms besides those which are given over to academic training. In primary schools there are the executive offices, some have auditoriums and gymnasiums. Then there is the kindergarden with its extensive recreational apparatus. In secondary schools there are beside the classrooms, executive offices, comprising the offices of the principal, sometimes the superintendents, the nurse's, the vocational guide; dean of girls, the doctors, and the secretarial staff. Even in the very small schools some provision is made for these officials of a modern school organization. Then there is the auditorium, the gymnasium and rooms for the Manual Training and Household Arts courses.

Through schoolhousing is more complicated than in the period when Horace Mann was secretary of the Board of Education, the phases of schoolhouse planning, which Mann considered important are given similar emphasis in the construction of a schoolhouse today. These will be discussed in the order followed in Mann's Report on Schoolhousing.

Ventilation and Warming.

Any source of heat may be used in warming a schoolhouse, providing it does not contaminate the air in the building or interfere with any health, fire, or building ordinance. The common source is a boiler or series of them developing steam which is conducted throughout the building to radiators located in the rooms and corridors. In the class room there are two of them, each a few feet away from the ventilating apparatus and on the outside wall of the classroom. These radiators are usually enclosed around the sides with insulated shields so that pupils in seats adjacent to them are not overheated. The radiators in the corridors are either in the walls or along the side.

The law requires that the classroom temperature be maintained at 68 degrees F. In the construction of a schoolhouse today, thermostats are located in the inside wall of the room about five feet above the floor and they are adjusted to maintain the room temperature at the required level. The temperature of corridors, stairs, halls and gymnasiums must be 60 degrees F.

Every system of ventilation must be capable of supplying thirty cubic feet of fresh air per minute for each pupil in the room, and the removal of an equal volume of air through openings provided for that purpose. In assembly halls the supply and removal of air must be equivalent to two and one half cubic feet per minute for each square foot of floor space. In gymnasiums the supply and removal of air must be one and one half cubic feet per square foot of floor space, per minute. The ventilating apparatus must be fire proof in its construction. The vent

flue, carrying off the respired air is controlled by an adjustable damper.

The ventilating apparatus as indicated above is located on the outside wall between the two radiators. There are two common types used. One is an air conditioner. This, in appearance, is a large steel box with rounded corners containing a mixing chamber at the bottom, a filter above this, and a suction chamber over all. The air from the room enters the mixing chamber, reconditioned, drawn up through the filter by the fans at the top and discharged into the room. As often as outside air is needed it is drawn into the mixing chamber.

The other type, resembles that just described except that the fans are located in the bottom and draw in the air from the outside. This air passes through a filter, past a heating coil, and is discharged into the room.

On the other side of the room, usually in the rear, is the vent flue and the impure air passes out to the outside through this.

Size

As indicated above many more departments and functions have come to be a part of a schoolhouse today. For that reason primary and secondary schoolhouses are of a considerable size, even in the small communities, when compared with the schoolhouses of 1837 and 1848.

One feature of schoolhousing today, worthy of mention is the fact that small school buildings cannot be economically maintained or operated. Several towns have combined with others to establish a school so that the benefits of a good schoolhouse

might be experienced by the children. This is particularly true of secondary schoolhouses.

Various shaped buildings are constructed today. Some are in the shape of an H, others follow an E, more follow a T, and many follow an L. Whichever appears well on the site chosen is adopted. Primary buildings are usually one or two stories high, secondary seldom more than three. Provision is made for an extension of the school in the event that it becomes necessary.

The basement must be well lighted and if it is ten feet or more in height it may contain the gymnasium. Many of the new schoolhouses do not include a basement, the boiler room alone being placed under the first floor.

The first floor contains the executive offices, the school nurses, the doctors offices, as well as the secretarial staff. In addition to that there is the auditorium and class rooms, some schoolhouses have a lunchroom on this floor. The second floor contains classrooms, a library, and in secondary schools there is usually a third floor which contains the science rooms, drawing rooms and frequently the domestic arts rooms.

On the first floor there must be a corridor running the length of the school and with egresses at each end. The doors at each end must open outward and be controlled with safety latches.

The ceilings must be eleven feet high. In any new schoolhouse the ceiling is made of porous material which absorbs the sound in the room and prevents reverberations.

The walls in schoolhouses which are being built depend largely upon the particular purposes of the room. In classrooms

hard wall plaster is used. In gymnasiums a vitrified brick is most generally used. The walls of the corridors are generally constructed of pumice.

The floors are made of material which will withstand wear, gives a good appearance and is reasonably quiet. Cork is used on some, "Battle-Ship" linoleum on others, maple wood of an inch thickness on others, and Terrazzo, a combination of marble mixed with Portland cement is used on the corridors floor.

