
**STATE NORMAL SCHOOL
SALEM MASSACHUSETTS**



FIFTY-FIRST YEAR
1904 : : : : 1905



STATE NORMAL SCHOOL — SALEM, MASS.

FIFTY-FIRST YEAR

OF THE

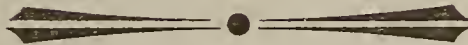
STATE NORMAL SCHOOL

AT

SALEM, MASS.



1904-1905.



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MODEL SCHOOLS.

MAUD SARAH WHEELER,	}	Fifth, Sixth, Seventh and Eighth Grades.
MABEL TOWNE BURNHAM,		
MAUDE MULLER BRICKETT,		
BESSIE JORDAN WELCH,		
MABEL LUCILE HOBBS,		Fourth Grade.
MARY ELIZABETH JAMES,		Third Grade.
DELIA FRANCES CAMPBELL,		Second Grade.
HELEN MERRILL DILLINGHAM,		First Grade.
LOUISE FARRINGTON,		Kindergarten.
ALICE MARTHA WYMAN (Assistant),		Kindergarten.

* Absent on leave.

CALENDAR FOR 1905=1906.

Spring Recess.

From close of school on Friday, March 31, 1905, to Tuesday,
April 11, 1905, at 9.20 A.M.

Graduation.

Tuesday, June 27, 1905, at 2.30 P.M.

First Entrance Examinations.

Thursday, June 29, 1905.

8.30-9.30 A.M. — Registration.

9.30-11.30 A.M. — Group I.

11.30 A.M.-12.30 P.M. — Group III.

2-4 P.M. — Group IV.

Friday, June 30, 1905.

9.30-11.30 A.M. — Group II.

11.30 A.M.-12.30 P.M. — Group V.

Second Entrance Examinations.

Tuesday and Wednesday, Sept. 12 and 13, 1905.

(Hours and order as above.)

Beginning of School Year.

Thursday, Sept. 14, 1905, at 9.20 A.M.

Thanksgiving Recess.

From Wednesday, 12 M., preceding Thanksgiving Day, to the
following Tuesday, at 9.20 A.M.

Christmas Recess.

From close of school Friday, Dec. 22, 1905, to Tuesday, Jan. 2,
1906, at 9.20 A.M.

Beginning of Second Half-year.

Tuesday, Jan. 30, 1906.

Spring Recess.

From close of school on Friday, March 30, 1906, to Tuesday,
April 10, 1906, at 9.20 A.M.

Graduation.

Tuesday, June 26, 1906, at 2.30 P.M.

First Entrance Examinations.

Thursday and Friday, June 28 and 29, 1906.
(Hours and order as above.)

Second Entrance Examinations.

Tuesday and Wednesday, Sept. 11 and 12, 1906.
(Hours and order as above.)

NOTE.— The regular weekly holiday of the school is on MONDAY, but the model schools conform to the practice of the other public schools in Salem, and have their holiday on SATURDAY. The model schools open the second week in September and close on June 30. Vacations during the school year are from Christmas to New Year's, inclusive, and for the week beginning with the first MONDAY in April.

The telephone call of the school is "Salem, 375." The principal's residence is at 285 Lafayette Street, and his telephone call is "Salem, 156-2."

STATE NORMAL SCHOOL,

SALEM, MASS.

The State Normal School at Salem was opened to students Sept. 12, 1854. It was the fourth normal school established by the State of Massachusetts. Indirectly it was the outcome of steps taken to provide a new location for the first normal school in the State, which was opened at Lexington. The old school was not transferred to Salem, but the Legislature directed the State Board of Education to establish a new one in Essex County, and this city was finally chosen as its location.

The first building of the school stood at the corner of Broad and Summer streets. Its cost, including site and equipment, slightly exceeded \$20,000. The city of Salem erected the building, and received in partial compensation the State appropriation of \$6,000, and a contribution of \$2,000 from the Eastern Railroad Company. The building was enlarged and improved in 1860, and again in 1871.

After twenty-five years the accommodations proved inadequate to meet the increased demands made upon modern normal schools. The Legislature of the Commonwealth consequently made generous provisions for a new building. Work was begun in November, 1893, and the building was first occupied by the school Dec. 2, 1896. The site, building and equipment represent an expenditure of \$300,000; and it is believed that the Commonwealth here possesses a structure as complete and convenient as any of its kind in this country. A somewhat detailed description of the building will be found on a following page.

THE SEMI-CENTENNIAL AND TRIENNIAL REUNION.

On June 30 last the completion of fifty years of school life was fitly commemorated by a public meeting held in the school building. The chairman of the Board of Visitors, Rev. Elmer H. Capen, D.D., presided, and made a brief address. The chief speaker was Hon. Carroll D. Wright, late United States Commissioner of Labor, who spoke upon "The Relation of Modern Industry to Intellectual Development." Other addresses were by Hon. Herbert Parker, Attorney-General, representing the Commonwealth; Hon. Joseph N. Peterson, mayor, representing the city of Salem; Hon. George H. Martin, secretary of the State Board of Education; and Dr. Richard Edwards, the first principal of the school, who, greatly to the pleasure of all concerned, was present in unimpaired mental vigor and in surprising physical strength.

On July 1 the sixteenth triennial reunion of the teachers and students of the school was held. The attendance was unprecedented, — more than eight hundred persons testified by their presence to their interest in and love for the school. The day was almost entirely devoted to the social reunions of individuals and classes. The principal welcomed the company, and hymns written for the occasion were sung. The only formal exercises were in connection with the presentation and reception of various gifts to the school.

These gifts were: (1) a beautiful bronze memorial tablet, in honor of the third principal, Dr. Daniel B. Hagar, placed in the front of the main hall, where it will always face the students as they assemble for their daily work; (2) six beautiful pictures, hung in the room now occupied by Miss Ellen M. Dodge, the senior teacher of the school, in memory of Miss. Elizabeth Weston, one of the earliest teachers; (3) six other pictures, in memory of Miss Harriet D. Allen, who died in 1898, at the end of twenty-five years of faithful teaching in the school; and (4) two classical figures, in special memory of Dr. Hagar.

The day was thus made one of extraordinary interest, and its value is to be found not simply in the renewing of old ties, but in its inspirational effect upon the undergraduates, many of whom



THE MAIN HALL.

were present. A school cannot reach its condition of greatest service until, with its backward look upon an honorable history, it combines a look into the future.

OFFICERS OF THE SALEM NORMAL ASSOCIATION, 1904-1907.

President. — Mrs. MARY (CATE) SMITH, West Roxbury (Class XLV.).

Vice-President. — Miss JESSIE P. LEAROYD, Danvers (Class LI.).

First Secretary. — Miss MABEL T. BURNHAM, Essex (Class LXXXIV.).

Second Secretary. — Miss DOROTHEA C. SAWTELLE, Peabody (Class LXVIII.).

Treasurer. — Miss MAUD S. WHEELER, Salem (Class LVII.).

Directors. — Mrs. MARY (COMEY) TENNEY, Brookline (Class LXIX.); Miss E. ADELAIDE TOWLE, Salem (Class XXVIII.); Miss MARY J. VINTON, Cambridge (Class XLVIII.); Mrs. FANNIE (PHILLIPS) ANDREWS, Boston (Class LVII.); Miss ELIZABETH W. RICHARDSON, Salem (Class LXI.).

THE TEACHERS AND STUDENTS.

The school during its history has had four principals and seventy-two assistant teachers. The development of the model schools began in 1897, and with them twenty persons have been connected as teachers. Fifteen teachers are now required in the normal school and ten in the model schools.

More than five thousand students have attended the school, of whom fifty-four per cent. have received either certificates or diplomas. The proportion of those who complete the course has been increasing steadily in recent years.

THE SCHOOL BUILDING.

The building is located in the southern part of the city, — a section devoted chiefly to residential purposes, — in a commanding position at the junction of the electric car lines from Lynn and Marblehead. It is constructed of buff brick, with light-colored stone and terra-cotta trimmings, and it has three stories and a basement. Facing northward, it is 180 feet in length from east to west, and the two wings are each 140 feet from north to south. In the basement are located the heating and ventilating apparatus, the toilet and play rooms for the pupils of the model

schools, besides a fine gymnasium with its adjoining dressing room; the industrial laboratory, bicycle room, lunch room, and store rooms for supplies and materials.

On the first floor, in the central part of the structure, are the toilet and cloak rooms, furnished with individual lockers, for the use of the normal students. Access to this portion of the building is provided by means of two outside doors. In each wing is another entrance for the pupils of the model schools. The rooms for these schools — nine in number, besides six recitation rooms connected with them — are upon the east, south and west sides, and are all large and well lighted. Including the kindergarten, they are intended to accommodate 350 pupils.

The central portion of the second floor is occupied by the fine assembly and study room of the normal school. It is about 60 by 85 feet in size, and can accommodate 250 single desks and chairs. The remainder of the floor contains the principal's office, reception room, teachers' meeting room, retiring room, text-book room, library, and other recitation and work rooms.

The third floor is largely devoted to the various departments of science, including physics, chemistry, botany, geography, mineralogy and zoölogy. One of the features is an excellent lecture room, with seats arranged in tiers, for lectures or similar work. Two fine rooms on the north side furnish admirable accommodations for the work in drawing.

One of the most conspicuous features of the building is found in the size and lighting of the rooms. In fact, it is hard to see how the lighting could be improved. The corridors are also noticeable for their width and cheerful aspect. The windows are many and lofty, and the glass is of the finest and clearest quality.

The heating and ventilating plant is ample; the blackboards, entirely of slate, are generous in size; combination gas and electric chandeliers are provided for lighting; from the principal's office speaking tubes radiate to all the important rooms; while a program clock, with its electric appliances, regulates the movements of the school. The interior finish throughout is of handsome oak, and all the furniture of the building is in keeping. Upon the walls are many handsome pictures and other artistic decorations,



THE KINDERGARTEN.

provided by the State, by past students and teachers of the school and by other generous friends, to whom due acknowledgment is made on another page.

REQUIREMENTS FOR ADMISSION.

Candidates for admission must, if young women, have attained the age of sixteen years, and if young men, the age of seventeen years. Their fitness for admission will be determined: —

- (1) By their standing in a physical examination.
- (2) By their moral character.
- (3) By their high school record.
- (4) By a written examination.
- (5) By an oral examination.

Physical Examination.

The State Board of Education adopted the following vote March 7, 1901: —

That the visitors of the several normal schools be authorized and directed to provide for a physical examination of candidates for admission to the normal schools, in order to determine whether they are free from any disease or infirmity which would unfit them for the office of teacher, and also to examine any student at any time in the course, to determine whether his physical condition is such as to warrant his continuance in the school.

Moral Character.

Candidates must present certificates of good moral character. In deciding whether they shall prepare themselves to become teachers, candidates should note that the vocation requires more than mere freedom from disqualifying defects; it demands virtues of a positive sort that shall make their impress for good upon those who are taught.

High School Record.

