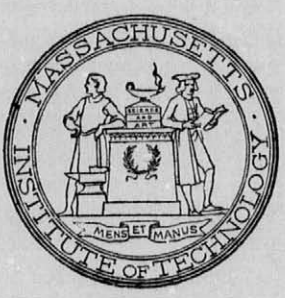
MASSACHUSETTS INSTITUTE OF TECHNOLOGY, BOSTON.



ANNUAL CATALOGUE.

1899–1900.

PUBLICATIONS

OF

THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

ANNUAL CATALOGUE, issued in December, containing lists of Officers and Students; a full statement of the Courses of Instruction; a Register of Graduates, with their professional positions; and an account of the Lowell School of Design.

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THIRTY-FIFTH

ANNUAL CATALOGUE

OF THE

Officers and Students,

WITH

A STATEMENT OF THE COURSES OF INSTRUCTION AND A REGISTER OF THE ALUMNI.

1899–1900.

BOSTON:
ROCKWELL AND CHURCHILL PRESS.
1899.

CALENDAR FOR 1899–1900.

School Year began	Wednesday, Sept. 27, 1899.
Semi-annual Examinations begin	Tuesday, Jan. 16, 1900.
Second Term begins	Tuesday, Feb. 6, 1900.
Annual Examinations begin	Tuesday, May 22, 1900.
Degrees conferred. — School Year ends	Tuesday, June 5, 1900.
First Entrance Examinations	Thursday, June 28, 1900, and Friday, June 29, 1900.
Examinations for Advanced Standing begin	Monday, Sept. 17, 1900.
Second Entrance Examinations [1]	Tuesday, Sept. 18, 1900, and Wednesday, Sept. 19, 1900.
School Year of 1900–1901 begins	Wednesday, Sept. 26, 1900.

CALENDAR FOR 1900–1901.

School Year begins	Wednesday, Sept. 26, 1900.
Semi-annual Examinations begin	Tuesday, Jan. 15, 1901.
Second Term begins	Tuesday, Feb. 5, 1901.
Annual Examinations begin	Tuesday, May 21, 1901.
Degrees conferred. — School Year ends	Tuesday, June 4, 1901.
First Entrance Examinations	Thursday, June 27, 1901, and Friday, June 28, 1901.
Examinations for Advanced Standing begin	Monday, Sept. 23, 1901.
Second Entrance Examinations [1]	Tuesday, Sept. 24, 1901, and Wednesday, Sept. 25, 1901.
School Year of 1901–02 begins	Wednesday, Oct. 2, 1901.

Stated Meetings of the Corporation for 1900	March 14, June 1, October 10, December 12.
Stated Meetings of the Executive Committee of the Corporation	First and third Tuesdays of every month.

[1] See page 61.

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Massachusetts Institute of Technology.

GENERAL INFORMATION.

Historical Sketch. — The foundation of the Massachusetts Institute of Technology was laid in a "Memorial" prepared in 1859 by Professor William Barton Rogers, and presented, by a Committee, to the Legislature of 1860. In this Memorial "reference is made to the expected early establishment of a comprehensive Polytechnic College, furnishing a complete system of industrial education supplementary to the general training of other institutions, and fitted to equip its students with every scientific and technical principle applicable to the industrial pursuits of the age."

On May 28, 1860, a sub-committee, consisting of Professor Rogers and Messrs. E. B. Bigelow and J. M. Beebe, was appointed to "mature a plan for a polytechnic institution." To this sub-committee Messrs. M. D. Ross and C. H. Dalton were subsequently added, and for it Professor Rogers, during the summer of 1860, prepared an elaborate report entitled, "OBJECTS AND PLAN OF AN INSTITUTE OF TECHNOLOGY."

On Jan. 11, 1861, a public meeting of persons interested in the proposed institution was held in Mercantile Hall, and a preliminary organization was effected. Professor Rogers was chairman of this meeting, and John D. Runkle secretary. The first meeting of the Institute for organization was held April 8, 1862. The civil war led to the postponement of the opening of the School of Industrial Science until 1865; but the Society of Arts was organized, began its meetings on Dec. 17, 1862, and has maintained them ever since. A preliminary session of the School of Industrial Science was opened, fifteen students attending, on Feb. 20, 1865. The regular courses of instruction began Oct. 2, 1865.

Charter and Government. — On April 10, 1861, a legislative act was passed to incorporate the Massachusetts Institute of Technology, and to grant aid to said Institute and to the Boston Society of Natural History. William B. Rogers, together with twenty other members, were named in the act. They, with their associates and successors, were made a body corporate under the above title, "for the purpose of instituting and maintaining a society of arts, a museum of arts, and a school of industrial science, and aiding generally by suitable means the advancement, development, and practical application of science in connection with arts, agriculture, manufactures, and commerce."

A square of State land on Back Bay in Boston was set apart as an open space, and the corporation was allowed upon certain conditions to erect buildings covering not more than one-third part of the westerly two-thirds of this square.

The corporation was authorized to hold property to an amount not exceeding two hundred thousand dollars.

May 30, 1865, an additional act authorized holding property yielding an annual income of thirty thousand dollars.

Feb. 29, 1888, an additional act raised the limit to property yielding an income of one hundred thousand dollars.

April 27, 1863, an additional act allotted to the Institute one-third of the interest received by the State from the United States Land Grant, to support colleges of agriculture and the mechanic arts, under the condition that instruction in military tactics should be provided, and that the Governor, the Chief Justice of the Supreme Court, and the Secretary of the State Board of Education should be each a member *ex-officio* of the government of the Institute.

The control of the Institute was exercised by a body called the Government, elected from among its members. The form of the Government at first constituted proved inconvenient, a change was made in the mode of selection of the governing body, and the present Government of the Institute derives its powers from the following charter, of March 20, 1869:

AN ACT IN ADDITION TO THE SEVERAL ACTS INCORPORATING THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

Be it enacted, etc., as follows :

SECTION 1. All the powers and privileges now vested by law in the Massachusetts Institute of Technology shall hereafter be exercised and enjoyed by the government of said Institute, as the same is now constituted; *provided, however*, that the governor of the Commonwealth, the chief justice of the Supreme Judicial Court, and the secretary of the Board of Education shall continue to be members of said government, as is now provided by law.

SECT. 2. Said government shall have power to establish any by-laws which they may deem expedient for the regulation of the affairs of said corporation; *provided*, the same are not repugnant to the general laws of this Commonwealth.

SECT. 3. All persons who are now associate members of said Institute, or who hereafter shall become such, shall be entitled to be members of the Society of Arts, with the rights and privileges thereof, as the same are or hereafter may be established by the by-laws.

SECT. 4. This act shall take effect upon its passage.

The Corporation. — The government of the school is vested under this charter in the Corporation. Its by-laws prescribe that the Corporation shall consist of not more than fifty members, to hold office for life, and to be chosen by votes of the Corporation by ballot. The *ex officiis* members are included in the total number.

The Corporation confirms appointments, confers degrees, authorizes the purchase and sale of land and the erection of buildings. It receives reports from the President, the Treasurer, and the Visiting Committees, and acts upon them. The President of the Institute presides at its meetings, as well as at those of the Society of Arts.

The Executive Committee of the Corporation consists of the President and Treasurer and of five members, who are chosen by the Corporation from among its members for a term of five years. This Committee has power to appoint the

President and Treasurer, also the professors and teachers and all other persons to be employed in any department of the Institute, subject to confirmation by the Corporation. It fixes the salaries and prescribes the duties of all officers so appointed, and has power to remove them. It has charge of the buildings and other property of the Institute, exercises control over the Faculty, and has the general superintendence of all matters relating to the school of industrial science. The Corporation appoints other committees whose functions and membership are stated on pages 14 and 15.

The School of Industrial Science has become the prominent feature of the Institute; and, indeed, nearly all persons know this, and this alone, as the Institute. It is devoted to investigation and the teaching of science as applied to the various engineering professions; namely, civil, mechanical, mining, electrical, chemical, and sanitary engineering, and naval architecture, as well as to architecture, chemistry, metallurgy, biology, physics, and geology. A course of a less technical nature, designed as a preparation for business callings, is also provided.

A subsidiary school, known as the LOWELL SCHOOL OF PRACTICAL DESIGN, is maintained by the Corporation of the Institute. A statement of its scope and organization will be found on page 206.

The Society of Arts aims to awaken and maintain an interest in the practical applications of the sciences, and to aid in their advancement. Meetings are held semi-monthly from October to May, at which reports of inventions, discoveries, and matters of scientific and technical interest are presented.

Graduates of the Institute and other persons interested in the aims of the Society are eligible to membership, and its meetings are open to students.

The "Technology Quarterly" contains the proceedings of the Society of Arts and papers presented at its meetings. It is

issued at regular intervals, and affords a medium for the publication of the results of original investigation carried on in the laboratories of the Institute. It has recently added a review of American chemical research, including abstracts of all important articles on pure or industrial chemistry published in this country.

All communications concerning the Society of Arts, or the "Technology Quarterly," should be addressed to the Secretary of the Society of Arts, Massachusetts Institute of Technology.

Location. — The buildings of the Institute are not only favorably located for accessibility and convenience of students and instructors, but are in close proximity to the chief collections and libraries of Boston, in particular to the Museum of Fine Arts, the new Public Library, and the Museum of the Boston Society of Natural History. The free lecture courses of the Lowell Institute are held in the main buildings of the school. Several railroad stations and many street-car lines afford convenient access from the southern and western suburbs. Moreover, the advantages of location in a great manufacturing district, with which the school maintains close relations, are of the greatest value to technological students. Frequent short excursions enable them to make immediate connection between what they learn in the school and what they observe in the industrial establishments. The relations between principles and their applications are much better appreciated than if such excursions were reserved for vacation or some subsequent period. The location in a large city brings the school into close contact with men of various professions. The architectural student, for example, not only has at his hand conspicuous examples of the best design and construction, but regularly receives suggestive criticism from eminent men in active practice. To the student in economics and political science the various State and city institutions afford ample opportunities for individual investigation.

Buildings. — The buildings now occupied are the Rogers Building, on Boylston street, devoted to instruction in mathematics, literature, history, and political science, and containing the administrative offices and the general library; the Walker Building, at the corner of Boylston and Clarendon streets, devoted to the departments of chemistry, physics, and electricity, and to instruction in language; the Engineering Buildings, on Trinity place, devoted to the engineering laboratories, to instruction in applied mechanics and hydraulics, and to the departments of civil and mechanical engineering and naval architecture; the Henry L. Pierce Building, occupied by the departments of architecture, biology, geology, and by the laboratories of industrial chemistry and textile coloring; a series of work-shops, on Garrison street, with a room devoted to the Lowell School of Design; and a Gymnasium on Exeter street.

Equipment. — The foundation of all sound technological education requires not only thorough theoretical training, but also prolonged, well-directed laboratory drill which shall first give the student the power of close and accurate observation, and then bring him into direct contact with the material problems of his future profession.

The laboratories of the Institute are numerous and extensive; their equipment is correspondingly ample, and is kept well up to the rapid advances in technical practice. Provision is made for exact general training in the problems of physics and chemistry, for highly specialized work in these and other sciences, and for engineering tests and processes on a practical scale. Descriptions of the different laboratories and some account of their equipment, as well as of the libraries of the Institute, will be found on pages 76 to 125.

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[1] Communications should be addressed to the Secretary of the Institute.
(See page 16.)

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[1] The numbers of the usual offices or lecture-rooms relate to the following buildings: Rogers Building, 491 Boylston St.; Walker Building, 525 Boylston St.; Engineering Buildings A and B, and Henry L. Pierce Building, on Trinity Place.

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KILBURN S. SWEET, S.B.	46 Engineering A.
Instructor in Civil Engineering.	
F. JEWETT MOORE, PH.D.	46 Walker.
Instructor in Analytical Chemistry.	
W. FELTON BROWN	50 Pierce.
Instructor in Freehand Drawing.	
JUSTUS ERHARDT	47 Engineering A.
Instructor in Modern Languages.	
HENRY FAY, PH.D.	31 Walker.
Instructor in Analytical Chemistry.	
HARRY W. GARDNER, S.B. (*Absent*),	
Instructor in Architecture.	
GEORGE B. HAVEN, S.B.	24 Engineering B.
Instructor in Mechanical Engineering.	
FRANK P. MCKIBBEN, S.B.	41 Engineering B.
Instructor in Civil Engineering.	
JOSEPH W. PHELAN, S.B.	41 Walker.
Instructor in General Chemistry.	
JAMES F. NORRIS, PH.D.	42 Walker.
Instructor in Organic Chemistry.	
SAMUEL C. PRESCOTT, S.B.	28a Pierce.
Instructor in Biology.	
ARCHER T. ROBINSON, A.B.	13 Rogers.
Instructor in English.	
ARTHUR W. WEYSSE, PH.D.	22 Pierce.
Instructor in Biology.	
HARRY C. BRADLEY, S.B.	50 Rogers.
Instructor in Mechanical Drawing and Descriptive Geometry.	
CARL H. CLARK, S.B.	32 Engineering B.
Instructor in Naval Architecture.	
CHARLES M. SPOFFORD, S.B.	41 Engineering B.
Instructor in Civil Engineering.	
RALPH R. LAWRENCE, S.B.	25 Walker.
Instructor in Physics.	

	Offices or Lecture-rooms.
FRANCIS HAROLD DIKE, A.B. *Instructor in Modern Languages.*	21 Walker.
MYRON L. FULLER, S.B. *Instructor in Geology.*	14 Pierce.
EDWARD M. BRAGG, S.B. *Assistant in Mechanical Engineering.*	30b Engineering A.
LEWIS PAUL CHAPIN, CH.E. *Assistant in General Chemistry.*	34 Walker.
GEORGE L. HOSMER *Assistant in Civil Engineering.*	50 Engineering A.
WALTER B. RUSSELL, S.B. *Assistant in Mechanical Engineering.*	10 Engineering A.
JAMES W. SMITH, S.B. *Assistant in Mechanical Engineering.*	10 Engineering A.
FRANCIS H. WATTS, S.B. *Assistant in Civil Engineering.*	50 Engineering A.
ALPHEUS G. WOODMAN, S.B. *Assistant in Sanitary Chemistry.*	36 Walker.
OSCAR W. PICKERING *Assistant in General Chemistry.*	41 Walker.
CHARLES B. BREED, S.B. *Assistant in Civil Engineering.*	51 Engineering B.
JOSEPH G. COFFIN, S.B. *Assistant in Physics.*	16 Walker.
WILLIAM T. HALL, S.B. *Assistant in Analytical Chemistry.*	30, 32 Walker.
ALICE G. LORING *Assistant in Architecture.*	33 Pierce.
JOSEPH C. RILEY, S.B. *Assistant in Mechanical Engineering.*	10 Engineering A.
EUGENE W. RUTHERFORD, S.B. *Assistant in Mechanical Engineering.*	10 Engineering A.
LEWIS J. SEIDENSTICKER, S.B. *Assistant in Oil and Gas Analysis.*	38 Walker.
HARRISON W. SMITH, A.B., S.B. *Assistant in Physics.*	10 Walker.
MAURICE DEK. THOMPSON, JR., S.B. *Assistant in Physics.*	16 Walker.
HARRISON W. HAYWARD, S.B. *Assistant in Mechanical Engineering.*	20 Engineering A.
HENRY E. ANDREWS, A.M. *Assistant in English.*	46 Rogers.
ARTHUR A. BLANCHARD, S.B. *Assistant in Theoretical Chemistry.*	43 Walker.

	Offices or Lecture-rooms.
WILLIAM D. COOLIDGE, PH.D. . . . . *Assistant in Physics.*	10 Walker.
ALVAN L. DAVIS, S.B. . . . . *Assistant in Mining Engineering.*	7 Rogers.
CHARLES W. BERRY, S.B. . . . . *Assistant in Mechanical Engineering.*	10 Engineering A.
FRED E. BUSBY, S.B. . . . . *Assistant in Industrial Chemistry.*	55 Pierce.
FRED L. H. KIMBALL, S.B. . . . . *Assistant in Mining Engineering.*	7 Rogers.
WILLIAM S. NEWELL, S.B. . . . . *Assistant in Mechanical Engineering.*	32 Engineering B.
GEORGE H. RIKER, S.B. . . . . *Assistant in Mechanical Drawing.*	43 Rogers.
NORMAN E. SEAVEY, S.B. . . . . *Assistant in Physics.*	11 Walker.
MILES S. SHERRILL, S.B. . . . . *Assistant in Analytical Chemistry.*	40 Walker.
FRANK R. SWIFT, S.B. . . . . *Assistant in Mechanical Engineering.*	10 Engineering A.
ETHERIDGE WALKER, S.B. . . . . *Assistant in Mining Engineering.*	7 Rogers.
CHARLES-EDWARD A. WINSLOW, S.M. . . *Assistant in Biology.*	28a Pierce.

INSTRUCTORS AND ASSISTANTS IN THE MECHANIC ARTS.

THEODORE B. MERRICK . . . . . *Instructor in Woodwork and Foundry-work.*	Workshops.
JAMES R. LAMBIRTH . . . . . *Instructor in Forging.*	Workshops.
ROBERT H. SMITH . . . . . *Instructor in Machine-Tool Work.*	Workshops.
FRANK CUSHMAN, JR. . . . . *Assistant in Machine-Tool Work.*	Workshops.
JOSEPH A. FRIZZELL . . . . . *Assistant in Woodwork and Foundry-work.*	Workshops.
JAMES F. LEARY . . . . . *Assistant in Forging.*	Workshops.

INSTRUCTOR IN GYMNASTICS.

WILLIAM SKARSTROM	Gymnasium.

TEACHERS AND LECTURERS FOR THE CURRENT YEAR.

JOHN ALDEN, S.B., *Textile Printing.*
TRUMAN H. BARTLETT, *Modelling.*
LOUIS BELL, PH.D., *the Electrical Transmission of Power.*
GEORGE W. BLODGETT, S.B., *the Application of Electricity to Railway Signalling.*
JOHN BALCH BLOOD, S.B., *the Design of Alternating Current Machinery.*
GARY N. CALKINS, PH.D., *Protozoa Inhabiting Water Supplies.*
HENRY CARMICHAEL, PH.D., *Electrolysis of Brine.*
S. EVERETT DOANE, *Incandescent Lamps.*
HOWARD C. FORBES, S.B., *Commercial Electrical Testing.*
JOHN R. FREEMAN, S.B., *Fireproof Construction and the Hydraulics of Fire Protection.*
HOLLIS FRENCH, S.B., *Electrical Engineering Practice and Specifications.*
CHARLES M. GREEN, *Electric Arc Lighting.*
F. M. GREEN, U.S.N., *Longitude Determinations.*
DAVID A. GREGG, *Pen and Ink Drawing.*
HAMMOND V. HAYES, PH.D., *Telephone Engineering.*
CHARLES D. JENKINS, S.B., *Illuminating Gas and Pottery.*
SIMEON C. KEITH, JR., S.B., *Bacteriology of Milk Products.*
WALTER H. KILHAM, S.B., *History of Ornament.*
ERNEST A. LE SUEUR, S.B., *Industrial Electro-Chemistry.*
ARTHUR D. LITTLE, *Paper.*
JAMES W. LOVELAND, S.B., *Manufacture of Soaps.*
GUY LOWELL, A.B, S.B., Grad. École des Beaux Arts, *Landscape Gardening.*
SAMUEL W. MEAD, *Architectural Design.*
H. G. PROUT, *the Future of the Railroad Engineer.*
ODIN B. ROBERTS, LL.B., *the Nature and Function of Patents for Inventions.*
ALBERT SAUVEUR, S.B., *Metallography.*
THEODORE SKINNER, S.B., *Architectural Design.*
TIMOTHY W. SPRAGUE, S.B., *Electricity in Mining.*
JOHN STONE STONE, *the Application of Electrical Oscillations in Telephony.*
ELIHU THOMSON, *Recent Developments in Applied Electricity.*
GEORGE W. TILLSON, S.B., *the Construction of City Pavements.*
ROSS TURNER, *Water Color.*
W. LYMAN UNDERWOOD, *Bacteriology in the Canning Industries.*
ALBERT L. WEBSTER, *the Drainage of High Office Buildings.*
GEORGE C. WHIPPLE, S.B., *the Microscopical Examination of Drinking Water.*
JASPER WHITING, S.B., *Cement Manufacture.*
S. W. WILDER, JR., S.B., *Alumina and Alumina Compounds.*
JOSEPH WILLARD, LL.B., *Business Law.*
C. J. H. WOODBURY, A.M., *Electricity in its Relation to Fire Risks.*

N. B. — For additional occasional lectures on special subjects, see pages 82, 90, 95, and 99.

Faculty.

JAMES M. CRAFTS, *President.*

JOHN D. RUNKLE.
GEORGE A. OSBORNE.
ROBERT H. RICHARDS.
WILLIAM H. NILES.
CHARLES R. CROSS.
GAETANO LANZA.
GEORGE F. SWAIN.
FRANCIS W. CHANDLER.
WILLIAM T. SEDGWICK.
DAVIS R. DEWEY.
SILAS W. HOLMAN.
WEBSTER WELLS.
CECIL H. PEABODY.
HARRY W. TYLER, *Secretary.*
ARLO BATES.
D. DESPRADELLE.
PETER SCHWAMB.
C. FRANK ALLEN.
ALFRED E. BURTON.
DWIGHT PORTER.
HEINRICH O. HOYMAN.
HENRY P. TALBOT.
ARTHUR A. NOYES.
ADOLPH RAMBEAU.
THOMAS E. POPE.
ELEAZER B. HOMER.
GEORGE T. DIPPOLD.
CHARLES F. A. CURRIER.
LINUS FAUNCE.
DANA P. BARTLETT.
JEROME SONDERICKER.
ALLYNE L. MERRILL.
EDWARD F. MILLER.
WILLIAM O. CROSBY.
FRANK VOGEL.
WILLIAM L. PUFFER.
FREDERICK H. BAILEY.
FRED L. BARDWELL.
AUGUSTUS H. GILL.
S. HOMER WOODBRIDGE.
HARRY E. CLIFFORD.
RICHARD W. LODGE.
FREDERICK S. WOODS.
THEODORE HOUGH.
WILLIAM Z. RIPLEY.
JOSEPH J. SKINNER.
GEORGE H. BARTON.
ARTHUR G. ROBBINS.
WILLIAM H. LAWRENCE.
FRANK A. LAWS.
HARRY M. GOODWIN.
JOHN O. SUMNER.
HENRY G. PEARSON.
JAMES HAMILTON.

Courses of Instruction.

The Massachusetts Institute of Technology provides instruction in the sciences and their applications to the arts, combined with such other general studies as are essential for a liberal education.

The fundamental elements in the curriculum of the school are mathematics, chemistry, and physics. The general training acquired in these introductory courses prepares the student, on the one hand, for more advanced and specialized scientific work, and it constitutes, on the other hand, the foundation for the technical courses in engineering, chemistry, and architecture. Instruction in technical methods is subordinated to the acquisition of principles, and these principles are studied with the predominant purpose to exercise the powers and train the faculties.

The Institute offers thirteen distinct courses, each of four years' duration, as follows:

I. Civil Engineering.
II. Mechanical Engineering.
III. Mining Engineering and Metallurgy.
IV. Architecture.
V. Chemistry.
VI. Electrical Engineering.
VII. Biology.
VIII. Physics.
IX. General Studies.
X. Chemical Engineering.
XI. Sanitary Engineering.
XII. Geology.
XIII. Naval Architecture.

For the satisfactory completion of any one of these, the degree of Bachelor of Science is conferred by the Institute. Of the thirteen courses, eight give their students scientific and practical training for the various engineering professions; four others, namely, those in Chemistry, Physics, Biology, and Geology, with a larger proportion of pure science, afford preparation either for professional practice, for teaching, or for scientific investigation. The Course in General Studies combines thorough general scientific training with a wide range of philosophic studies. While the Institute of Technology is primarily and essentially a school of applied science, its curriculum has always comprised a considerable amount of literary, historical, and economic study. There has been no time since the foundation of the Institute when its degree could be attained without studies in these lines carried through at least three years. The growing appreciation of the value to technological students of a broader training than can be obtained from purely technical courses has led the Faculty to require of regular students, in addition to the general studies of the course, a substantial amount of reading during the summer vacation.

Women are admitted to any of the courses of the school.

Descriptions and Schedules of the Professional Courses. — The following pages 29 to 55 contain schedules showing the distribution of studies throughout each of the regular four-year courses. Each schedule is preceded by a brief description of the course as a whole, while more detailed information is given for each department of instruction in the following pages 76 to 125.

Choice of Courses.[1] — At the end of the first half-year, which is the same for all courses, the student selects, subject to the approval of the Faculty, the course which he will thenceforth pursue, and his work becomes more specialized thereafter as it progresses.

[1] A special circular in regard to the choice of courses will be sent on application.

An idea of the nature and amount of the work to be done in any one of the regular courses may be obtained by considering, in connection with the schedule of that course (pages 28 to 55), the statements made in regard to the various branches of study (for example, Mathematics, Language, Chemistry, Physics, etc.) in the paragraphs descriptive of the "Subjects and Methods of Instruction," pages 76 to 125.

Options. — Within most of the regular courses the student is given, by means of options, a considerable latitude in the selection of the branch of his intended profession to which he shall specially devote his energies in the later years of his study. Thus in Civil Engineering (page 31) he may elect sanitary and hydraulic engineering, geodesy, or an advanced course in railroad engineering and management; in Mechanical Engineering (page 33) he may choose either marine engineering, locomotive construction, mill engineering, or heating and ventilation; and similarly for other courses. Inspection of the descriptions and schedules of the courses (pages 28 to 55) will show the nature and effect of the options. In cases where numbers are prefixed the selection of later options is positively determined by that of earlier ones, owing to the requirement of certain subjects as preparation for the former; in others, a wide choice is offered throughout all the years, the difference in this respect arising chiefly from the nature of the topics involved.

Graduate Courses of study may be pursued, either with or without reference to advanced degrees, by graduates of the Institute or by other persons of equivalent training. (See page 56.)

Five-Year Courses. — Students purposing to take the degree of the Institute, but for exceptional reasons finding it advantageous to take at once fewer studies than are prescribed in the schedules for the regular four-year courses, may arrange to distribute the entire work over five instead of four

years. A further statement of the five-year courses may be found on page 56. The arrangement of five-year courses is in charge of a standing Committee of the Faculty (Prof. Bartlett, chairman).

Subjects and Methods of Instruction. — The statements on pages 76 to 125 supply a general outline of the character and methods of instruction given, and of the equipment of the laboratories, museums, and libraries, which form conspicuous features in the work of the Institute.

SCHEDULES OF THE FIRST-YEAR COURSES.

FIRST TERM

(Common to all Courses.)

Algebra	20	Freehand Drawing	115
Plane Trigonometry	22	French [1] (or German [2])	191–(201)
General Chemistry; Chemical Laboratory	290	Rhetoric and English Composition	160
Mechanical Drawing	100	Military Science.	

SCHEDULES OF THE FIRST-YEAR COURSES.

SECOND TERM.

COURSES I. and XI.

Analytic Geometry 27
Spherical Trigonometry 29
General Chemistry; Qualitative Analysis; Chemical Laboratory 291
Mechanical Drawing and Descriptive Geometry 101, 102
Freehand Drawing 116
French [1] (or German [2]) . . 191–(201)
United States History 220
Military Science.

COURSES II., III. (2), VI., X., XIII.

Analytic Geometry 27
Theory of Equations 28
General Chemistry; Qualitative Analysis; Chemical Laboratory 291
Mechanical Drawing and Descriptive Geometry 101, 102
Freehand Drawing 116
French [1] (or German [2]) . . 191–(201)
United States History 220
Military Science.

COURSES III. (1), XII.

Analytic Geometry [3] 27
Theory of Equations 28
General Chemistry; Qualitative Analysis; Chemical Laboratory 291
Mechanical Drawing 104
Freehand Drawing 116
French [1] (or German [2]) . . 191–(201)
United States History 220
Military Science.

COURSE IV.

Analytic Geometry 27
Theory of Equations 28
Mechanical Drawing and Descriptive Geometry 101, 103
Freehand Drawing 117
French [1] (or German [2]) . . 191–(201)
French [1] sight-reading 192
United States History 220
Military Science.

COURSE V.

General Chemistry; Qualitative Analysis; Chemical Laboratory 291
Analytic Geometry 23
Theory of Equations 28
Mechanical Drawing 104
Freehand Drawing 116
Shopwork 136
French [1] (or German [2]) . . 191–(201)
United States History 220
Military Science.

COURSE VII.

General Chemistry; Qualitative Analysis; Chemical Laboratory 291
Microscopy 710
Elements of Plane Analytic Geometry; Theory of Equations . 23, 28
Mechanical Drawing 105
Freehand Drawing 116
French [1] (or German [2]) . . 191–(201)
United States History 220
Military Science.

COURSE VIII.

Analytic Geometry 27
Theory of Equations 28
General Chemistry; Qualitative Analysis; Chemical Laboratory 291
Mechanical Drawing 105
Freehand Drawing 116
Shopwork 136
French [1] (or German [2]) . . 191–(201)
United States History 220
Military Science.

COURSE IX.

United States History 220
Logic and Argumentative Composition 161
French [1] (or German [2]) . . 191–(201)
French [1] sight-reading 192
Elements of Plane Analytic Geometry; Theory of Equations . 23, 28
Graphic Statistics 238
Freehand Drawing 116
Military Science.

For descriptions of the methods, etc., used in the above instruction, see the corresponding pages under Subjects and Methods of Instruction, pages 76 to 125. Numbers at the right refer to the first column of the Schedule of Topics (of the Catalogue), where details are given as to the methods of instruction, etc.

[1] Students entering on French take German in their second and third years.
[2] Students entering on German take French in their second and third years.
[3] For XII., briefer course, 23.

I.—CIVIL ENGINEERING.