The standard classrooms varies from 23' x 26' to 24' x 30'.

Location

The size of the community is an important factor in determining the location of a schoolhouse at the present time. In the small communities it is possible to locate it centrally without depriving the schoolhouse of its essential needs. In the larger communities more care is exercised in selecting a site. The traffic conditions of certain streets makes one site unfavorable, a factory on another street prevents the selection of a site there, and unsanitary conditions in another section prevents that spot from being chosen. In the days of Horace Mann and previous to him also, there was an insistent demand from most of the people to locate the schoolhouse centrally. Today such a selection is important to a relatively few people. With the means of transportation improved to a high degree it is not necessary that the schoolhouse be located at an exact geographical center.

The important consideration which location receives today is based on the desire to obtain an extensive piece of land which may be ornamented and part of it used for a playground,

and recreational purposes. In the towns and cities of this state transportation is furnished when the schoolhouse is located at an unreasonable distance from a pupils home. In cities well spread out and only one high school, tickets on the bus or street car are furnished pupils at a reduced rate. Then, too, the family car is often used to transport the pupil to and from school. That this is done extensively in some centers is indicated by the fact that many towns and cities have had to provide parking sites for the pupils cars.

Lighting.

In schoolhouses which are being constructed and in all others that are required to adhere to the State regulations; windows shall have not less than one square foot of glass to each five square feet of floor area, and the top of the windows shall be not more than eight inches below the ceiling. Rooms that are lighted from one side cannot be more than two and one third larger than the height of the room.

All modern school buildings do not permit the pupil to face the light. The accepted method is to have the light come from one side, preferably over the left shoulder. A front light impairs the vision, and provides a strain which causes a headache. When it comes over the left shoulder shadows are avoided.

In order that the pupil will not be bothered by cross lights, or any other lights in the background, no white, very light colored, glaring or glossy walls are included in a schoolhouse that is constructed today. The wall colors which have a neutral effect upon the eyes, such as buff, are acceptable. In planning a schoolroom today the rooms are matched as near to

nature as is possible. The ceiling, of a bright or glossy color which reflect light upon the pupils, walls of a buff, cream or a light green color, and a dark floor, are desirable features of a schoolroom and typify the natural world in which the child lives. The paper and textbooks which are used in the schools today are usually of a dull rather than a glossy finish.

In providing for artificial light the ceilings are wired for outlets which will furnish sufficient light and provide for even diffusion. This light is usually thrown onto the ceiling and reflected onto the pupils.

The corridors are lighted by the doorways at the two extremes, by windows when it is possible and sometimes by light walls.

Desks formerly finished in a light color, since it was thought that this method would increase the brightness of the room, are not given such a surface in the rooms of the new schoolhouses. Today desks are finished in a dark, soft toned and non-reflecting surface and in this way antagonistic light is excluded.

Proper lighting is regarded as an essential part of school-house planning today and every effort is made to provide the most satisfactory amount and type of it.

Desk and Seating.

In Massachusetts the aisles in class and recitation rooms must be one foot and five inches in the center. The wall aisles next to the windows must be three feet wide and the other wall aisles must be two feet and six inches.

The number of seats in a room varies from thirty to forty

five in the ordinary classroom. In some lecture rooms there is a larger number of them.

In the schoolhouses of today individual desks with individual seats are provided, some of them being adjustable to the height of the pupil, in other schools they are merely of two sizes. Some of these are attached to the floor, and such a type is favored by the Department of Public Safety. In another style the desks and seats are attached to one form, and this type, known as a movable desks and seats, can be placed in any position in the room.

The desks are sloped on the top, eliminating the tendency to lean forward or stoop which is found when a level top desk is used. This sloped top permits the pupil to sit erect without the clarity of his vision being affected. It permits the correct posture in writing, the hand being brought in proper relation to the eye since it is the elbow rather than the back or neck which is bent.

The seat is regulated to a satisfactory height so as to prevent any pressure when the feet are resting on the floor. It should be low enough to permit the pupil to move his feet freely. The responsibility for correct seating depends upon the teacher. She is required to see that each pupil has a seat in which he may sit erect, with feet squarely on the floor. The forward edge of the seat is well rounded with a downward curve at the front edge. A moderate backward slope of the seats, and a slight tilt at the upper end of the back rest permits the pupil to assume a comfortable posture.

When any consideration is given to the length of time which

a pupil spends in a seat it is only reasonable to expect that special attention should be given to the correctness of the seats and desks which are used in the classroom. When such seats and desks are provided that there is no need to fear spinal or other distortions then one important phase of schoolhouse planning is well taken care of.