It may be said, in general, that if the ordinary work of a good statutory high school is well done, candidates should have no difficulty in meeting the academic tests to which they may be subjected. *They cannot be too earnestly urged, however, to avail themselves of the best high school facilities attainable in a four years' course, even though they should pursue studies to an extent*

not insisted on, or take studies not prescribed, in the admission requirements.

The importance of a good record in the high school cannot be overestimated. *Principals are requested to furnish the normal schools with records of the high school standing of candidates.* The stronger the evidence of character, scholarship and promise, of whatever kind, candidates bring, especially from schools of high reputation and from teachers of good judgment and fearless expression, the greater confidence they may have in guarding themselves against the contingencies of an examination and of satisfying the examiners as to their fitness.

Written Examination.

The examinations will embrace papers on the following groups of subjects, a single paper with a maximum time allowance of two hours to cover each of groups I., II. and IV., and a single paper with a maximum time allowance of one hour to cover each of groups III. and V. (*five papers with a maximum time allowance of eight hours*): —

I. *Language.* — (a) English, with its grammar and literature, and (b) either Latin or French.

II. *Mathematics.* — (a) Algebra and (b) plane geometry.

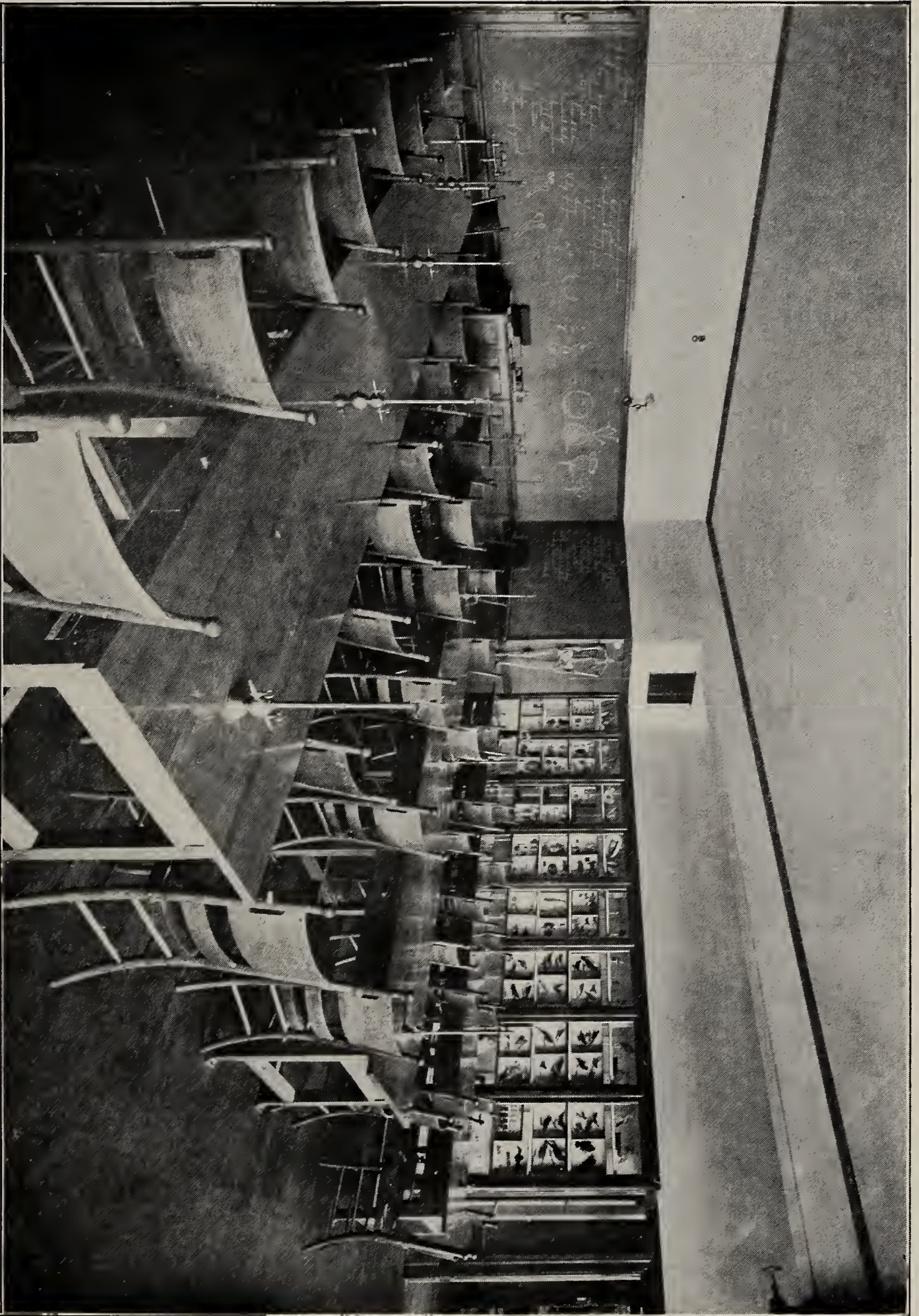
III. *United States History.* — The history and civil governments of Massachusetts and the United States, with related geography and so much of English history as is directly contributory to a knowledge of United States history.

IV. *Science.* — (a) Physiology and hygiene and (b) and (c) any two of the following, — physics, chemistry, physical geography and botany, provided one of the two selected is either physics or chemistry.

V. *Drawing and Music.* — (a) Elementary mechanical and free-hand drawing with any one of the topics, — form, color and arrangement, and (b) music.

Oral Examination.

Each candidate will be required to read aloud in the presence of the examiners. He will also be questioned orally either upon



THE ZOÖLOGICAL LABORATORY.

some of the foregoing subjects or upon other matters within his experience, in order that the examiners may gain some impression about his personal characteristics and his use of language, as well as give him an opportunity to furnish any evidences of qualification that might not otherwise become known to them.

General Requirement in English for all Examinations.

No candidates will be accepted whose written English is notably deficient in clear and accurate expression, spelling, punctuation, idiom or division of paragraphs, or whose spoken English exhibits faults so serious as to make it inexpedient for the normal school to attempt their correction. The candidate's English, therefore, in all oral and written examinations will be subject to the requirements implied in the statement here made, and marked accordingly.

Special Directions for the Written Examinations.

Group I. — Language.

(a) *English.* — The subjects for examination in English will be the same as those agreed upon by the colleges and high technical schools of New England, and now quite generally adopted throughout the United States.

1. *Reading and Practice.* — A limited number of books will be set for reading. The candidate will be required to present evidence of a general knowledge of the subject-matter and spirit of the books, and to answer simple questions on the lives of the authors. The form of examination will usually be the writing of a paragraph or two on each of a few topics to be chosen by the candidate from a considerable number set before him in the examination paper. In place of a part or the whole of this test, the candidate may present an exercise book *properly certified by his instructor*, containing compositions or other written work done in connection with the reading of the books.

The books set for this part of the examination are : —

1905. — Shakespeare's *The Merchant of Venice* and *Julius Cæsar*; *The Sir Roger de Coverley Papers* in *The Spectator*; Goldsmith's *The Vicar of Wakefield*; Coleridge's *The Ancient Mariner*; Scott's *Ivanhoe*; Tennyson's *The Princess*; Lowell's

The Vision of Sir Launfal; George Eliot's *Silas Marner*; Carlyle's *Essay on Burns*.

1906, 1907 and 1908. — Shakespeare's *Macbeth* and *The Merchant of Venice*; *The Sir Roger de Coverley Papers* in *The Spectator*; Irving's *Life of Goldsmith*; Coleridge's *The Ancient Mariner*; Scott's *Ivanhoe* and *The Lady of the Lake*; Tennyson's *Gareth and Lynette*, *Lancelot and Elaine* and *The Passing of Arthur*; Lowell's *The Vision of Sir Launfal*; George Eliot's *Silas Marner*.

2. *Study and Practice*. — This part of the examination presupposes a more careful study of each of the works named below. The examination will be upon subject-matter, form and structure.

In addition, the candidate may be required to answer questions involving the essentials of English grammar, and questions on the leading facts in those periods of English literary history to which the prescribed works belong. The books set for this part of the examination are: —

1905. — Shakespeare's *Macbeth*; Milton's *Lycidas*, *Comus*, *L'Allegro*, *Il Penseroso*; Burke's *Speech on Conciliation with America*; Macaulay's *Essays on Milton and Addison*.

1906, 1907 and 1908. — Shakespeare's *Julius Cæsar*; Milton's *L'Allegro*, *Il Penseroso*, *Comus* and *Lycidas*; Burke's *Speech on Conciliation with America*; Macaulay's *Essay on Addison* and *Life of Johnson*.

(b) *Either Latin or French*. — The translation at sight of simple prose or verse, with questions on the usual forms and ordinary constructions, and the writing of simple prose based in part or in full on the passage selected.

II. — Mathematics.

(a) The elements of algebra through affected quadratic equations.

(b) The elements of plane geometry.

While there is no formal examination in arithmetic the importance of a practical working acquaintance with its principles and processes cannot be too strongly emphasized. The candidate's proficiency in this subject will be incidentally tested in its applications to other subjects.

In geometry, the candidate's preparatory study should include



THE DRAWING ROOM.

independent solutions and demonstrations, — work that shall throw him upon his own resources; and his ability to do such work will be tested in the examination. An acquaintance with typical solid forms is also important, — enough, at least, to enable the candidate to name and define them and to recognize the relations borne to them by the lines, planes, angles and figures of plane geometry.

III. — *United States History.*

Any school text-book on United States history will enable candidates to meet this requirement, provided they study enough of geography to illumine the history, and make themselves familiar with the grander features of government in Massachusetts and the United States. Collateral reading in United States history is strongly advised — also in English history so far as this history bears conspicuously on that of the United States.

IV. — *Science.*

(a) *Physiology and Hygiene.* — The chief elementary facts of anatomy, the general functions of the various organs, the more obvious rules of health, and the more striking effects of alcoholic drinks, narcotics and stimulants upon those addicted to their use.

(b and c) *Any Two of the Following Sciences, — Physics, Chemistry, Botany and Physical Geography, provided One of the Two is either Physics or Chemistry.* — The chief elementary facts of the subjects selected, so far as they may be presented in the courses usually devoted to them in good high schools. It will be a distinct advantage to the candidate if his preparation includes a certain amount of individual laboratory work.

A laboratory note-book, with the teacher's endorsement that it is a true record of the candidate's work, will be accepted as partial evidence of attainments in the science with which it deals. The original record should be so well kept as to make copying unnecessary.

V. — *Drawing and Music.*

(a) *Drawing.* — Mechanical and free-hand drawing, — enough to enable the candidate to draw a simple object, like a box or a pyramid or a cylinder, with plan and elevation to scale, and to

make a free-hand sketch of the same in perspective. Also any one of the three topics, — form, color and arrangement.

(b) *Music*. — Such elementary facts as an instructor should know in teaching singing in the schools, — including major and minor keys, simple two, three, four and six part measures, the fractional divisions of the pulse or beat, chromatics, the right use of the foregoing elements in practice, and the translation into musical notation of simple melodies or time phrases sung or played.

Division of Examinations.