The course in Civil Engineering is designed to give the student sound training, both theoretical and practical, in the sciences and principles upon which professional practice is based. Particular care is taken to enforce the application of the principles taught, and the student is made familiar with the use of engineering instruments and with the usual problems of practice.

Civil engineering is the broadest in scope of the engineering professions, being the parent stem from which have diverged all the other branches; but even though these have become recognized as distinct professions, the field of civil engineering still remains so large that no one can become expert in its whole extent. It covers topographical engineering; the building of railroads, harbors, docks, and other works serving the purposes of commerce and transportation; municipal engineering, including the construction of sewers, waterworks, roads, and streets; structural engineering, including the construction of bridges, buildings, walls, foundations, and all fixed structures; hydraulics, the development of water power and other branches. All of these branches of engineering rest, however, upon a relatively compact body of principles, and in these principles the students are trained by practice in the class-room, the drawing-room, the field, and the testing laboratory.

In the comparatively advanced work of the fourth year, the student is offered a choice between three options or lines of study; namely, a general option in civil engineering, an option in which more than usual attention is devoted to highways, railroads, and railroad management, and an option giving special attention to geodesy and topography.

In the summer vacation following the third year four weeks are devoted to a course of field-work in geodetic and topographic surveying, including hydraulic measurements and geological field-work. This course is open to all students, and is required of those taking the geodetic option. (See pages 93 to 97.)

I.—CIVIL ENGINEERING.

FIRST YEAR. SEE PAGE 29.

SECOND YEAR.

FIRST TERM.

Surveying and Plotting	440
Topographical Drawing	442
Elements of Astronomy	443
Differential Calculus	33
Physics: Mechanics, Wave Motion, Electricity (lectures)	360
Descriptive Geometry	110
German (or French)	200 (190)
English Literature	165
European History	221

SECOND TERM.

Surveying and Plotting	440
Mechanism	520
Dynamical Geology	665
Integral Calculus	38
Physics: Electricity, Optics (lectures)	360
German (or French)	200 (190)
English Literature and Composition	165

THIRD YEAR.

FIRST TERM.

Railroad & Highway Engineering; Field-work and Drawing	452, 453
Advanced Surveying	450
Stereotomy	455
Structural Geology	670
Physics: Heat	370
Physical Laboratory	373
General Statics; Stresses in Frames; Strength of Materials	70
German (or French)	201 (191)
Political Economy	245

SECOND TERM.

Railroad & Highway Engineering; Field-work and Drawing	452, 453
Advanced Surveying	450
Theory of Structures	460
Stratigraphic Geology	675
Physical Laboratory	373
Strength of Materials; Kinematics and Dynamics; Theory of Elasticity	70
German (or French)	201 (191)
Political Economy and Industrial History	245
Business Law	275

FOURTH YEAR.

FIRST TERM.

Theory of Structures: Bridges and similar Structures	474, 476 (or 477)
Hydraulics	470
Industrial Electricity	379

Options.

1.	Sanitary and Hydraulic Eng.	472
	Bridge Design	478
	Hydraulic Measurements	473
	Practical Astronomy	468
	Steam Engineering	541
	Metallurgy of Iron	587
2.	Railroad Engineering	403, 465
	Railroad and Highway Design	493
	Railroad Management	466
	Bridge Design	478
	Steam Engineering	541
	Metallurgy of Iron	587
3.	Bridge Design	479
	Geodesy and Astronomy	467, 468
	Hydraulic Measurements	473
	Method of Least Squares	57
	Physical Laboratory	397

SECOND TERM.

Theory of Structures: Bridges and similar Structures	474, 476 (or 477)
Thesis.	

Options.

1.	Hydraulic Engineering	491
	Elements of Geodesy	497
	Bridge & Sanitary Design	478, 494
	Foundations	499
	Principles of Public Health and Sanitation	750
	Steam Engineering	541
	Engineering Laboratory	480
2.	Railroad Engineering	465
	Railroad and Highway Design	493
	Bridge Design	478
	Building Construction	649
	Foundations	499
	Steam Engineering	541
	Engineering Laboratory	480
3.	Hydraulic Engineering	491
	Geodesy	467
	Geodetic Laboratory	58
	Physical Laboratory	397

II. — MECHANICAL ENGINEERING.

The course in Mechanical Engineering aims to equip the student with such training in pure and applied mathematics as shall qualify him to deal with the engineering problems of his profession from the most favorable standpoint. It attempts by instruction, both theoretical and practical, to acquaint him with engineering practice, and to give him a proper groundwork upon which to base a professional career. The more strictly professional work of the course may be classified as follows:

Mathematics, physics, and applied mechanics are given outside the department, the last including the study of the strength of materials, with practice in testing.

Recitation-room work of the department proper begins with the study of mechanism, the construction of gear-teeth, etc., and is continued by courses on machine tools and cotton machinery. Courses are given on valve gears, thermodynamics, theory of the steam-engine, and on steam-boilers. The fourth-year instruction includes applied dynamics, further study of steam engineering, hydraulics and hydraulic motors, foundations, and industrial management, and in machine design a course combining study and drawing. The option is given of courses in locomotive construction, mill engineering, marine engineering, and heating and ventilation.

Drawing-room work begins in the second year. The students make working drawings from measurements, and the drawings necessary in connection with the course in mechanism and gear construction. In the third year they make detail and assembly drawings from machinery, and this is followed by mechanism designs and boiler drawings.

Shop-work includes carpentry, pattern-making, forging, chipping, filing, and machine-tool work.

Engineering laboratory work begins with drill in steam-engine tests in the second term of the third year, and is continued throughout the fourth year, including tests of boilers, pumps, power, etc., and a large amount of investigation. (See pages 97 to 99 and 101 to 105.)

II.—MECHANICAL ENGINEERING.

FIRST YEAR. SEE PAGE 29.

SECOND YEAR.

FIRST TERM.		SECOND TERM.	
Principles of Mechanism	510	Mechanism: Gear-Teeth; Machine Tools; Cotton Machinery	517
Drawing	512	Drawing	515
Carpentry and Wood-turning	138	Pattern Work	141
Differential Calculus	33	Foundry (elective)	140
Physics: Mechanics, Wave Motion, Electricity (lectures)	360	Integral Calculus	38
Descriptive Geometry	110	Physics: Electricity, Optics (lectures)	360
German (or French)	200 (190)	German (or French)	200 (190)
English Literature	165	English Literature and Composition	165
European History	221		

THIRD YEAR.

FIRST TERM.		SECOND TERM.	
Steam Engineering: Valve Gears; Thermodynamics	525	Steam Engineering; Boilers	525
Drawing	526	Drawing, Design, and use of Surveying Instruments	526, 451
Industrial Electricity	379	Engineering Laboratory	530
Dynamo-Electric Measurements	380	Forging; Chipping and Filing	142, 144
Forging	142	Physical Laboratory	373
Elements of Differential Equations	46	Strength of Materials; Kinematics and Dynamics	75
Physics: Heat	370	German (or French)	201 (191)
Physical Laboratory	373	Political Economy and Industrial History	245
General Statics	71	Business Law	275
German (or French)	201 (191)		
Political Economy	245		

FOURTH YEAR.

FIRST TERM.		SECOND TERM.	
Steam Engineering	540	Hydraulic Motors	490
Machine Design	544	Engineering Laboratory	545
Hydraulics	471	Machine-Tool Work	146
Dynamics of Machines	542	Strength and Stability of Structures; Theory of Elasticity	88
Engineering Laboratory	545	Foundations	555
Chipping and Filing; Machine-Tool Work	145, 146	Industrial Management	556
Strength of Materials; Friction	86	Thesis.	
Heating and Ventilation	396		
Metallurgy of Iron	587		
Options.		*Options.*	
1. Marine Engineering	551	1. Marine Engineering	551
2. Locomotive Construction	550	2. Locomotive Construction	550
3. Mill Engineering	552	3. Mill Engineering	552
4. Heating and Ventilation	553	4. Heating and Ventilation	553

III.—MINING ENGINEERING AND METALLURGY.

The mining and metallurgical engineer has of necessity demands made upon him in a great variety of lines. The policy of the school is to give him the underlying principles of mathematics, physics, chemistry, mineralogy, geology, mining engineering, and metallurgy, as well as some practical knowledge of mechanical, civil, and electrical engineering. Thus equipped, he can after graduation take up specialized work, with the expectation of carrying it on successfully.

With the studies included under the first option the course is a general one, adapted to the needs of students who prefer not to make an immediate choice between professional specialties. Those who have not a serious reason for doing otherwise are advised to take this option.

The second group of optional studies is arranged with reference to mechanism and the steam-engine, the time necessary being taken from surveying, geology, and mining engineering. This course is adapted especially for the iron and steel metallurgist.

Valuable opportunities are offered for observation and field-work in the summer schools of mining and metallurgy, and in mineralogical excursions, as well as in the ample laboratories of the Institute. (See pages 106 to 109.)

For students able to devote an additional year to the course, valuable collateral instruction in other engineering branches, or a combination of the two options, may be arranged. In view of the exceedingly varied demands likely to be made upon the professional mining engineer, such an extension of the course offers particular advantages.

III.—MINING ENGINEERING AND METALLURGY.

FIRST YEAR. SEE PAGE 29.

SECOND YEAR.

FIRST TERM.

Mineralogy and Blowpipe Analysis[1] 661, 662
Differential Calculus 33
Physics: Mechanics, Wave Motion, Electricity (lectures) 360
German (or French) . . . 200 (190)
English Literature 165
European History 221

Options.

1. { Surveying and Plotting . . 440 / Topographical Drawing . . 442
2. { Descriptive Geometry . . . 110 / Principles of Mechanism . . 510

SECOND TERM.

Blowpipe Silver Assay[1] 580
Integral Calculus 38
Physics: Electricity, Optics (lectures) 360
German (or French) . . . 200 (190)
English Literature and Composition 165

Options.

1. { Surveying and Plotting . . 440 / Structural & Chemical Geology 668 / Dynamical Geology . . . 665
2. { Mechanism: Gear-Teeth; Machine Tools . . . . . 518 / Theoretical Chemistry . . 295 / Drawing 515

SUMMER COURSE IN PRACTICAL MINING OR METALLURGY (ELECTIVE).
FIELD-WORK IN MINERALOGY (ELECTIVE).

THIRD YEAR.

FIRST TERM.

Assaying 582
Qualitative Analysis (lectures and laboratory) 300
Physics: Heat 370
Physical Laboratory 373
General Statics 71
German (or French) . . . 201 (191)
Political Economy 245

Options.

1. { Mining Engineering . . . 581 / Historical Geology . . . 669 / Industrial Electricity . . . 379 / Dynamo-Electric Measurements 380
2. { Steam Engineering; Thermodynamics; Valve-Gears 525 / Drawing 526

SECOND TERM.

Quantitative Analysis (lectures and laboratory) 305
Physical Laboratory 373
Strength of Materials; Kinematics and Dynamics 75
German (or French) . . . 201 (191)
Political Economy and Industrial History 245
Business Law 275

Options.

1. { Mining Engineering . . . 581 / Theoretical Chemistry . . 295
2. { Steam Engineering; Boilers 525 / Engineering Laboratory . . 530

SUMMER COURSE IN PRACTICAL METALLURGY OR MINING (ELECTIVE).

FOURTH YEAR.

FIRST TERM.

Mining Engineering: Ore-Dressing 590, 591, 593
Memoirs, Laboratory Reports . 595, 596
Metallurgy (non-ferrous) . . . 588
Metallurgy of Iron 587
Metallurgical Laboratory . . . 592
Quantitative Analysis (lectures and laboratory) 319, 320
Heat Measurements 398
Strength of Materials; Friction . 86

Options.

1. Quantitative Analysis . . . 320
2. Hydraulics 471

SECOND TERM.

Mining Engineering: Mining and Metallurgical Machinery, 590, 591, 593
Memoirs, Laboratory Reports . 595, 596
Metallurgy (non-ferrous) . . . 599
Metallurgical Laboratory . . . 592
Quantitative Analysis (lectures and laboratory) 319, 320
Thesis.

Options.

1. { Quantitative Analysis (additional) 320
2. Engineering Laboratory . . 559

[1] Students in Option 2 are required to take *either* Blowpipe Analysis or Blowpipe Silver Assay.

IV.—ARCHITECTURE.

The architectural course aims to prepare its members not only for their years of work as subordinates, when accuracy, rapidity, and taste in drawing and design, with knowledge of detail, will be the most useful qualifications, but also for their subsequent independent career when the value of technical knowledge will become most important.

The professional work of the course begins in the second year, with the study of the five orders and their applications. The student is made familiar with the materials and principles of construction by lectures and visits to buildings.

In the third year the time devoted to architectural history is much increased, specifications are discussed, and sufficient practice in working drawings is given to enable the student to be of immediate service on entering an architect's office.

A technical course in heating and ventilation is given in the third year, illustrated by the study of important public buildings in the city. In the fourth year applied mechanics and graphical statics are applied to general practice, and exercise is given in designing trusses and in the various problems occurring in modern construction.

Practice in architectural design is continued throughout the course, also instruction in drawing from the cast and from life. Facility in rendering is gained by a course in water-color and pen and ink drawing.

An option, beginning with the second term of the third year, has been added to provide special training in architectural engineering.

An option in landscape gardening has also been recently introduced; a circular giving details is in preparation.

Persons applying for admission as special students in architecture must be college graduates, or twenty-one years of age, with not less than two years' office experience. They will be required to pass, before entrance, examinations[1] in plane and solid geometry and freehand and mechanical drawing (including projections, isometric and the elements of descriptive geometry); and must include in their work at the Institute the regular courses in freehand drawing and descriptive geometry, unless already proficient in these subjects. (See pages 109 to 111.)

[1] See "Advanced Standing Examinations," Calendar, page 2.

IV. — ARCHITECTURE.

First Year. See page 29.

SECOND YEAR.

FIRST TERM.		SECOND TERM.	
Elementary Design	610	Design	618
Materials	612	Perspective	619
Shades and Shadows	611	Stereotomy	620
Freehand Drawing	118	Freehand Drawing	118
Differential Calculus	33	Integral Calculus	38
Physics: Mechanics, Wave Motion, Electricity (lectures)	360	Physics: Electricity, Optics (lectures)	360
German (or French)	200 (190)	German (or French)	200 (190)
English Literature	165	English Literature and Composition	165
European History	221		

THIRD YEAR.

FIRST TERM.		SECOND TERM.	
Design	625	Gothic and Renaissance Architecture	626
Ancient and Romanesque Architecture	626	Freehand Drawing	119
Specifications and Working Drawings	627	Pen and Ink	628
Freehand Drawing	119	Building Stones	676
Heating and Ventilation	372	Strength of Materials	76
General Statics	71	German (or French)	201 (191)
German (or French)	201 (191)	Political Economy and Industrial History	245
Political Economy	245	Business Law	275
		Options.	
		1. Design	625
		2. Structures	461
		2. Structural Design	629

FOURTH YEAR.

FIRST TERM.		SECOND TERM.	
History of Construction	636	Business Relations	647
European Civilization and Art	228	European Civilization and Art	228
Pen and Ink	639	Principles of Public Health and Sanitation	750
Options.		Thesis.	
Design	635	*Options.*	
Constructive Design	638	History of Ornament	637
History of Ornament	637	Life Class	641
1. Life Class	641	1. Modelling	648
Water Color	640	Pen and Ink	639
Strength of Materials	87	Water Color	640
Color and Acoustics	391	Structures	500
Structures	500	2. Laboratory Tests of Building Materials	90
2. Structural Design	634		
Strength of Materials	89		

A special circular giving details of the option in Landscape Gardening will be mailed on application.

V. — CHEMISTRY.

The course in Chemistry is primarily designed to prepare students for actual work in connection with manufactures based on chemical principles. It is also adapted to the needs of persons who intend to become teachers of chemistry.

The class-room work consists of courses of lectures on general chemistry, and on theoretical, analytical, industrial, and organic chemistry. The non-chemical studies, such as mathematics, physics, biology, mineralogy, English, history, political economy, and language are selected with reference to their bearing on chemical work, or for their general educational value.

The student spends a large part of the four years in the laboratories, the work being arranged as follows: In the first year there is general laboratory practice, in which the student is taught the nature of chemical processes and the use of chemical apparatus, and is drilled in accurate habits of observation. Qualitative chemical analysis is begun in the second term of the first year, and is continued through the first term of the second year. Quantitative analysis follows in the second term of the second year, and continues throughout the course. Practice in the industrial, sanitary, organic, and physico-chemical laboratories follows in the third and fourth years.

While there is a certain prescribed course of study and work in the separate departments of chemistry, which all regular students must pursue, great latitude in the choice of subjects is allowed in the third and fourth years.

Effort is made to develop self-reliance in the student, so that he may be fitted to make his way without assistance. To this end he is required to make investigations, involving original research and reference to the appropriate literature in English, French, and German.

The details of instruction in this course, both for regular and special students, and the description of the Kidder laboratories, are given on pages 80 to 88.

V.—CHEMISTRY.

FIRST YEAR. SEE PAGE 29.

SECOND YEAR.

FIRST TERM.

Qualitative Analysis (lectures and laboratory) 300
Mineralogy and Blow-pipe Analysis 661, 662
Physics: Mechanics, Wave Motion, Electricity (lectures) . . 360
German (or French) . . . 200 (190)
English Literature 165
European History 221

Options.

1. Differential Calculus . . . 33
2. { Elements of Differential and Integral Calculus . . . 34

SECOND TERM.

Quantitative Analysis (lectures and laboratory) 305
Physics: Electricity, Optics (lectures) 360
Physical Laboratory 366
Physical Measurements (lectures) 365
German (or French) . . . 200 (190)
English Literature and Composition 165

Options.

1. Integral Calculus 38
2. { Dynamical or Chemical Geology 665, 668
   { General Biology 715
   { Microscopy 710

THIRD YEAR.

FIRST TERM.

Quantitative Analysis (lectures and laboratory) 319, 320
Industrial Chemistry 312
Sugar Analysis 311
Physics: Heat 370
Physical Laboratory 374
Industrial Electricity 379
German (or French) . . . 201 (191)
Political Economy 245

Options.

Water, Air, and Food Analysis . 316
Industrial Chemical Laboratory . 314

SECOND TERM.

Quantitative Analysis (lectures and laboratory) 319, 320
Theoretical Chemistry 303
Organic Chemistry (brief course) 315
Industrial Chemistry 312
Assaying[1] 583
German (or French) . . . 201 (191)
Political Economy and Industrial History 245
Business Law 275

Options.

Structural and Chemical Geology . 668
Water, Air, and Food Analysis[1] . 316
Industrial Chemical Laboratory . 314

FOURTH YEAR.

FIRST TERM.

Organic Chemistry (lectures) . . 332
Organic Analysis 329
Organic Preparations and Reactions 335
Molecular Weight Determinations[2] 328
Theoretical Chemistry 313
Elements of Non-Ferrous Metallurgy[2] 589
Metallurgy of Iron 587
Testing of Oils 336

Options.

Proximate Technical Analysis . . 337
Textile Coloring 338
Bacteriology; Industrial Biology 743, 740
Historical Geology 669
Non-Ferrous Metallurgy, Ore Dressing, and Metallurgical Laboratory . . . 588, 592, 593, 596

SECOND TERM.

Organic Chemistry (lectures) . . 332
Gas Analysis 340
Theoretical Chemistry 318
Electrical and Heat Measurements 421
History of Chemistry 342
Memoirs 344
Thesis.

Options.

Physico-Chemical Laboratory . . 384
Non-Ferrous Metallurgy, Mining Machinery, and Metallurgical Laboratory . . 592, 593, 596, 599

[1] Students intending to choose the metallurgical option of the fourth year take additional Assaying and omit Food Analysis.
[2] Omitted by students taking metallurgical option.

VI.—ELECTRICAL ENGINEERING.

The course in Electrical Engineering is designed to meet the needs of young men desirous of entering upon the practice of any of the various applications of electricity in the arts. Its leading studies are physics, especially theoretical and applied electricity, mechanical engineering, and mathematics.

The work in engineering runs parallel with the electrical subjects, since in all branches of electrical engineering a sound knowledge of mechanics and motors, of measurements of power and of the means of its transmission, etc., is essential. Thus, the second year includes the studies of mechanism, shopwork, and drawing, and the third year, applied mechanics, steam engineering, and hydraulics. Certain of these subjects are also continued in the fourth year.

An extended course in physics begins with the second year, and is continued, by lectures, recitations, and laboratory work, to the end of the third year. A portion of this is devoted to electricity; and at the middle of the second year special lectures, readings, and recitations on this topic are begun, by which the study of the theory of electricity is continued until the end of the fourth year. Work in the physical laboratory begins at the middle of the second year, and leads up to electrical measurements and testing. Extended courses on the technical applications of electricity to the telegraph, telephone, electric lighting, the electrical generation, transmission, and utilization of power, etc., are given in the third and fourth years. Electrical study and research occupy the greater portion of the fourth year. A series of advanced mathematical topics also forms an important part of the work. (See pages 89 and 92.)

A course of lectures upon the industrial applications of electro-chemistry has recently been instituted, and also a course relating to the economics of corporations. Provision will be made for students who desire to pursue the study of chemistry to a greater extent than is provided for in the course scheme.

VI. — ELECTRICAL ENGINEERING.

FIRST YEAR. SEE PAGE 29.

SECOND YEAR.

FIRST TERM.

Physics: Mechanics, Wave Motion. Electricity (lectures) . . 360
Acoustics 362
Principles of Mechanism . . . 510
Differential Calculus 33
Descriptive Geometry 110
Carpentry and Metal-turning 137, 139
German (or French) . . . 200 (190)
English Literature 165
European History 221

SECOND TERM.

Physics: Electricity, Optics (lect.) 360
Physical Laboratory: Mechanics, Optics 366
Physical Measurements (lectures) 365
Theoretical Electricity 363
Mechanism: Gear-Teeth; Machine Tools 518
Drawing 515
Integral Calculus 38
Carpentry and Wood-turning . . 137
German (or French) . . . 200 (190)
English Literature and Composition 165

THIRD YEAR.

FIRST TERM.

Physics: Heat (lectures) . . . 370
Physical Laboratory: Optics, Heat 374
Theoretical Electricity 377
Methods of Telegraphy 378
Elements of Industrial Electricity 379
Steam Engineering: Valve-Gears; Thermodynamics 525
Drawing 526
Differential Equations 45
General Statics 71
German (or French) . . . 201 (191)
Political Economy 245

SECOND TERM.

Physical Laboratory: Electrical Measurements 376
Theoretical Electricity 377
Electrical Measuring Instruments and Methods (lectures) . . . 383
Steam Engineering: Boilers . . 525
Engineering Laboratory 530
Drawing 526
Strength of Materials; Kinematics and Dynamics 75
German (or French) . . . 201 (191)
Political Economy and Industrial History 245
Business Law 275

FOURTH YEAR.

FIRST TERM.

Technical Applications of Electricity to Telephony, Electric Lighting, Electrical Generation of Power, Railroad Signals, etc. 400, 403
Methods of Dynamo Testing (lectures) 402
General Electrical Testing . . . 405
Electrical Engineering Laboratory; Testing of Dynamos, Electric Lamps, etc. 420
Electrical Measuring Instruments and Methods (lectures) . . . 406
Theory of Periodic Currents . . 404
Photometry 392
Steam Engineering 540
Dynamics of Machines 543
Hydraulics 471
Engineering Laboratory 545
Strength of Materials; Friction . 86
Method of Least Squares . . . 57

SECOND TERM.

Technical Applications of Electricity; Electric Motors; Alternating Current Machines . . . 400, 416
Transmission and Distribution of Energy 417
Methods of Dynamo Testing (lectures) 402
Principles of Dynamo Design . . 418
Telephone Engineering 419
Electrical Engineering Laboratory; Measurements of Dynamo Electric Machinery, Special Methods 420
Theory of Periodic Currents . . 404
Discussion of the Precision of Measurements 423
Engineering Laboratory 545
Economics of Corporations . . . 261
Thesis.

NOTE. — Students having the requisite preparation and ability may pursue more advanced courses in the mathematical theory of electricity and other subjects. With this end in view, competent students may take Fourier's Series and allied topics, also Energetics and Electro-Chemistry, as extra studies.

VII.—BIOLOGY.

The course in Biology affords especially a training in those sciences which pertain to living things. Those who take it usually intend to become physicians or teachers, to fill positions connected with public works or the civil service, or to engage in some of the various fermentation industries as experts in bacteriology or microscopy.

Some of the best medical schools are already requiring for admission special training such as this course affords, and it is generally conceded that for the scientific or professional study of medicine no preparation can equal a well-considered and liberal education in which the prominent features are chemistry, physics, and biology, comparative anatomy and embryology, comparative physiology and miscroscopic anatomy, bacteriology, and sanitary science.

The need for thoroughly trained teachers of the natural sciences was never greater than to-day, and for several years a large number of teachers in actual service have resorted to the Institute for instruction in biology. There is good reason to believe that the public-school service now offers an inviting career to educated teachers, and that the course in biology, owing to its broad and comprehensive character, affords a sound preparation for persons intending eventually to teach, or to direct teaching, in the natural sciences.

The course in biology is also adapted for those who desire to enter the civil service with boards of health, water boards, or sewer departments on the sanitary side, as bacteriologists or microscopists, as well as for those who intend to devote themselves to processes connected with dairying, vinegar-making, pickling, canning, cold-storage, or other food-making, fermentation, or food-preserving industries.

The subjects of study and their sequence are shown on the opposite page. Abundant facilities for the regular practical work of the course are provided in the various laboratories of the Institute, especially the chemical, physical, geological, physiological, and bacteriological.

Opportunities are also provided for special advanced work in general bacteriology, industrial biology, and sanitary science; in physiology and hygiene; and, to some extent, in zoölogy and botany. (For more detailed information see pp. 111 to 115, and the special circular on Biology.)

VII.—BIOLOGY.

FIRST YEAR. SEE PAGE 29.

SECOND YEAR.

FIRST TERM.

General Biology 711
Qualitative Analysis (lectures and laboratory) 300
Mineralogy and Blow-pipe Analysis 661, 662
Physics: Mechanics, Wave Motion, Electricity (lectures) 360
German (or French) . . . 200 (190)
English Literature 165
European History 221

SECOND TERM.

Cryptogamic Botany 728
General Zoölogy 716
Quantitative Analysis (lectures and laboratory) 305
Dynamical Geology 665
Physics: Electricity, Optics (lectures) 360
German (or French) . . . 200 (190)
English Literature and Composition 165

THIRD YEAR.

FIRST TERM.

Comparative Anatomy 720
Anthropology 722
Quantitative Analysis (lectures and laboratory) 319, 320
Organic Chemistry (brief course) 302
Historical Geology 669
Physics: Heat 370
Physical Laboratory 373
German (or French) . . 201 (191)
Political Economy 245

SECOND TERM.

Comparative Anatomy and Embryology 720
Microscopic Anatomy 737
Water, Food, and Air Analysis . 315
Theoretical Chemistry 295
Physical Laboratory 373
German (or French) . . . 201 (191)
Political Economy and Industrial History 245
Business Law 275

FOURTH YEAR.

FIRST TERM.

Comparative Physiology . . . 735
Physiological Laboratory . . . 736
Theoretical Biology 738
Microscopic Anatomy 737
Bacteriology 743
Industrial Biology 740
History of the Inductive Sciences 742
Journals 739

Options.

1. Organic Chemistry . . 329, 333
2. { Paleontology . . . . . 672 / or Social Reform . . . 247 / Climatology 685

SECOND TERM.

Comparative Physiology 735
Theoretical Biology 738
Principles of Public Health and Sanitation 750
Journals 739
Vital Statistics 268
Thesis.

Options.

1. { Sanitary Biology . . . . 751 / Organic Chemistry . . . 333
2. { Sanitary Biology . . . . 751 / Social Reform or Structural 247 / and Chemical Geology . . 668
3. { Descriptive Sociology . . . 256 / Social Reform or Structural 247 / and Chemical Geology . . 668

VIII. – PHYSICS.

As distinguished from the professional or technical courses in engineering, architecture, etc., the Institute offers certain courses of a distinctly scientific nature. The course in Physics contains a series of studies adapted to the needs of those who wish to become teachers of physics, or who desire to enter upon a course in pure science, whether with a view to its further continuance, or wholly as a matter of training. Its leading features are a thorough and continuous study of the various branches of physics and a treatment of mathematics advanced considerably beyond the requirements of any of the technical courses. General, theoretical, analytical, and organic chemistry occupy a position next in prominence to mathematics, and of hardly less importance. Options are so arranged that choice may be made between the pursuit of more advanced mathematical and chemical topics.

Historical and other allied subjects and the modern languages are continued throughout the first three years; and the latter may be further prolonged, if desired. Chemistry may be continued to the end of the course, and mathematics, pure and applied, is required throughout the whole four years. Physics begins with the second year and, in lectures, readings, recitations, and laboratory exercises, extends to the close of the course. A large amount of experimental work is performed, and an experimental investigation is undertaken during the fourth year in connection with the preparation of the thesis. At all times it is sought to encourage the spirit of original research, and to impart an understanding of the principles upon which scientific investigation, especially in quantitative measurement, should be conducted. (See pages 85 to 89.)

Beyond the particular alternative studies set forth in the course scheme, a certain further liberty of substitution may be allowed by the Faculty in the case of students in Course VIII. who are fitting themselves for some special line of work.

VIII. — PHYSICS.

FIRST YEAR. SEE PAGE 29.

SECOND YEAR.

FIRST TERM.

Physics: Mechanics, Wave Motion, Electricity (lectures) . . 360
Acoustics 362
Qualitative Analysis (lectures and laboratory) 300
Descriptive Astronomy 361
Microscopy 710
Differential Calculus 33
German (or French) . . . 200 (190)
English Literature 165
European History 221

Options.

Qualitative Analysis (additional) 300
Determinants 35

SECOND TERM.