Playgrounds.

It is the opportunity for the development of playground facilities which is given important consideration in selecting the site for a schoolhouse. Open spaces, properly protected from rough and inclement weather, to be used for recreational purposes are an important part of the child's training. The school aims to create for every child an atmosphere which will promote wholesome living and an inspiring outlook upon the years ahead. He is taught to appreciate the leisure time which is his. The school does not stop here, but teaches him how to utilize it in recreation.

To do this work the school playground must be extensive. In selecting the site for a primary schoolhouse today five acres is considered the minimum, for Junior High Schools, ten acres is considered the minimum, and for Senior High Schools ten to twenty acres of land are satisfactory. These playgrounds are supplied with apparatus which enable the younger children to enjoy themselves a great deal more than if they were to mingle and play with older children. In high schools where a physical education means something more than setting up exercises in a gymnasium the playground has become the center for intramural sports, and more acreage is necessary than in the lower schools.

In Massachusetts there is no congestive condition in school-housing which requires playgrounds on the roof of the building, but in some sections of the larger cities of this country that is necessary. The schoolhouses of this State are indeed fortunate to possess adequate and splendid playgrounds. The athletic fields in some of the larger cities are removed a little distance from the schoolhouse, but in constructing the new schoolhouses the athletic field is developed along side the building itself.

Duties of Instructors in Regard to Schoolhouses.

The teachers are expected to give instruction in moral conduct and teach children to avoid idleness, profane and vulgar language, marking of the desks and school property. The responsibility for keeping the classrooms neat and clean rests upon the teachers. The cloakrooms in the rear of the classroom, must be kept clean and orderly.

When a desk is broken, or has to be adjusted, the teacher makes a report to the janitor and the repairing or readjustment is done by this individual.

The apparatus must be supervised and kept in good order by the teachers. Notices and articles which refer to the school directly are allowed on the bulletin board. Blackboards, when not in use must be cleaned and the teacher must see that they are washed frequently by the janitor.

Apparatus

Blackboards are an important addition to any schoolhouses. The teaching of certain subjects requires their use. In other rooms they are not so necessary and one wall blackboard is suf-

efficient.

Maps and globes are important parts of school apparatus particularly in History, and Geography.

Rooms devoted to certain subjects are supplied with apparatus with will make the subject matter clearer and the setting of the room more appropriate. This is particularly true of biology, physics, chemistry, mathematics and the languages.

In the Domestic Arts course stoves, sewing machines and the various cooking appliances are supplied.

In the Manual Arts class rooms are supplied with benches, saws, planing machines, lumber, chassis and engines for the automotive work and equipment for the sheet metal work.

The Commerical class rooms are supplied with typewriters, comptometers and in many schools a model is set up which trains the pupils in banking methods.

In the Art department, models, boards, statuary and mechanical drawing instruments are furnished. In the commerical branch of this department, paints special instruments and desks are supplied.

There is one other type of apparatus found in present schoolhouse planning which was never visualized by Mann, a school radio. This is controlled from the principals office and may be used for announcements by the principal or to present a program that is coming from outside the school. In each classroom there is a horn and at anytime through the school session it may be used for the purposes mentioned above. The new Junior High School on Maple Street in Holyoke is equipped with this apparatus.

SUMMARY

In the preceeding pages the writer has indicated that:

I. In the period from 1630 to 1831 no consideration was given to the proper planning and construction of schoolhouses. As a result the buildings of this period were unhealthy, poorly lighted, improperly heated and ventilated, unfavorably located, restricted in size, lacking apparatus, unprovided with playgrounds and furnished with inconvenient desks and seats.

II. In 1831 the American Institute of Instruction offered a prize for the best plan of a schoolhouse. This prize was awarded to Dr. Wm. A. Alcott of Hartford, Connecticut. It did not result in immediate improvement of schoolhouses, but it did inspire and influence certain individuals.

III. Among these was Horace Mann. Shortly after his election to the Secretaryship of the Board of Education Mann addressed County Conventions throughout the state. In these lectures he discussed among other educational problems the condition of the schoolhouses and recommended certain improvements. In a special communication in 1838 Mann described a model schoolhouse and included those features which should be considered in the planning of such a building. Throughout the period of his secretaryship he emphasized the need of better schoolhouses.

IV. As a result of the criticisms and suggestions of Horace Mann a large number of new schoolhouses were built and a considerable number of the old ones repaired. The value of the schoolhouses in the state increased from \$500,000 to \$2,750,000 during his term as Secretary of the Board of Education. The planning of the new and the renovation of the old schoolhouses was con-

cerned with their proper heating and ventilation, the need for a pleasant location, the necessity of a spacious building, the provision of suitable apparatus for each school group, the opportunity for recreation, the satisfactory lighting of the schoolroom, and the furnishing of comfortable seats and desks. The statement of William Fowle indicates that Mann's influence was not limited to Massachusetts, but had spread out into the surrounding states resulting in the publication of a text on School Architecture.