Candidates may be admitted to a preliminary examination a year in advance of their final examination, provided they offer themselves in one or more of the following groups, *each group to be presented in full*: —

- II. Mathematics.
- III. United States history.
- IV. Sciences.
- V. Drawing and music.

Preliminary examinations can be taken in June only.

Every candidate for a preliminary examination must present a certificate of preparation in the group or groups chosen, or in the subjects thereof. (See blank at end of this catalogue.)

The group known as *I. Language* must be reserved for the final examinations. It will doubtless be found generally advisable in practice that the group known as *IV. Science* should also be so reserved.

Candidates for the final or complete examinations are earnestly advised to present themselves, as far as practicable, in June. Division of the final or complete examinations between June and September is permissible, but it is important both for the normal school and for the candidate that the work laid out for the September examinations, which so closely precede the opening of the school, shall be kept down to a minimum.

Equivalents.

Persons desiring to enter the school, whose course of study has been equivalent to, but not identical with, the requirements of admission are advised to correspond with the principal. Each

case will be considered upon its merits, and in deciding the question of admission there will be a serious effort to give all the credit that is due. Experience in teaching, according to its amount and kind, is regarded as very valuable.

Special Students.

College graduates, graduates of normal schools, and other persons of suitable attainments, also those who have had considerable experience in teaching, may by arrangement with the principal select a year's work from the regular program. If this work embraces not less than twenty recitations periods per week, and includes the course in advanced pedagogy, the student will receive a certificate for the same upon its satisfactory completion.

Prompt and regular attendance is exacted of special students, as well as of those in the regular course.

A definite statement of the applicant's purpose in desiring to enter the school is required, and those who do not intend to remain at least one half year are requested not to apply.

The design of the school does not include the admission of transient students, for the purpose of taking partial or special courses, except in cases which are really exceptional. Personal culture for its own sake is not the end for which the school receives its students. It exists and will be administered for the training and improvement of teachers, and all its facilities will be put to their utmost use for the advantage of teachers. Thus, during recent years, many teachers have been allowed to attend the exercises in selected departments, — so far as the privilege could be granted without injury to regular class work, — although their names have not appeared in the catalogue as students.

In other cases it is sometimes found possible for those who have had experience in teaching, without a previous normal course, to enter the school and derive great benefit from a half year's work. Some of our most earnest students have been of this class. But special students who do not intend to identify themselves with the school are not desired. Neither is there room for those who do not have a serious purpose of study and self-improvement, but who wish rather to secure a brief nominal membership in a normal school, in order to obtain a better position.

Students from outside the State.

Non-residents of this Commonwealth who are able to satisfy the requirements for admission may be admitted as students on payment of fifty dollars per year, of which sum one-half is payable at the beginning of the year, and the other half at the middle of the year.

Elementary Course of Study.

The elementary course of study is designed primarily for those who aim to teach in the public schools below the high school grade. It comprises substantially the following subjects: —

I. The study of the educational values of the following subjects, and of the principles and methods of teaching them: —

(a) English, — reading, oral and written composition, grammar, rhetoric, English and American literature.

(b) Mathematics, — arithmetic and book-keeping, algebra, plane geometry.

(c) History, — history and civil polity of the United States and of Massachusetts.

(d) Science, — physics, chemistry, mineralogy, botany, zoölogy, geography, physiology and hygiene.

(e) Drawing, vocal music, physical training, manual training.

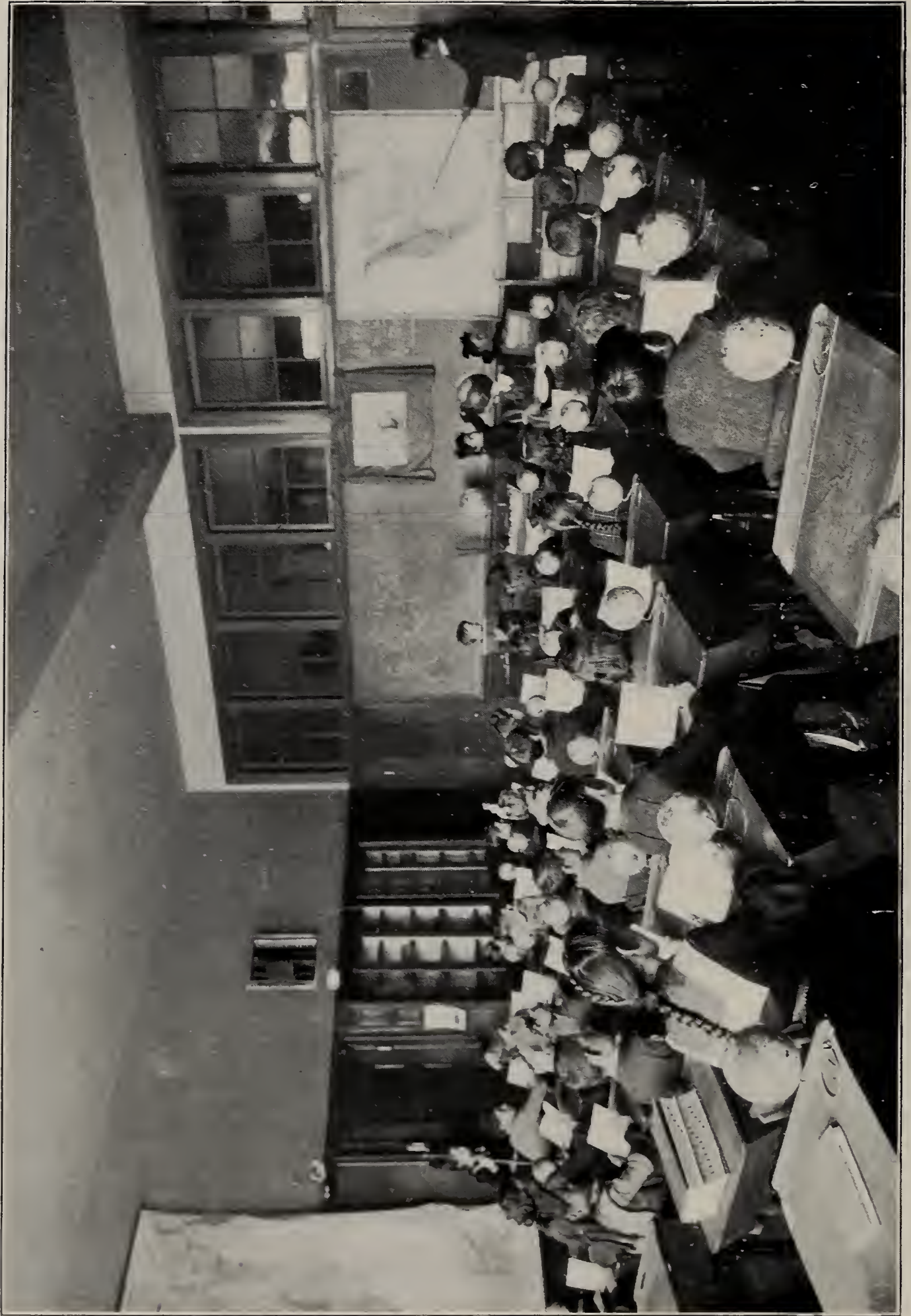
II. (a) The study of man, body and mind, for the principles of education; the study of the application of these principles in school organization, school government, and in the art of teaching; the history of education; the school laws of Massachusetts.

(b) Observation and practice.

The time required for the completion of this course depends upon the students. It may not exceed two years for those of satisfactory preparation and superior ability; for others, three years are needed to do the work properly. In many cases more than two years are insisted upon. A diploma is given when the course is satisfactorily completed.

Conditions of Graduation.

The school does not accept the satisfactory accomplishment of the class work required as constituting a complete title to a diploma. While the fact is recognized that predictions regarding



GRADE VI. — MODEL SCHOOL.

the success or failure of normal school students as teachers always involve a greater or less degree of uncertainty, it is nevertheless felt that the school owes its chief responsibility to the Commonwealth. Its duty is not fully discharged by the application of academic tests; certain personal qualities are so essential and their absence so fatal to success in teaching that the candidate for graduation must be judged in part from the standpoint of personality.

It is the aim of the school — and this is insisted upon year by year with increasing strictness — not to bestow its diploma upon those who are likely to be unable in ordinary school work to use the English language with ease and correctness. The power of the student to teach, so far as that can be ascertained and judged, is of course an essential element in the problem, and those who are manifestly unable to do so will not be allowed to graduate, whatever their academic proficiency may be.

THE MODEL DEPARTMENT.

[Miss PAINE, Critic.]

In co-operation with the school committee of the city of Salem, the State normal school maintains in its building a system of model schools, beginning with a kindergarten, and intended to train pupils to the point of entering the local high school. The system is now complete, and the second class, consisting of fourteen members, graduated last summer. The teachers are nominated by the principal of the normal school, with the approval of the Board of Visitors, and they are elected by the city school committee. The assignment of pupils is in the hands of the local authorities, and the children do not constitute a picked company.

The aim has been to secure in these schools as nearly as possible the actual conditions existing in public schools of a high class. It is an essential part of the plan upon which they are conducted that they are to be kept at a reasonable size. The school-rooms themselves are of ample dimensions, well lighted, thoroughly ventilated, furnished with approved furniture and other appliances for work, and provided with sanitary conveniences of the best kind. By the generosity and interest of many parents they are also provided with beautiful decorations.

In planning the instruction in these schools the aim is to connect it as closely as possible with the work in the normal school, to the end that the art of teaching may here exemplify the theory in which the normal students are taught. About half of the instruction from the fifth grade upwards is arranged upon the departmental plan, and a large part is either supervised or actually given by normal school instructors.

The critic teacher devotes her entire time to supervising the normal school students in their relations to the model schools. Her intimate acquaintance with the work of the schools in their various departments and her duties as a supervisor make it easy to guard in the most efficient manner the interests of the children. The regular teachers are selected solely by reason of their efficiency, and the facilities whose use is made possible by the connection between the model schools and the normal school are put to their greatest service. While nothing is allowed to stand in the way of obtaining the most satisfactory results, it is believed that both directly and indirectly the students of the normal school derive great advantage from their association with the teachers and pupils of the model schools.

Second Graduating Class of the Model Schools.

Leslie Joseph Bartlett.	Henry Bushby Hathaway.
Beatrice Prescott Batchelder.	George Woodard Lane.
Neal Bridgman.	Alice Marion McGee.
Henry James Callahan.	Marion Lou Merrill.
Albert Wallace Chisholm.	Nathan Edward Merrill.
Elva Dawn Edgecomb.	William D'Arcy Millea.
Grace Dorothy Flint.	Elizabeth Roche.

AIM AND SCOPE OF THE COURSE OF STUDY.

English and American Literature.

[Miss DODGE, — Miss BAKER.]

Four periods per week throughout the first year of the course are devoted to this work. This assignment of time is based upon the belief that literature constitutes a very important branch of one of the great divisions of thought-giving material, and that it is worthy of an earlier and more extended treatment than it commonly receives in the public schools. It is believed that it is rea-

sonable to expect a marked growth of appreciative power and insight from the high school graduates who constitute the junior class in this school. It is difficult to estimate justly and surely the increase of such ability, but the prime aim is to promote it.