Physics: Electricity, Optics (lectures) 360
Physical Laboratory: Mechanics, Optics 366
Physical Measurements (lectures) 365
Theoretical Electricity 363
Quantitative Analysis (lectures and laboratory) 305
Theoretical Chemistry 303
Integral Calculus 38
German (or French) . . . 200 (190)
English Literature and Composition 165

THIRD YEAR.

FIRST TERM.

Physics: Heat (lectures) . . . 370
Physical Laboratory: Optics, Heat 374
Theoretical Electricity 377
Elements of Industrial Electricity 379
Photometry 371
Organic Chemistry (brief course) 302
Chemistry of Solutions and Molecular Weight Determinations 313, 328
Differential Equations 45
German (or French) . . . 201 (191)
Political Economy 245

Options.

{ Quantitative Analysis . 319, 320
{ Shopwork 138, 139
{ or General Theory of Equations 43

{ Quaternions 47
{ General Theory of Equations 43

SECOND TERM.

Physical Laboratory: Optics or Heat and Electrical Measurements, 375, 376
Physico-Chemical Laboratory . . 384
Theoretical Electricity 377
Electrical Measuring Instruments and Methods (lectures) . . . 383
Theoretical Chemistry 318
Analytical Mechanics 77
German (or French) . . . 201 (191)
Political Economy and Industrial History 245
Business Law 275

Options.

Quantitative Analysis . . . 319, 320

{ Theory of Surfaces . . . 49
{ Advanced Calculus and Definite Integrals 50

FOURTH YEAR.

FIRST TERM.

Electrical Testing: Heat Measurements 405, 398
Theory of Periodic Currents . . 404
Electrical Measuring Instruments and Methods (lectures) . . . 406
Optics 390
Kinetic Theory of Gases . . . 394
Energetics 393
Physical Colloquium 395
Fourier's Series; Laplace's Coefficients 56
Method of Least Squares . . . 57
History of Science 742

Options.

Organic Chemistry 333
Analytical Mechanics 85

SECOND TERM.

Theory of Periodic Currents . . 404
or Theory of Potential . . . 412
Optics 390
Electro-Chemistry 411
Fourier's Series; Laplace's Coefficients 56
Discussion of the Precision of Measurements 423
Principles of Scientific Investigation 414
Physical Colloquium 395
Physical Research: Thesis.

Options.

Special Work; Chemistry or Physics 415
Analytical Mechanics 85

IX.—GENERAL STUDIES.

The course in General Studies is designed especially for students who wish to secure an education based upon scientific study and experiment, but including a larger amount of history, economics, language, and literature than is possible in technical courses. It is adapted to the needs of those who expect to engage in trade, banking, manufacturing, or journalism, or in the teaching of social or political science. For administrative positions in business, a careful knowledge of political and social relations is essential; and it is believed that the origin, growth, and laws of political and industrial society can best be approached through the methods used in natural science. The uniform requirement of the Institute in physics and a considerable share of the general training in chemistry are preserved in this course. From the study of biology, including botany and zoölogy, as a basis, the student is prepared to proceed to the study of man in society, and to consider the history and significance of social institutions, such as the family, the state, and the church. Physical science, biology, anthropology, social science and history, political and industrial history, and international law thus present, throughout the course, a definite, progressive relationship.

This course keeps in view the fact that in practical life, as in intellectual, success must depend largely upon breadth and flexibility of mind; and that intelligent and appreciative study of literature contributes to the fullest development of these qualities. The study of the history and development of the English language is made to lead the way to a careful survey of English literature, the effort being to make the work not mechanical, but sympathetic and vital.

Other special features of the department of General Studies are: More extended study of modern languages; a continuous course of historical study, directed especially toward the political and social history of England and the United States; drill in the essential principles of English composition; an orderly study of economics, including its theory and history, with courses in industrial and commercial history and geography, finance, and statistics. The student may be permitted to substitute certain subjects in other courses, as biology or mathematics, provided his individual aptitudes justify such a liberty. (See pages 119 to 123.)

IX. — GENERAL STUDIES.

FIRST YEAR. SEE PAGE 29.

SECOND YEAR.

FIRST TERM.

European History since 1815 . . 221
History of England 222
Political Economy 240
Economic Problems 241
English Literature 165
French [2]; German 193, 200
General Biology 711
Physics: Mechanics, Wave Motion, Electricity (lectures) 360

SECOND TERM.

History of England 222
English Literature and Composition 165
French [2]; German 193, 200
Zoölogy and Botany 716, 717
Dynamical Geology 665
Physics: Electricity, Optics (lectures) 360
Physical Laboratory 367

THIRD YEAR.

FIRST TERM.

European Civilization and Art . 228
English Composition (advanced course) 167
Financial History of United States [1] 250
Statistics 246
Commercial Geography [1] . . . 251
Anthropology 722
German, with sight-reading 201, 202
Physics: Heat 370

Options.

History of England in the 16th and 17th Centuries 227
Theories and Methods of Social Reform 247
English Literature to 1560 . . . 169

SECOND TERM.

European Civilization and Art . 228
History of Commerce [1] 252
Descriptive Sociology 256
Geology 678
Business Law 275
German, with sight-reading . 201, 202

Options.

History of England in the 16th and 17th Centuries 227
Theories and Methods of Social Reform 247
English Literature: 1560–1660 . 169
French 195

FOURTH YEAR.

FIRST TERM.

Comparative Politics 266
International Law 258
Taxation and Administration [1] . . 255
English Literature: 1660–1780 . 175
Physiology 741
Climatology 685

Options.

History of Era of French Revolution 230
Local United States History . . 231
Statistics of Sociology 257
Argumentation 176
Language: Special Work in French or German, or Elements of Spanish or Italian . . 207, 208

SECOND TERM.

Comparative Politics 266
History of Industry [1] 253
History and Elements of Philosophy 234
English Literature: 1780–1860 . 177
Principles of Public Health and Sanitation 750
Thesis.

Options.

History of Era of French Revolution 230
Local United States History . . 231
Banking and Finance 270
History of Economic Theory . . 260
Contemporary Literature . . . 178
Journalism 179
Language: First Term continued 207, 208

[1] Alternating studies.
[2] The course in French Literature is also recommended.

X. — CHEMICAL ENGINEERING.

The course in Chemical Engineering is arranged to meet the needs of students who desire, in addition to a general training in mechanical engineering, a knowledge of the applications of chemistry to the arts. Graduates in this course find employment as engineers, having to deal with problems of construction and administration in connection with dye-works and bleacheries, oil refineries, gas-works, sugar refineries, paper and pulp mills, the manufacture of fertilizers, soap, heavy chemicals, and various other branches of industry where such special training is demanded.

The general engineering studies in the course in Chemical Engineering coincide for the most part with the work of the students in Mechanical Engineering. A course of instruction in the fourth year is devoted to a discussion of the appliances used in manufacturing and applied chemistry, the methods of transportation, evaporation and distillation, refrigeration and similar topics.

The instruction in industrial and applied chemistry is arranged with reference to the needs of this course, and attention is directed to the methods of conducting the mechanical operations in various manufacturing processes. At the same time the chemical principles upon which operations rest are thoroughly taught. (See pages 82, 83.)

The instruction in the fourth year has been so arranged that the student can exercise a certain choice as to the topics to which he wishes to devote special attention. Thus he may receive instruction in textile coloring, in case he expects to find employment in the textile industries; in heat measurements and metallurgy, to fit him for operations involving the use of furnaces; or in organic chemistry, if he intends to engage in the manufacture of dyes or other organic products.

X. – CHEMICAL ENGINEERING.

FIRST YEAR. SEE PAGE 29.

SECOND YEAR.

FIRST TERM.		SECOND TERM.	
Qualitative Analysis (lectures and laboratory)	300	Quantitative Analysis (lectures and laboratory)	305
Principles of Mechanism	510	Mechanism: Cotton Machinery; Machine Tools; Gear-Teeth	517
Differential Calculus	33	Drawing	515
Physics: Mechanics, Wave Motion, Electricity (lectures)	360	Integral Calculus	38
Descriptive Geometry	110	Physics: Electricity, Optics (lectures)	360
German (or French)	200 (190)	German (or French)	200 (190)

THIRD YEAR.

FIRST TERM.		SECOND TERM.	
Industrial Chemistry	312	Industrial Chemistry	312
Organic Chemistry (brief course)	302	Industrial Chemical Laboratory	314
Steam Engineering; Thermodynamics; Valve-Gears	525	Steam Engineering: Boilers	525
Drawing	526	Drawing	526
Elements of Differential Equations	46	Engineering Laboratory	530
Industrial Electricity	379	Physical Laboratory	373
Physics: Heat	370	Strength of Materials; Kinematics and Dynamics	75
Physical Laboratory	373	German (or French)	201 (191)
General Statics	71	English Literature and Composition	165
German (or French)	201 (191)		
English Literature	165		
European History	221		

FOURTH YEAR.

FIRST TERM.		SECOND TERM.	
Applied Chemistry	339	Applied Chemistry: Memoirs	339
Testing of Oils	336	Technical Machinery	554
Gas Analysis	340	Engineering Laboratory	545
Steam Engineering	540	Strength and Stability of Structures; Theory of Elasticity	88
Engineering Laboratory	545	Shopwork	143, 147
Metallurgy	587, 589	Political Economy and Industrial History	245
Strength of Materials: Friction	86	Business Law	275
Dynamics of Machines	543	Thesis.	
Shopwork	138		
Political Economy	245		
Options.		*Options.*	
Textile Coloring	338	Metallurgy	599
Heat Measurements	398	Organic Chemistry	332
Organic Chemistry	332	Hydraulic Motors	490
Hydraulics and Hydraulic Measurements	471, 473	Applied Chemistry (additional)	339

XI. — SANITARY ENGINEERING.

The course in Sanitary Engineering is essentially one in civil engineering, but is designed for students who wish to pay particular attention to those engineering branches which are concerned with problems of the public health, and who, therefore, desire to gain a better knowledge of the subjects of chemistry and biology, and of their relations to engineering problems, than can be obtained in the course in Civil Engineering.

The line of study offered differs from the regular course in Civil Engineering, page 31, in the following particulars:

There is a reduction in the time devoted to railroads and bridges, and an entire omission of the mechanical engineering subjects of mechanism and steam engineering, and of astronomy and historical geology.

The time thus gained is devoted principally to courses in chemistry and biology. In these it is designed to give the students such training as shall fit them to interpret properly the results of researches in sanitary chemistry and sanitary biology, and to coöperate with chemists and biologists in professional work. Practice is given in the chemical and biological laboratories, and the student is instructed in the methods of water and air analysis, and is taught to observe and identify the various animal and vegetable organisms present in natural waters and sewage. The course devotes particular attention to the sanitary side of questions of water supply and drainage, and discusses, among other things, the principles of filtration and the methods of purifying water and sewage, the relation between drinking waters and disease, the methods of disposing of sewage, and other questions relating to the health of communities. In the fourth year courses of instruction are also given in heating and ventilation and hydraulic machinery.

The entire instruction in sanitary and hydraulic engineering now given in the course in Civil Engineering, a portion of which is there optional, is required in the course in Sanitary Engineering. (See page 94.)

XI. — SANITARY ENGINEERING.

First Year. See page 29.

SECOND YEAR.

FIRST TERM.		SECOND TERM.	
Surveying and Plotting	440	Surveying and Plotting	440
Topographical Drawing	442	Qualitative Analysis (lectures and laboratory)	300
Organic Chemistry (brief course)	302	Dynamical Geology	665
Differential Calculus	33	Integral Calculus	38
Physics: Mechanics, Wave Motion, Electricity (lectures)	360	Physics: Electricity, Optics (lectures)	360
Descriptive Geometry	110	German (or French)	200 (190)
German (or French)	200 (190)	English Literature and Composition	165
English Literature	165		
European History	221		

THIRD YEAR.

FIRST TERM.		SECOND TERM.	
R. R. & Highway Engineering: Field-work and Drawing	452, 453	R. R. & Highway Engineering: Field-work and Drawing	452, 453
Stereotomy	455	Advanced Surveying	450
Advanced Surveying	450	Theory of Structures	460
Quantitative Analysis (lectures and laboratory)	305	Water Analysis	317
General Biology	712	General Zoölogy and Botany	716, 717
Structural Geology	670	Physical Laboratory	373
Physics: Heat	370	Strength of Materials: Kinematics and Dynamics; Theory of Elasticity	70
Physical Laboratory	373	German (or French)	201 (191)
General Statics; Stresses in Frames; Strength of Materials	70	Political Economy and Industrial History	245
German (or French)	201 (191)	Business Law	275
Political Economy	245		

FOURTH YEAR.

FIRST TERM.		SECOND TERM.	
Theory of Structures; Bridges and Similar Structures	477	Theory of Structures; Bridges and Similar Structures	477
Hydraulics	470	Hydraulic Engineering	491
Hydraulic Measurements	473	Hydraulic Machinery	495
Sanitary and Hydraulic Engineering	472	Design	494
Bridge Design	479	Chemistry of Water Purification and Sewage Disposal	341
Air Analysis	334	Principles of Public Health and Sanitation	750
Bacteriology	743	Sanitary Biology	751
Metallurgy of Iron	587	Building Construction	649
Industrial Electricity	379	Engineering Laboratory	480
Heating and Ventilation	396	Thesis.	
Shopwork	149		

XII. — GEOLOGY.

The course in Geology affords an opportunity to obtain a general education in natural science with special training in geological work and studies. The occupations which its students may naturally have in view include employment in responsible positions upon local, state, or national surveys, practice as professional geologists in any of the economic or technical relations of the science, or in connection with collegiate or other institutions.

The demand for men who have united topographic with physiographic and geologic studies has been increased by the modern methods of conducting governmental and other surveys. That the students may be better prepared for such work, the amount of topographic, geodetic, and hydrographic surveying is larger than has been common in geological courses. Such students are further qualified by the addition of physiographic geology and hydrography with field practice, and by the construction of geologic maps and sections.

Option 1 provides for the education of students who may wish to apply geological science in connection with the examination or the development of any of the various mineral resources of a country. To the studies of chemistry and assaying they may add mining and metallurgy if they so elect, while the schedule of the course provides for economic geology and the study of ore deposits.

Option 2 of the course affords an opportunity for students to extend their studies in chemistry, to add comparative anatomy, and in the fourth year to work in experimental geology.

Option 3 gives a larger proportion of time to topographic and other surveying studies, and is offered for the benefit of those who desire to be prepared for work in physiographic geology.

It is recognized that some students, especially those who contemplate teaching, may for good reasons wish for a different selection of studies, for example, the substitution of natural history studies for those of civil engineering. Applications for such substitution may be submitted to the Faculty. For details of instruction and equipment see pages 115 to 118.

XII.—GEOLOGY.

First Year. See page 29.

SECOND YEAR.

FIRST TERM.

Physiography 660
Mineralogy and Blowpipe Analysis 661, 662
General Biology 711
Physics: Mechanics, Wave Motion, Electricity (lectures) 360
German (or French) . . . 200 (190)
English Literature 165
European History 221

Options.

1, 2. Qualitative Analysis (lectures and laboratory) . . 300
3. { Surveying and Plotting . . . 440 / Topographical Drawing . . 442

SECOND TERM.

Structural and Chemical Geology . 668
Geological Field-work and Laboratory 666
Dynamical Geology 665
Zoölogy and Botany 716, 717
Physics: Electricity, Optics (lectures) 360
German (or French) . . . 200 (190)
English Literature and Composition 165

Options.

1, 2. Quantitative Analysis (lectures and laboratory) . . 305
3. Surveying and Plotting . . 440

Field-work in Mineralogy (elective).

THIRD YEAR.

FIRST TERM.

Historical Geology 669
Geological Maps and Sections . . 671
Structural Palæontology 672
Geological Fieldwork 673
Anthropology 722
Physics: Heat 370
Physical Laboratory 373
German (or French) . . . 201 (191)
Political Economy 245

Options.

1. Quantitative Analysis (lectures and laboratory) . . 319, 320
2. Comparative Anatomy . . . 720
3. { Advanced Surveying . . . 450 / Experimental Geology . . . 692

SECOND TERM.

Mineralogy 677
Stratigraphic Palæontology . . . 680
Glacial Geology 679
Assaying 583
Physical Laboratory 373
German (or French) . . . 201 (191)
Political Economy and Industrial History 245
Business Law 275

Options.

1. { Quantitative Analysis (lectures and laboratory) . 319, 320 / Theoretical Chemistry . . . 295
2. { Comparative Anatomy . . . 720 / Freehand Drawing 120
3. { Advanced Surveying . . . 450 / Applied Geology . . . . 681 / Freehand Drawing 120

Summer Course in Geology and Topography.

FOURTH YEAR.

FIRST TERM.

Physiographic Geology 687
Ore Deposits 691
Micro-Lithology 690
Geological Field-work and Laboratory 686
Geological Memoirs 688
Climatology 685
Stratigraphic Correlation . . . 689

Options.

1. Mining Engineering and Metallurgy 581, 587, 589
2. Experimental Geology . . . 692
3. { Mining Engineering . . . 581 / Hydraulic Measurements . . 473

SECOND TERM.

Economic Geology 695
Micro-Lithology 690
Geological Field-work and Laboratory 686
Geological Memoirs 688
Hydrography 696
Thesis.

XIII.—NAVAL ARCHITECTURE.

The course in Naval Architecture offers instruction in the theory and methods of designing and building ships, together with a study of the properties requisite for the safety and steadiness of a ship at sea.

While attention is given mainly to the construction of merchant steamships, the methods used are as thorough and complete as those employed in designing government vessels, and due attention is given to problems that arise only in the design of a man-of-war, or which are more conveniently treated in connection therewith. Some attention also is given to sailing vessels.

In addition to the literary, mathematical, and general scientific studies requisite for a well-rounded education and for proper preparation for the special work of the course, thorough training is given in mechanism, thermodynamics, applied mechanics, hydraulics, steam engineering, and marine engineering. It is believed that the best coördination of the design of a steamship and its propelling machinery is attained by a naval constructor who is familiar with both branches of his profession.

In the third year of the course, lectures are given on the methods of building ships in iron and steel, on the general properties of floating bodies, on statical and dynamical stability of ships, and on such special problems as launching and docking. In the fourth year the lectures treat of the strength of ships, resistance and propulsion, rolling of ships, theory of oscillating waves and waves of translation, and the steering and manœuvring of ships; also of ventilation and drainage and of adjustment of compasses. The lectures are accompanied by two or three exercises a week in drawing, in which the students make the calculations and constructions described in the lectures, and thus gain a proper appreciation of the principles learned and some facility in applying them.

The work in applied mechanics and steam engineering is accompanied by a full course in the laboratories of engineering and applied mechanics. Instruction is given in the shops, in forging, chipping and filing, and machine-tool work. (See also pages 99 to 101.)

XIII. — NAVAL ARCHITECTURE.

First Year. See page 29.

SECOND YEAR.

FIRST TERM.		SECOND TERM.	
Principles of Mechanism	510	Mechanism: Gear-Teeth; Machine Tools	518
Drawing	512	Drawing	515
Forging	142	Forging, Chipping and Filing	142, 144
Differential Calculus	33	Integral Calculus	38
Physics: Mechanics, Wave Motion, Electricity (lectures)	360	Physics: Electricity, Optics (lectures)	360
Descriptive Geometry	110	German (or French)	200 (190)
German (or French)	200 (190)	English Literature and Composition	165
English Literature	165		
European History	221		

THIRD YEAR.

FIRST TERM.		SECOND TERM.	
Naval Architecture	570	Naval Architecture	570
Naval Architectural Drawing	571	Naval Architectural Drawing	571
Mechanism Design	526	Steam Engineering; Boilers	525
Steam Engineering; Valve-Gears; Thermodynamics	525	Engineering Laboratory	530
Elements of Differential Equations	46	Physical Laboratory	373
Physics: Heat	370	Strength of Materials: Kinematics and Dynamics	75
Physical Laboratory	373	German (or French)	201 (191)
General Statics	71	Political Economy and Industrial History	245
German (or French)	201 (191)	Business Law	275
Political Economy	245		

FOURTH YEAR.

FIRST TERM.		SECOND TERM.	
Naval Architecture	572	Naval Architecture	572
Naval Architectural Drawing	573	Naval Architectural Drawing	573
Marine Engineering	551	Marine Engineering	551
Steam Engineering	540	Engineering Laboratory	545
Hydraulics	471	Strength and Stability of Structures; Theory of Elasticity	88
Engineering Laboratory	545	Machine-Tool Work	146
Dynamics of Machines	542	Thesis.	
Strength of Materials; Friction	86		
Chipping and Filing; Machine-Tool Work	142, 146		
Metallurgy of Iron	587		

FIVE-YEAR REGULAR COURSES.

The foregoing schedules of the regular courses are arranged for the completion of the work in four years. A student who can devote five years to his course will, however, often find it advantageous to do so. He is thus enabled to master it more thoroughly, and, on the other hand, to accomplish certain valuable work which has been necessarily omitted from the schedule of the four-year course. Moreover, considerations of health, lack of opportunities for thorough preparation, or other causes, may render it advisable for a student to extend the work over five years. To meet such cases, there have been arranged, in most departments, five-year courses which contain the same subjects as the corresponding four-year courses, and differ from them only in the time over which the work is distributed, and, to a slight extent, in the sequence of studies. They lead respectively to the same degrees as the corresponding four-year courses. The standard of scholarship required of the student is in every way the same, and he is classed as a regular student so long as he maintains his standing in the course which he is pursuing.

A special circular will be sent on application. Applicants for five-year courses not shown in the circular should consult the chairman of the Faculty Committee on Five-Year Courses as early as possible.

GRADUATE COURSES.

The degree of Master of Science is awarded for proficiency in complete graduate courses of study of at least one year's duration.

Except in cases of unusual attainment the applicant for the degree of Master of Science must have taken his first degree in science in some science school, college, or university of good standing; and his attainments must in general be equivalent to those required for the corresponding Bachelor's degree of the Institute. He must file with the Secretary, before being accepted as a candidate, a statement of his pre-

vious work and present attainments, and of the advanced work which he proposes to do at the Institute. The candidate, if a graduate of the Institute, may offer either more advanced work in his own department or undergraduate professional work of an allied department; but, in general, his subjects must not be all of the latter class, and he will be expected to present a thesis of higher grade than is required for the Bachelor's degree. He must pursue his course of study continuously under the direction and oversight of the Faculty for at least one full school year after filing his application, exhibiting during that time ability to conduct original investigations, and passing creditable examinations at such times and on such subjects as may be designated, and must finally present an acceptable thesis.

In making a choice between the two methods of planning a course leading to the Master's degree as outlined above, it should be remembered that the continually increasing specialization of the various engineering professions and the upward tendency of the standards of professional attainment render it difficult in a four-year course to give much more than a thorough training in the student's chosen specialty. Hence it is frequently of great advantage to the graduate from one of the engineering courses to devote an additional year to the professional work of another closely related course, with or without reference to obtaining the Master's degree. For example, a student who has received a degree in Mechanical Engineering may, by devoting a year to the study of theoretical and practical electricity, complete the professional subjects of the course in Electrical Engineering; a graduate in Chemical Engineering may do the same; or a graduate in Electrical Engineering or Chemical Engineering, by a year of additional study, may complete the professional work of Mechanical Engineering.

The student who completes such a double course has obtained a broader scientific and professional education, is enabled to investigate a given problem on more than a single side, and is thus more efficient and independent in engineering practice.

The candidate for the Master's degree following a plan of this kind will not in general be required to complete all the prescribed studies of the second department; thus, for example, a graduate in Electrical Engineering desiring to spend an additional year in the department of Mechanical Engineering may be excused from a certain amount of Shopwork and Drawing.

A circular giving additional details in regard to requirements for the Master's degree will be mailed on application to the Secretary of the Faculty.

The degree of Doctor of Philosophy is awarded for proficiency in graduate courses of study of at least two years' duration. The particular courses of study which candidates for this degree wish to pursue must be submitted to the Faculty in writing, and must meet its approval. Occasional short absences, when the time is spent upon professional work by advice of the Faculty, will not be considered as interruptions of the student's residence.

Advanced courses in chosen lines of study, and without reference to degrees, may be pursued by graduates of the Institute without preliminary examination, or by graduates of other institutions who satisfy the Faculty, by examination or otherwise, that they are qualified to take with advantage the courses proposed.

SPECIAL STUDENTS.

In general, no definite schedules for special courses of study are laid down; but special courses may be planned by students with due reference to the requirements for admission to the work desired, as stated in the Schedule of Topics of the Catalogue, subject, however, in all cases, to the approval of the Faculty.

All special students in Chemistry who do not come under the two classes to be mentioned in the following paragraph must pass the full entrance examinations. For requirements regarding special students in Architecture, see page 36.

Persons of mature years who are engaged in technical pursuits will be afforded opportunities for the pursuit of laboratory and lecture courses without the exaction of the usual requirements for admission. Moreover, the attention of teachers who desire to qualify themselves for a higher degree of advancement in their profession is called to the opportunities which are offered at the Institute for afternoon and Saturday laboratory work. Persons actually engaged in the work of instruction, whether in public or in private schools, will be admitted to the Institute without formal examination, and the Faculty will take every occasion, consistent with the necessary general conduct of the school, to arrange courses for such special students which shall suit their individual needs, alike as to days and hours and as to the nature of the work to be done. Persons having but a few hours a week at their disposal can find opportunities at the Institute to extend and perfect their knowledge, especially in the departments of Chemistry, Physics, Biology, Geology, Drawing, and Mathematics.

A special circular in regard to Opportunities for Teachers will be mailed on application to the Secretary of the Faculty.

SUMMER COURSES.

During the summer vacation, after the close of the school-year, formal instruction in a considerable range of studies is given in the lecture-rooms and laboratories of the Institute by members of the instruction staff. The courses to be offered in the summer of 1900 are not yet definitely arranged, but it is expected that they will include Mechanical Drawing and Descriptive Geometry; Analytic Geometry; Shades and Shadows, and Elementary Design; Analytical and Organic Chemistry; Biology; Physics, including Mechanics, Light, Electricity, Heat; Surveying; Mechanism; Shopwork; French and German. Applications for other (non-technical) courses will be entertained. The work offered is planned with particular reference to subsequent study at the Institute. Students taking these courses have an opportunity to anticipate por-

tions of the work of the succeeding year, and thus to include a wider range of subjects, or to make greater advancement along a particular line. Again, students who, through sickness, or other cause, have failed to complete the work of the previous year at the proper time are enabled to obtain clear records before the opening of the fall term. Finally, persons desiring to enter with advanced standing — in particular, college graduates — may make up in the summer courses deficiencies which might otherwise cause serious embarrassment in their choice of studies and arrangement of hours for the year.

A special circular, giving full details in regard to dates and subjects, will be sent on application after March 1.

For information in regard to professional summer schools devoted mainly to "field-work" in Mining Engineering, in Surveying, Geology, and Hydraulic Engineering, and in Architecture, which have for a long time been maintained by the Institute with valuable results to the departments concerned, see pages 96, 108, 111, and 119.

Requirements for Admission.

Time of Examinations for Admission. — Examinations for admission to the first-year class are held on the first Thursday and Friday after June 24, in the Rogers Building, 491 Boylston Street, Boston. A second series of examinations for admission, and for applicants conditioned at the first examinations, is held on the first Tuesday and Wednesday after September 17. (See Calendar, page 2.) Attendance on both days, either in June or in September, is required.

The examinations begin at 9 A.M., and a schedule of hours will be mailed on application during the month preceding the examinations.

Applicants are advised to attend the June entrance examinations, if practicable, in order that any deficiencies then existing may be made up before entrance.

Entrance examinations are held *in June only* in New York, Philadelphia, Chicago, and other important cities. A circular, giving times and places, is issued in April, and will be mailed on application.

Candidates who intend to be examined in any other place than Boston are requested to send their names to the Secretary in time for him to receive them by June 15. A fee of five dollars is to be paid in advance by every candidate who is examined at any other place than Boston. The whole fee of a candidate who proposes to divide his examination between two years is payable in the year when he begins his examination. The fee should be sent by check, postal order, or registered letter to Albert M. Knight, Bursar, when the candidate sends his name to the Secretary.

Applicants who intend to take their entrance examinations in September are requested to notify the Secretary of such intention not later than September 10.

Applicants for *advanced standing* — that is, for admission to classes above the first year — must pass the entrance examinations, exception being made in favor of applicants from other colleges (see page 73), and must present themselves at the examinations for advanced standing. These examinations are held on the Monday and following days preceding the September entrance examination. A schedule of dates of these examinations will be mailed after June 1 on application. (See Calendar, page 2.)

Applications for admission at other times will be received only when some good cause, such as illness, has prevented attendance on the days prescribed. A fee of five dollars, payable to the Bursar, may be charged for special examinations if required in such cases.

ADMISSION TO THE FIRST YEAR.

In general, the training given in the best high schools (including manual training high schools) and academies will afford suitable preparation. To the student the importance of thorough preparation is great, since the character and amount of instruction given in the Institute from the outset leave little opportunity for one imperfectly fitted to make up deficiencies, and render it impossible for him to derive the full benefit from his course, or perhaps even to maintain his standing.

It should be borne in mind by the student purposing to enter the Institute that the broader his intellectual training in any direction, and the more extensive his general acquirements, the greater are the advantages he may expect to gain from his future course.

It is desired that every applicant present from the principal of the school last attended a statement of the duration and extent of his work there. While the Faculty accepts no certificates of preparatory schools in place of entrance examinations, the value of the opinion of previous teachers is fully recognized, and great weight will be attached to statements from them.

The requirements of age and scholarship specified are regarded as a minimum in all ordinary cases, and only exceptional circumstances will justify any relaxation. Parents and guardians are advised that it is generally for the ultimate advantage of the student not to enter under the age of eighteen years.

To be admitted as a regular student in the first-year class, the applicant must have attained the age of seventeen years, and must have passed satisfactory examinations in the following subjects:

Algebra,
Plane Geometry,
Solid Geometry,
French or **German,**
English,
History.