Finally it has been shown that the phases of schoolhouse planning which Horace Mann considered important were given equal emphasis in the planning of such a building today. No attempt is made by the author to connect Mann's influence on schoolhousing in 1837-48 to schoolhousing in 1934, but it is significant that many of his suggestions are embodied in the statutory law today. Those which are not required by the law are demanded by an enlightened people so that today considerable progress has been made towards the objective established by Mann in 1838 in his report on schoolhouses. "And what citizen of Massachusetts would not feel an ingenuous and honorable pride, if, in whatever direction he should have occasion to travel through the state, he could go upon no highway nor toward any point of the compass, without seeing after every interval of three or four miles, a beautiful temple, planned according to some tasteful model in architecture, dedicated to the whole purpose of improving the rising generation, and bearing evidence in all its outward aspects and circumstances, of fulfilling the sacred object of its erection."

BIBLIOGRAPHY

- I. New England Review, Vol. 19, Page 449.
- II. Records of Massachusetts, Vol II, page 8.
- III. Records of Massachusetts, Vol. II, page 203.
- IV. American Journal of Education, Vol. 13, page 737.
- V. Schools and Teachers of Dedham Massachusetts, Carlos Softer
- VI. American Journal of Education, Vol. 13, page 137.
- VII. American Journal of Education, Vol. 13, page 125.
- VIII. Annals of Education, Vol. 8, page 122.
- IX. American Journal of Education, March, 1868, page 135.
- X. American Society of Antiquity, Vol. 9, page 98.
- XI. Pamphlet No. 271 American Antiquarian Society.
- XII. Life of Horace Mann, Vol. II Appendix I, Mrs. Mary Mann.
- XIII. Edinburgh Review, 1846, page 495.
- XIV. Lectures of Horace Mann, by Mrs. Mary Mann.
- XV. Secretary of the Board of Education Report, 1837.
- XVI. Common School Journal, 1839, page 370.
- XVII. Common School Journal, 1841, page 167.
- XVIII. Common School Journal, 1842, page 214.
- XIX. Abstracts of the School Returns 1838.
- XX. Town Report for Groveland, 1839.
- XXI. Common School Journal, 1840, page 231.
- XXII. Abstracts of the School Returns, 1844.
- XXIII. Horace Mann Collection, Massachusetts Historical Society.
- XXIV. Common School Journal, 1846, page 271.
- XXV. Common School Journal, 1848, page 214.
- XXVI. Common School Journal, 1848, page 360.
- XXVII. Common School Journal, 1840, page 218.
- XXVIII. Common School Journal, 1842, page 74.
- XXIX. Secretary of the Board of Education Report, 1839.
- XXX. Secretary of the Board of Education Report, 1840.
- XXXI. Secretary of the Board of Education Report, 1841.
- XXXII. Secretary of the Board of Education Report, 1844.
- XXXIII. Secretary of the Board of Education Report, 1845.
- XXXIV. Abstracts of the School Returns, 1845.
- XXXV. Common School Journal, 1848, page 243.
- XXXVI. Secretary of the Board of Education Report, 1838.
- XXXVII. Abstracts of the School Returns, 1839.
- XXXVIII. Common School Journal, 1846, page 324.
- XXXIX. Abstracts of the School Returns, 1840.
- XXXX. Abstracts of the School Returns, 1842.
- XXXXI. School Committee Report of New Bedford, 1846.
- XXXXII. Common School Journal, 1848, Page 293.

ACKNOWLEDGEMENT.

The writer offers his grateful appreciation to those whose advice and experience have aided his labors. He is particularly indebted to Miss Hazel Alexander of the Forbes Library in Northampton, Mr. Harry J. Kelly of Northampton, Mrs. Reynolds of the American Antiquarian Society of Worcester, Mr. Basil B. Wood of the Massachusetts State College Library, Mr. Edward Finnegan of the Medford High School Faculty, and to Mr. Gene Mack of the Boston Globe Art Staff.

For the helpful suggestions and encouragements given by Professor Frederick M. Culter, Ph.D., Professor Christian I. Guinness and Professor Winthrop S. Welles, all members of the Massachusetts State College Faculty, many thanks are given.

Approved by:

W. W. Welles

B. D. Gumm

Frederick. Mose. Butler

Graduate Committee

Date May 4, 1934