Such a result will make the future teachers more inspiring and helpful to their pupils; and, while the course cannot fail to broaden the acquaintance and sympathy of the normal students with all kinds of good literature, the methods of using the same in all kinds and grades of schools will not be overlooked.

Believing that literature should and will hold a more prominent place as subject-matter in school courses of study, there will be an attempt so to conduct this department as to formulate a course in literature suitable to the interest and profit of children in the primary and grammar schools. This attempt has often been made, but there is hardly as yet so general an agreement that valuable results may not be expected from further consideration and experiment.

English Language and Grammar.

[Miss LEAROYD, — Miss DEANE.]

In the second year three periods a week are devoted to English. An effort is made to interest the students in the systematic study of English, and to arouse in them an appreciation of the value of a skilful use of language both in speech and in writing.

In the first part of the year the different forms of discourse and the principles which govern their construction are considered, and illustrated by selections from good authors and by the work of the students themselves. The class are required to give short talks and to write themes which involve explanation, description and narration. Frequent oral and written criticisms are required from the members of the class, to the end that they may be trained to judge the work of others intelligently and justly. The students gradually assume the responsibility of the work in the classroom, and thus gain skill in planning, confidence in discussion and ease in speaking.

Suggestions are constantly given as to the subject-matter and methods to be used in the lower grades, in order to guide pupils in the knowledge and use of English. In the model schools the students have the opportunity to see the practical application of

some of these suggestions. A course of study is planned with the class, so that they may see the relation of parts of the work to one another, and the progress made from year to year.

In the second half of the year sentences and words receive attention. The requirements of good sentence structure and of "good use" as applied to words are considered. Students are urged to improve their use of English, both for their own sake and for the sake of the pupils whom they will have in charge. Grammar is also studied at this time. The analysis and synthesis of sentences precede the study of the parts of speech in detail. It is intended that the class shall be thoroughly grounded in the elements of grammar, and understand the aims in teaching grammar and the best means of accomplishing these ends.

Reading and Voice Training.

[Miss ROGERS.]

The work of this department is two-fold: (1) the personal training and culture of the student; (2) the training in methods of teaching reading in primary and grammar schools.

During the first year the work is directed toward the personal improvement of the student. The selections for oral reading lessons are taken from the authors studied with the teachers of literature. This is an attempt to impress, in a practical way, the fact that appreciation of the beauty and meaning of literature is the basis of intelligent reading. Three purposes are kept in mind: to develop the power of getting the thought of an author, to create a desire for revealing it to others, and to acquire skill in its expression.

In the second year attention is directed to the pedagogical aspect of the subject. Students are not taught to depend upon one "method" of teaching reading. The aim is rather to familiarize them with typical methods, as the alphabetic, word and phonetic, and to give them certain practical tests by means of which any popular system may be examined and judged. It is hoped in this way to lead students to be broad-minded enough to teach with enthusiasm any method now in use, knowing that success depends upon the sympathy and wisdom of the teacher, rather than upon the method. Schools in which various methods are used are vis-

ited by the students, who report observations to their class-mates. Text-books are reviewed, programs for reading and literature in the grades are examined, and several books treating of reading and the voice are read. Typical lessons on the use of the dictionary and reference books are presented. Some practice is given in story-telling and interpreting poems to children. Phonetics from the teacher's standpoint is studied in connection with Professor Robbins's pamphlet on that subject.

During both years of the course a small amount of time is devoted to vocal gymnastics and the mechanical side of reading.

Elementary Latin.

A course will be offered annually, if a reasonable number of students desire it, for the benefit of special and advanced students who wish to be prepared to teach Latin in the upper grades of the grammar schools. Three years of good work in Latin will be necessary for those who take the course, and more is desirable. It is intended that the course deal chiefly with methods of teaching, and with that purpose in view the amount of previous study, above indicated, will be assumed.

Elementary Numbers and Arithmetic.

[Miss BAKER.]

These two courses extend throughout the senior year, the first half being devoted to the primary work and the second to that which is more advanced.

Elementary Numbers. — As concepts result from an acquaintance with visualized form, this work is based entirely on objects. Number is the measure of quantity. Quantity is symbolized in geometrical material, and measuring is the controlling element of the system. The units of measurement are the inch, square inch and one inch cube, the objective work thus being put into the three realms of length, surface and volume. All abstract combinations are preceded by constructive effort, and, in fact, construction goes hand in hand with measuring in forming the basis of the system.

Advanced Arithmetic. — This subject is understood as including percentage and the applications of percentage, mensuration prop-

erly belonging to geometry, and evolution and involution to algebra. Hence commission and brokerage, banking, stocks and bonds, and interest, are some of the important parts of the work. It is not the purpose to treat these topics after the manner of a commercial school, neither is it intended to deal with them in an impractical way, inconsistent with that of the business world. The aim is to treat them as they occur in actual transactions, irrespective of text-book boundaries. It is believed that the financial column of a newspaper should not be wholly unintelligible to a pupil leaving the grammar school.

Students are required not only to give teaching exercises in their classes in the normal school, but also to present the same exercises to classes in the model schools.

Geometry.

[Miss MARTIN.]

The course is planned to include (1) a review of demonstrative geometry and (2) a detailed study of concrete or observational geometry. The two are carried along together.

In the demonstrative work special attention is given to securing exactness in reasoning and in expression and to helping students towards that mastery of the subject which may reasonably be expected of teachers in the elementary schools. In this connection the origin and development of the science are made a matter of study, and the scope and plan of the ordinary text-book in geometry are noted. The general object in this part of the work is to confirm and supplement and make exact the student's knowledge, to broaden his outlook, arouse fresh interest, and awaken a sense of the teacher's responsibility towards the subject.

The course in concrete geometry develops the elementary definitions, and such of the simpler truths of the science as lend themselves to objective treatment. A topical outline in the hands of students furnishes a basis for discussion of methods of work and the selection and arrangement of material. The leading text-books in this department are reviewed, and to some extent practically tested. Laboratory work and field work are prominent features. The general aim is to put students in possession of approved methods of teaching in elementary schools those parts of geometry which by general consent are adapted therefor.

Algebra.

[Miss MARTIN.]

The general purpose is to review and supplement the student's knowledge of the subject-matter, and to establish clear and simple methods of teaching the more elementary topics. This involves (1) a thorough study of the processes underlying the solution of simple equations and the simpler forms of quadratics, (2) the discussion of methods of solution of equations of these types, and (3) the discussion of problems involving such equations, together with devices for making real to a class of beginners the conditions of a problem. The aim is to develop facility in algebraic operations, to give an intelligent grasp of the subject-matter, and to form the habit of regarding it from the teacher's point of view.

United States History.

[Miss DEANE.]

The study of United States history is taken up in the second year of the course. Sufficient work is done to indicate the right methods of teaching and studying history in general. The time does not permit the entire field to be thoroughly covered, but with this limitation, for purposes of illustration selected periods and events are studied. The aims are to show the students how to increase their own knowledge of the necessary subject-matter, and to demonstrate the suitable method of procedure in the public schools.

The work follows a topical analysis. These topics are developed in various ways, — sometimes in more detailed outlines, again as recitations, and sometimes as written themes or oral debates, or by the aid of questions.

An acquaintance with the works of standard authors, with the best methods of research, and with the proper manner of study, is sought. The school library is well equipped with reference books, and desirable additions are constantly being made. The students are also encouraged to make use of material from the public libraries at their own homes, and of the historical museums which are easily accessible.

Topics of current interest are given attention, and thinking

along lines of public welfare is encouraged. The elements of civil government have their place in the outlined course, and the attempt is made to render all work in this field as practical as possible.

Chemistry and Physics.

[MR. ADAMS.]

Objects. — (1) Training the student to observe; to express what has been observed. — orally, by writing and by drawing; to draw correct conclusions from his own observations and from data collected by others; to follow directions; to manipulate apparatus skilfully; to acquire habits of carefulness, accuracy and neatness. (2) An acquaintance with the most important facts of the science; certain laws and principles based upon these facts; some practical applications of these principles in machines and appliances useful to man; a knowledge of certain manipulations and processes, and the properties, uses and manufacture of the more common elements and compounds. (3) Familiarity with the method of teaching by experiments; the art of correct questioning; ability to stand before others and guide their thinking.

Means. — The ends enumerated are secured by a course of experiments selected and arranged so that most of the work can be done by each individual. Each student is provided with a notebook, and has a separate compartment at the laboratory bench. The chemical laboratory is equipped with slate tables, hot and cold water and individual fume closets. The physical laboratory is arranged for experiments in quantitative work. Both laboratories connect with a large lecture room, provided with roller shutters for darkening the room, and an electric lantern.

The students have considerable practice in teaching before their classmates, and in examining them on the experimental work.

While a part of the work is qualitative in nature, a considerable amount of quantitative work is done in both subjects, to give skill in accurate measuring and weighing.

Constant emphasis is laid upon the necessity of viewing the work from the stand-point of the teacher. This practice gives professional value to the course, which cannot be obtained by work that is wholly academic.



THE BOTANICAL LABORATORY.

Geology.

[Mr. MOORE, — Mr. ADAMS.]

The course in geology is of a rather general character. It aims to give a broad view of earth phenomena. While some familiarity with the technicalities of the science is sought, the emphasis is placed upon the knowledge which will be valuable to teachers in the public schools. Incidentally, the training and experience gained in this work are found helpful in the next year in the study of geography. The course includes a study of minerals, rocks, soils, glacial phenomena and river and wave action.

The work is planned from the standpoint of the mature student, but its application to the teaching of children is never lost sight of. For this reason, the formal, logical order in which the elements of a science are usually presented in secondary school textbooks finds a place, if anywhere, only in summaries and reviews. The work proceeds instead in the more natural order in which the study of earth processes ought to be pursued with children.

The locality in which the normal school is situated offers unusual advantages for the study of earth forces and earth materials. Out-door lessons are given, to show how to discover and interpret geological and geographical phenomena. These lessons not only prove valuable in stimulating the powers of observation, but they illustrate the kind of work which it is hoped will sooner or later find its way into the elementary schools.

Botany.

[Miss LEAROYD.]

The course aims to suggest how to study plants in a simple and interesting way with children, rather than to give a thorough knowledge of the science of botany; although an effort is made to teach the subject accurately and systematically, and as thoroughly as the time will allow. Continuing the subject throughout the year gives an opportunity to study plant life in all its phases.

First the students are trained to cultivate the power of observation and of expression, by examining specimens in the laboratory and reporting the results of their observation. Discussions in the class room show them where they have failed to observe keenly,

and how they may draw inferences by comparison. Occasional field trips arouse their enthusiasm, and show them the necessity of an intimate acquaintance with plants in their natural surroundings. In general, the classification of plants, their life-history and their relation to their surroundings receive attention. Considerable work is done with the microscope, and a good variety of books is supplied to supplement the work in the field and in the laboratory. A close relation is maintained between drawing and plant study.

As soon as students have gained power in acquiring information from material at hand and from books, they are instructed how to convey it to the class in an informal, logical and interesting manner. They are then taught how to lead a class of beginners to observe from specimens by giving directions and asking questions, and during the last six months they give most of the lessons in the class room.