He must also present satisfactory evidence of preparation in one of the following **Electives**:

French or **German** (additional),
Latin,
English (additional),
History (additional),
Physics,
Chemistry,
Mechanical Drawing and **Shopwork.**

The detailed requirements in the various subjects are as follows:

Algebra. — Definitions; fundamental operations; use of parentheses; factoring; highest common factor; lowest common multiple; fractions, simple and complex; simple equations, with one or more unknown quantities; involution of monomials and polynomials; evolution of monomials and polynomials and the square and cube root of numbers; the theory of exponents, with applications; radicals, including rationalization, imaginary quantities, properties of quadratic surds, square root of a binomial surd, and solution of equations containing radicals; quadratic equations; equations in the quadratic form; simultaneous quadratic equations; ratio and proportion; arithmetical progression; geometrical progres-

sion. A satisfactory treatment of the topics in Algebra may be found in any of the following text-books: Wells' Essentials of Algebra, Wentworth's School Algebra, or Bradbury and Emery's Academic Algebra.

The former alternative requirement in Advanced Algebra has been discontinued.

Plane Geometry. — As much as is contained in the first five books of Wells' Essentials of Geometry; Chauvenet's or Wentworth's Geometry. Much importance will be attached to the applicant's ability to demonstrate original exercises.

Solid Geometry. — The usual theorems contained in text-books on solid geometry, with the exception of theorems relating to similar polyedrons and regular polyedrons. The application of the above to numerical examples in mensuration as follows — lateral areas and volumes of regular prisms; surfaces and volumes of rectangular parallelopipeds; lateral edges, lateral areas, and volumes of regular pyramids, and of frustums of regular pyramids; volumes of truncated triangular prisms; areas of spherical polygons; volumes of spherical pyramids; lateral areas, total areas, and volumes of cylinders, cones, and frustums of cones; areas of zones; volumes of spherical sectors; areas and volumes of spheres; volumes of spherical segments. The applicant should also be able to solve simple original exercises.

Importance will be attached to accuracy in the numerical work of the papers in Algebra and Geometry. Familiarity with the Metric System is essential.

The attention of teachers and applicants is particularly called to the necessity of thorough preparation in mathematics, not merely as to the extent and amount of work done, but as to its quality. Candidates should be thoroughly grounded in fundamental principles and definitions, and should be carefully guarded against the tendency to become mechanical in their algebraic work from giving disproportionate attention to mere dexterity in the solution of problems.

French. — 1. Proficiency in elementary grammar, to be tested by translation of easy English into French, or by direct questioning on the following topics: Inflection of nouns and adjectives for gender and number, excepting unusual cases; "pronominal adjectives"; the forms and positions of pronouns, especially the personals; the partitive constructions; the inflection of the regular and of the more usual irregular verbs, such as *aller*, *dire*, *faire*, and of the classes represented by *ouvrir*, *sentir*, *venir*, *paraître*, *conduire*, and *craindre*.

2. Ability to translate simple prose at sight, to be acquired by the reading of not less than two hundred and fifty duodecimo pages from at least two works of dissimilar character. (See remark for teachers on page 69.)

The above requirement corresponds with the course in elementary French taken in the second year by students who have passed German at entrance.

German. — 1. Proficiency, to be tested as for French, in the following topics of elementary grammar: Declension of readily classified nouns, of adjectives, and of pronouns; conjugation of the weak and of the more usual strong verbs; simple cases of word order.

2. Ability to translate simple prose, to be acquired by the reading of not less than two hundred duodecimo pages from at least two works of dissimilar character. A portion of this should be selected with a view to imparting some knowledge of a scientific vocabulary. (See remark for teachers on page 69.)

The above requirement corresponds with the course in elementary German taken in the second year by students who have passed French at entrance.

NOTE. — It is highly desirable that students should be trained early in the correct pronunciation of modern languages, and that teachers in preparatory schools give this important subject all due attention.

Candidates prepared to pass both elementary French and elementary German at the entrance examination will find it

advantageous for their subsequent work at the Institute to do so. Provision will also be made in June as well as in September for applicants prepared to pass examinations for advanced standing in the French and German of the first and third years.

English.[1] — The examination in English is based on the requirements adopted by the Commission of Colleges in New England.

1. The candidate will be required to write upon subjects familiar to him. It is expected that his composition will be correct in spelling, punctuation, grammar, idiom, and division into paragraphs, and plain and natural in style. He will be judged by how well he writes, rather than by how much he writes.

2. The candidate is required to have some acquaintance with good literature, and the following works will serve as a basis both for the examination in this and for the test in the writing of English. With these books the applicant must be familiar.[2] They are, however, divided into two classes. Those marked (*a*) are to be read, and the candidate will be required to show a general knowledge of their subject-matter and of the lives of the authors. Those marked (*b*) are to be thoroughly studied, so that the candidate shall be able to pass an examination upon their subject-matter and structure.

For 1900: (*a*) Dryden's Palamon and Arcite; Pope's Iliad, Books I., VI., XXII., and XXIV.; The Sir Roger de Coverley Papers in The Spectator; Goldsmith's The Vicar of Wakefield; Scott's Ivanhoe; De Quincey's Flight of a Tartar Tribe; Cooper's The Last of the Mohicans; Tennyson's The Princess; Lowell's The Vision of Sir Launfal.

(*b*) Shakespeare's Macbeth; Milton's Paradise Lost, Books I. and II.; Burke's Speech on Conciliation with America; Macaulay's Essays on Milton and Addison.

[1] For alternative requirement in English, see page 67.

[2] These books may all be had in an inexpensive form. A list of publishers and prices will be sent upon application to the Secretary of the Institute.

For 1901 and 1902: (*a*) Shakespeare's The Merchant of Venice; Pope's Iliad, Books I., VI., XXII., and XXIV.; the Sir Roger de Coverley Papers in The Spectator; Goldsmith's The Vicar of Wakefield; Coleridge's The Ancient Mariner; Scott's Ivanhoe; Cooper's The Last of the Mohicans; Tennyson's The Princess; Lowell's The Vision of Sir Launfal; George Eliot's Silas Marner.

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

For 1903, 1904, 1905: (*a*) 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.

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

As an alternative in English there may be offered any systematic course in combined rhetoric and literature which in amount is practically equivalent to the requirement specified. Such an alternative, however, will be accepted only upon special application in each case not less than two weeks prior to the examination.

NOTE. — The standing in English will not be determined solely by the rank attained in the examination in that subject, but, in addition to this, it is expected that the paper in History and the translations from French and German will be written in correct and expressive English.

History. — Preparation in either United States History or Ancient History may be offered. In the former subject a thorough acquaintance with the history of the Thirteen Colonies and of the United States down to the present time is required. In the latter subject the requirement covers the history of the early world down to the fall of the Roman Empire in the West.

For United States History, either (1) Johnston's History of the United States for Schools, or (2) Fiske's History of the United States for Schools and Thomas's History of the United States, will suggest a satisfactory amount of preparation; for the study of Ancient History, Myers and Allen's Outlines of Ancient History is recommended, but not prescribed.

It is not enough for the candidate to know merely the facts of history; he must show an understanding of the meaning of the facts, and some knowledge of the relation of cause and effect in historical events.

ELECTIVE REQUIREMENTS.

The object of the elective requirements is to secure greater breadth of preparatory training in subjects which have heretofore been recommended by the Faculty, and one or more of which most applicants have taken in preparing for the Institute.

It is expected that in general these requirements will be met by the presentation of certificates, note-books, drawings, etc., and not by examination. All certificates must be made out on forms supplied by the Institute. Examinations are in general required in the case of applicants desiring excuse from some of the work in the Institute on the ground of electives offered at entrance.

The subjects in which such excuse may be granted are French, German, Drawing, and Shopwork. Applicants offering Chemistry may take a course more advanced than otherwise during their first year. Further information in regard to substitutes for work thus anticipated may be found in the special circular on Alternative Studies, which will be mailed on application to the Secretary of the Institute.

French and German.[1] — An applicant presenting Elementary French (see page 65) may offer (*a*) Additional French. Translation from English into French; review of grammar,

[1] In addition to the uniform requirements stated on page 65.

with special reference to the syntax of verbs (modes and tenses); additional and more varied reading. (*b*) Elementary German (see page 65).

An applicant presenting Elementary German may offer (*a*) Additional German. Translation from English into German; review of grammar; additional and more varied reading; or (*b*) Elementary French (see page 65).

The elementary and additional reading in French and German may be selected from the list of works read in the Institute classes, but no requirement of particular text-books is intended. Lists may be obtained on application to the Secretary of the Faculty. Preparation in the elementary requirements of both languages is advised rather than in the more advanced work of one.

Latin. — Satisfactory evidence should be presented that the applicant has acquired the elements of Latin grammar, and that he has read four books of Cæsar or an equivalent.

The study of Latin is strongly recommended to persons who purpose to enter the Institute, since in addition to its disciplinary value it gives a better understanding of the various terms used in science, and greatly facilitates the acquisition of the modern languages.[1]

English and History.[2] — The work of secondary schools differs so much in these branches that no definite requirement is formulated at present. Any applicant who has carried work in English or history materially beyond the requirement stated on pages 66 and 67 may present for approval as his elective a statement of the amount and kind of work done. Such a course can be considered, however, only when the amount of work done in excess of the ordinary requirement has been in time equivalent at least to the requirement in Latin.

Physics. — Applicants may come prepared in either classroom or laboratory work. The latter is recommended when practicable.

[1] See also statement under Elective Requirements, pages 68 to 71.

[2] In addition to the uniform requirements stated on page 65.

It is important that the student should have learned the fundamental facts of physics. A knowledge of hypotheses is not material at this stage of his training. If his preparation has been solely in the class-room, he should have completed some one of the text-books in physics ordinarily used in high-school instruction of this kind. If laboratory work is presented, the course should be substantially equivalent to that laid out in such manuals as Hall and Bergen's "Text-book of Physics" or Chute's "Physical Laboratory Manual." In this case the applicant will be expected to present his original notes for examination.

Chemistry. — Applicants must present evidence of familiarity with the rudiments of Chemistry. More importance is attached to experience in laboratory practice which has made the student apt in manipulation and in critical observation, and to a practical knowledge of the composition, methods of preparation, and reactions of the common chemical substances, than to a knowledge of theoretical conceptions such as the determination of atomic and molecular weights, molecular structure, valence, etc.

The subject should be attempted only in schools having adequate equipment; and the laboratory work should be carried out with great care and attention, on the part of the teacher, to manipulation and note writing, special emphasis being laid upon exhaustive observation and correct inference.

The applicant should present for examination his original, uncopied notes, with any annotations which may have been made by the instructor.

Applicants who satisfy the Chemical Department as to their proficiency in general chemistry and elementary qualitative analysis may substitute more advanced work for the chemistry of the first year. The examination will include both written questions and laboratory work; and in the laboratory examination, special attention will be given to delicacy of manipulation and consequent accuracy, as well as to the intelligent understanding of the subject on the part of the applicant.

Mechanical Drawing and Shopwork. — The applicant must be familiar with the projections of points, lines, planes, and simple solids. Special attention is called to the importance of neatness and accuracy in making the drawings, and considerable practice in securing these qualities is advised. Plates should be presented showing the ground covered. (Faunce's Mechanical Drawing, chapters 1 to 4, represents the requirement.)

In **Shopwork** the applicant should be thoroughly familiar with the different tools and materials and know when and how to use them; he should be able to adjust and to sharpen all edge-tools, and capable of executing work from "working drawings." The main object of preparatory exercises should not be construction simply, but rather systematic instruction in the correct use of various tools.

Carpentry : The exercises should include systematic instruction in sawing; planing; chiselling, including chamfering, grooving, and plain moulding work; framing, including tenoning, mortising, and fitting in braces; use of the ordinary moulding-planes and the making of simple mouldings; the making and use of the mitre-box in fitting mouldings; nailing; dovetailing; gluing, and the proper use of sand-paper.

At least seventy-five hours should be allowed, exclusive of any time that may be used in making working drawings.

Wood-Turning : The applicant should have had systematic instruction and experience in the use of the wood-lathe; should understand the adjustment of speeds for the work in hand, and how to use properly the turning tools, such as gouges, turning chisels, nosing tools, right and left side tools, parting tool, calipers, and dividers. The exercises should also include systematic instruction in centre and chuck turning, particular attention being paid to the production of smooth work by the cutting action of the tools, and not through excessive use of sand-paper.

At least forty-five hours should be allowed, exclusive of any time that may be used in making drawings.

Whenever it shall appear practicable for the schools to meet higher requirements without raising the present age at entrance, it is the inten-

tion of the Faculty to increase the present requirements by additional work in modern languages. In such an event, it is probable that an alternative in Plane Trigonometry may be accepted.

* DIVIDED ENTRANCE EXAMINATIONS.

Candidates for admission will be allowed, at their option, to divide their extrance examinations between two successive years. The first divided examination will be held *only in June;* the second, in either June or September of the *following* year, at the dates named on page 2. To be admitted to the first divided examination the candidate must be at least sixteen years of age, and must present a certificate from his teacher, stating that he is qualified in the subjects in which he applies to be examined.

For the first divided examination the candidate will be allowed the choice of any of the following five subjects, but no credit will be allowed on any of these unless at least three of the five (or two in addition to the elective) are satisfactorily passed. At the second examination those subjects not passed at the first must be taken, as well as the Solid Geometry, which cannot be taken at the first examination.

Algebra.	French (or German).
Plane Geometry.	English.
History.	

Details of the above requirements are given on pages 63 to 67.

No provision is made for division of entrance examinations between June and September of the same year.

ALTERNATIVE STUDIES.

In view of the increasing number of applicants taking examinations for advanced standing the Faculty have arranged alternative studies for students able to pass off some of their first-year subjects: thus, for example, applicants passing more than the required work in modern languages may arrange to complete these at an earlier stage in their courses; those passing Advanced Algebra may substitute second-year European History or Shopwork, or special work in English or Chemistry; those anticipating Mechanical Drawing may do the same, or, if prepared, may take second-year Descriptive Geometry. Graduates of Manual Training Schools may often be excused from the first-term work in Mechanical Drawing, as well as the Shopwork required in some of the engineering courses.

A special circular giving detailed information in regard to such alternative studies will be mailed on application.

ADMISSION TO ADVANCED STANDING.

To be admitted as a regular student in the second, third, or fourth year, the applicant must have attained the corresponding age (eighteen, nineteen, or twenty years, respectively), and must in general pass satisfactorily the examination for admission to the first-year class, and examinations, on all of the subjects given in the earlier years of the course which he desires to enter. The examinations for advanced standing are held at the time stated on page 2. (See pages 63 to 71 and pages 28 to 55.)

Graduates of colleges are admitted to the Institute without the usual entrance examination, and will be permitted to enter any of the courses at such a point as their previous range of studies will allow. If prepared to enter upon most of the studies of a certain year, they may be afforded opportunity to make up any studies of the earlier years in which they are deficient; they will, in general, be credited with all subjects in earlier or later years in which they can show, by examination or otherwise, a standing satisfactory to the Faculty, and may be received provisionally as regular students. The attention of such applicants is particularly called to the schedules of courses on pages 28 to 55, and to the Schedule of Topics of the Catalogue. It is highly desirable that students contemplating professional courses after graduation from college should arrange their college electives to cover the earlier subjects of the courses chosen, in order that the number of deficiencies to be made up may be as small as possible. Such students are advised to communicate with the Secretary of the Faculty, from whom detailed information may be obtained as to the requirements for entering a particular year of any course. In order to enter any of the engineering courses in the second year, it is essential for applicants to have preparation in analytic geometry. For admission to third-year engineering work they must be prepared in mathematics through the calculus. It is important that students applying for advanced standing in these courses shall have had considerable practice in mechanical drawing and be familiar with the ele-

ments, at least, of descriptive geometry. Summer courses of appropriate scope are offered in these subjects. (See page 59.) Applicants desiring excuse from mechanical or freehand drawing should present their plates. (A special circular in regard to Opportunities for College Graduates will be mailed on application.)

ADMISSION OF SPECIAL STUDENTS.

To be admitted to one or more selected subjects in any of the regular courses — that is, to a partial or special course — the applicant must have attained the age of seventeen years, and must give satisfactory evidence, by examination or otherwise, that he is qualified to pursue to advantage the subjects chosen.

By means of the Schedule of Topics of the Catalogue the applicant may ascertain what the various subjects of study are, how, when, and by whom they are given, in what regular courses they are included, and the preparation required for each; but admission to special courses is dependent in all cases upon the approval of the Faculty. In general, no student will be allowed to take any one of these subjects until he has proved his satisfactory knowledge of all subjects required as preparation for it.

All special students desiring to take chemistry of the first year must pass the full entrance examinations, except that an equivalent in some other subject may be substituted for geometry. Communications in regard to such substitution should be addressed to the Secretary of the Faculty.

To Teachers and to Persons of Mature Age engaged in Technical Pursuits, wishing to devote some time to scientific study, the Institute desires to offer the amplest opportunities in its lecture-rooms and laboratories. Such persons may in general be admitted without formal examination, on satisfying the Faculty that they are qualified to undertake the work proposed. They will be expected after admission to attend the same exercises and examinations as other students. (For additional details, see circular on Opportunities for Teachers.)

Requirements for Graduation.

THE degree of Bachelor of Science, in the course pursued, is given for the satisfactory completion of any of the regular courses of study.

To be entitled to a degree the student must have attended the Institute for not less than one year next preceding, must have completed the prescribed studies and exercises of the four years, and must, in addition, pass final examinations, if required, on subjects relating particularly to his course. He must, moreover, prepare a dissertation on some subject included in his course of study; or an account of some research made by himself; or an original report upon some machine, work of engineering, industrial works, mine or mineral survey; or an original design accompanied by an explanatory memoir. This thesis or design must be approved by the Faculty. Theses are to be written on one side only of paper of good quality, 8 × 10½ inches in size, with an inch margin on the inner edge, and a half-inch margin on the outer edges. Theses must be handed to the Secretary of the Faculty, not later than the first annual examination.

No degree can be conferred until all dues to the Institute are discharged.

Students leaving the Institute of their own motion before graduation are entitled to receive a statement of attendance from the Secretary.

Subjects and Methods of Instruction.

INSTRUCTION is given by lectures and recitations, and by practical exercises in the field, the laboratories, and the drawing-rooms. A high value is set upon the educational effect of these exercises, and they form the foundation of each of the thirteen courses. Text-books are used in many subjects, but not in all. In many branches the instruction given differs widely from available text-books; and, in such cases, notes on the lectures and laboratory work have been printed, either privately or by the Institute, and are furnished to the students at cost. Besides oral examinations in connection with the ordinary exercises, written examinations are held from time to time. Near the close of the months of January and May general examinations are held. After the examinations the standing of the student in each distinct subject is reported to his parent or guardian. Reports of standing are based to a very large extent upon the quality of daily class-work. The January and May reports form the basis of admonition or advice from the Faculty in the case of students who are not profiting sufficiently by their connection with the school.

Mathematics. — Great importance is attached to the study of mathematics, both as a means of mental discipline and as affording a necessary basis for further instruction in the engineering and other courses.

The three topics following are taken by all regular students: Advanced Algebra; Plane Trigonometry; Plane and

Solid Analytic Geometry,[1] including the equations and properties of the point, right line, and circle; of the parabola, ellipse, and hyperbola; and of the plane, sphere, cylinder, cone, paraboloids, ellipsoids, and hyperboloids.

Students in all the engineering courses receive instruction also in Elements of the Theory of Equations; the Differential and Integral Calculus, including the following topics: Expansion of functions, evaluation of indeterminate forms, maxima and minima, general properties of plane curves, application of both single and double integration to the rectification and quadrature of curves, and to the determination of volumes and moments of inertia.

In addition to the above, the following topics are given in some courses: Spherical Trigonometry; Differential Equations, with applications to problems in geometry, mechanics, and physics; the Theory of Probability and Method of Least Squares, including the adjustment of observations and the precision of measurements; Fourier's Series, Spherical Harmonics, and Bessel's Functions; a study of their properties and their application to the solution of such problems in physics as can be expressed by certain partial differential equations.

As elective work, opportunities are afforded for the study of Higher Algebra and Trigonometry, including De Moivre's theorem and its applications; the General Theory of Equations, with the solution of higher equations by methods of approximation; Determinants; Theory of Surfaces; an advanced course in the Calculus, including the theory of definite integrals; Quaternions, being an introduction to the fundamental principles of vector addition, subtraction, division, and multiplication, and their application to problems of Plane and Solid Geometry;[2] General Theory of Functions.

The Runkle Mathematical Library contains a carefully selected collection of works in all branches of mathematics, and new publications of value are added as soon as issued.

[1] A shorter course in Plane Analytic Geometry is given to students in certain non-mathematical courses.

[2] Upon application a second course treating the surfaces of the second degree by Quaternion methods may be given.

In addition, the more important journals devoted to the subject of Mathematics are regularly received.

The department is also in possession of an extensive collection of models, which are of special interest and value in connection with the courses on analytic geometry of three dimensions, the theory of surfaces, and the theory of functions.

Theoretical and Applied Mechanics. — In applied mechanics the subjects first treated are the composition and resolution of forces, the general laws of kinematics and dynamics mathematically discussed, the principles governing the determination of the stresses in the different members of trusses, centre of gravity, moment of inertia, and the ordinary principles of the strength of materials.

The more advanced instruction in this subject aims to familiarize the students with such data on the strength of materials used in construction as have been obtained by means of experiments, especially those made on a practical scale, in different parts of the world. Pains is taken to keep this work well up to date. This is followed in particular courses by the study of friction and lubrication, of continuous girders, of stone and iron arches, and of the theory of elasticity. Besides the above, the students have made during the school year 1898–99 the following tests in the laboratory:[1]

A test to determine the modulus of elasticity, the limit of elasticity, and tensile strength of a cast-iron, a wrought-iron, or a steel rod or bar.

A test of the deflections and of the transverse strength of a full-size iron or steel I-beam, or of a wooden beam subjected to a transverse load.

A test to determine the modulus of elasticity and the tensile strength of annealed or bright iron wire.

A test to determine the shearing modulus of elasticity and torsional strength of 2-inch iron or steel bars.

Tests of the tensile strength of hydraulic cement.

Tests of the compressive strength of hydraulic cement.

Tests of tensile strength of compositions.

Torsional tests of composition bars; of iron, steel, brass, and copper wires.

Tests of the tensile strength of bolted joints.

[1] See page 102.

Tests of the strength of different kinds and sizes of ropes and of different knots used in fastening ropes.

Tests of the strength of twine, window cord, belting, and belt-lacing.

The instruction in Analytical Mechanics includes an advanced mathematical treatment of analytical statics, dynamics of a particle, dynamics of rigid bodies, etc., and requires acquaintance with considerable pure mathematics beyond the general courses in the calculus.

Drawing and Descriptive Geometry. — Instruction is given to all regular students in the principles of Geometrical, Mechanical, and Freehand Drawing; and a large amount of time is devoted to practice in the drawing-room, to enable the student to acquire the skill necessary for his future work. Drawing is also continued in connection with the professional studies.

All engineering students learn the elements of Descriptive Geometry in connection with their mechanical drawing, the exercises including recitations by small sections. The later exercises in descriptive geometry are of two kinds: In the lecture-room the instruction is given by means of models and diagrams, and also by the use of text-books. In the drawing-room the student is drilled in the solution of problems designed to illustrate the work of the class-room, and to make him thoroughly familiar with the subject.

The instruction in Freehand Drawing includes an elementary course in lettering and object drawing, taken by all regular students, and more advanced work in the departments of Architecture and Geology. For students in Architecture, the course includes the study of ornament and the human figure from the cast and from life. Studies in charcoal are usually required, and opportunity is afforded for those who have made satisfactory progress to sketch in pencil, pen and ink, and with the brush. Importance is attached to drawing from memory and to rapidity of execution. For students in Geology, freehand drawing is taught with special reference to the representation of physical features and structure in field-work, and to the description of the specimens collected.

Besides the large and well-equipped freehand-drawing

rooms of the Institute, the Museum of Fine Arts offers excellent opportunities for drawing from the cast, and regular exercises for advanced students are held in its galleries.

Shopwork. — Practical instruction in the nature of the materials of construction, and in the typical operations involved in the arts, is considered a very valuable adjunct to the theoretical treatment of professional subjects. Workshops have been provided with the more important hand and machine tools, so that the student may acquire a direct knowledge of the nature of metals and woods, some manual skill in the use of tools, and a thorough knowledge of what can be accomplished with them. The shops are located on Garrison street, and are equipped as follows:

The carpentry, wood-turning, and pattern-making departments contain forty carpenter's benches, two circular saw benches, a swing-saw, two jig-saws, a buzz-planer, a mortising-machine, thirty-six wood-lathes, a large pattern-maker's lathe, and thirty-six pattern-maker's benches. The foundry contains a cupola furnace for melting iron, two brass furnaces, a core-oven, and thirty-two moulder's benches. The forge-shop contains a power-hammer, thirty-two forges, seven blacksmith's vises, and one blacksmith's hand-drill. The machine-shop contains twenty-three engine-lathes and seventeen hand-lathes of approved patterns, two machine-drills, three planers, a shaping-machine, two universal milling-machines furnished with spiral and gear-cutting attachments, a universal grinding-machine, a cutter and reamer grinder, thirty-two vise-benches arranged for instruction in vise-work, a twenty-four-inch standard measuring-machine, and a fully equipped tool-room.

Chemistry. — All regular students attend a course of lectures on Inorganic Chemistry, illustrated by experiments, and perform experimental work in the laboratory of general chemistry. The lectures are intended to prepare the student for his work in the laboratory, and to emphasize and coördinate the facts which he there learns. In the laboratory the student receives

instruction in chemical manipulation, and performs a series of experiments designed to illustrate the properties of the more important elements and compounds and the laws of chemical action. In connection with the lectures on inorganic chemistry, the elements of qualitative analysis and of theoretical chemistry are taught, and the student is given practice in the solution of chemical problems. The study of theoretical chemistry is continued in the chemical and other related courses by more advanced lectures and recitations, in which are presented the general laws and theories relating to the constitution of chemical compounds and their transformations. A laboratory course in molecular weight determinations and one in physico-chemical measurements also form a part of the instruction in theoretical chemistry.

The instruction in Analytical Chemistry extends through two or three years of the chemical or other allied courses. Each student is assigned a desk in the laboratory for his sole use, and is allowed to supplement the regular work of his course by such additional practice as his time and energies will permit. General directions relating to the laboratory practice are given in the lecture-room, and these are supplemented by personal instruction at the student's desk. The assignment of work is made with due regard to the course which the student is pursuing, and is designed to combine a reasonable breadth of experience in methods and manipulation with such training as shall enable him to deal with technical problems intelligently and successfully.

Special attention is given to instruction in volumetric analysis, including the graduation and calibration of measuring instruments.

In addition to the lectures upon methods of analysis and manipulation, the current chemical literature in English, French, and German is reviewed by the students, and subsequently discussed in the class-room under the direction of an instructor.

The facilities for Gas Analysis have recently been increased by the enlargement of the rooms devoted to this work and

by the addition of much new apparatus. New laboratories have also been equipped for the chemical and physical testing of oils and for the optical and chemical examination of sugars, starches, etc. The carefully arranged course of instruction in each of these subjects is designed to familiarize the student with the best methods of analysis and to enable him to interpret intelligently the results of these analyses in their technical bearings.

The instruction in Water, Air, and Food Analysis consists mainly of laboratory work, supplemented by occasional lectures, and special laboratories have been equipped for the purpose. A definite scheme of work is laid out, including practice in the methods commonly used in the chemical examination of air and water, of milk, and of butter. For those who wish to take a more extended course, opportunity is afforded for the critical study of methods of analysis and for the investigation of a variety of sanitary problems in which chemical questions are involved.

Industrial Chemistry is taught by a course of lectures and by work in the laboratory of industrial chemistry. A full description of the most important technical applications of chemistry is given in the lectures, a part of which are delivered by persons actively employed in carrying out the processes which they describe. During the past year such instruction has been given by the following:

Mr. John Alden, chemist of the Pacific Mills, upon Textile Printing; Dr. Henry Carmichael, consulting chemist, upon the Electrolysis of Brine; Mr. Charles D. Jenkins, State inspector of Gas and Gas Meters, upon the Manufacture of Illuminating Gas, and upon Pottery and Tiles; Mr. Arthur D. Little, consulting chemist, upon the Manufacture of Paper; Mr. James W. Loveland, superintendent with Curtis Davis & Co., on the Manufacture of Soap; Mr. Frank G. Stantial, superintendent of the Cochrane Chemical Company, upon Sulphuric Acid.

In the industrial laboratory the students prepare chemical products from raw materials, and also undertake the prepara-

tion of pure chemicals upon a semi-industrial scale. They are taught fractionation and distillation; and particular attention is paid to the preparation of dyes and mordants.

Dyeing and coloring receive special attention. The course of instruction includes the bleaching and dyeing of silk and of cotton, and of wool in the piece and in yarn. The students are taught how to use mordants and to perform the common operations of the dye-house. They become acquainted with the principles involved in cotton printing, and have some experience in mixing colors. The methods of detecting the nature of the dyestuffs present upon fibres are taught, together with many of the modern methods of commercial analysis. A special laboratory is used for this instruction; it contains a complete equipment for experimental dyeing and coloring. The laboratory instruction in industrial chemistry is supplemented by frequent excursions to manufacturing establishments, where the practical working of chemical industries can be examined.

The instruction in Applied Chemistry includes the use of text and reference books in both French and German; the student gains thereby a working knowledge of the technical vocabulary, and is enabled to consult literature in these languages relating to patents.

There are two courses in Organic Chemistry — an elementary course of fifteen lectures given in the third year, preparatory to an extended one of ninety lectures in the fourth year. This later course treats of the properties, composition, and mode of formation of the more important organic compounds, and also of the modern theories of chemical composition and structure. It is fully illustrated in the lecture-room by experiments.