Whether the students are capable, at the end of the year, of leading children to gain an acquaintance with nature, depends in large measure upon the spirit in which they have undertaken and accomplished the work.

Geography.

[MR. MOORE.]

The course in geography is primarily a study of methods of teaching. The insufficient preparation of the pupils and the lack of time in this course limits the work, however, to the most fundamental topics. But whether it be in the acquisition of facts which serve as the basis for the professional discussion, or in the specific problem of how to present a lesson to children, right methods of teaching are emphasized.

This school possesses many advantages for the study of geography. The building is most favorably situated in a locality rich in geographical illustrations. In one direction are found the agricultural and pastoral conditions typical of a rural community, and in another the important industrial and commercial features of city life. The influence which the natural features exert upon the life of the people is clearly shown, and the home locality epitomizes the geographical relations existing throughout the world.



THE GEOGRAPHY ROOM.

Another advantage is the close connection which exists between the normal and model schools. What is actually done in the classes of children taught and supervised by the normal school instructor is made the basis of professional discussions. A marked result is the intimate agreement which exists between theory and practice.

Geography is a study of relations. In all the work, therefore, in both the model and normal schools, prominence is given to the control which relief and climate exert upon the life of the people. At every point the understanding is called upon to aid the memory, and geography thus changes from a subject furnishing only information to a study in which reasoning holds an important place.

In the study of the home locality the fundamental principles which underlie the teaching of all geography receive a comprehensive treatment. In fact, as the home locality illustrates to a greater or less degree the world in miniature, so the teaching of the local surface features exemplifies the methods to be followed in the study of the whole earth as the home of man.

The intelligent reading of maps and the full use of good pictures are, next to a study of the home locality, the most important topics of a general nature in this course. The successful interpretation of the map symbols, in fact, depends upon the thoroughness with which the study of the home locality has been pursued in connection with the local map, and upon the close association which has been made between the pictures of distant places and their symbolic representation. To read a map intelligently is to know geography.

Biology.

[MISS WARREN, — MISS GOLDSMITH.]

The purpose of the work in biology is to give the students as clear an idea of evolution as is possible in the time allowed, and to lay a broad foundation for a comprehensive understanding of the study of human physiology.

For the accomplishment of this purpose the course begins with the lowest forms of animal life, and continues with the more complex organisms in the order of their development.

In each stage of development the characteristics of type forms are emphasized. Allied forms are considered in connection with the type forms.

In the laboratory, by dissection and careful observation, both external and internal organs are studied with reference to their structure, position, relation and function, together with the special office of each in the animal economy. Additional knowledge is gained by reading and drawing.

There are frequent discussions of the problems of heredity, of environment and adaptation to environment, and of the survival of the fittest. These lead to a clearer insight into the forces at work which influence the life and structure of the various forms of the animal kingdom.

Practice in the application of the principles taught is intended to prepare those who are to become teachers to meet the requirements of the public schools.

The fine collection of specimens at the Peabody Academy of Science affords unusual facilities for the pursuit of this branch of study.

In the spring opportunities are given to become familiar with the common birds and their songs.

The aim of the work in biology is to fit the normal students to lead children to love and care for God's creatures; to observe their habits more closely, thereby learning lessons in industry, perseverance, patience and fidelity; and to give them a keener appreciation of the wonders and the beauty of the abundant life with which we are surrounded.

Drawing.

[Mr. WHITNEY.]

It is the aim of this department to secure for the student as high a degree of the culture value of drawing as is practicable, and at the same time to emphasize its value in all the other departments of study. Realizing its industrial and æsthetic value to the teacher, the subject is treated in as broad a manner as the course permits.

In view of the value of illustrative drawing, and the fact that the grade teacher should draw readily and well illustrations for any

line of school work, a course in blackboard drawing has been arranged.

This course consists of a series of lessons in quick sketching upon the board of illustrations for number, nature, geography, history, reading, etc., such as are frequently demanded in the school room.

No definite outline for the various grades of the public schools is given the students, but outlines for the work in the model schools are planned from month to month, and the students have the opportunity of observing and assisting in conducting the lessons.

The courses in the other departments of the normal school, as well as the cycle of the year, dictate in a great degree the subject to be taken in the drawing and the time for that special branch.

In September the classes begin the study of color, drawing of flowers, leaves, trees, fruit and seed; also the study and drawing of birds, moths and shells. Throughout the year this method is followed, the intercourse with nature giving a keen appreciation of the beautiful.

The study of landscape drawing and composition is related to the illustrative work for literature, and the mechanical branches assist in drawing of apparatus for chemistry and physics.

The historic art and picture study are closely related to the geography and history.

In relating the drawing to the other departments, the aim is to remember the scientific value of the drawing and at the same time to emphasize the necessity of artistic rendering, the importance of good composition, proportion and unity.

As a result of the training in the normal school, there should come a broader culture, an appreciation of beauty of form and color, and some ability to express and create the beautiful; an appreciation of the practical value to the child, awakening thought, holding the attention and giving a free and spontaneous mode of expression.

Music.

[Mr. ARCHIBALD.]

The work in this department is designed to enable students to teach such principles of music as will apply to the several grades of the public schools.

Tune, time, technique and the æsthetics of music are considered. The exemplification of these subjects is observed in the model schools, and practice in these lines is afforded the student under the guidance of the regular grade teachers.

A weekly drill in carefully selected choruses is participated in by the entire school.

Physical Training.

[MISS WARREN, — MISS ROGERS.]

In the work of physical training the Swedish system of gymnastics is employed. Physical exercise has a two-fold purpose; it invigorates the body and relieves mental tension.

The floor work includes all the fundamental positions of the body, as bending, twisting, jumping, running and marching. It is supplemented by the use of apparatus, which gives added interest and enthusiasm to the work, and a greater opportunity for muscular development.

The gymnasium is provided with stall bars and benches, double boms, jumping standards, vertical ropes, a Swedish ladder and a horse.

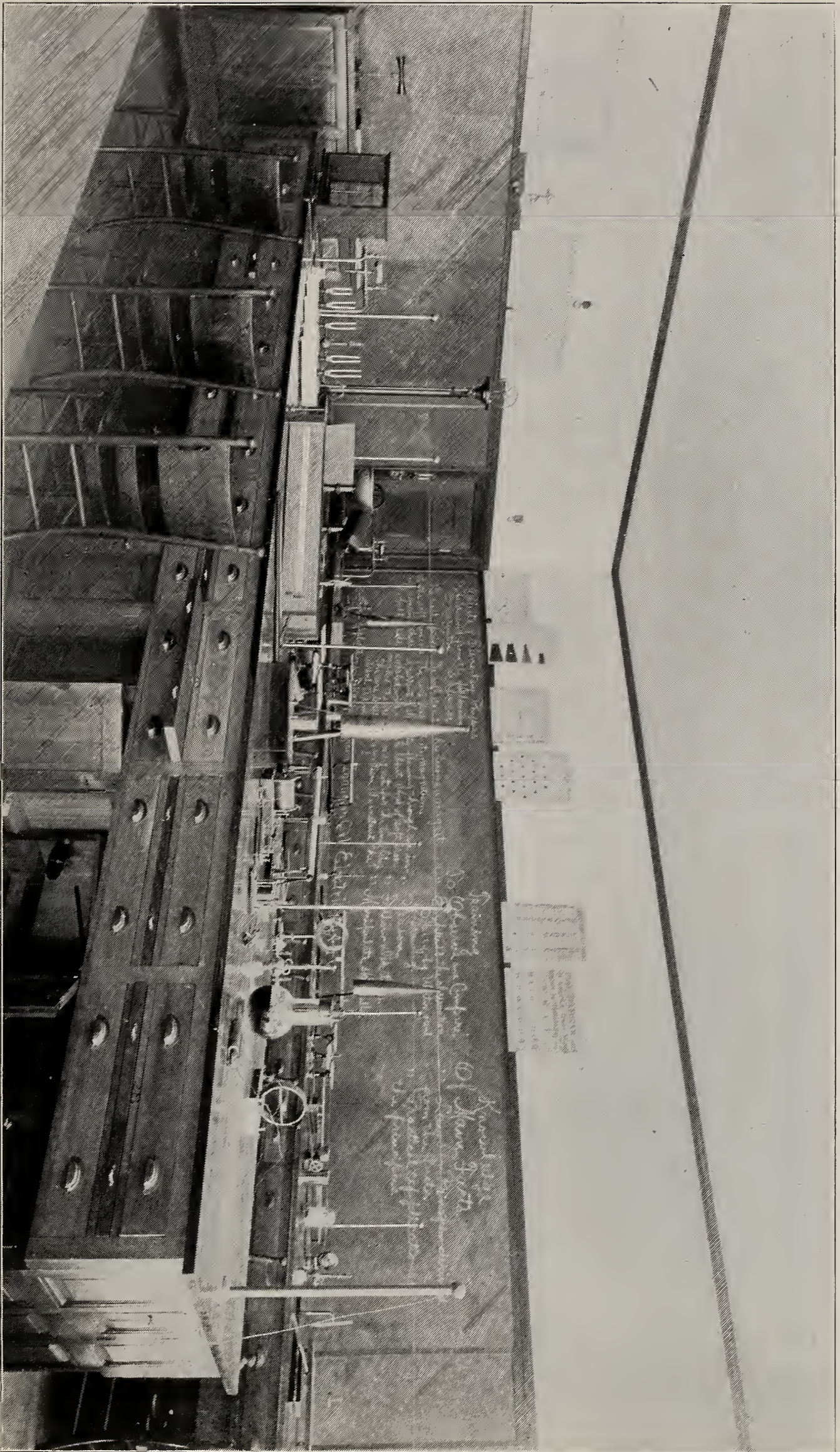
The work is varied occasionally by gymnastic games, which are calculated to develop self-control, precision, dexterity and concerted action. Rhythmic movement is a strong feature of the work.

During the senior year opportunities are given the students for conducting gymnastic exercises as practice in teaching.

Association in the gymnasium promotes a social spirit, which serves as a bond of union, and tends to give a healthy impetus to the fulfilling of the requirements in other departments of study.

The aim of the work is not only to help the student to gain a more intelligent mastery of the body, but also to train the mental and moral faculties.

The vitality and usefulness of the human body are also furthered by correct carriage, proper breathing and regular bodily exercise. Whatever, therefore, conduces to develop the chest, straighten the spine, purify the blood and distribute it to the various organs, and to improve the personal appearance generally, is a matter of vital importance.



THE PHYSICAL LABORATORY.

We cannot too strongly emphasize the fact that a sound mind in a sound body is a prime requisite for success and effectiveness in any department of life.

Psychology.

[Miss GOLDSMITH.]

The course in psychology extends throughout the junior year. The aim is to secure a clear and sufficient understanding of (1) the processes by which knowledge is acquired and elaborated, (2) the sources of interest and attention, and (3) the functions and training of the will. The development of the various faculties of the mind, and the relation of different branches of study to this process, receive careful attention. The work is done so as to secure a good grasp of what is really valuable to a teacher, rather than to spend time upon what is of only speculative interest. The various sources of psychological knowledge — introspection, observation of mental phenomena, the study of literature and physiological science — are all recognized as having important uses in the study of the human mind.