The laboratory work in organic chemistry comprises practice in the methods of ultimate analysis, exercises in the preparation of a variety of typical organic substances, and a series of experiments illustrating the characteristic reactions of the different classes of substances and their identification and separation. In connection with their laboratory work

students are required to consult original articles bearing upon the subjects they are studying, and thus to acquire familiarity with chemical literature. Ample opportunities are afforded for the prosecution of original investigations both in pure and applied chemistry.

The instruction in chemistry is designed primarily for those who are candidates for the several degrees of the Institute, and for such special students as are looking to chemistry as a profession, and are following, in the main, the courses laid out for the regular students. In order to secure the necessary command of chemical literature, these special students are required to study French and German.

(For further details, see the circular on Chemistry.)

The Kidder Laboratories of Chemistry afford accommodations for more than six hundred students. The Chemical Department occupies twenty-two laboratories, three lecture-rooms, a reading-room and library, two balance-rooms, offices, and supply-rooms, — in all forty rooms. Five new laboratories have been recently added for advanced work and research. The laboratory for general chemistry has places for four hundred students, and is completely equipped for instruction in elementary chemistry. The analytical laboratories can accommodate one hundred and fifty students, and possess every convenience for accurate and rapid analytical work. The main organic laboratory has places for thirty-six students and is provided with appliances for vacuum, steam and fractional distillation, with suction pumps for filtration, with electrolysis circuits, with filter-presses, etc. Adjoining it is a laboratory arranged for organic combustions, and on the roof is an enclosed room, in which chemical operations of a dangerous or noxious character can be performed. The laboratory of water, air, and food analysis contains places for sixteen students. It possesses a complete outfit for the analysis of air and water, and for the investigation of sanitary problems. The laboratory of

industrial chemistry accommodates forty-eight students. It consists of a series of rooms in the Pierce Building fitted with the needful apparatus for the preparation of chemicals on a considerable scale. The laboratory contains kettles of various patterns, stills, presses, tanks, centrifugal dryers, crystal dryers, and filter-press, a furnace, and a variety of other apparatus. The laboratory devoted to textile coloring contains numerous jacketed kettles, baths, and dye-tubs, squeeze-rolls, steamer, ager, and dryer. The laboratory for oil and gas analysis accommodates thirty-six students, and is equipped with thirty-three sets of gas absorption and explosion apparatus, with sampling apparatus, flue thermometers, a photometer, and gas calorimeter. Viscosimeters, testing-machines, flash-point apparatus, and the other usual means for the testing of oils are provided. There are also special laboratories for the instruction in proximate technical analysis, in molecular weight determinations, and in sugar analysis. Kidder Hall has a seating capacity of two hundred and twenty, and is arranged with special reference to the delivery of experimental lectures. In addition there are two lecture-rooms, seating respectively forty-eight and one hundred and twenty-five students. The lecture-rooms contain valuable cabinets of specimens for purposes of illustration. The balance-room is supplied with twenty-five analytical balances.

The William Ripley Nichols Chemical Library, numbering more than eight thousand volumes and fifteen hundred pamphlets, is kept in the reading-room of the department. This library contains complete sets of most of the important chemical periodicals and a noteworthy collection of works upon sanitary science. The number of periodicals currently received is seventy. It is open to all persons who desire to consult it.

Physics. — The instruction in the principles of physics begins with an extended series of lectures common to all

courses, in which the subject of physics as a whole is discussed. The various branches are treated both mathematically and experimentally. Recitations are held in connection with the lectures. The student begins this course on entering the second year and continues it until the middle of the first term of the third year. The topics treated are mechanics of solids, liquids, and gases, molecular mechanics, wave motion, electricity, optics, and heat.

It is the intention of the course to lay a thorough foundation for subsequent study of theoretical, experimental, and technical physics. Hence it is planned with immediate reference to familiarizing the pupil with the fundamental principles of the science. The practical applications of the subject, however, are considered with care and to as great an extent as is compatible with the main end sought for. The lectures are very fully illustrated by suitable experiments.

Regular students, excepting those in Architecture, enter upon a general course of experimental work in the Rogers Laboratory of Physics, either upon the conclusion of the lecture course in physics or earlier. The work is from the beginning almost exclusively quantitative in character. It is laid out primarily to teach the student to make accurate measurements, to impart training in the manipulation of the various instruments of precision employed in physical investigation, and to give practice in properly recording, interpreting, and reducing experimental data. At the same time he obtains a better understanding of the principles of physics with which he has already become acquainted in the lecture-room. The earlier and simpler work serves chiefly to train the student in the use of methods or instruments which are employed as accessories later. This is succeeded by experiments on the mechanics of solids, liquids, and gases, each illustrating a method by which some physical law or constant is determined. Work in optics follows, and heat and electrical measurements occupy the remaining and more difficult part of the course.

Accurate work is required throughout; and in connection

with the use of instruments of precision, especially in the more advanced measurements, the student's attention is particularly directed to the study of possible sources of error, and to the discussion of the effects of these upon the results obtained. A short lecture course is also devoted to this subject. An optional course upon calculating machines has been introduced.

The particular line of work assigned to each person is determined, to some extent, by his department in the Institute; and the instruments which he studies are often such as he will be called upon to use in later technical work. In a number of courses, such as Physics, Chemistry, Electrical, Civil, Mechanical, Chemical, and Mining Engineering, work of a more advanced scientific or technical nature is undertaken. In such work, laboratory and lecture instruction are usually combined.

An extended course is provided in general electrical measurements and testing, and also one in the testing of dynamo-electric machinery. Lecture and laboratory instruction are given in heat measurements, including accurate thermometry, pyrometry, and fuel tests. A course has also been instituted in modern physico-chemical methods, in which particular attention is given to the application of these methods to the various novel and important scientific problems of the present day in physical and electro-chemistry. A special laboratory is devoted to this purpose. Facilities are provided for original investigation in these branches of physics. Instruction is also provided in photography and its applications, in photometry, and in the use of the lantern as an instrument of demonstration in the lecture-room.

Original investigation is encouraged, and the result has been a considerable number of published memoirs.

Further instruction in pure physics is also provided for the especial benefit of those who are candidates for a degree in Physics. This includes special courses in acoustics, energetics, and the kinetic theory of gases, and a mathematical treatment of optics and electricity.

Opportunity will be offered for more advanced instruction in

mathematical and experimental physics to students who are competent to pursue such courses. During the present year one series of lectures of this character will be devoted to the electro-magnetic theory of light, and another to the applications of polarized light in physics and chemistry.

It is intended that students pursuing these courses shall gain a familiarity with standard works on the various branches of physics, both in their own and foreign languages. In connection with them, a physical colloquium is held, for which the students prepare and read before the class essays on assigned physical topics. These essays are written after a study of recently published papers and memoirs, and often embody also the results of experimental work by the student. They are intended to familiarize the class with current scientific literature, and to give experience in independent study and in the preparation and presentation of original scientific papers. This work is of particular advantage to those who intend to become teachers.

The Rogers Laboratory of Physics is located in the Walker Building, and occupies sixteen rooms. Of these, two are lecture-rooms: the general physical lecture-room, seating three hundred and fifty students, and a smaller lecture-room for special lectures in physics and chemistry, seating seventy. Both of these are fitted with appliances for physical experimentation and for the use of the lantern. The laboratory of general physics is devoted to instruction in general physical measurements; the acoustic laboratory is especially designed for acoustic and telephonic research, and the optical room for the study of light. The laboratory of electrical measurements is furnished with special electric circuits for lighting and power, and for both direct and alternating currents. The laboratory of heat measurements and the laboratory of physical chemistry are devoted to advanced work in these subjects. Several dark-rooms are appropriated to photometry and photography.

The Laboratories of Electrical Engineering constitute a further important portion of the Rogers Laboratory. The

dynamo-room contains a large plant of direct and alternating current machinery, the driving power for which is furnished by a Westinghouse 90-horse-power simple engine and a Westinghouse 130-horse-power compound engine. A number of other rooms are fitted up for study and research in the various branches of technical electricity.

The Rogers Laboratory has an exceedingly extensive equipment of apparatus for both demonstration and physical measurements, and large additions are made to it every year. It is especially well furnished with instruments for electrical testing, and for heat, sound, and electro-chemical measurements.

The library of the department contains over six thousand volumes, and is very complete in recent works upon physics and electricity. All new publications of importance are procured upon their issue. The principal physical and electro-technical periodicals are received regularly, seventy such being taken. The study of special topics is greatly facilitated by several valuable libraries, to which the students have admission. (See also p. 124 and the circular on Electrical Engineering and Physics.)

Electrical Engineering. — As a foundation for subsequent work, instruction is given in the theory of electricity. An extended course of lectures is devoted to the detailed consideration of the various technical applications of electricity to land and submarine telegraphy, the telephone, electric lighting, electro-chemistry, the electrical generation, transmission, and utilization of power, and the design of dynamo-electric machinery. Instruction is given by lectures and laboratory exercises upon the processes of photometry, especially as applied to the measurement of electric lights.

A special course of lectures for students in Electrical Engineering has also been introduced, in which the transmission of power by mechanical as distinguished from electrical methods is treated.

Advanced instruction is provided in general electrical

measurements and testing, and in the Laboratory of Electrical Engineering an extended series of exercises is devoted to the experimental study of direct and alternating current generators and motors, transformers, and other forms of dynamo-electric machinery. The subjects of construction, specifications, and contracts also receive attention.

Besides the work done by the regular staff of the Institute, special instruction is given by gentlemen who are professionally engaged in various departments of electrical engineering, or especially conversant with certain branches of applied electricity. During the past year such instruction has been given by the following persons:

Mr. George W. Blodgett, Electrician of the Boston and Albany Railroad, on the Application of Electricity to Railway Signalling; Mr. Hammond V. Hayes, Electrical Engineer of the American Bell Telephone Co., on Telephone Engineering; Mr. C. J. H. Woodbury, of the American Bell Telephone Co., on Electricity in its Relation to Fire Risks; Mr. Louis Bell, on the Electrical Transmission of Power and the Application of Electricity to Railway Transportation; Mr. S. Everett Doane, of the Marlboro Electric Co., on the Manufacture of Incandescent Lamps; Mr. Charles M. Green of the General Electric Co., on Electric Arc Lighting; Mr. Hollis French, on Electrical Engineering Practice and Specifications; Mr. Howard C. Forbes, on the Design and Testing of Electric Light and Power Plants; Mr. John B. Blood, on the Design of Alternating Current Machinery; and Mr. Odin B. Roberts, on the Nature and Function of Patents for Inventions.

The equipment of the Laboratory of Electrical Engineering includes a large number of dynamo machines, both alternating and direct current, of various types and sizes, which are wholly available for purposes of instruction.

Among these are the following: An Edison shunt generator, having a capacity of 96 amperes at a pressure of 110 volts; a Thomson-Houston inclined-coil constant potential generator, having a capacity of 120 amperes at 110 volts; a Westinghouse multipolar compound generator, having a capacity of 180 amperes at 110 volts; a United States direct-current

compound generator, having a capacity of 340 amperes at 110 volts; a Weston shunt generator, having a capacity of 60 amperes at 70 volts; a Thomson-Houston alternating-current generator, having a capacity of 30 amperes at 1000 volts, with transformers of various patterns and sizes up to 15 kilowatts; a Mordey inductor alternating-current generator, having a capacity of 37 amperes at 1000 volts; a Brush arc-light generator, having a capacity of 10 amperes at 1500 volts; an experimental three-phase low-pressure alternating-current generator, having a capacity of about 15 kilowatts at 500 volts; a Westinghouse shunt generator for electrolytic work, having a capacity of 300 amperes at 15 volts; a General Electric compound bipolar generator, having a capacity of 25 amperes at 125 volts; a Westinghouse 10-horse-power machine arranged for use as a 120-volt direct-current generator or motor, a quarter-phase alternating-current generator or motor, or a rotary transformer; a 220-volt 7½-horse-power Thomson-Houston shunt motor; a 7-horse-power 500-volt three-phase alternating-current motor; several 15-horse-power 500-volt Thomson-Houston and Edison street-railway motors; and a large number of small direct and alternating current generators and motors of various sizes up to 5 horse-power. The laboratory possesses a 15-kilowatt Thomson welding-coil, furnishing current up to 3000 amperes if required, and a set of 10-kilowatt phasing transformers for use in connection with the three-phase and quarter-phase machines.

A new and separate plant has recently been installed for use in regular laboratory instruction, in connection with the course in dynamo testing and dynamo-electric measurements. It consists of two similar four-pole moderate-speed 25-kilowatt direct-current compound generators made by the General Electric Co. They are belt-driven from a Westinghouse compound engine fitted with indicators, and with a surface condenser discharging the condensed steam into weighing-tanks.

The switchboard is so designed that the dynamos can be

put in series or parallel or connected in any special manner called for by the requirements of particular methods of testing the efficiency, or studying the losses, either of the dynamos alone or of these in connection with the engine. A number of Weston illuminated-dial ammeters and voltmeters of suitable ranges constitute a part of the equipment. They are provided with flexible lead-wires, and so arranged as to be readily connected to meet the requirements of the ordinary commercial methods of testing efficiency as well as those of the more refined electrical methods.

The new lighting and power plant of the Institute in its buildings on Trinity place is available for instruction and experiments related to central station work. In this plant there are two Westinghouse multipolar slow-speed direct-current three-wire generators, each capable of giving a current of 350 amperes at 220 volts, or 350 amperes at 110 volts, on either side of the system. Each generator armature is carried by the extended shaft of a 100-horse-power Westinghouse compound engine, running at a speed of 300 revolutions per minute.

For additional details, see p. 88 (Rogers Laboratory) and also the circular on Electrical Engineering and Physics.

Civil Engineering. — The instruction in Civil Engineering is given by means of lectures and recitations, and by practice in the field, in the drawing-room, and in the testing laboratory.

In Surveying, besides the work in the class-room, the use of the various instruments is taught by actual work in the field, including the adjustments of the instruments and the principal operations involved in land, topographical, hydrographical, railroad, city, and underground surveying. The work in the drawing-room consists in representing upon paper the surveys made in the field, with practice in topographical and map drawing. The earlier field-work includes the use of the chain, tape, compass, transit, level, and solar compass, as well as of the various pocket instruments. This is followed

by the use of the stadia, sextant, and plane table. The short course in practical astronomy includes a discussion of the methods of determining latitude, longitude, time, and azimuth, together with the theory of the usual astronomical instruments. The short course in geodesy includes a discussion of the figure of the earth and of the methods of measuring base-lines and of carrying on a geodetic survey.

Students electing the geodetic option pursue these subjects in detail, taking also the course in the method of least squares, and receiving instruction in the adjustment of observations.

An observatory in the Middlesex Fells, within easy access of Boston, is devoted to the instruction in Geodesy and Astronomy. It is a stone building, fifteen feet square, and contains at present the following apparatus; namely, a transit instrument of $2\frac{1}{2}$-inch aperture, 27-inch focus, with micrometer eye-piece for latitude observations; a sidereal chronometer, a chronograph, a magnetometer, a dip circle, an altazimuth instrument, and various other smaller appliances, such as level triers, mercury horizons, etc. This observatory enables the Institute to offer the best facilities for instruction in Geodesy.

The course in Railroad Engineering treats of the survey, location, construction, and equipment of railroads. In addition to the work in the class-room, an actual railroad survey and location, several miles in length, is made each year upon such ground as shall best illustrate the problems occurring in practice; and the necessary maps and profiles are prepared by the students. Advanced courses are given, in which are discussed the economics of railroad location, also the subjects of rolling-stock, motive power, train resistance, brakes, signals, yards, stations, tunnels, and street railways of various kinds. The instruction in the class-room is supplemented by drawing-room work in design, and by visits to works in process of construction. Railroad administration and management form the subject-matter of a distinct course.

The work in Road or Highway Engineering embraces the

location, construction, and maintenance of town and country roads, and of city streets and pavements. The facilities for instruction in this branch are ample, and the equipment of the department, in books, models, apparatus, and drawings, is constantly increasing. The laboratory is equipped with apparatus by which the suitability of various materials for the purposes of road or pavement construction may be ascertained.

The course in Hydraulic Engineering embraces, first, a detailed study of the principles of hydraulics, including the laws of hydrostatics and of the flow of water through orifices, over weirs, and through pipes, with numerous problems illustrating the practical application of the principles discussed; second, practice in hydraulic measurements, in which the student is instructed in the methods of gauging the flow of streams, with work in the field, using instruments of various kinds; third, practice in carrying out hydraulic experiments on the flow of water and on the loss of head under various conditions, with the aid of the tanks and other apparatus in the hydraulic laboratory, as well as in the testing of motors, and other similar work; fourth, a course of exercises, given partly by text-book and partly by lectures, covering the subjects of hydrology, water-supply, water-power, hydraulic motors, and irrigation.

In the course in Sanitary Engineering the object sought is to prepare the student to deal intelligently with questions relating to the health of individuals and communities, and to plan works of sewerage and drainage. The course embraces the study in detail of the house, with its apparatus, the disposal of sewage for isolated buildings by surface or sub-surface irrigation, the collection and removal of sewage in the larger towns, and the sanitary drainage of cities. Frequent opportunities are given for the inspection of actual examples of sanitary engineering, and the work in the classroom is supplemented by exercises in designing. The students also attend lectures and demonstrations in sanitary science.

The course in the Strength and Stability of Structures

embraces a study of the methods of proportioning beams, floors, columns, roofs, bridges, piers and abutments, arches, retaining-walls, and similar structures. Both the analytical and graphical methods of investigating the strength and stability of structures are taught. The course in Bridges and Roofs involves an extended study of the different structures of this class, of wood, stone, and metal, with reference to economy of material, methods of proportioning parts, and the details of design. The subject of foundations is also included. In connection with these courses the student is required in the drawing-room to make complete designs and working drawings, with blue-prints, for several structures.

By the kindness of many active members of the profession, the classes are frequently enabled to inspect engineering works of interest, and to carry on field operations in favorable localities. During the past year special courtesies have been shown by Mr. Lucius Tuttle, President of the Boston and Maine Railroad; Mr. W. H. Barnes, General Manager of the Boston and Albany Railroad; and Mr. A. C. Kendall, General Ticket Agent of the New York, New Haven and Hartford Railroad.

In addition to the regular lectures of the school, occasional lectures are given by prominent engineers, in active practice in their profession, upon subjects with which they are especially familiar. During the past year lectures have been given by Mr. George W. Blodgett, Electrician of the Boston and Albany Railroad, on the Application of Electricity to Railway Working; by Mr. Edward P. North, of New York, on Road Construction; by Prof. A. H. Sabin, of New York, on Paint and the Painting of Metal Structures; by Mr. Joseph T. Richards, Engineer of Maintenance of Way of the Pennsylvania Railroad Co., on Railroad Organization and Maintenance; and by Mr. Frederick H. Newell, Hydrographer, U. S. Geological Survey, on Irrigation.

The instruments and apparatus of the department may be classified as follows: A full outfit of the instruments used in surveying and in the drawing-room; a collection of hydraulic apparatus for work in the field, comprising single and

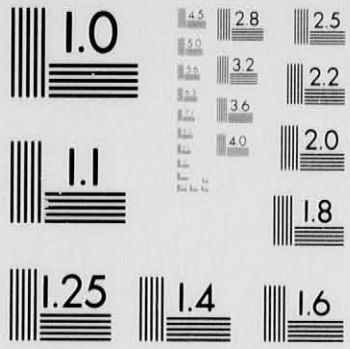
double floats of various patterns, loaded tubes, and five-current meters of different kinds; apparatus for comparing the wearing properties and other physical characteristics of the various road and pavement materials; and continuous-record instruments for measuring the strain in bridges and other structures of iron. The very complete hydraulic apparatus for the measurement of the flow of water through orifices and mouthpieces, over weirs, through pipes, etc., is described elsewhere, in connection with the engineering laboratories.

The department has also a collection of models illustrating bridge details, problems in stone-cutting, etc., and a set of full-size models of various types of road and pavement construction, for use in connection with the work of instruction. It has also a large collection of blue-prints, drawings, and photographs, and a considerable number of lantern-slides.

In order to provide for the needs of students wishing to pursue graduate courses of study, leading, if desired, to advanced degrees (see page 56), an advanced course has been laid out, which includes, besides original work in research and criticism, further instruction in the design and construction of bridges, buildings, and other structures in theoretical hydraulics, and in the theory of elasticity, with special reference to its applications to the strength of materials, together with experimental work in the engineering laboratories.

(For additional details, see the circular on Civil Engineering.)

Summer School. — In the vacation following the third year, students taking the geodetic option are required to attend a course in geodetic and topographic surveying, including hydraulic measurements and geological fieldwork, during about four weeks in the early part of the summer. This is held at some convenient point in the country, and its object is to give the students opportunity for more extended and continuous field practice in these branches than is possible during the term. The work consists of a topographical survey of a certain district, with field practice in triangulation and base-line measurement, the construction of geological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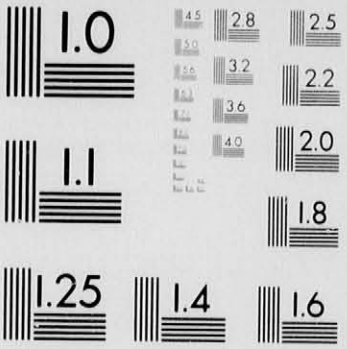
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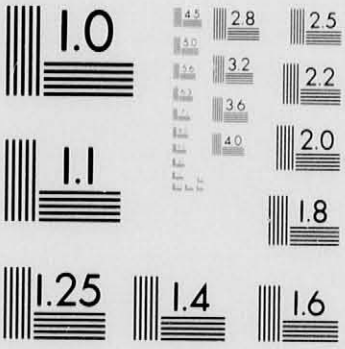
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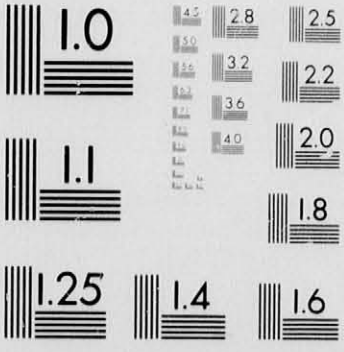
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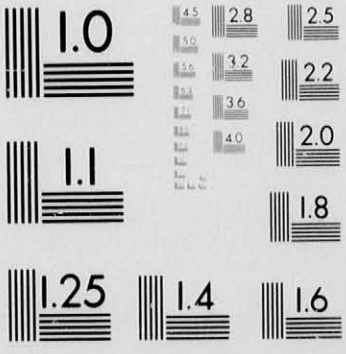
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profiles, the gauging of streams and the observation of tidal phenomena. The course is open, without extra charge for tuition, to all students in the department who have completed the third year, as well as to properly qualified students in other departments. Persons not connected with the Institute are also permitted to attend upon giving satisfactory evidence of being properly qualified and upon payment of a tuition fee of $25.00.

In 1896 and 1897 this school was held at Machias, on the coast of Maine; in 1898, Lancaster, Mass.; in 1899, at Cherryfield, Maine.

Mechanical Engineering. — Instruction in Mechanical Engineering is given by means of lectures and recitations, and of practice in the drawing-rooms and in the engineering laboratories. The work includes visits to machine shops and manufacturing establishments where may be seen machinery in operation and manufacturing processes more extensive than would be possible at the Institute.

The course in the principles of Mechanism and in the construction of gear-teeth is followed by study of the mechanism of machine tools and of cotton machinery.

The course in Steam Engineering includes a detailed study of the principles of thermodynamics, mathematically treated; a discussion of the properties of gases and vapors, especially steam; of the flow of steam and other fluids, of air compressors, of the steam injector, of refrigerating machines, and of the hot-air engine and gas-engine. All of these topics are treated in such a way as to give the student a good foundation in the principles of thermodynamics, especially as they apply to the steam-engine. This is followed by a study of the steam-engine itself, of the compound and multiple-expansion engine, of the mode of testing steam-engines, and of steam-boilers. A careful study is made of such data as have been based on reliable tests made on large single, compound, and multiple-expansion engines.

In Machine Design each student is required to make a

certain number of designs, — the design of a boiler, of a large shaft with gears and pulleys, of a set of hangers, etc., — to make all the necessary calculations and drawings, and to determine the strength of every part by means of the principles already learned.

The main principles of hydraulics and of hydraulic motors are studied with particular attention to the turbine.

The course in Locomotive Engineering begins with a careful study of the details of the more usual types of locomotives, and of the strength of the more important parts. The following topics, among others, are discussed — train resistance, brakes, heating cars by steam from the locomotive, compound locomotives. The course in Marine Engineering includes a detailed study of the design and construction of single, compound, and multiple-expansion marine engines, with a discussion of their form, proportions, and efficiency, as well as of the strength of the several parts. Mill Construction, together with the processes to be carried out in a cotton mill, is studied so far as to enable the student to take up intelligently the laying-out of machinery to best advantage, including the planning of the power plant and the distribution of power, all leading up to the designing of the complete mill building.

The course in Heating and Ventilation is planned to acquaint the student with the fundamental principles of the subject, and the proper application of these principles to practice in the solution of a considerable range of problems in this field of engineering work. The practical side of the subject is treated with as much thoroughness and fulness as is consistent with the primal aim of the course.

The laboratory work, in its earlier portions, is devoted to giving the student a drill in such experimental work as a mechanical engineer has constantly to perform, such as boiler and engine tests, etc. The later work takes very largely the form of original research; and it is intended that the students in these laboratories shall, under suitable direction, undertake the experimental investigation of a

number of important engineering problems. (See page 101.)

In connection with the course in mechanism, practice is given in making working drawings of parts of machinery from measurements, and other drawings illustrating the class-room work. In the following year detail drawings are made from measurement of some machine, and from these assembly drawings. This is followed by practice in boiler drawing and in the working-out of valve-gears and mechanism design.

Courses are given on Industrial Management and on Foundations, the former involving a study of the organization and relations of the various departments of an industrial establishment.

Besides the teaching by the regular corps of instructors, lectures upon special subjects are given by gentlemen actively engaged in the profession. During the past school year lectures have been given by Mr. Walter B. Snow, on Mechanical Draft; Mr. William D. Forbes, on a System of Shop Blanks; Mr. J. N. Gunn, on the Distribution of Indirect Expense in Rolling Mills; and Mr. Charles T. Main, on Commercial and Special Uses of Power Plants. The students of the department were enabled to attend also a course of lectures by Mr. Odin B. Roberts, on the Relation of Patent Law to Engineering. (For additional details, see the circular on Mechanical Engineering.)

Naval Architecture. — The special work in Naval Architecture is given by lectures, recitations, and drawing.

The subjects treated in the lectures and recitations are as follows:

An account is given of the methods of building ships of wood and of iron and steel, including transverse and longitudinal framing, and the fitting of ballast tanks and double bottoms; also of the preparation of the ground, the laying of blocks, and the erection of scaffolding; of the laying-out, bending, and erection of the framing and the application of the shell plating; of the fitting of decks, hatches, and bulkheads; and of launching and docking.

A general discussion is given of the properties of floating bodies, with special application to ships; of statical and dynamical stability of ships and curves of statical and dynamical stability, with examples of such curves for special types of ships; of the effect of carrying fluids in tanks wholly or partially filled; and of the effect of filling compartments of a ship; of reserve of stability, or the effect of sudden forces — such as gusts or squalls of wind — on the safety of a ship when under sail.

Attention is given to methods of finding statical and dynamical stability by Barnes' method and by the method of cross-curves; to methods of finding the weight and centre of gravity of hull, equipment, and cargo; to the determination of the loads, shearing forces, and bending moments acting on the hull of a ship in still water and when borne by waves; to the determination of the equivalent girder and the stresses on the hull of a ship.

The rolling of a ship in an unresisting medium, in water, and among waves, the trochoidal theory of waves, and the theory of waves of translation, of waves made by ships, and of the effect of such waves on the propulsion of ships, are considered, also resistance of ships due to friction, wave-making, eddy-making, and to the effect of the wind on hull and rigging; experiments on the resistance of ships by towing and otherwise; effect of the propeller on the resistance of a ship; propulsion of ships by steam or sails; steering and manœuvring a ship.

An explanation is given of methods of procedure for laying out the preliminary design of a ship for a given purpose; and of carrying out and completing a design.

Heating and ventilation, and drainage of ships and adjustment of compasses, receive attention.

The drawing-room work is as follows:

Laying out and fairing the lines of a ship; making a displacement sheet; drawing curves of displacement, tons per inch of immersion, centre of buoyancy, and transverse

metacentre, moment to trim ship, etc. In connection with lectures on ship construction, drawings are made of different construction details.

Calculations are made of statical and dynamical stability by Barnes' method and the method of cross-curves; of the weight and centre of gravity of the hull, equipment, and cargo; of trim of a ship, with and without cargo; of the stresses on the hull in still water and when borne by waves.

The design of a ship for a specific purpose.

The drawing-room work is carried on progressively, as applied to some ship or ships of good modern design, and is of a scope to give familiarity with all the methods and processes used for the complete design of a ship and the determination of her properties. Finally, the design of a ship is begun and carried far enough to exhibit the methods of designing; calculations and processes which the student has already mastered, and with which he must be familiar before a design can be intelligently begun, are now fixed by application in actual work. Full advantage is taken of the use of mechanical integrators, of which the department has a good supply, to reduce the time and labor of calculations.

The department has a good collection of standard and recent works on naval architecture and marine engineering. There is, further, in the possession of the department a large number of drawings of modern ships and marine engines of various types for naval and merchant service; including complete sets of drawings of several steamships, with their propelling machinery, both naval and merchant, of large size and of the most recent and approved design and construction. Much of this material is in such form that it can be used directly in the work of the classes.

(For additional details, see the circular on Naval Architecture.)