Physiology and Hygiene.

[Miss WARREN.]

The work in physiology being a continuation of the work in biology, the same general plan is followed. The main point in the consideration of the subject is hygiene.

To know how to care for the human body that the best results may be obtained, it is necessary: —

1. To consider it as a whole.
2. To become familiar with the functions of the organs and with their mutual dependence and co-operation.

The laboratory method is continued in this branch of study. The dissection of a mammal as a complete organism, and of individual organs of different animals, throws much light upon the structure and functions of corresponding organs in man.

A life-sized manikin, a human skeleton and microscopic slides are valuable aids in the work of anatomy.

Each of the following systems, the respiratory, the circulatory, the digestive, the excretory, the nervous, the muscular and the osseous, is studied in detail. The intimate relation of each system

to the others, and the importance of keeping each in a healthy condition to ensure an harmonious whole, are strongly emphasized.

In addition, attention is given to the special senses, particularly to the structure and hygiene of the eye and ear.

The effect of alcohol and tobacco upon the human system is taken up in connection with the consideration of the organs and their functions.

One practical application of the knowledge obtained in the class room is the intelligent treatment of emergency cases.

Special stress is laid upon the hygienic effects of clothing, bathing, food, sleep, recreation and rest.

As the body is the instrument through which mind finds expression, a better understanding of its mechanism and of hygiene is very important for those who are to take up the teacher's profession, that they may be instrumental in helping the young to a more harmonious and effective physical development.

Theory and Practice of Teaching.

[Dr. BECKWITH.]

The course in theory and practice of teaching, conducted by the principal of the school, extends throughout the senior year. It is intended to develop an understanding of the principles of education as derived from psychology, and of their application to school administration and to the art of teaching. The work of the students in the model schools is drawn upon extensively in the class-room discussions, and great effort is made to render the latter as practical and useful as possible. The former scope of the Saturday morning lectures will be somewhat extended. Written reports of them will usually be required. Some of them will be introductory to or summaries of various topics connected with class-room work; others will be independent and suggestive discussions of important phases of educational activities, or of subjects forming parts of the school curriculum.

At the same time there is a serious attempt to arouse in the students an intelligent appreciation of our indebtedness to great educational leaders for their apprehension of sound principles and for inspiration to the teacher's work.

The principal believes that much of the success of a teacher depends upon the ideals with which the work is undertaken. Consequently, it is no small part of the duty of a normal school to see that its students take the right attitude toward their work, that they fully understand and appreciate the nature and extent of the influence of the school upon the child, and that the duty of study and growth is one constantly resting upon teachers. This school will aim faithfully to perform its duty in these respects.

Advanced Pedagogy.

[Dr. BECKWITH.]

During next year, for the benefit of special and advanced students, the principal will conduct a class in advanced pedagogy. This will be an extension and elaboration — not a mere repetition — of his course with the seniors. This will be made a part of the work required for a certificate. The teachers who are intending to enter the school next year to take a year's special work ought to make a study, in the mean time, of James's Elementary Course in Psychology, Halleck's Psychology and Psychic Culture, or some other book of equal scope.

The course will include a survey of the educational ideals of the ancient nations, of the influence of Christianity upon education, and of the various effects of both material and spiritual life and growth; and will include special studies of the lives and works of great educational reformers.

A portion of the course will be devoted to the consideration of the development and features of the Massachusetts school system, and of the legislation of this Commonwealth upon educational interests.

Special effort will be made to acquaint the members of the class with the most helpful and rational modern publications upon pedagogy and teaching.

GENERAL INFORMATION.

The Location and Attractions of Salem.

No place in north-eastern Massachusetts is more easily accessible than Salem. It is on the main line of the eastern division of the Boston & Maine Railroad system, connecting also with the

Saugus branch at Lynn. A branch road to Wakefield Junction connects the city with the western division. There is also direct communication with Lowell, Lawrence, Haverhill, Rockport, Marblehead and intervening points. Trains are frequent and convenient. Salem is also the centre of an extensive network of electric railways. Students coming daily to Salem on Boston & Maine trains can obtain season tickets at greatly reduced rates. Trains on the Marblehead branch stop at Loring Avenue, on signal, and many students find it more convenient to purchase their season tickets to that station.

Salem is the centre of many interesting historical associations, and within easy reach are the scenes of more important and stirring events than can be found in any other equal area of our country. The scenery, both of seashore and country, in the neighborhood, is exceedingly attractive. There are many libraries, besides the free public library, and curious and instructive collections belonging to various literary and antiquarian organizations, to which access may be obtained at a slight expense. Lectures are frequent and inexpensive. The churches of the city represent all the religious denominations that are common in New England.

The Management of the School.

The matter of discipline, as that term is used with reference to school management, does not enter into the administration of this school. Each student is allowed and is encouraged to exercise the largest degree of personal liberty consistent with the rights of others. The teachers aim to be friends and leaders, rather than governors and masters. They will not spare advice, admonition and reproof, if needed; but their work in such lines will be done with individuals, and in the most helpful and generous spirit. The students who, after full and patient trial, are found unworthy of such consideration, are presumed to be unfit and unlikely to become successful teachers, and will be removed from the school. Others also, who, by no fault of their own, but by the misfortune of conspicuous inaptitude, through physical or mental deficiencies, for the work of teaching, will be advised to withdraw, and will not be graduated.

Expenses, Aid, Board, etc.

Tuition is free to all residents of Massachusetts who declare their intention to teach in the schools of this Commonwealth. Text-books and supplies are free, as in the public schools. Articles used in school work which students may desire to own will be furnished at cost. Students who come to Salem to board are advised to bring with them such text-books of recent date as they may own.

To assist those students, residents of the State, who find it difficult to meet the expenses of the course, pecuniary aid is furnished by the State to a limited extent. Applications for this aid must be made in writing, to the principal, and must be accompanied by such evidence as shall satisfy him that the applicant needs the aid. This aid, however, is not furnished to residents of Salem, nor during the first half-year of attendance at the school.

At the last triennial reunion of teachers and students a movement was inaugurated to collect a "Students' Benefit Fund," whose income may be employed to aid worthy and needy persons while pursuing their studies here. At this time the sum of \$150.15 has been contributed for this purpose. The effort will be continued.

The expense of board is moderate; two students rooming together can usually find accommodations within easy distance of the school, including light and heat, at prices ranging upward from three dollars and fifty cents each, per week. A record of places where board may be obtained is kept at the school, and reasonable aid will be given to students who are seeking boarding places. It is advisable to make inquiries some time before the beginning of the school year.

A lunch counter is maintained in the building, from which is served at noon each school day a good variety of wholesome and attractive food, at very reasonable prices.

The Library and Reading Room.

The school is well equipped with books of reference, and its general library, which is especially strong in works of history,

biography, pedagogy, poetry, and dramatic and miscellaneous literature, contains 4,207 volumes, exclusive of a large number of public documents and sample text-books covering a period of many years. The best periodicals of the day are also kept on file. There is a complete card catalogue by titles and authors, and a system of references by topics already contains several thousand cards, and is constantly being extended.

No needless restrictions are placed upon the use of the library and reading room, and the students are encouraged to resort to it freely and constantly.

Promptness and Punctuality.

1. Students living at home, on finding themselves likely to be absent more than one day, are desired to make known the fact in writing.

2. Students who are withdrawing from school must return the books and other property of the school, and receive regular dismissal. Those who fail to do so promptly must not expect at a later date any recommendation or endorsement from the teachers of the school.

3. Absences for the purpose of teaching or of acting as substitutes for more than one day must be arranged in advance. In general, absence for this purpose during the first year of a student's course will not be regarded with favor.

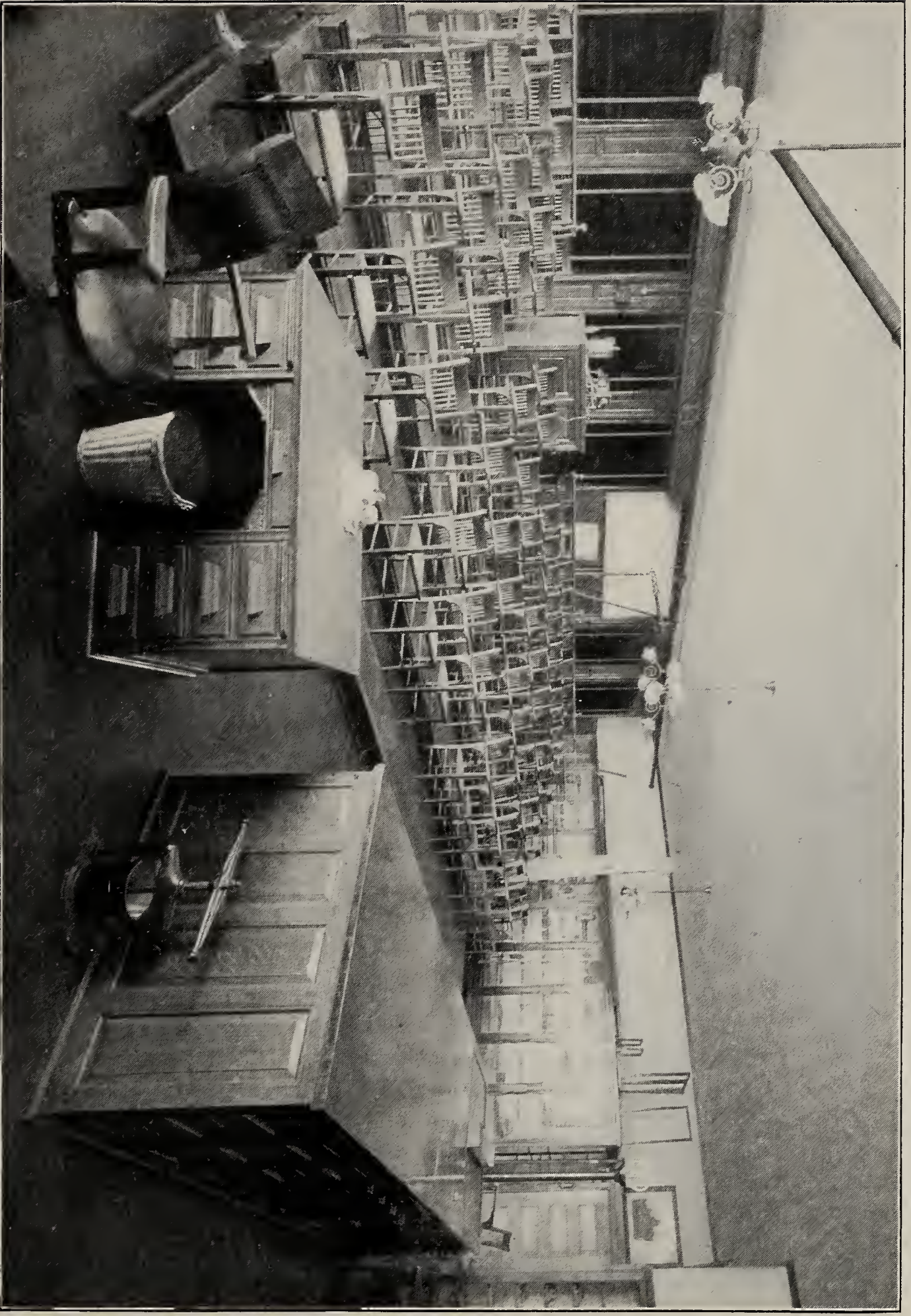
4. Students must be present at the opening of school after any recess or vacation, and must remain until all are excused.

5. Students boarding in this vicinity, away from their parents, whether over or under legal age, must keep the principal informed of their addresses. All boarding places are subject to the judgment of the principal.

6. Students boarding in Salem must not make arrangements involving absence from any school exercise without previously obtaining permission.

Lectures.

Since the issue of last year's catalogue the teachers and students of the school have listened to the following lectures: —



THE LECTURE ROOM.

1904.

- Jan. 30. "A Talk about Primitive Art." Mr. ROSS TURNER, Salem.
- April 16. "Waste in Education." Superintendent F. H. NICKERSON, Melrose.
- June 21. Annual Graduation: "Some Educational Problems of To-day," Superintendent THOMAS M. BALLIET, Springfield.
- Nov 18. "Applied Design," Mr. WALTER SARGENT, State supervisor of drawing.
- Jan. 28. "The Education of Primitive People." Dr. WILLIAM G. FROST, Berea College.
- March 4. "Keeping Good Health." Prof. JOHN M. TYLER, Amherst College.

Employment for Graduates.

The increase in the number of normal graduates employed in Massachusetts as teachers has been, especially during the past twenty years, very much greater proportionately than the increase in the whole number of teachers. But even at the present time less than one-half of all the teachers in the State are normal graduates, and the demand is annually greater than the supply; especially for the higher grammar grades there is a marked scarcity of strong candidates. This school does not undertake to guarantee positions to its graduates, but it is a fact that promising graduates are rarely without positions six months after graduation. The principal takes pleasure in assisting graduates to obtain such positions as they are qualified to fill. To that end he is glad to correspond or to confer with school authorities, or to be informed as to the degree of success which has attended the efforts of former students.

Scholarships for Graduates.

There are offered at Harvard University four scholarships, each of an annual value of one hundred fifty dollars, for the benefit of students in the Lawrence Scientific School who are graduates of any reputable normal school in the United States.

Notices to School Officials.

All interested persons, especially those connected in any way with educational work, are cordially invited to visit the school, to

inspect its building and equipment, or to attend the exercises in its class rooms or model schools at any time and without ceremony.

During the summer vacation, either the principal or some other person qualified to give information regarding the school, its work and the conditions of admission will be at the building each forenoon. Requests for catalogues are always promptly honored.

Superintendents and other school officials are requested to send to the school copies of their reports, courses of study and other publications of common interest. The courtesy will be appreciated and reciprocated.

Every person claiming to be a graduate of this school should be able to show either a diploma or a certificate to the fact of graduation. This evidence should be required in all cases.

All students of this school, since Jan. 1, 1900, who have left the school by reason of graduation, or otherwise in good standing, possess either a diploma, a certificate showing the completion of a year's work, or a certificate of honorable dismissal. The last-named paper is not to be understood as a recommendation of proficiency in scholarship or teaching ability.

CONTRIBUTORS TO THE DECORATIONS OF THE BUILDING.

The Commonwealth of Massachusetts.	The Class of June, 1891.
The Salem Normal Association.	The Class of June, 1896.
Mr. George R. Chapman.	The Class of January, 1897.
Richard Edwards, LL.D.	The Class of June, 1897.
Mrs. C. O. Hood.	The Class of 1898.
Mr. James F. Almy.	The Class of 1899.
Miss Annie M. Phelps.	The Class of 1900.
Mr. Ross Turner.	The Class of 1901.
The Class of February, 1857.	The Class of 1902.
The Class of February, 1858.	The Class of 1903.
The Class of July, 1858.	The Class of 1904.
The Class of February, 1859.	The Model School Class of 1903.
The Class of July, 1859.	The Model School Class of 1904.
The Class of February, 1860.	Certain students and friends of Miss Elizabeth Weston.
The Class of July, 1861.	Certain students and friends of Miss Harriet D. Allen.
The Class of January, 1877.	Other teachers and graduates, and others.
The Class of January, 1883.	
The Class of June, 1888.	

The following citizens of Salem have generously contributed to the decorations of the model school-rooms : —

Mrs. James F. Almy.	Mr. Frank A. Langmaid.
Mr. George A. Brown.	Mr. J. Henry Langmaid.
Mr. William O. Chapman.	Mr. Arthur L. Lougee.
Mr. Robin Damon.	Mr. William Messervey.
Mr. William H. Gove.	Mr. John M. Raymond.
Mr. George B. Harris.	Mr. Ira Vaughn.
Mrs. William M. Hill.	Mrs. Charles F. Whitney.

CONTRIBUTORS TO THE LIBRARY.

Generous contributions to the library have been made by

The Class of July, 1863.

The Class of January, 1869.

The Class of January, 1870.

The Class of January, 1874.

The Class of January, 1875.

The Class of July, 1875.

The Class of January, 1876.

The Class of June, 1876.

The Class of January, 1880.

The Class of June, 1880.

The Class of January, 1881.

The Class of January, 1882.

The Class of June, 1883.

The Class of January, 1885.

The Class of June, 1885.

The Class of January, 1886.

The Class of June, 1886.

The Class of January, 1887.

The Class of January, 1889.

The Class of January, 1890.

The Class of January, 1891.

The Class of January, 1892.

The Class of June, 1892.

The Class of June, 1894.

Mrs. Thomas Hawken.

Many teachers and others.

REGISTER OF STUDENTS.

1904 = 1905.

Graduates. — Class XC. — June 21, 1904.

Agnes Arabel Alexander,	Gloucester.
Alexa Maria Anthony,	Lynn.
May Josephine Barry,	Malden.
Florence Lillian Black,	West Somerville.
Rose Marjorie Bourne,	Salem.
Mary Evangeline Bourneuf,	Haverhill.
Mildred Cora Bulfinch,	Swampscott.
Katherine Frances Cahill,	Lynn.
Mary Margaret Callahan,	Lynn.
Jennie Winslow Carey,	Swampscott.
Hattie Cecilia Carlson,	Malden.
Theresa Elizabeth Connelly,	North Andover.
Agnes Veronica Cragen,	Salem.
Julia Lauretta Cunningham,	Lynn.
Lena Cushing,	Salem.
Helen M. Dearborn,	Everett.
Ellen Julia Delay,	Somerville.
Bessie May Dresser,	Salem.
Bessie Estelle Eayrs,	Malden.
Irene Franklin Fellows,	Ipswich.
Mary Agnes Finn,	Lynn.
Elleanor Melvina Fitzgerald,	Linden
Elsie Louise Fogg,	Chelsea.
Sarah Beulah Frost,	Malden.
Sally Garland,	Gloucester.
Fanny Irene Goodhue,	North Andover Centre.
Eugenie Goss,	Lynn.
Minnie Griffiths,	Danvers.
Nettie Isabel Haff,	North Cambridge.

Alberta Frances Hatfield,	Lynn.
Etta Howe Hicks,	Haverhill.
Marion Louise Howard,	Malden.
Edith Marion Howe,	Woburn.
Gertrude Augusta Huntington,	Newburyport.
Frances Cupples Jackson,	Malden.
Harriet Mary Jones,	Arlington.
Nellie Alice Kemp,	Chelsea.
Alice Elizabeth Lane,	Peabody.
Susan Elouise Lee,	Chelsea.
Marjorie Helen Lenox,	Cambridge.
Lizzie Adelaide Lewis,	Lynn.
Abraham Charles Lourie,	Boston.
Dora Lena Lourie,	Boston.
Eliza Procter Low,	Beverly.
Margaret Mary Mahoney,	East Cambridge.
Winnifred Appleton Marshall,	Gloucester.
Annie Isabel McCarthy,	Peabody.
Henrietta McConnell,	Somerville.
Gertrude Philomine McCusker,	Cambridge.
Ruth Alma McKay,	Beverly.
Blanche Velma McKenne,	Middleton.
Margaret Angela Millea,	Salem.
Edith Marion Moffatt,	Walla Walla, Wash.
Georgia Bernice Morgan,	Groveland.
Marion Louise Norton,	Chelsea.
Blanche Lowell Paine,	Somerville.
Zulette Potter,	Marblehead.
Annie Cobb Pottle,	Newburyport.
Cynthia May Prentice,	South Medford.
Bertha Ellinor Pringle,	North Reading.
Louisa Isabelle Pryor,	Portsmouth, N. H.
Ida Louise Rand,	Somerville.
Lucy Reynolds,	Peabody.
Nellie Winifred Riley,	Melrose.
Ida Helen Rogers,	Arlington.
Madeline Sayward Rowe,	Gloucester.
Helen Louise Russell,	Somerville.
Lottie May Ryder,	Lynn.
Mary Cecilia Scally,	Stoneham.
Eliza Lohra Scott,	Chelsea.
Mary Elizabeth Shatswell,	Salem.

Katherine Grey Smith,	. . . . .	Lynn.
Lillian Frazier Smith,	. . . . .	Beverly.
Mary Gertrude Snow,	. . . . .	Cambridge
Clara Alice Southwick,	. . . . .	West Peabody.
Abbie Elizabeth Stetson,	. . . . .	Danversport.
Mary Gertrude Sullivan,	. . . . .	Haverhill.
Ellen Elizabeth Sweeney,	. . . . .	Arlington.
Irene Florence Thompson,	. . . . .	Melrose.
Edna Gordon Towle,	. . . . .	Salem.
Margaret Phillips True,	. . . . .	Marblehead.
Grace Anna Turbett,	. . . . .	Salem.
Lucy Agnes Walsh,	. . . . .	Stoneham.
Margaret Teresa Walsh,	. . . . .	Peabody.
Edith May Webber,	. . . . .	Waltham.
Charlotte Calhoun Wells,	. . . . .	Amesbury.
Clara Emerson Wheeler,	. . . . .	Gloucester.
Mary Veronica Williams,	. . . . .	Lynn.
Marion Louise Wilson,	. . . . .	Salem.
Constance Ethelwyn Yeames,	. . . . .	Arlington.

Certificates for One Year's Work.

Grace Amira Allen,	. . . . .	Westford, Vt.
Ada Dora Colbath,	. . . . .	Whitefield, N. H.
Jennie Clifton Frost, A.B.,	. . . . .	Arlington.
Ella Frances Gould,	. . . . .	Somerville.
Jeanie Jeanette Keir,	. . . . .	Rochester, N. H.
Elizabeth Gertrude Saunders,	. . . . .	Newmarket, N. H.
Lucy Maria White,	. . . . .	Beverly.
Carrie Edna Willey,	. . . . .	Montpelier, Vt.

Post Graduate and Special Students.