The Engineering Laboratories. — In the Engineering Laboratories the objects sought are the following: First, to give the students practice in such experimental work as engineers

in the pursuit of their profession are called upon to perform; second, to afford some experience in carrying on original investigations in engineering subjects, with such care and accuracy as to render the results of real value to the engineering community; third, by publishing from time to time the results of such investigations, to add gradually to the common stock of knowledge.

These laboratories are situated in the buildings on Trinity place, where they occupy a floor space of about 21,000 square feet. The laboratory for testing the strength of materials is furnished with the following apparatus: A testing-machine of one hundred thousand pounds capacity and another of fifty thousand pounds capacity for determining tensile strength, elasticity, and compressive strength; a testing-machine of one hundred thousand pounds capacity for determining the transverse strength and stiffness of beams up to twenty-five feet in length, of framing-joints used in practice, and of other structures subjected to a transverse load; a testing-machine of eighteen thousand pounds capacity for determining the transverse strength and stiffness of beams up to fourteen feet in length; apparatus for testing the strength of full-size masonry arches, a machine for testing the torsional strength and stiffness of shafting up to three inches in diameter and to twenty-one feet in length; a small torsion-machine of six thousand inch-pounds capacity, for very delicate work; machinery for the measurement of the twist of shafting; for testing the tensile strength of mortars and cements, and of ropes; for testing the effect of repeated stresses upon the elasticity and strength of iron and steel; for determining the strength and elasticity of wire; for determining the strength and elasticity of cloth; for testing the strength of pipe and pipe-fittings under hydraulic pressure; also accessory apparatus for measuring stretch, deflection, and twist. Besides the above-stated apparatus, a horizontal Emery testing-machine of three hundred thousand pounds capacity forms a part of the equipment of this laboratory. It contains all the essential features of the eight-hundred-thousand-pound

testing-machine built by Lieut. Albert H. Emery at the Watertown arsenal, and is suitable for testing a compression specimen eighteen feet long, and a tension specimen twelve feet long.

The Hydraulic Laboratory contains a closed steel tank five feet in diameter and over twenty-seven feet high, arranged for the insertion of orifices, mouth-pieces, and other special pieces of apparatus, with gates for controlling the discharge, and with connections for supplying water, in experiments upon pipes and motors. This tank is connected with a ten-inch stand-pipe over seventy feet high, so arranged that a constant head may be maintained at any desired level. Two steel tanks, each of about two hundred and eighty cubic feet capacity, give opportunity for the accurate measurement of larger quantities of water than can be weighed directly during experiments. A system of pipes connected both with the main tank and with the pumps is arranged for the insertion of diaphragms, branches, and other apparatus for studying loss of head and the laws of discharge. An attachment has been fitted to the main tank, containing a Pitot tube for studying the laws of velocity in jets, and adjustable points for accurate measurement of the cross-section of jets.

The laboratory is further equipped with a forty-eight-inch Pelton wheel, of thirty horse-power; a three-foot American impulse wheel; a Venturi meter; an eight-inch, a twelve-inch, and two forty-eight-inch weirs for measuring water, also an orifice-tank for the same purpose; a centrifugal pump; a rotary pump; a plunger pump; a pulsometer; a three-inch water meter and others of smaller size, and a variety of mercury gauges, standard orifices, mouth-pieces, diaphragms, branches, nozzles, etc., for experiments with flowing water under all conditions. A six-inch turbine is arranged to be run under various conditions of head and gate opening in tests for efficiency. There is also a hydraulic ram with a two and one-half inch drive-pipe. The laboratory also contains a steel weir-box, the weir having a standard crest adjustable as

to length from zero to five feet, and a seconds pendulum, with chronograph for exact determination of time in experimental work. Water is directly supplied for experiment by the various pumps.

The Steam Laboratory contains a triple-expansion engine, with cylinders of nine inches, sixteen inches, and twenty-four inches diameter respectively, and thirty inches stroke, arranged in such a way as to be run single, compound, or triple, as desired for the purposes of experiment. This engine is of the Corliss type, and has a capacity of about one hundred and fifty horse-power when running triple, with an initial pressure of one hundred and fifty pounds in the high-pressure cylinder. It is connected with a surface condenser and the other apparatus necessary to adapt it to the purposes of accurate experiment. A tandem compound high-speed engine of about two hundred and twenty-five horse-power, having cylinders eleven and nineteen inches in diameter by fifteen inches stroke, is similarly provided with surface condenser, air pump, and other apparatus needed for testing. This engine transmits its power through a rope drive.

This laboratory also contains a sixteen-horse-power engine, and an eight-horse-power engine, used for giving instruction in valve setting, etc., also a thirty-six-horse-power gas-engine and a small gas-engine. It is equipped with several surface condensers, steam-pumps, injectors and ejectors, calorimeters, mercurial pressure and vacuum columns; apparatus for determining the quantity of steam issuing from a given orifice or through a short tube under a given difference of pressure; apparatus for testing steam-engine indicators; apparatus for testing injectors; and with indicators, planimeters, gauges, thermometers, anemometers, and other accessory apparatus.

The Engineering Laboratories are provided with a number of friction brakes; with machinery for determining the tension required in a belt or rope to enable it to carry a given power, at a given speed, with no more than a given amount of slip; with four transmission dynamometers; with two machines for determining the coefficient of friction of lubricat-

ing oils; with a pendulum governor arranged for experimental purposes; with a complete set of Westinghouse air-brake apparatus, including the parts belonging to the car and to the locomotive; with the pump and engineer's valve of the New York air-brake; with a locomotive link model; with two hot-air engines; and with cotton machinery as follows — two cards, a drawing-frame, a speeder, a fly-frame, a ring spinning-frame, and a mule, as well as accessory apparatus. There are available for the purposes of experiment in connection with the work of these laboratories four horizontal tubular boilers in a boiler-house near the Engineering Building, with a wrought-iron stack, three feet in diameter and one hundred feet high, fitted with the apparatus necessary to make experiments on the draughts of chimneys; two large sectional boilers situated in the Rogers Building with a masonry stack three feet square and one hundred feet high; also another boiler, a forty-horse-power engine, a number of looms, and other apparatus in the workshops on Garrison street.

The Engineering Library. — The libraries of the departments of Civil, Mechanical, and Sanitary Engineering, and Naval Architecture are united into a single library under the direct charge of the Librarian of the Institute. This library contains over eight thousand volumes and thirty-five hundred pamphlets. It is especially rich in journals and transactions of societies dealing with the various branches of engineering and ship-building. One hundred and eighty-two publications of this kind are received annually.

Mining Engineering and Metallurgy. — Instruction in mining and metallurgy is given by lectures and recitations, by laboratory work, and in the summer school. The introductory work begins with Plattner's blow-pipe assay of silver. This is followed by a course of lectures on methods of mining, including prospecting, sinking, stoping, hoisting, pumping, and ventilating, the location of mining claims, and mine surveying. Ore dressing is taught by lectures and by laboratory work illustrating the various forms of machinery, while the lectures on

metallurgy are supplemented by an extended course in the use of the furnaces in the laboratory for the smelting of gold, silver, copper, and lead. By this laboratory work the student has experience in actual metallurgical work, and checks his results by assays and chemical analyses at the appropriate stages of the process. With such practical experience, in immediate connection with class-room instruction, he acquires the best possible grasp of the subject-matter.

During the past year Mr. Albert Sauveur, recently of the Illinois Steel Co., has lectured on Metallography; Mr. Timothy W. Sprague on Electricity in Mining.

The department library contains over twenty-three hundred volumes, and receives annually fifty-six periodicals.

The John Cummings Laboratories of Mining Engineering and Metallurgy.— These laboratories are designed to furnish students the means for experimental study of the various processes of ore dressing and smelting, and at the same time to give them the mental training needful for professional practice. The apparatus has been chosen with a view to illustrating, as far as possible, the principles of the more important machines and furnaces actually used in mines, mills, and smelting works.

The crushing, concentration, and smelting of ores of lead, copper, gold, and silver furnish the best field for this laboratory work. The production of iron and steel in quantity is precluded by the size of the plant required, and by the large amount of ores and fluxes needed.

The experimental work of the laboratory is carried on by the students, under the immediate charge of an instructor. A sufficiently large quantity of ore is assigned to each student, who first examines it for its component minerals, sorts and samples it, determines its character and value by analysis and assay, and makes such other preliminary examinations as serve to indicate the proper method of treatment. He then treats the given quantity, makes a careful examination of the products of each step of the process,

ascertains, wherever practicable, the amount of power, water, chemicals, fuel, and labor expended, and thus learns approximately the effectiveness and economy of the method adopted. He learns also the value of chemistry as a check upon metallurgical work. Each student in working his ore is assisted by his classmates, who have opportunity in turn to manage the machines and furnaces.

It is not considered that the instruction given in this laboratory is in any sense a substitute for the experience gained in large works. It is believed, however, that it prepares students to enter works and to be almost immediately useful in them. The spirit of investigation which is developed by the work, as well as the experience of comparing processes actually carried out with the same processes as described in books, is of great advantage.

Four laboratories are devoted respectively to concentration, lixiviation and pan amalgamation, — for the present in one room, — smelting, and assaying.

In the concentrating laboratory the effects of different combinations and adjustments of machines upon the saving of losses in slimes and included grains, in order to produce the best scientific result or the greatest commercial profit, can be tested under the very best conditions. Among these combinations are graded crushing, graded sizing, graded jigging; hydraulic classifying as preparation for jigging and the slime table; jigging with much or little suction; the variations of the slope, the quantity of water, and the roughness of the surfaces of slime tables; the adjustments of the gravity stamps, the amalgamated plates, and the Frue vanner.

In the lixiviating and amalgamating laboratory the effects of varying the sizes of grains, the strength of the cyanide solution, and the time of treatment may be tried; suitable variations also may be made in the hyposulphite process, in the gas chlorination process, either by vat or by revolving barrel; in the amalgamating pan the temperature, the chemicals, and the time of exposure can all be studied for production of the best results.

The smelting laboratory is provided with furnaces for roasting, smelting, and refining copper; for roasting, smelting, and cupelling lead; for chloridizing roasting preparatory to pan amalgamation or lixiviation. The smelting of a ton or two of ore cannot in the nature of things produce results which approach as nearly to the economy of large scale practice as is done in the other experimental lines, but the experience which the students gain throws more light upon the meaning of the lectures than any other work performed in these laboratories.

The assaying laboratory is provided with furnaces for crucible work, scorification, cupellation, and all the usual accompanying operations. Near by are rooms for fine balances and for supplies. This laboratory not only provides for the regular course in assaying which is taken by all the students in Mining Engineering and Chemistry, but it provides the means of testing and checking the work of the other three laboratories. A laboratory is provided with chemical desks for conducting all of the small lixiviation tests and such wet work as is necessary in connection with the smelting and lixiviation of ores. The blow-pipe laboratory of the Geological Department is used for the blow-pipe silver assay. A museum of ores, products, and models of mining engineering and metallurgy serves to illustrate the lectures.

Summer Schools of Mining and Metallurgy. — To bring the mining students into closer acquaintance with their profession, summer schools are organized for the study of mines, mills, smelting works, and geological fields.

At the summer school of mines, the students, with their instructors, locate at a mine, and take up in succession systematic studies in methods of mining and ore-dressing, of underground and surface surveying, doing actual work in all these lines.

At the summer school of metallurgy, the party visits a locality where a variety of smelting and refining operations are conducted, and makes a systematic study of the different operations, writing up the notes from day to day.

The mining and metallurgical summer schools take place in alternate years.

In 1896 the summer school of mining was held in the Upper Peninsula of Michigan and in Minnesota. The leading iron mines of the Menominee, Gogebic, and Mesabi ranges were visited, and their geological features, as well as the surface and underground workings, carefully studied.

In 1897 the summer school of metallurgy was held in Western New York and Ohio. The leading works of Syracuse, Buffalo, Niagara Falls, and Cleveland were visited, and coking in by-product ovens and the metallurgy of iron, steel, and copper were studied, as well as some electrical and chemical processes.

In 1898 the summer school of mining was held in Nova Scotia, where a study was made of the mining and milling of gold, the mining and shipping of coal, and the manufacture of gas and coke.

In 1899 the summer school of metallurgy was held in New Jersey and Pennsylvania. Copper works were visited at Bergen Point; iron, steel, and zinc works at Bethlehem; and iron and steel works at Pittsburgh. The methods of smelting were followed through from the ore to the finished metal ready for the market.

Architecture. — The instruction in this department comprises the study of construction and materials, the study of building processes and of professional practice, of composition, design, and the history of architecture. It is arranged to meet the needs of those who are commencing their professional studies, as well as of experienced draughtsmen who desire to make up deficiencies in their training, or to qualify themselves for undertaking the responsibilities of practice.

The more strictly professional work begins with the history and applications of the orders. During the entire course there is regular instruction in freehand drawing, that of the last year being from life. The students are familiarized with the ma-

terial elements of their future work by courses in practical construction, including lectures, problems, and visits to buildings.

Architectural history is taught by lectures, illustrated with the stereopticon, by text-books, and by written themes.

For three years the students are continually engaged upon architectural design. Each student's work is examined and criticised before the classes by a jury from the Boston Society of Architects.

An option in architectural engineering is offered to students who intend to make a specialty of construction, and advanced courses in design, history, and construction are offered to graduates of the regular course.

By means of a special fund raised for the purpose, several thousand photographs, prints, drawings, and casts were originally collected for the department. To these collections large additions have been made by regular appropriations and by gifts. Models and illustrations of architectural detail and materials are arranged in the rooms of the department. The chief part of the collection of casts of architectural sculpture and detail belonging to the department has been deposited in the Museum of Fine Arts, and is arranged with the architectural collections belonging to the museum. The students of the department have free access to the museum at all times; as the building is close at hand, no inconvenience results from the change, and some of the advanced exercises in drawing are held there.

The Architectural Library contains a carefully selected collection of eleven thousand photographs, six thousand lantern slides, over three thousand volumes of technical works, and the leading American and foreign periodicals. The publications of the Royal Institute of British Architects are presented by it, and a large number of richly illustrated and costly books have been added to the library as gifts from friends of the Institute.

The Boston Society of Architects has established prizes each in books of the value of fifty dollars for the two students who shall exhibit the best work at the completion of their courses.

The two Rotch prizes of two hundred dollars each are given according to the will of the late Mr. Arthur Rotch, one to the student who is graduated with the highest standing in the regular course in architecture, and the other to the special student who ranks highest at the end of a two-year course. For this special student prize only those applicants are eligible who enter in accordance with the requirements on page 36, on the basis of professional office experience or as college graduates.

Summer School of Architecture. — The first summer school was held in 1893 in Chicago, during the World's Fair. In 1894 and 1895 schools were held in Salem and Portsmouth for the study of colonial architecture. In 1896 the Institute took the important initiative of sending the school abroad, and a bicycle tour was made in England and France for the study of architectural styles. In 1897 and 1898 the school made pencil and water-color sketches of the picturesque buildings in and about Quebec. In 1899 the school again studied European Architecture, visiting cities in northern Italy between Genoa and Venice, and then made a successful bicycle tour to Paris for the study of the buildings of the Riviera, the Rhône Valley, and the central part of France.

Biology. — Under Biology is included instruction in a series of related subjects, beginning with microscopy and general biology, and extending to comparative physiology, zoölogy, bacteriology, and industrial and sanitary biology.

General Biology is taught partly as an introduction to the special branches of the subject, which depend more or less upon it, and partly for its own sake, as introducing the student to a new department of science. Beginning with a brief review of the familiar facts of common knowledge concerning living things and lifeless things, their likeness and their difference, and concerning organisms, organs, and tissues, the more recondite subjects of cells and protoplasm are considered; after which considerable time is spent upon a thorough examination and comparison, both macroscopic

and microscopic, of selected plants and animals, chosen as representative forms.

Botany and Zoölogy. — General biology is succeeded and continued by brief courses in general zoölogy and general botany. These naturally introduce the student to cryptogamic botany, of which the outlines only are taught, and to more advanced zoölogy, in which larger opportunities are offered.

Comparative Anatomy and Embryology. — The student makes careful dissections and drawings of typical forms from most of the principal groups of the animal kingdom, the last six weeks of the course being devoted to the study of the embryology of vertebrates, with the embryo chick and the frog as types. This course is indispensable to those who intend to teach zoölogy; while those who intend to study medicine will find that a knowledge of the anatomy and development of vertebrates, together with the skill in dissection and embryological methods acquired in this course, will give them a great advantage during their earlier years in the medical school.

Theoretical Biology. — The more philosophical questions connected with biology are brought forward and treated historically and critically. The facts and theories are examined in regard to such subjects as heredity, evolution, natural selection, variation, etc.

Comparative Physiology. — For those intending to study medicine, or to become science teachers in secondary schools, the course in physiology (and microscopic anatomy) is especially useful. The subject is presented primarily as a pure science, and, with this as a basis, especial attention is given to the consideration of some aspects of personal hygiene. An extensive course of laboratory work not only acquaints the student practically with the methods of modern physiological investigation, but also affords excellent training in the use of apparatus for accurate measurement of the functional activities of the animal body.

Bacteriology, Fermentation, Sanitary Science, etc. — Stu-

dents who are preparing themselves for work in some one of the sanitary or industrial applications of biology give special attention to bacteriology, especially in its latest application to sanitary science in the examination of air, ice, and water, and its industrial applications to dairying, vinegar-making, food-preserving, etc. Owing to their practical importance, the organisms peculiar to or infesting water-works are particularly considered.

A Biological Journal Club, to which the more advanced students are admitted, is made helpful as a means of keeping abreast of current progress, and of giving practice in bibliography and in the public presentation of original matter or of abstracts.

Advanced students in biology devote most of their time to special work, in which they are allowed considerable choice, and they are expected to undertake original observations in their respective specialties. The subjects offered at present for specialization are comparative physiology (including microscopic anatomy) and applied biology (including bacteriology, industrial biology, and sanitary science).

The Institute now affords unusual opportunities for advanced or special work in fermentation, hygiene, and sanitary science. The departments giving the principal instruction in these subjects are the biological, chemical, physical, architectural, and that of sanitary engineering. Graduate or special students, such as physicians, inspectors of boards of health, superintendents of water-works or sewer departments of cities or towns, or persons engaged in industries depending on the activities of yeast, bacteria, etc., if qualified to pursue their work with advantage, will be admitted to such subjects as they may elect, and will be given every opportunity to equip themselves for their work.

The Biological Laboratories are now located in the Henry L. Pierce Building. They comprise four well-equipped laboratories for undergraduates, with smaller rooms for special lines of work, and a laboratory devoted to more advanced or special

investigation. In connection with these there is a well appointed library and reading-room, centrally placed and containing more than two thousand volumes.

A large laboratory of General Biology and Microscopy supplies the needs of classes in these subjects, as well as of those in Elementary Zoölogy and Botany. It is furnished with microscopes, microscope lamps, suitable work-tables, and other appliances. The proximity of Boston to the sea offers exceptional facilities for work along these lines, as well as for the more advanced study of zoölogy and botany.

A second laboratory, somewhat smaller, furnishes opportunities for the practical work of the classes in comparative anatomy, embryology, cryptogamic botany, and histology. It is equipped with Thoma and Minot microtomes, paraffin baths, microscopes, and reagents for work in the gross and microscopic anatomy of plants and animals. Students of biology have also valuable privileges in connection with the Boston Society of Natural History, of which the museum and library are freely accessible.

For experimental work in physiology there is a special laboratory equipped with continuous roll and drum kymographs, induction coils, and other electrical apparatus, moist chambers, tambours, plethysmographs, etc., for physiological measurements, and with desks for work in physiological chemistry. Adjoining this is a workshop, with lathe and tools, as well as a dark-room for work in physiological optics.

The laboratory of bacteriology, industrial and sanitary biology is supplied with the microscopes, incubating chambers, thermostats, and other special appliances necessary for the detailed and practical study of micro-organisms. In connection with it there is a special culture-room and a room for chemical work and the preparation of nutrient media.

Finally, there is a research laboratory for the use of graduate students and special investigators. This is fitted with thermostats, autoclaves, and other apparatus for the study of problems connected with the sanitary and industrial applications of biology.

This whole series of laboratories is well organized for work, directed chiefly towards the microscopical, hygienic, and industrial side of biology, and offers unusual opportunities for those desiring to fit themselves for teaching or medical study or for practical work in the biological sciences.

Geology and Mineralogy. — The work of the department is introduced by courses in Crystallography, Mineralogy, and Blowpipe Analysis. Crystallography is taught with the aid of models, diagrams, and a series of crystals. In mineralogy specimens are freely used, an example of each of the more important species being placed before each student, while a collection of typical specimens is always accessible. The students are taught to identify minerals by their crystallization and physical properties, as well as by blowpipe or chemical tests. The instruction in blowpipe analysis is supplemented by sufficient practice to insure familiarity with the methods.

At the close of the term an excursion of several days is made to localities of mineralogical interest in New England or the adjoining States.

Dynamical Geology. — The course has been planned to meet the requirements of students in a school of industrial science. It discusses the processes by which the earth acquires its topographic and hydrographic features.

It is recognized that the phenomena of the earth's surface directly influence the prosperity of communities, and that some knowledge of them is essential to an intelligent consideration of many questions which arise in the administration of affairs. The subject is accordingly presented in a comprehensive manner, while parts of it are adapted to particular courses, as, for example, to civil engineering.

While the students become familiar with the geological action of streams, the sea, the atmosphere, and even the earth's interior heat, they do not dismiss these topics without considering the limitations imposed upon works constructed to utilize, resist, or evade the power of these agencies.

A large number of maps, charts, diagrams, and lantern illustrations are used.

Structural Geology. — Petrology, embracing the principal structural features of large masses of rocks, such as stratification, joint-structure, faults, folds, slaty cleavage, veins, dikes, etc., is taught as concretely as circumstances will allow. Specimens as well as diagrams and other illustrations are freely used in the class-room, and the unusually favorable opportunities which the local geology of the region of Boston presents for the illustration of these topics are utilized by means of frequent field lessons.

In the instruction of Lithology, a large amount of observation or laboratory work is combined with oral instruction. At each lesson a tray containing a typical hand-specimen of each type to be studied is placed before each student, and the lessons consist largely in the examination, testing, and description of the specimens by the students themselves, the instructors directing and supplementing the work of the class. The collections in this department are specially adapted to the laboratory method of instruction, and a complete series of typical rocks is accessible to students at all times. The instruction in Chemical Geology is also introduced in this term, and embraces the formation, alteration, and decay of rocks, the origin of vein-stones and ore-deposits, of rock-salt and mineral waters, and of coal and petroleum.

Historical Geology, Stratigraphical Geology. — The physical history of the earth is the subject for study in each of these two courses, but in the selection of topics and in their presentation each is adapted to the needs of the students to whom it is given. The course in stratigraphic geology is designed for students in Civil Engineering, and prominence is given to the development and significance of the physical features of the surface. In historical geology a larger amount of time is devoted to the past life of the earth as antecedent to existing species. The students are taught how the geologic events determined the structures and features of existing lands, and that it is through these that we

ascertain the causes of the distribution and modes of occurrence of mineral productions, of soils, and of living species. The testimonies of geology upon the doctrine of evolution, and the geologic events which constitute a part of the earliest history of human life upon the earth, are taught in these courses. The courses are illustrated by the use of specimens, maps, diagrams, and lantern projections.

The courses in Ore Deposits and Economic Geology are based upon extensive special collections, and are designed to prepare the students in Geology for professional work in connection with mines and quarries, including the selection and testing of materials for structural purposes and for industrial processes. In addition to frequent field-lessons during term-time, students in these courses spend about ten days of the semi-annual vacation with an instructor in some mining district, making a practical study of the modes of occurrence and structural relations of the economic materials, as well as of the methods of mining, etc.

In all the courses in mineralogy and geology especial prominence is given to the practical and economic aspects of these sciences, the main object being to adapt the instruction in each case to meet the special demands of the student's profession, whether it be mining engineering, civil engineering, architecture, geology, biology, or chemistry. The students in architecture, for example, receive a course in which the study of building-stones is the prominent feature, and in which the regular exercises are supplemented by visits to quarries, stone-yards, buildings, and monuments, and by laboratory practice in physical and chemical tests of the strength and durability of stones.

The Geological Laboratory. — The Geological Department now occupies five rooms in the buildings on Trinity place, of which four are connecting rooms upon the first floor.

The Rogers Geological Library contains two thousand volumes, the current publications, and the geological and geographical maps used in giving instruction. In the same

room are a well selected and valuable collection of fossils stratigraphically arranged in 275 drawers. An additional collection is selected and arranged with special reference to teaching Structural Palæontology from the specimens. The general office of the department is located here and the room is further used for some of the smaller classes.

The laboratory of mineralogy is so equipped as to be convenient both as a class-room and as a laboratory for descriptive and determinative mineralogy. It contains collections of minerals arranged for class-work in each of the above subjects and for the use of students in descriptive mineralogy. The tables in this room have been specially designed for the purpose of practice in blow-pipe analysis. Here is also placed a machine for the cutting and polishing of mineral and rock sections.

The laboratory of structural geology (petrography) is also used for classes and as a laboratory. It contains, first, the cabinet collection of rocks and an extensive series of trays specially arranged for the laboratory work in lithology; second, an exceptionally complete petrologic collection; third, the cabinet collection of minerals; and fourth, the crystallographic illustrations, including both models and natural crystals.

Directly connected with each of these three rooms is the lecture room, which contains the requisites for the illustration of the lectures given therein.

The laboratory of economic geology is adjacent to these and contains collections indicated by the name of the room, including building and ornamental stones, an extensive series of ores, and economic minerals other than ores; also the illustrations in chemical geology. The instruction in ore deposits, economic geology, and building stones is given here.

In addition to the working collections in the Pierce Building, the students in this department have access at all times to the extensive and valuable mineralogical and geological collections of the Boston Society of Natural History. These are very conveniently placed, and have been arranged with

special reference to the needs of students, each division of mineralogy and geology being separately and fully illustrated in the same order in which it is taken up in the Institute courses. To impart information is regarded as but one portion of the instruction; so far as practicable, the students are led to a direct acquaintance with natural features and objects, and then trained to employ correct methods of interpretation and presentation. The collections are especially adapted for use in teaching, and every available opportunity for field-practice is improved.

Students in the Course in Geology are also expected to devote four weeks in the summer vacation following the third year to field-work in connection with the summer school already described. (See page 96.)

Modern Languages. — The study of Modern Languages has two principal objects: it is an important means of general training and culture; and it aims also to impart by suitable exercises such facility in reading and translating that the student may avail himself of foreign works relating to his professional department, and may gain as much familiarity with spoken French and German as his aptitudes and the time available may permit. For both purposes, a thorough and systematic study of the structure of the language is deemed to be an essential basis. This is, however, accomplished by means of practical work with the language itself, including written and oral exercises, rather than by study of the abstract rules of grammar. Regular students entering the Institute with preparation in French (see page 65) continue that language in the first year, and take German in their second and third years. Students entering with German (see page 65) continue German for one year, and take French in their second and third years. Practice in sight reading is provided in these as well as in special classes. In the Course in General Studies, there is more advanced work in French and German, and an optional course in French Literature is open to advanced

students. Instruction in the elements of Italian and Spanish is also offered.

English. — All regular students receive instruction in English during the first two years of their course. During the first half of the first year they hear lectures and have exercises in English, the aim being not to develop a theory of rhetoric, but to train them to express themselves accurately and adequately. Each student writes, frequently and regularly, themes and exercises of various sorts, which are corrected and returned by the instructors. The student has also frequent opportunities for consulting the instructors in private about his especial needs. By arrangement with other instructors, the note-books in general chemistry and all written exercises in history and political economy are subject to examination and correction by the English Department, which is thus enabled to direct continually the progress of each student in English composition. In several of the courses this criticism of the English is extended to technical papers in the fourth year. Throughout the second year instruction is given in the history of English literature, with practice in composition under the personal supervision and criticism of the instructor. In this course the student is required to read, as a whole or in part, such representative works as shall give him the best idea of the history and general character of English literature. The aim of the department is to give students who are looking forward to professional or business life such drill as will help them to express themselves readily, accurately, and adequately, and to aid them in the understanding and appreciation of good literature.

In the Course in General Studies, instruction is offered in the following subjects, optional or required, — English literature before 1560, Elizabethan literature, English literature of the eighteenth century, English literature of the nineteenth century, contemporary English and American literature, logic, advanced English composition, and argumentation. The aim is to give the student thorough drill, according to

modern methods, in the literature and literary history of the periods mentioned, and to enable him, by theory and by practice, to express his ideas in a correct and adequate form.

Students have access to a library of nearly three thousand volumes of selected works in English literature.

History and Political Science.—The study of three comprehensive topics in history and political science is required of all regular students, as follows:

In the first year, United States History.

In the second year, Modern Political History of foreign nations, illustrating the political progress of the world during the present century, with particular reference to the growth of political institutions.

In the third year, Political Economy and Industrial History, including the discussion of current economic problems.

These three general subjects may be followed or accompanied by several series of more highly specialized historical and political studies, which are required in one or more courses, and are open to all qualified students. The history of England and the United States may be studied continuously for three years; mediæval and modern European history for two years, introducing the student in the following year to the study of the era of the French Revolution.

The instruction in Social Science and History has been arranged so as to connect the instruction in biology with that in history. These two departments thus present an unbroken sequence of related studies extending through three successive years, and resting upon the fundamental knowledge of living forms and of prehistoric man that is presented in general biology, zoölogy, and anthropology. The study of social science and history is followed by that of comparative politics and constitutional history. The last link in the chain is international law.

Instruction is imparted by lectures, oral and written recitations, and assignments of reading for which students are held strictly responsible. The topical method of study is

employed, and syllabuses of lectures and reference readings are placed in the hands of each student.

Economics. — In the group of economic studies, the course upon the elements of political economy taken by all regular students is continued for those in the Course in General Studies by more detailed studies extending through three years. During this period, the economic instruction is devoted to five different lines of inquiry — Finance and taxation, commercial and industrial history, theories and methods of social reform, history of economic theory, and statistics.

The Financial History of the United States from 1789 until the present time is studied. Use of public documents is taught, and the student is required to go to official sources for authority as to statements of fact. A second course is directed to the theory and history of taxation in general. A third optional course on the theory of banking and finance describes the most important banking institutions of the world, and treats with more detail the questions of banking and money.

Two courses in Commercial and Industrial History are presented, the first dealing with questions of transportation, railroads, shipping, and commercial development; the second, with the industrial organization of society, as illustrated by the experience of England and the United States.

The course on Social Reform considers the economic systems proposed, particularly during the present century, to change the existing distribution of wealth.

In the last term of the Course in General Studies, a return may be made by optional work to the study of economic theory. The previous general historical studies, as well as the more special ones in finance and industry, lead the student to the development of the different schools of economic thought, from the mercantilists and physiocrats to the more modern representatives of the science.

In Statistics there are two courses. The first is elementary, and is devoted to the use of statistical data of the United

States, especially in their application to the questions of population, commerce, and finance. The more advanced and optional course treats of the general subject of statistics, its history, method, and technique. A good working library in statistics has been gathered, and the library of the American Statistical Association, deposited with the Boston Public Library and easily accessible, affords special advantages.

For the students in the Department of Biology there is given a brief course on Vital Statistics, especially adapted for the proper interpretation of registration reports.

For the students of the Department of Electrical Engineering a short course on the Economics of Corporations is given, open also to others who have completed the general course in Political Economy.

(For additional details see the circular of the Course in General Studies.)

The reading-room of the department contains libraries of authorities to be consulted in the required reference work, a large number of the best magazines and newspapers, both bound and unbound, which are useful in historical and political study, together with reading-tables, and work-tables for the preparation of maps, charts, diagrams, and especially for statistical work. There is a good collection of maps and diagrams particularly serviceable for the illustration of industrial and political history. The library in connection with the reading-room comprises nine thousand selected volumes and several thousand pamphlets. Every student enjoys immediate and unrestricted access to the shelves.

Military Science and Tactics. — In conformity with the requirements of the Acts of Congress of July 2, 1862, and August 30, 1890, and the Acts of the General Court of Massachusetts in furtherance thereof, the Institute provides instruction in military science and tactics.

All male students, except aliens, who take a majority of their studies in the first year, are required to attend military exercises for three hours per week.

For these exercises they are required to provide themselves with uniforms, which are made from measure and by contract, in order to secure uniformity of material and manufacture, as well as cheapness. The whole cost to each student does not exceed eighteen dollars. Any student may be excused from the prescribed course in the military department if he is a college graduate or twenty-three years of age at entrance, or if he passes an examination in the subjects taught during the year. Should a student present to the Faculty satisfactory evidence of physical disability he may be excused from the prescribed drill exercises, and in lieu thereof may be required to attend a course of theoretical studies in military science and tactics. All medical certificates intended to show physical disability must be presented within ten days after entrance.

All first-year students are required to fill out blanks stating their previous military experience, and no student may omit military exercises unless he has also appeared before the committee of the Faculty and received his excuse in writing from the Secretary.

At the commencement of the school year an examination will be held with a view to the selection of officers and non-commissioned officers. It will cover the infantry drill regulations from the beginning of the book to the school of the battalion in close order, inclusive, both theoretically and practically, and will be open to all students.

Gymnastics. — Class and individual work are conducted at the Institute gymnasium under the guidance of an experienced instructor.

Libraries. — The libraries of the Institute contain fifty thousand volumes and more than fourteen thousand pamphlets. The General Library of the Institute occupies a spacious and well-lighted room on the first floor of the Rogers Building. In it are to be found books in English literature and modern languages, works on education,

proceedings of learned societies that are of general character, and a complete set of the publications of the Institute and its officers; besides encyclopædias, dictionaries, catalogues of other libraries, and other books of reference. The Librarian of the Institute has his office here, and the rooms of the Department of English are in immediate proximity.

The greater part of the books belonging to the Institute are distributed to nine departmental libraries, where they are easily accessible to all students. There is also a small library of about six hundred volumes in the Margaret Cheney Reading-room for the use of women students of the Institute. These libraries, some of which have been mentioned in the preceding pages, contain a careful selection of special treatises, monographs, text-books, etc., and of periodical publications germane to the work of the respective departments. They are thus working libraries, and valuable experience in the use of them is acquired before the completion of the regular courses, either incidentally to the preparation of theses or in connection with lectures or recitations. The division of the library enables each student to consult the works needed by him with the least possible inconvenience.

The students have full use also of the valuable library of the Boston Society of Natural History, and of the extensive collections of the Boston Public Library, comprising more than five hundred thousand volumes in all departments of knowledge. Many libraries of scientific societies, of individuals, and of private corporations, rich in complete sets of the scientific periodicals of all countries, and of the publications of leading scientific societies throughout the world, are, through the courtesy of the owners, open to advanced students of the Institute.

Schedule of Topics.

THE following thirty pages form a schedule which includes the larger part of all the distinct topics or subjects of study taught in the Institute. These subjects are classified under headings, such as "Mathematics," "Chemistry," "Physics," "Civil Engineering," "Mining Engineering," etc. In the first column of the table is given the numeral by which any given topic is designated for convenience of reference, the same numbers appearing in the course schedules, pages 29 to 55; in the second column, the name of the subject; in the third and fourth, the number of the year (1st, 2d, 3d, or 4th) and the term (1st or 2d) in which the subject occurs; in the fifth, the number of hours per week given to exercises in the subject, the number of weeks being fifteen for each term, except as indicated by subscript figures; in the sixth, the number of the preparatory subject or subjects required of those desiring to be admitted to that in question; in the seventh, the manner in which the subject is taught, whether by lectures, by recitations, or by work in the laboratory, drawing-room, or field, or by several of these in conjunction; in the eighth, the name of the professor or instructor in charge of the exercise; and in the ninth, the courses including this subject. The requirements in column six include not merely the subjects specified by number, but also those required as preparation for them. Thus, for instance, the requirements for 70 (Applied Mechanics) are 38 and 360; that for 38 is 33; that for 33 is 27; those for 27 are 5 and 22; that for 22 is 20; those for 20 are 1 and 2 (Algebra and Plane Geometry required for admission, page 63); the requirement for 360 is 27 (or 23), which has already been followed

through. So that to take up 70, Applied Mechanics, the applicant must be prepared to pass, or must have passed, examinations in 20, 22, 27, 33, 38, 360, and in 1, 2, and 5. The sufficient reason for this is that in topic 70 use is made of all the subjects referred to; and to carry on the work the student must have had suitable training in all of them. In the sixth column the numbers are in some cases in italics. This denotes that the corresponding topics, if not previously completed, must be taken at the same time with the topic under consideration. For instance, the student cannot take 510, Mechanism, unless he takes 33, 110, and 360 at the same time, or has already completed them. Roman numerals in parentheses in the ninth column designate courses for which the topic in question is optional.

By a careful consideration of the schedule, in connection with the pages on the "Subjects and Methods of Instruction" (pages 76 to 125), the applicant for a special course may select for the earlier part of that course such topics as will enable him to pursue later those more advanced subjects which he may particularly desire. He may also ascertain what preparatory training is requisite for admission to any special course at the Institute.

Applications for exception for sufficient causes from the requirements stated in column 6 will always be considered by the Faculty.

The topics included in the schedule are subject to change at any time by action of the Faculty; and the list of studies for which any special student applies must be submitted to the Faculty for approval.

The subjects named below are the entrance requirements, full statements of which are given on pages 63 to 71:

1. ALGEBRA.	4. HISTORY.
2. PLANE GEOMETRY.	5. SOLID GEOMETRY.
3. ENGLISH.	190. FRENCH OR, 200, GERMAN.

MATHEMATICS.

No.	Subject.	Year.	Term.	Hours[1] per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
20	Algebra	1	1	2	(1) (2)	Rec.	Wells	All reg. students.
22	Plane Trigonometry	1	1	2	(20)	Rec.	Wells	All reg. students.
23	Elements of Plane Analytic Geometry	1	2	2	(5) (22)	Rec.	Bartlett, Bailey	V., VII., IX., XII.
27	Analytic Geometry	1	2	4	(5) (22)	Lect., Rec.	Woods, Skinner,	All courses except V., VII., IX., and XII.
28	Elements of the Theory of Equations	1	2	1_{10}	(20)	Rec.	Wells	All courses except I. and XI.
29	Spherical Trigonometry	1	2	1_{10}	(22)	Rec.	Wells	I., XI.
33	Differential Calculus[2]	2	1	3	(27)	Lect., Rec.	Runkle, Osborne.	All courses[2] except VII., IX., and XII.
34	Differential and Integral Calculus	2	1	3	(23)	Lect., Rec.	Woods	(V.)
35	Determinants	2	1	1	(22)	Lect., Rec.	Skinner	(VIII.)
38	Integral Calculus	2	2	3	(33)	Lect., Rec.	Runkle, Osborne.	All courses[2] except VII., IX., and XII.
43	General Theory of Equations	3	1	2	(28)	Lect., Rec.	Skinner	(VIII.)

(1) The number of weeks is 15 per term, except as indicated by subscript figures. (2) Optional in Course V.

MATHEMATICS.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
45	Differential Equations . . .	3	1	3	(38) . . .	{Lect., Rec.}	Osborne . . .	VI., VIII.
46	Elements of Differential Equations	3	1	2½	(38) . . .	{Lect., Rec.}	Osborne . . .	II., X., XIII.
47	Quaternions	3	1	2	(45) . . .	{Lect., Rec.}	Bailey	(VIII.)
49	Theory of Surfaces	3	2	[illegible]	(35) (38) .	{Lect., Rec.}	Woods	(VIII.)
50	Advanced Calculus	3	2	1	(35) (38) .	{Lect., Rec.}	Woods	(VIII.)
56	Fourier's Series; La Place's Coefficients	4	1, 2	2	(45) . . .	{Lect., Rec.}	Bailey	VIII.
57	Theory of Probability and Method of Least Squares	4	1	2	(38) . . .	{Lect., Rec.}	Bartlett	I.3, VI., VIII.
61	Elliptic Functions	4	1, 2	2	(50) . . .	Lect.	Woods	Elective.
64	Theory of Functions . . .	4	1, 2	2	(50) . . .	Lect.	Woods	Elective.

ANALYTICAL AND APPLIED MECHANICS.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
70	Statics; Stresses in Frames; Strength of Materials; Kinematics and Dynamics; Theory of Elasticity . .	3	1, 2	4_{20} / 3_{10}	(38) (360) .	Lect., Rec., Lab.	Lanza, Sondericker / Miller, Johnston .	I., XI.
71	Statics and Stresses in Frames	3	1	2	(38) (360) .	Lect., Rec.	Sondericker . . / Fuller	II., III.(1), IV.(1), VI.(1), X., XIII.
75	Strength of Materials; Kinematics and Dynamics .	3	2	3	(71) . . .	Lect., Rec.	Sondericker . . / Fuller	II., III., VI., X., XIII.
76	Strength of Materials; Graphical Statics . . .	3	2	3(2)	(71) . . .	Lect., Rec.	Sondericker . .	IV.
77	Analytical Mechanics . . .	3	2	3	(45) (360) .	Lect., Rec.	Lanza	VIII.
85	Analytical Mechanics . . .	4	1, 2	3	(77) . . .	Lect., Rec.	Lanza	(VIII.)
86	Strength of Materials; Friction	4	1	3	(75) . . .	Lect., Rec., Lab.	Lanza, Miller . .	II., III., VI., X., XIII.
87	Strength of Materials . . .	4	1	3 7	(76) . . .	Lect., Rec.	Lanza	IV.1
88	Strength of Materials; Stability of Structures; Theory of Elasticity . . .	4	2	3	(86) . . .	Lect., Rec., Lab.	Lanza, Miller . .	II., X., XIII.
89	Strength of Materials . . .	4	1	3	(76) . . .	Lect., Rec.	Lanza	IV.2
90	Strength of Materials . . .	4	2	3 7	(89) . . .	Lab.	Miller	IV.2

(1) 10 weeks. (2) Option 2, 52 exercises.

DRAWING.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
100	Geometrical and Mechanical Drawing	1	1	6	. . . . .	Lect., Draw.	Faunce	All reg. students.
101	Mechanical Drawing [1] . .	1 1	2 2	6_5 12	(2) (5) (100),	Lect., Draw.	Faunce	I., II., III.$_2$, VI., X., XI., XIII. IV.
102 103	Descriptive Geometry (continuation of 101)	1 1	2 2	6_{10} 12_{12}	(101) . .	Lect., Rec., Draw.	Faunce	I., II., III.$_2$, VI., X., XI., XIII. IV.
104	Mechanical Drawing . . .	1	2	6	(100) . .	Lect., Draw.	Faunce	III.$_1$, V., VIII., XII.
105	Mechanical Drawing . . .	1	2	4	(100) . .	Lect., Draw.	Faunce	VII.
110	Descriptive Geometry [2] (continuation of 102) .	2	1	5	(102) . .	Lect., Rec., Draw.	Faunce	I., II., III.$_2$, VI., X., XI., XIII.
115	Freehand Drawing	1	1	1	. . . . .	Draw.	Adams	All reg. students.
116 117	Freehand Drawing	1	2	2 3	(115) . .	Draw.	Adams	All courses except IV. IV.
118	Freehand Drawing	2	1, 2	4	(117) . .	Draw.	Adams	IV.
119	Freehand Drawing	3	1, 2	4	(118) . .	Draw.	Adams	IV.
120	Freehand Drawing	3	2	2	(116) . .	Draw.	Adams	XII.$_{2, 3}$.

(1) Course IV., 12 hours per week for 3 weeks.
(2) Applicants who have no previous knowledge of the subject, but are otherwise qualified to enter the second year of any of the courses named should address Professor Faunce as early as possible.

SHOPWORK.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge. All shopwork is under the general direction of Professor Schwamb.	Taken by
130	Carpentry and Wood Turning	1	1	9	(100) (115) . .	Shop	Merrick	Special Class.
131	Pattern Work	1	2	6	(104) (116) (130)	Shop	Merrick	Special Class.
132	Foundry Work	1	2	3	(104) (116) . .	Shop	Merrick	Special Class.
133	Forging	1	1, 2	6, 3	(100) (115) . .	Shop	Lambirth . . .	Special Class.
134	Chipping and Filing . . .	1	1, 2	3, 3_6	(100) (115) . .	Shop	Lambirth, Smith .	Special Class.
135	Machine Tool Work . . .	1	2	6_5, 9_{10}	(104) (116) (134)	Shop	Smith	Special Class.
136	Wood and Metal Work . .	1	2	2	. . . . .	Shop	Merrick, Smith .	V., VIII.
137	Carpentry and Wood Turning	2	1, 2	2				VI.
138		2	1	$4^{(1)}$	. . . . .	Shop	Merrick	II.
		3						(VIII.)
		4						X.
139	Metal Turning, Brass, etc. .	2	1	2	. . . . .	Shop	Smith	VI.
		3						(VIII.)
140	Foundry	2	2	2	. . . . .	Shop	Merrick	(II.)
141	Pattern Work	2	2	2	(138)	Shop	Merrick	II.
142	Forging	2	1, 2	$4, 6_8$	. . . . .	Shop	Lambirth . . .	XIII.
		3						II.
143		4	2	3				X.
144	Chipping and Filing . . .	2	2	6_7	. . . . .	Shop	Smith, Lambirth .	XIII.
		3						II.
145		4	1	6_5				II., XIII.
146	Machine Tool Work . . .	4	1, 2	$6_{10}, 6$	(145)	Shop	Smith	II., XIII.[2].
147	Metal Turning, Iron, etc. . .	4	2	2	. . . . .	Shop	Smith	X.
149	Pipe Fitting	4	1	2	. . . . .	Shop	Smith	XI.

(1) Course VIII., two hours.

(2) Ten weeks in second term.

ENGLISH LANGUAGE AND LITERATURE.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
160	Rhetoric and English Composition	1	1	2	(3) (4)	Lect., Rec., Comp.	Bates	All reg. students.
161	Logic	1	2	3	(160)	Lect., Rec.	Robinson	IX.
165	English Literature	2 3	1, 2	1(1), 2	(160)	Lect., Rec., Comp.	Bates	All courses except X. X.
167	English Composition (advanced course)	3	1	1	(165)	Lect., Comp.	Bates	IX.
169	English Literature: to 1660	3	1, 2	3	(165)	Lect., Read.	Robinson	(IX.)
175	English Literature: 1660–1780	4	1	3	(165)	Lect., Read.	Bates	IX.
176	Argumentation	4	1	2	(161)	Lect., Comp.	Pearson	(IX.)
177	English Literature: 1780–1860	4	2	3	(175)	Lect., Read.	Bates	IX.
178	Contemporary English and American Literature	4	2	2	(165)	Lect., Read.	Bates	(IX.)
179	Journalism	4	2	2	(165)	Lect., Comp.	Bates	(IX.)

(1) Course IX., 20 hours for the term.

MODERN LANGUAGES.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
190	French I. (elementary) (1) .	2	1, 2	3	. . . . .	Rec.	Rambeau . . .	{ All reg. students not taking 200.
191	French II.	1 or 3	1, 2	3	(190) . . .	Rec.	Rambeau . . .	All reg. students.
192	French (sight reading) . .	1		3	(*191*) . . .	Rec.	Bernard . . .	IV., IX.
193	French III.	2	1, 2 2	3	(191) . . .	{ Lect., Rec. }	Rambeau . . .	IX.
195	French Literature	3	2	2	(193) . . .	{ Lect., Rec. }	Rambeau . . .	(IX.)
200	German I. (elementary) (1) .	2	1, 2	3	. . . . .	Rec.	Vogel	{ All reg. students not taking 190.
201	German II.	3 or 1	1, 2	3	(200) . . .	Rec.	Dippold . . .	All reg. students.
202	German (sight-reading) . .	3	1, 2	2	(*201*) . . .	Rec.	Vogel	IX.
204	German III.	4	1, 2	3	(201) . . .	{ Lect., Rec. }	Dippold	Elective.
207	Spanish (2)	4	1, 2	2	. . . . .	Rec.	Erhardt	(IX.)
208	Italian (2)	4	1, 2	2	. . . . .	Rec.	Erhardt	(IX.)

(1) Identical with entrance requirement. See page 65.

(2) Given alternate years.

HISTORY.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
220	United States History . . .	1	2	2[1]	(4) . . .	Lect., Read.	Currier	All reg. students.
221	European History since 1815	2, 3	1	2	(220) . .	Lect., Rec.	Currier	All courses except X. / X.
222	History of England	2	1, 2	2	(220) . .	Lect., Rec.	Sumner	IX.
227	History of England	3	1, 2	2	(222) *(228)*	Lect., Rec.	Currier	(IX.)
228	History of European Civilization and Art; principally in the Classical, Gothic, and Renaissance Ages . .	3, 4	1, 2	3[2]	(4) . . .	Lect., Read.	Sumner	IX. / IV., (VII.)
230	History of the Era of the French Revolution . .	4	1, 2	2	(228) . .	Lect., Rec.	Currier	(IX.)
231	Local United States History .	4	1, 2	2	(221) (222)	Lect., Read.	Currier	(IX.)
234	History and Elements of Philosophy	4	2	3	. . . . .	Lect., Rec.	Sumner	IX.

(1) For Course IX., 3 hours.

(2) For Course VII., second term, 2 hours.

ECONOMICS AND STATISTICS. POLITICAL SCIENCE.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
238	Graphic Statistics	1	2	4	(100) . . .	Draw.	Ripley	IX.
240	Political Economy	2	1	2	(220) . . .	Lect., Rec.	Dewey	IX.
241	Economic Problems . . .	2	1	1	(*240*) or (*245*)	Read.	Ripley	IX.
245	Political Economy and Industrial History	3, 4	1, 2	2, 1[1]	(221) . . .	Lect., Rec.	Dewey, Ripley . .	All Courses except IX. and X. X.
246	Statistics of the U. S., and Graphic Methods . .	3	1	2	(240) . . .	Lect., Draw.	Dewey	IX.
247	Theories and Methods of Social Reform	3, 4	1, 2	2	(240) or (*245*)	Lect.	Dewey	(IX.) (VII.)
250	Financial History of the U. S.	3 or 4	1	3	(240) or (*245*)	Lect., Rec.	Dewey, Ripley . .	IX.
251	Commercial Geography . .	3 or 4	1	2½	(240) . . .	Lect., Rec.	Niles	IX.
252	History of Commerce . .	3 or 4	2	3	(222) (240)	Lect., Rec.	Dewey, Ripley . .	IX.
253	History of Industry [2] . .	3 or 4	2	3	(222) (240)	Lect., Rec.	Dewey, Ripley . .	IX.

[1] See 275.

[2] Alternating subject, not given the present year.

ECONOMICS AND STATISTICS. POLITICAL SCIENCE.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
255	Taxation and Administration (1)	3 or 4	1	3	(241) . . .	Lect., Rep.	Dewey, Ripley .	IX.
256	Descriptive Sociology . . .	3 or 4	2	3	(722) . . .	Lect., Rec.	Ripley	IX. (VII.)
257	Statistics of Sociology . .	4	1	3	(246) (252) or (253)	Lect., Rep.	Dewey	(IX.)
258	International Law	4	1	2	(221) . . .	Lect., Rec.	Ripley	IX.
260	History of Economic Theory	4	2	–	(250) (255)	Lect., Rec.	Dewey	(IX.)
261	Economics of Corporations .	4	2	2	(245) . . .	Lect., Rec.	Dewey, Ripley .	VI.
266	Comparative Politics and Constitutional History .	4	1, 2	3	(256) (220) or (221)	Lect., Rec.	Currier	IX.
268	Vital and Sanitary Statistics .	4	2	1	(245) . . .	Lect.	Dewey	VII.
270	Banking and Finance . . .	4	2	2	(250) . . .	Lect., Rec.	Not given the present year.	(IX.)
275	Business Law	3 or 4	2	1	. . . . .	Lect.	Willard . . .	All courses except X. X.

(1) Alternating subject not given the present year.

CHEMISTRY.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
290	General Chemistry	1	1	7	(1)(2)(3)(4) . .	Lect., Lab., Rec.	Pope, Bardwell .	All reg. students.
291	General Chemistry: Qualitative Analysis	1	2	6[1]	(290) . . .	Lect., Lab.	Pope, Bardwell .	All courses except IV., IX.
295	Theoretical Chemistry (brief course)	2	2	2	(291) . . .	Lect.	Whitney . . .	III.$_2$
		3						III.$_1$, VII., XII.$_1$.
300	Analytical Chemistry: Qualitative Analysis . .	2	1	8	(190) or (200) (291)	Lect., Lab.	Talbot, Walker, Moore	V., XII.$_{1,2}$.
				10				VII.
				6				(VIII.)
				9				(VIII.), X.
		2	2	4				XI.
		3	1	6, 8				III.$_{1,2}$.
302	Organic Chemistry (brief course)	2	1	1	(291)	Lect.	Norris	XI.
		3						VII., VIII., X.
303	Theoretical Chemistry: Atomic and Molecular Weights	2	2	2	(291)	Lect.	Noyes	VIII.
		3						V.
305	Analytical Chemistry: Quantitative Analysis . .	2	2	10	(300)	Lect., Lab.	Talbot, Walker, Moore	V.
				8				VII.
				6				VIII., XII.$_{1,2}$.
				5				X.
		3	1	3				XI.
		3	2	7, 8				III.$_{1,2}$.

(1) Course V., 10 hours.

CHEMISTRY.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
311	Sugar Analysis	3	1	1	(305)	Lab.	Rolfe	V.
312	Industrial Chemistry	3	1, 2	2 5 / 3 10	(291)	Lect.	Thorp	V., X.
313	Theoretical Chemistry: Solutions	3 / 4	1	1	(303)	Lect.	Noyes	VIII. / V.
314	Industrial Chemical Laboratory.	3	1 or 2 / 2	6 / 5	(305) (*312*)	Lab.	Smith	(V.) / X.
315	Organic Chemistry (brief course)	3	2	1	(*303*)	Lect.	Norris	V.
316	Water, Air and Food Analysis	3	1 or 2 / 2	6[1]	(305)	Lect., Lab.	Mrs. Richards	(V.) / VII.
317	Water Analysis	3	2	2	(305)	Lab.	Mrs. Richards	XI.
318	Theoretical Chemistry: Chemical Change	3 / 4	2	1 / 2	(328)	Lect., Rec.	Noyes	VIII. / V.
319	Analytical Methods	3	1	2	(305) (*191*) or (*201*)	Lect., Rec.	Talbot, Fay	VII.
		3	1, 2	2, 1				V., (VIII.), XII.$_1$.
		4	1, 2	2, 1				III.
320	Analytical Chemistry: Quantitative Analysis	3	1	4	(305) (*319*)	Lab.	Talbot, Fay	VII.
			1, 2	12, 13				V.
				5				(VIII.)
				6, 7				XII.
		4	1, 2	11, 11				III.$_1$.
				8, 9				III.$_2$.

(1) Four hours for students taking additional Assaying in place of Food Analysis.

CHEMISTRY.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
328	Molecular Weight Determinations	3 or 4	1	1	(*313*)	Lab.	Whitney	VIII. or (V.)
329	Organic Analysis	4	1	5	(320)	Lab.	Noyes, Mulliken	V.
332	Organic Chemistry	4	1, 2	3	(302) or (315)	Lect.	Noyes	V., (VII.), (X.)
333	Organic Chemistry	4	1	6 or 9	(302) (305)	Lab.	Noyes	(VII.) or (VIII.)
334	Air Analysis	4	1	2	(317)	Lab.	Mrs. Richards	XI.
335	Organic Preparations and Reactions	4	1	13	(315) (*332*)	Lab.	Noyes, Norris	V.
336	Testing of Oils	4	1	2	(302) (305)	Lect., Lab.	Gill	V., X.
337	Proximate Technical Analysis	4	1	6	(320)	Lect., Lab.	Whitney	(V.)
338	Textile Coloring	4	1	6	(315) or (302)	Lab.	Smith	(V.), (X.)
339	Applied Chemistry	4	1, 2	4, 2[1]	(312)	Lect., Lab.	Gill	X.
340	Gas Analysis	4	1 or 2	1	(305) or (373)	Lect., Lab.	Gill	X. or V.
341	Chemistry of Water and Sewage	4	2	1	(743)	Lect.	Mrs. Richards	XI.
342	History of Chemistry	4	2	1	(313) (315)	Lect.	Norris	V.
344	Memoirs	4	2	1	(320) (332)	Read.	Noyes	V.

(1) Additional work optional.

PHYSICS.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
360	Physics: Wave Motion, Electricity, Optics	2	1, 2	5	(23) or (27)	Lect., Rec.	Cross, Wendell, Lawrence	All reg. students.
361	Descriptive Astronomy	2	1	2	(23) or (27)	Read.	Clifford	VIII.
362	Acoustics	2	1	2	(27) (360)	Lect., Rec.	Clifford	VI., VIII.
363	Theoretical Electricity	2	2	2	(360)	Lect., Rec.	Clifford	VI., VIII.
365	Physical Measurements	2	2	1	(366)	Lect.	Goodwin	V., VI., VIII.
366	Physical Laboratory	2	2	2	(360)	Lab.	Goodwin, Derr	V., VI., VIII.
367	Physical Laboratory	2	2	2	(360)	Lab.	Goodwin	IX.
370	Physics: Heat	3	1	2s	(360)	Lect.	Clifford	All courses except IV.
371	Photometry	3	1	1	(360)	Read.	Clifford	VIII.
372	Heating and Ventilation	3	1	3	(360)	Lect.	Woodbridge	IV.
373	Physical Laboratory	3	1, 2	2₇, 3 / 2₇, 2	(370)	Lab.	Goodwin, Derr	III. / I., II., VII., X. / XI., XII., XIII.
374	Physical Laboratory	3	1	2₇	(366) (370)	Lab.	Goodwin, Derr	V., VI., VIII.
375	Physical Laboratory	3	2	2	(374)	Lab.	Goodwin	VIII.
376	General Electrical Testing	3	2	3, 2	(374) (383)	Lab.	Laws	VI., VIII.
377	Theoretical Electricity	3	1 / 2	2₇ / 2s, 1₇	(363)	Lect., Rec.	Clifford	VI., VIII.

PHYSICS.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
378	Methods of Telegraphy	3	I	28	(363)	Lect.	Derr	VI.
379	Industrial Electricity	3 or 4	I	I	(360)	Lect.	Cross	II., III.1, V., VI., VIII., X., I., XI.
380	Dynamo-Electric Measurements	3	I	I	(360) (379) (373) or (375)	Lect., Lab.	Puffer	II., III.1
383	Electrical Measuring Instruments and Methods	3	2	I8, 27	(374) or (375) (377)	Lect.	Laws	VI., VIII.
384	Physico-Chemical Laboratory	3 or 4	2	I	(318)	Lab.	Goodwin	VIII. (V.)
390	Optics	4	I, 2	2, 3	(38) (360)	Lect., Read.	Clifford	VIII.
391	Color and Acoustics	4	I	I5	(360)	Lect.	Cross	IV.
392	Photometry	4	I	—(1)	(374) or (375)	Lect.	Clifford	VI.
393	Energetics	4	I	2	(38) (318) (370)	Lect.	Goodwin	VIII.
394	Kinetic Theory of Gases	4	I	I	(393)	Lect.	Goodwin	VIII.
395	Physical Colloquium	4	I, 2	2		Read.	Goodwin	VIII.
396	Heating and Ventilation	4	I	1 or 2	(370)	Lect.	Woodbridge	II. XI.
397	Physical Laboratory	4	I, 2	4, 3	(373)	Lab.	Derr	I.3.
398	Heat Measurements	4	I	2 or 4	(373) (374) or (375)	Lect., Lab.	Norton	III., VIII. (X.)