Bessie May Bailey,	. . . . .	Sunapee, N. H.
(Tilton, N. H., Seminary.) Teacher.		
Jennie Winslow Carey,	. . . . .	Swampscott
(Salem Normal School, 1904.)		
Clara Melvin Clement,	. . . . .	Merrimac.
(Salem Normal School.) Teacher.		
Nelly Grant Cutting,	. . . . .	Hamilton.
(Saxton's River, Vt., Academy.) Teacher.		
Anna Lenora Elkins,	. . . . .	Salem.
(North Troy, Vt., Academy.) Teacher.		

Bertha Augusta Fellows,	Lynn.
(Lynn Training School, 1891.) Teacher.	
Florence May Henderson,	Salem.
(Haverhill High School, 1878.)	
Clara Coggins Hodgkins,	Lamoine, Me.
(Hebron, Me., Academy, 1902.) Teacher.	
Carrie Beryl Johnson,	Fryeburg, Me.
(Fryeburg, Me., Academy, 1903.) Teacher.	
Maud Bertha Kennerson,	Melrose.
(Salem Normal School, 1901.) Teacher.	
Rose Elizabeth McIntire, A.M.,	Salem.
(Maine Wesleyan College, 1886.) Teacher.	
Grace Anna Trubett,	Salem.
(Salem Normal School, 1904.)	
Marion Louise Wilson,	Salem.
(Salem Normal School, 1904.)	

Students of the Elementary Course.

Olive Mary Adams,	Beverly.
Susie Marguerite Alexander,	Lynn.
Myrtle Gertrude Allen,	Malden.
Mary Agnes Arnold,	Salem.
Florence Bertha Atkins,	Somerville.
Ida Belle Bailey,	South Lawrence.
Laura Helen Bailey,	East Saugus.
Mary Isabelle Bailey,	Haverhill.
Helen Edna Baldwin,	Salem.
Ida Elizabeth Bancroft,	Stoneham.
Helen Louise Barrett,	Lynn.
Carrie Isabel Black,	Ipswich.
Nona Ellen Blackwell,	Somerville.
Eva Mary Bousquet,	East Cambridge.
Hannah Amelia Boyce,	West Peabody.
Amy Wyman Bradbury,	Malden.
Florence Gertrude Bragan,	Everett.
Emma Josephine Bresnahan,	Medford.
Minnie Haynes Brown,	Malden.
Gladys Amelia Budgell,	Somerville.
Florence Elena Bunton,	Cambridge.
Marguerite Cushing Buswell,	Salisbury.
Gertrude Frances Byron,	Medford.
Margaret Genevieve Callahan,	Malden.
Mabel Clifford Carle,	Malden.
Alice Veronica Carmichael,	Cambridge.

Anna Lois Childs,	Henniker, N. H.
Katherine Mary Clarke,	Ipswich.
Bertha Greenwood Cole,	Salisbury.
Sadie Etta Cole,	Lynn.
Alice Veronica Connelly,	Cambridge.
Gertrude Connor,	Lynn.
Elsie Harriet Cooter,	East Cambridge.
Esther Costello,	Groveland.
Elizabeth Clare Couture,	North Cambridge.
Mary Margaret Crane,	Salem.
Ethel Florence Crocker,	Malden.
Rosa Alice Curran,	Haverhill.
Rebecca Chase Currier,	Somerville.
Lillian Anna Curtin,	Chelsea.
Alice Gertrude Dacey,	Arlington.
Isabella Kelly Daley,	Lanesville.
Pearl Frothingham Dame,	Medford.
Bertha Ruby Davis,	Medford.
Gladys Cecelia Davis,	Amesbury.
Irena Lucena Day,	Lynn.
Margarida Martha DeAvellar,	Somerville.
Sallimae Morrill Dennett,	Amesbury.
Annie Montague Dickey,	Danvers.
Jennie St. Claire Dickson,	Cambridgeport.
Catherine Lauretta Dinneen,	East Cambridge.
Abbie Susan Dodge,	Salem.
Annie Louise Dodge,	Salem.
Anastasia Emaline Donovan,	Wakefield.
Dorrice Downing,	Andover.
Katharine Sigrid Enlind,	Peabody.
Ethel Sleeper Evans,	Amesbury.
Mary Loretta Feeny,	East Cambridge.
Carrie Madella Feltham,	Amesbury.
Elizabeth May Ferguson,	Topsfield.
Ethel Mary Flanders,	Wakefield.
Josephine Patricia Follen,	Nahant.
Edith Faulkner French,	Haverhill.
Mary May Gainard,	Chelsea.
Gladys Adell Gale,	Henniker, N. H.
Ellen Gertrude Galvin,	Lynn.
Grace Lillian Gardner,	Somerville.
Mabel Alice Gauthier,	Cambridge.

Mary Elizabeth Giffin,	Salem.
Cecilia Eugenia Glynn,	East Cambridge.
Marion Elizabeth Goodson,	Everett
Frances Eva Gorman,	Haverhill
Edith Evelyn Gott,	Woburn.
Maude Ama Graham,	Boston.
Mildred May Graham,	Lynn.
Alice Marion Grant,	Haverhill.
Mabel Hannah Gray,	Malden.
Mary Frances Harney,	Lynn.
Alona Harrington,	Malden.
Mary Beatrice Hart,	Lynn.
Sara Gould Haven,	Chelsea.
Rena Elizabeth Hemenway,	Andover.
Margaret Frances Herlihy,	Beverly.
Edna Hale Herrick,	Georgetown.
Ethel Putnam Herrick,	Georgetown.
Edith May Hicks,	Lynn.
Ethel Gertrude Higgins,	Somerville
Grace Julia Holden,	Revere
Grace Eliza Hood,	Salem.
Julia Mary Horgan,	Cambridgeport.
Elsie Marie Hussey,	Swampscott.
Jeannette Jacobson,	Cambridge.
Dorothy Jasinsky,	Swampscott.
Alice Augusta Jones,	Gloucester.
Lena May Jones,	Manchester.
Mary Russell Jones,	Beverly.
Helena Genevieve Keefe,	North Andover.
Lena Marion Kelly,	Amesbury.
Margaret Mary Kenney,	Charlestown.
Margaret Elizabeth Kerrigan,	Woburn.
Margaret Louise Kerrigan,	Haverhill.
Flora Agnes Knight,	Lynn.
Ruby Evelyn Ladd,	Lynn.
Goldie Theresa Lane,	Cambridge.
Florence Marie Leavitt,	Danvers.
Florence Louise Little,	Cliftondale.
Elinor Catherine Long,	West Lynn.
Mary Frances Low,	Wakefield.
Ruth Low,	Wakefield.
Carolyn Elizabeth MacDonald,	East Cambridge.

Rachel Lillian Macdonald,	Somerville.
Josephine Frances McCarty,	Lynn.
Margaret Bernadine McCullough,	Cambridge.
Mary Beston McDonough,	Salem.
Mary Ellen McGrath,	Cambridge.
Emma Mabel McKinley,	Somerville.
Emily Katharine McVann,	Lynn.
Lynda Viola Merrill,	Somerville.
Josephine Freeman Minard,	Groveland,
Amy Brown Morrill,	Amesbury.
Ada Evelyn Moulton,	North Hampton, N. H.
Cora Lucy Mulrey,	Cambridge.
Helena Murphy,	North Cambridge.
Margaret Mary Murphy,	Beverly.
Ada Josephine Nichols,	Lynn.
Lotta Louise Nichols,	Lynn.
Mary Louise Norton,	Malden.
Mary Evelyn Nutter,	Beverly.
Elizabeth O'Brien,	Marblehead.
Nora Anastatia O'Connell,	Wakefield.
Mary Magdalene O'Donnell,	Lynn.
Mary Frances O'Rourke,	Peabody.
Susan Morse Paine,	Salem.
Lottie Carroll Palmer,	Amesbury.
Ethel Bird Park,	Greenwood.
Bessie Maxwell Parker,	Reading.
Phebe Harriet Patterson,	Lynn.
Carrie Noyes Pease,	Merrimac.
Mary Isabelle Perkins,	Lynn.
Millicent Grace Perkins,	Beverly.
Nellie Louise Quennell,	Somerville.
Nellie Magdalene Quinn,	Amesbury.
Edna Merriam Ramsdell,	Lynnfield.
Florence Emma Ramsdell,	Lynnfield.
Sadie May Reed,	Lowell.
Alice Louise Reid,	Somerville.
Edna Ricker,	Lynn.
Elsie Marian Robbins,	Salem.
Marion Elliott Robbins,	Lynn.
Lucy Agnes Roper,	North Cambridge.
Christine Alberta Ross,	Lynnfield Center.
Josephine Florence Rowe,	Cambridge.

Ethel Louise Sargent,	West Medford.
Julia Everett Sargent,	Amesbury.
Mabel Florence Sawyer,	Chelsea.
Lena Seitlen,	Chelsea.
Thomas William Sheehan,	Peabody.
Alta Foster Silsby,	Everett.
Gertrude Evelyn Simpson,	Lynn.
Grace Foster Sneden,	Salem.
Grace Lillian Snow,	Everett.
Gertrude Josephine St. Clair,	Beverly.
Margaret Marie Sullivan,	South Groveland.
Ethel Stearns Swett,	Amesbury.
Florence Ellen Tadgell,	Salem.
Etta Murray Taylor,	Manchester.
Martha Anna Taylor,	Malden.
Martha Lois Taylor,	Chelsea.
Helen Barbara Tighe,	Plymouth.
Miriam Adelaide Tighe,	Salem.
Sarah Blackinton Titcomb,	Merrimac.
Helen Louise Tuck,	Chelsea.
Mabel Emily Turner,	North Reading.
Edna Selman Tutt,	Marblehead.
Rachael Louise Upham,	Melrose.
Louise Evelyn Urquhart,	Wakefield.
Elizabeth Cecilia Welsh,	North Cambridge.
Mildred Frost Williams,	Danvers.
Elizabeth Ellen Whitcomb,	Chelsea.
Amy Florence Wilson,	Pigeon Cove.
Edith Smith Wilson,	Beverly.
Clara Witham,	Everett.
Frank William Woodlock,	Allston.
Gertrude Amelia Woolner,	Chelsea.
Marion Young,	Lynn.

Summary.

Post-graduate and special students,	13
Students of the elementary course,	185
	<hr/>
	198
Whole number of students from the opening of the school,	5,073
Whole number of graduates,	2,703
Number of certificates for one year's work,	36

Certificate Required for Admission to a Preliminary Examination.

_____ 1905.

_____ has been a pupil in the

_____ School for three years, and is, in my judgment, prepared to pass the normal school preliminary examination in the following group or groups, of subjects and the divisions thereof:—

Group II. _____ Group IV. _____

Group III. _____ Group V. _____

Signature of principal or teacher, _____

Address, _____

Certificate of Graduation and Good Character.

THIS IS TO CERTIFY that M _____
is a regular graduate of a four years' course of the _____
_____ High School, and that, to the best of my knowledge
and belief, _____ he is a person of good moral character.

_____ *Principal.*

_____ 1905.

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 311

LECTURE 1

MECHANICS

1.1 Kinematics

1.2 Dynamics

1.3 Energy