(1) Time specially arranged each year.

PHYSICS.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
400	Electrical Engineering . . .	4	1, 2	4 / 5	(375) (377) (379)	Lect.	Cross	VI.
402	Methods of Dynamo Testing	4	1, 2	–[1]	(400) (406)	Lect.	Puffer	VI.
403	Railroad Signals	4	1	–[1]	(360) . .	Lect.	Blodgett . . .	I_2, VI.
404	Theory of Periodic Currents .	4	1, 2	1, 2	(377) . .	Lect.	Clifford	VI., VIII.[2]
405	General Electrical Testing[3] .	4	1	5 / 3	(374) or (375) (406)	Lab.	Laws	VI. / VIII.
406	Electrical Measuring Instruments and Methods	4	1	1_{11}	(383) . .	Lect.	Laws	VI., VIII.
410	Photography	4	2	1	. . . . .	Lect.	Derr	Elective.
411	Electro-Chemistry	4	2	2	(393) . .	Lect.	Goodwin . . .	VIII.
412	Potential, Theory of . . .	4	2	2	(377) . .	Lect.	Clifford . . .	(VIII.)
413	Electro-Magnetic Theory of Light	4	2	2	. . . . .	Lect.	Clifford	Elective.

(1) Time specially arranged each year. (2) Optional in second term. (3) 405 is followed by 420 and hours are subject to transfer.

PHYSICS.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
414	Principles of Scientific Investigation	4	2	3	. . . . .	Read.	Cross	VIII.
415	Advanced Chemistry or Physics	4	2	–(1)	(333) (393)	Read., Rec.	Noyes, Goodwin . .	(VIII.)
416	Alternating Current Machinery	4	2	–(1)	(400) (404)	Lect.	Puffer	VI.
417	Distribution of Electricity . . .	4	2	–(1)	(400) . .	Lect.	Puffer	VI.
418	Principles of Dynamo Design	4	2	–(1)	(400) . .	Lect.	Derr	VI.
419	Telephone Engineering . .	4	2	–(1)	(400) . .	Lect.	Hayes	VI.
420	Electrical Engineering Laboratory	4	1, 2	–(2), 5	–(3)	Lab.	Puffer	VI.
421	Electrical and Heat Measurements	4	2	2	(373) . .	Lab.	Laws, Norton . .	V.
423	Precision of Measurements .	4	2	2½	(57) (365)	Lect.	Clifford	VI., VIII.
424	Calculating Machines . . .	4	2	1½	. . . . .	Lect.	Derr	Elective.
425	Applications of Polarized Light	4	2	1	. . . . .	Lect.	Wendell . . .	Elective.

(1) Time specially arranged each year.
(2) 405 is followed by 420, and hours are subject to transfer.
(3) Students not taking all other fourth-year electrical subjects of Course VI. will apply for admission by petition.

CIVIL ENGINEERING.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
440	Surveying and Plotting . .	2	1, 2	6, 5	(27) (102)	Lect., Rec., Field., Draw.	Burton, Robbins .	I., III.$_1$[1], XI., XII.$_3$.
442	Topographical Drawing . .	2	1	2	(102) (116)	Draw.	Burton, Robbins .	I., III.$_1$, XI., XII.$_3$.
443	Elements of Astronomy . .	2	1	1	(*440*)	Lect., Rec., Field.	Burton	I.
450	Surveying	3	1, 2	2	(360) (440) .	Lect., Rec., Field., Draw.	Burton, Sweet .	I., XI., XII.$_3$.
451	Surveying Instruments (six lessons)	3	2	–[2]	(*526*) . .	Lect., Field.	Burton, Robbins .	II.
452	Railroad Field-work and Drawing	3	1, 2	4, 5 2, 5	(440) (*453*)	Field., Draw.	Allen, Robbins .	I. XI.
453	Railroad Engineering . . Highway Engineering . .	3	1, 2	2, 3[3]	(38) (440) . (*452*) . .	Lect., Rec.	Allen, Robbins . . .	I., XI.

(1) In second term, for Course XI., 6 hours; for Course III., 4 hours.

(2) Time included in 526.

(3) For Course XI., 10 weeks in first term, 12 in the second.

CIVIL ENGINEERING.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
455	Stereotomy	3	1	4	(110) . .	Rec., Draw.	Porter, Sweet . .	I., XI.
460	Theory of Structures . . .	3	2	$\{{}^{1}5\ {}^{2}10\}$	(70) . . .	Lect., Rec.	Swain, McKibben	I., XI.
461	Theory of Structures . . .	3	2	2	(76) . . .	Lect., Rec.	Swain	IV.$_2$.
465	Railroad Engineering . . .	4	1, 2	2, 3	(70) (453) .	Lect., Rec.	Allen	I.$_2$.
466	Railroad Management . . .	4	1	2	(245) (453)	Lect.	Allen	I.$_2$.
467	Geodesy (see also 497) . .	4	1, 2	3, 12	(57) (450) .	Lect., Rec., Field.	Burton	I.$_3$.
468	Practical Astronomy . . .	4	1	1	(38) (450) .	Lect.	Robbins . . .	I.$_{1, 3}$.
470 / 471	Theoretical Hydraulics . .	4	1	$\{{}^{1}3\ {}^{2}7\}$	(70)(1) (71)	Lect., Rec.	Porter	I., XI. / II., III.$_2$, VI., (X.), XIII.
472	Sanitary and Hydraulic Engineering	4	1	3	(470)	Lect., Rec.	Porter	I.$_1$, XI.
473	Hydraulic Measurements . .	4	1	37	(470) or (471) for XII. (450)	Field., Draw., Rec.	Porter, Sweet . .	I.$_{1, 3}$, (X.), XI., XII.$_3$.
474	Theory of Structures . . .	4	1, 2	2	(460)	Lect., Rec.	Swain	I.$_{1, 2}$,

(1) First term.

CIVIL ENGINEERING.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
476	Bridges and Similar Structures	4	1, 2	2	(*474*)	Lect., Rec.	Swain	I.$_{1, 2}$.
477	Theory of Structures: Bridges and Similar Structures	4	1, 2	3	(460)	Lect., Rec.	Swain	I.$_3$, XI.
478	Bridge Design	4	1, 2	6	(*474*) (*476*)	Draw.	Swain, McKibben, Spofford	I.$_{1, 2}$.
479		4	1	5, 4	(*477*)			I.$_3$, XI.
480	Engineering Laboratory	4	2	28	(470)	Lab.	Miller	I.$_{1, 2}$, XI.
490	Hydraulic Motors	4	2	2	(471)	Lect., Rec.	Porter	II., (X.)
491	Hydraulic Engineering	4	2	3	(472)	Lect., Rec.	Porter	I.$_{1, 3}$, XI.
493	Railroad and Highway Design	4	1, 2	3	(*465*)	Draw.	Allen	I.$_2$.
494	Sanitary and Hydraulic Designing	4	2	2 or 6	(472) (*491*)	Draw.	Porter, Sweet	I.$_1$. XI.
495	Hydraulic Machinery	4	2	2	(*491*)	Lect., Rec.	Porter	XI.
497	Geodesy (see 467)	4	2	1	(38) (450)	Lect., Rec., Field.	Burton	I.$_1$.
499	Foundations	4	2	1	(*474*)	Lect.	Swain	I.$_{1, 2}$.
500	Theory of Structures	4	1, 2	3	(87) (461)	Lect., Rec.	Swain	IV.$_2$.

MECHANICAL ENGINEERING.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
510	Principles of Mechanism . .	2	1	2	(33) (110) (360)	Lect., Rec.	Merrill, Park . .	II., III.$_2$, VI., X., XIII.
512	Drawing	2	1	2	(510)	Draw.	Schwamb / Park . .	II., XIII.
515	Drawing	2	2	6 / 3 / 5	(517) or (518)	Draw.	Schwamb / Park . .	II., X. III.$_2$, VI. XIII.
517	Mechanism: Construction of Gear-Teeth, Machine Tools, Cotton Machinery	2	2	3	(510) (515)	Lect., Rec.	Merrill	II., X.
518	Mechanism: Construction of Gear-Teeth, Machine Tools	2	2	2	(510) (515)	Lect., Rec.	Merrill, Park . .	III.$_2$, VI., XIII.
520	Principles of Mechanism . .	2	2	2	(33) (110) (360)	Lect., Rec.	Merrill	I.
525	Steam Engineering: Valve Gears, Boilers	3	1, 2,	3	(38) (71) (75) (370) (517) or (518) (526)	Lect., Rec.	Peabody, Miller .	II., III.$_2$, VI., X., XIII.

MECHANICAL ENGINEERING.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
526	Drawing Design	3	1, 2 1 1, 2 1, 2 1	6, 5 5 3, 2 6, 2 2	(515) (525)	Draw.	Schwamb, Peabody, Park	II. III.$_2$. VI. X. XIII.
530	Engineering Laboratory . .	3	2	2	(525) . . .	Lab.	Miller	II., III.$_2$, VI., X., XIII.
540	Steam Engineering	4	1	2$_8$	(525) . . .	Lect., Rec.	Peabody . . .	II., VI., X., XIII.
541	Steam Engineering	4	1, 2	2	(38) (370) (520)	Lect., Rec.	Peabody . . .	I.$_{1, 2}$.
542 543	Dynamics of Machines . .	4	1	39 35	(86) (525) .	Lect., Rec.	Lanza	II., XIII., VI., X.
544	Machine Design	4	1	9	(86) (525) (526) (542)	Lect., Rec., Draw.	Schwamb . . .	II.
545	Engineering Laboratory . .	4	1, 2	4	(471) (530) (540) (542) or (543)	Lab.	Miller	II., VI.(1), X.(1), XIII.

(1) Course VI., 45, Course X., 50 hours, first term.

MECHANICAL ENGINEERING.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
550	Locomotive Construction .	4	1, 2	3$_6$, 3	(86) (471) / (540) (542)	Lect., Rec.	Lanza	II.$_2$.
551	Marine Engineering . .						Peabody . . .	II.$_1$, XIII.
552	Mill Engineering . . .						Schwamb . . .	II.$_3$.
553	Heating and Ventilation .						Woodbridge . .	II.$_4$.
554	Technical Machinery . . .	4	2	2	(540) . .	Lect. .	Merrill	X.
555	Foundations	4	2	2$_5$	(88) . . .	Lect. .	Lanza	II.
556	Industrial Management . .	4	2	2$_5$	(550) (551) (552) or (553)	Lect. .	Schwamb . . .	II.
559	Engineering Laboratory . .	4	2	4	(86) (525) (530)	Lab.	Miller	III.$_2$.

NAVAL ARCHITECTURE.

570	Naval Architecture	3	1, 2	2	(71) (75) (518) (525) (571)	Lect. .	Peabody . . .	XIII.
571	Naval Architectural Drawing	3	1, 2	6, 5	(570) . .	Draw..	Peabody, Clark .	XIII.
572	Naval Architecture	4	1, 2	2	(86) (525) (540) (542) (551) (570) (573)	Lect. .	Peabody . . .	XIII.
573	Naval Architectural Drawing	4	1, 2	4, 6	(572) . .	Draw..	Peabody, Clark .	XIII.

MINING ENGINEERING.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
580	Blow-pipe Silver Assay . .	2	2	2	(291)	Lab. .	Richards . . .	III.$_1$, (III.$_2$).
581	Mining Engineering . . .	3 4	1, 2 1	3 3	(360) (440) (661) (665)	Lect. .	Richards . . .	III.$_1$. XII.$_1$, $_3$.
582 583	Assaying by Fire	3	1 2	4 2[1]	(661) (662)	Lab. .	Lodge	III. V., XII.
587	Metallurgy of Iron . . .	4	1	1	(291)	Lect. .	Hofman . . .	I.$_1$, $_2$, II., III., V., X., XI., XII.$_1$, XIII.
588	Metallurgy of Non-ferrous Metals	4	1	2	(291) (592)	Lect. .	Hofman . . .	III., (V.)
589	Elements of Non-ferrous Metallurgy	4	1	1	(291) (661)	Lect. .	Hofman . . .	(V.), X., XII.$_1$.
590	Metallography	4	1, 2	–	(593)	Lect. .	Sauveur . . .	III.
591	Electricity in Mining . . .	4	1, 2	–	(593)	Lect. .	Sprague . . .	III.
592	Metallurgical Laboratory .	4	1, 2	8, 14 8, 12 8	(320) (360) (582) (595)	Lab. .	Richards, Hofman, Lodge .	III.$_1$. III.$_2$. (V.)
593	Mining Engineering . . .	4	1, 2 1	2	(360) (661)	Lect. .	Richards . . .	III. (V.)
595	Memoirs	4	1, 2	1	(191) (201)	Read. .	Richards, Hofman, Lodge .	III.
596	Laboratory Reports . . .	4	1, 2	1	(592)	Rec. .	Richards, Hofman, Lodge .	III., (V.)
599	Metallurgy of Non-ferrous Metals and General Metallurgy	4	2	3	(588) or (589)	Lect. .	Hofman . . .	III., (V.), (X.)

[1] Four hours for students in metallurgical option of Course V.

ARCHITECTURE.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
610	Design	2	1	6	(103) (*118*)	Lect., Rec., Draw.	Gardner	IV.
611	Shades and Shadows	2	1	2s	(103) (117)	Lect., Draw.	Gardner	IV.
612	Materials	2	1	1	(103)	Lect.	Chandler	IV.
618	Design	2	2	7	(610) (611) (*118*)	Draw.	Despradelle, Gardner	IV
619	Perspective	2	2	1	(611)	Lect., Draw.	Lawrence	IV.
620	Stereotomy	2	2	1	(103)	Lect., Draw.	Lawrence	IV.
625	Design	3	1, 2	10, 14	(*119*) (618)	Draw.	Despradelle, Mead	IV.(1)
626	Architectural History	3	1, 2	2	(610)	Lect., Draw.	Homer	IV.
627	Specifications and Working Drawings	3	1	4	(612)	Lect., Draw.	Chandler	IV.
628	Pen and Ink	3	2	1	(*118*)	Draw.	Gregg	IV.
629	Structural Design	3	2	4	(*461*)	Lect., Draw.	Lawrence, Swain	IV.2
634	Structural Design	4	1, 2	19, 26	(*500*) (629)	Lect., Draw.	Swain, Lawrence	IV.2

(1) Omitted by Option 2 in second term.

ARCHITECTURE.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
635	Design	4	1, 2	19, 26	{(625)(637)(641)}	Draw.	Despradelle . .	IV.1
636	History of Construction . .	4	1	1	(627) . .	Lect.	Chandler . . .	IV.
637	History of Ornament . . .	4	1, 2	110	{(119)(625)(628)}	{Lect., Draw.}	Walker	IV.1
638	Constructive Design . . .	4	1	28	(87) (620)	{Lect., Draw.}	Lawrence . . .	IV.1
639	Pen and Ink	4	1, 2	1	(628) . .	Draw.	Gregg	IV.(1)
640	Water Color	4	1, 2	2	(119) . .	. . .	Turner	IV.1
641	Life Class	4	1, 2	4	(119) . .	Draw.	Adams	IV.1
647	Business Relations, Contracts, etc.	4	2	{1 2}	(627) . .	Lect.	Chandler . . .	IV. IV.
648	Modelling	4	2	2	(119) . .	. . .	Bartlett	IV.1
649	Building Construction . . .	4	2	1	. . . . .	Lect.	Chandler . . .	I.2, XI.

(1) Omitted by Option 2 in second term.

NATURAL SCIENCES.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
660	Physiography	2	1	2	(360)	Field., Lab.	Niles	XII.
661	Mineralogy	2	1	4	(291)	Lect., Lab.	Crosby, Barton	III., V., VII., XII.
662	Blow-pipe Analysis	2	1	2	(291) (661)	Lab.	Barton	(III.), V., VII., XII.
665	Dynamical Geology	2	2	3	(360) 1st term	Lect.	Niles	I., III.$_1$, (V.), VII., IX., XI., XII.
666	Geological Field-work and Laboratory	2	2	3	(668)	Field., Lab.	Crosby	XII.
668	Structural and Chemical Geology	2, 3, 4	2	3[1]	(661) (665)	Lect., Lab.	Crosby	III.$_1$, XII. (V.) (VII.)
669	Historical Geology	3, 4	1	3	(670) (668)	Lect., Rec.	Niles	III.$_1$, VII., XII. (V.)
670	Structural Geology	3	1	2	(291) (665)	Lect., Lab.	Barton	I., XI.
671	Geological Maps and Sections	3	1	2	(666) (668) (669)	Field., Draw.	Niles	XII.
672	Structural Palæontology	3, 4	1	4, 5	(716)	Lab.	Niles	XII. (VII.)
673	Geological Field-work	3	1	4	(666) (669)	Field., Lab.	Crosby	XII.
675	Stratigraphic Geology	3	2	2	(670)	Lect., Rec.	Niles	I.
676	Building Stones	3	2	2	(290)	Lect., Lab.	Crosby	IV.

(1) Two hours per week alternative with 665 for Course V.

NATURAL SCIENCES.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
677	Mineralogy	3	2	4	(661) (662)	Lect., Lab.	Crosby	XII.
678	Geology	3	2	3	(665)	Lect., Rec.	Niles	IX.
679	Glacial Geology	3	2	1	(669) or (675)	Lect.	Niles, Barton	XII.
680	Stratigraphic Palæontology	3	2	4	(669) (672)	Lab.	Niles	XII.
681	Applied Geology	3	2	8	(671)	Lab., Read.	Niles, Crosby	XII.3.
685	Climatology	4	1	2	(360)	Lect., Rec.	Niles	(VII.), IX., XII.
686	Geological Field-work and Laboratory	4	1, 2	8, 10	(666)	Field., Lab.	Niles, Crosby, Barton	XII.
687	Physiographic Geology	4	1	3	(669) or (675)	Rec.	Niles	XII.
688	Geological Memoirs	4	1, 2	1	(669)	Rec.	Niles	XII.
689	Stratigraphic Correlation	4	1	5	(680)	Lect., Lab.	Niles, Crosby	XII.
690	Micro-Lithology	4	1, 2	3	(668) (669) (677)	Lect., Lab.	Barton	XII.
691	Ore Deposits	4	1	2	(668) (669) (677)	Lect., Lab.	Crosby	XII.

NATURAL SCIENCES.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
692	Experimental Geology . . .	3 or 4	1	8 or 6	(669) . .	Lab. . .	Niles	XII.$_3$. XII.$_2$.
695	Economic Geology	4	2	4	(668) (669) (677)	Lect., Lab.	Crosby	XII.
696	Hydrography	4	2	3	(669) . .	Rec. . .	Niles	XII.
710	Microscopy	1 / 2 / 2	2 / 2 / 1	2	(290)	Lect., Rec., Lab.	Sedgwick, Winslow	VII. (V.) VIII.
711 712	General Biology	2 or 3	1	5 / 4 / 2$_7$	(290)	Lect., Rec., Lab.	Sedgwick . . .	VII. IX., XII. XI.
715	General Biology	2	2	1	(291)	Lect., Lab.	Sedgwick . . .	V.
716	General Zoölogy	2 or 3	2	2[1]	(711) or (712)	Lect., Lab.	Weysse, Winslow	VII., IX., XII. XI.
717	General Botany	2 or 3	2	1[1]	(711) or (712)	Lect., Lab.	Sedgwick . . .	IX., XII. XI.
718	Cryptogamic Botany . . .	2	2	5	(711) . .	Lect., Lab.	Prescott . . .	VII.
720	Comparative Anatomy and Embryology	3	1, 2	8	(711)	Lect., Rec., Lab.	Weysse	VII., XII.$_2$.

(1) Ten weeks for Course XI.

NATURAL SCIENCES.

No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
722	Anthropology	3	1	1	(716)	Lect.	Ripley	VII., IX., XII.
730	Microscopic Anatomy	3	2	5	(720)	Lect., Rec., Lab.	Weysse	VII.
		4	1	3				
735	Comparative Physiology	4	1, 2	5	(720)	Lect., Rec.,	Hough	VII.
736	Physiological Laboratory	4	1	5	(720)	Lab.	Hough	VII.
738	Theoretical Biology	4	1, 2	1, 2	(720)	Lect.	Bigelow	VII.
739	Journals	4	1, 2	1	(711)	Read.	Sedgwick, Hough	VII.
740	Industrial Biology	4	1	3	(302) (711) or (715)	Lect., Lab.	Prescott	(V.), VII.
741	Physiology and Hygiene	4	1	2	(711)	Rec., Lab.	Hough	IX.
742	History of Inductive Sciences	4	1	1	(290)	Lect.	Sedgwick	VII., VIII.
743	Bacteriology	4	1	3 4	(302) (711) or (712) or (715)	Lect., Rec., Lab.	Prescott	(V.), VII. XI.
750	Principles of Public Health and Sanitation	4	2	1	(290)	Lect.	Sedgwick	I., IV., VII., IX. XI.
751	Sanitary Biology	4	2	3 4	(743)	Lect., Rec., Lab.	Sedgwick, Winslow	(VII.) XI.

Regulations.

School Year. — The first term begins on the first Wednesday after September 25. There is a recess of one week after the semi-annual examinations, and the second term begins on the first Tuesday after February 4. On legal holidays, on the Friday and Saturday following Thanksgiving Day, and for three days at Christmas, and three in April, the exercises of the school are suspended.

CALENDAR FOR 1899-1900.

School Year began	Wednesday, Sept. 27, 1899.
Semi-annual Examinations begin	Tuesday, Jan. 16, 1900.
Second Term begins	Tuesday, Feb. 6, 1900.
Annual Examinations begin	Tuesday, May 22, 1900.
Degrees conferred. — School Year ends	Tuesday, June 5, 1900.
First Entrance Examinations	Thursday, June 28, 1900, and Friday, June 29, 1900.
Examinations for Advanced Standing begin	Monday, Sept. 17, 1900.
Second Entrance Examinations[1]	Tuesday, Sept. 18, 1900, and Wednesday, Sept. 19, 1900.
School Year of 1900–1901 begins	Wednesday, Sept. 26, 1900.

CALENDAR FOR 1900-1901.

School Year begins	Wednesday, Sept. 26, 1900.
Semi-annual Examinations begin	Tuesday, Jan. 15, 1901.
Second Term begins	Tuesday, Feb. 5, 1901.
Annual Examinations begin	Tuesday, May 21, 1901.
Degrees conferred. — School Year ends	Tuesday, June 4, 1901.
First Entrance Examinations	Thursday, June 27, 1901, and Friday, June 28, 1901.
Examinations for Advanced Standing begin	Monday, Sept. 23, 1901.
Second Entrance Examinations[1]	Tuesday, Sept. 24, 1901, and Wednesday, Sept. 25, 1901.
School Year of 1901–1902 begins	Wednesday, Oct. 2, 1901.

The Status of Students in regard to scholarship and ability to continue their courses is determined in part by means of examinations; but regularity of attendance and faithfulness to daily duties are considered equally essential.

[1] See page 61.

Examinations. — General Examinations are held each year in January and in May; but examinations in fourth-year subjects finished before the end of the term may be held at the close of the respective courses. The January examinations are confined to the work of the first half of the year. The May examinations may cover the work of the entire year. In the fourth year the annual examination covers, in addition, any professional work upon which the instructors in charge may choose to examine. Any member of the Faculty may omit an examination in a third or fourth year subject, if, in his judgment, such examination is unnecessary. In certain first and second year subjects, students are marked upon term work without examinations.

Examinations for students conditioned in May in subjects of the first, second, and third years are held on the Friday and following days previous to the September entrance examinations, and for first-term subjects at the time of the May examinations.

Intermediate examinations, the results of which are not made a matter of permanent record, but are primarily for the information of students and their parents or guardians, may be held at any time in place of regular exercises.

Students conditioned in any subject and failing to make up the condition at the time appointed for the examination are not entitled to another examination, but will be required either to repeat the subject or to discontinue it, as well as all subjects dependent thereon, unless further time be allowed by special vote of the Faculty. A regular student failing entirely to make up any condition will cease to be regular, and his name will be transferred to the list of special students.

Students having clear records at the end of their first term are allowed to choose their courses without restriction. Students will not be admitted to professional work of the several courses without clear records in those previous subjects on which the former especially depend. Intermediate cases are specially considered by the Faculty.

Any special student attaining a proper standing in all

subjects required of a regular student, up to any given period of the course, may apply to have his name transferred to the list of regular students.

Reports of Standing. — Intermediate informal reports for all first and second year subjects are sent to students, and to the guardians of those not of age, twice during each term. Formal semi-annual reports are sent at the close of each term. In connection with these reports special votes of the Faculty are transmitted in cases requiring consideration.

Attendance Card. — At the opening of each term the student is required to fill out and present to the Secretary an attendance card, blank forms for which are supplied. The attendance card is the direct means by which the student places before the Faculty his wishes in regard to his professional course or selection of studies. The card must be presented at the earliest possible moment, to give opportunity for the immediate determination of qualifications and status. All subjects applied for must be regularly pursued, and no others can be taken except by special permission of the Faculty, duly applied for by petition.

Bond or Deposit. — Every student is required, on entering the school, to file with the Bursar a bond in the sum of two hundred dollars, signed by two responsible sureties, one of whom must be a citizen of the United States, as security for the payment of all charges of the Institute against him. If, for any reason, such a bond cannot be obtained, a deposit of fifty dollars may, in exceptional cases, be accepted as security. No officer of instruction or student of the Institute will be received as a surety.

Fees. — The tuition fee for regular students is $200 per year, and must be paid *in advance* as follows, — $125 on or before October 10, and $75 on or before February 10. No bills are sent in advance for the *first* term. For one-half or

any less fraction of the school year, the fee is $125. Payment is also required of the cost of chemicals used and of apparatus injured or destroyed in the laboratories, and of the cost of repair of damage by students to any other property of the Institute. Special students pay, in general, the full fee; but when a few branches only are pursued, and the time required for instruction is limited, application for reduction may be made to the Bursar. The fee for students in graduate courses is the same as that for regular students.

It is desired that regular students, whose financial necessities are such as to prevent their continuance at the Institute, communicate, through the Secretary, with the Scholarship Committee of the Faculty.

Payments. — All payments should be made to Albert M. Knight, Bursar. If by check, remittance from points out of New England should be in New York or Boston funds.

Undergraduate Scholarships. — The resources of the Institute for undergraduate scholarships have been largely increased by recent benefactions. It is the policy of the Faculty to apply the funds available to the assistance of as many students as possible by assigning, in general, amounts less than the full tuition. Preference is given in making awards to applicants who have completed at least a year of thoroughly satisfactory work at the Institute. In the case of an applicant not already in the Institute, it is important that full information should be presented from former teachers as to capacity. The facts considered in making assignments are the needs of the student and his promise, as indicated by his previous work. It is expected that only those students who are greatly in need of aid will apply for a scholarship, and none will be awarded to a student who gives little promise of future usefulness. Awards will be made in October, and five-eighths of the amount awarded will be credited on the term bill due in October, and the remaining three-eighths on

the term bill due in February. Applications for scholarships should be addressed to the Secretary of the Faculty.[1]

Massachusetts State Scholarships. In consideration of aid received from the Commonwealth, the Institute has established forty free scholarships, one being assigned to each senatorial district of the State. In many cases these scholarships are divided in halves in order to assist a larger number of applicants. Information regarding the terms and condition upon which these are to be awarded may be obtained by addressing the Secretary of the State Board of Education, State House, Boston.

William Barton Rogers Scholarship Fund. The income from this fund, which was presented by the Alumni Association of the Institute as a memorial of the late President Rogers, is applied to aiding needy students. Grants from this fund carry with them the obligation of ultimate repayment, and all amounts returned become immediately available as income.

Coöperative Scholarships. The Coöperative Society of the students of the Institute applies its annual profits to the assistance of members of the Society, selected by its Board of Directors.

Perkins Fund. By a bequest of the late Richard Perkins, of Boston, the income of fifty thousand dollars is available for aiding students in such amounts as shall be recommended by the Faculty.

Vose Fund. By the will of Mrs. Ann White Vose, the Institute has received about forty thousand dollars, the income of which is used for scholarships.

Dickinson Fund. By the will of Mrs. Ann White Dickinson, the Institute has received about sixty thousand dollars,

[1] Applications for Massachusetts State Scholarships should be made only to the Secretary of the State Board of Education, State House, Boston, from whom the necessary blanks may be obtained. The Faculty Committee on Scholarships desires, however, to be informed, through the Secretary of the Faculty, in regard to the needs of applicants for State Scholarships, in order that recommendations to the State Board of Education may be based on full knowledge of personal circumstances, as well as of scholastic standing.

of which the income is applied to the assistance of needy and deserving students.

Elisha Atkins Scholarship and Farnsworth Scholarship. Founded by the late Mrs. Mary E. Atkins, of Boston.

Charles L. Flint Scholarship. Founded by the late Charles L. Flint, of Boston. This scholarship is to be awarded, by preference, to a graduate of the Boston High School.

T. Sterry Hunt Scholarships. Founded by bequest of the late T. Sterry Hunt, for seven years Professor of Geology at the Institute; preference will be given chemical students of the higher years.

William F. Huntington Scholarship. Founded in memory of William F. Huntington, who graduated in Civil Engineering in the Class of '75. Preference will be given to a student in that course.

Joy Scholarships. The money by which these scholarships are sustained was given by Miss Nabby Joy. They were created pursuant to a degree of the Supreme Judicial Court of Massachusetts, for the benefit of one or more women studying natural science in the Institute. At present one scholarship only is available; a second will be established when the fund has increased sufficiently to warrant such an expenditure.

Elisha T. Loring Scholarship. Founded by the late Elisha Thacher Loring, of Boston.

Milton High School Scholarship. Founded by the contributions of residents of Milton. This scholarship will be conferred upon such former pupil of the Milton High School as the master of that school and the school committee of the town may select.

James Henry Mirrlees Scholarship. Founded by James B. Mirrlees, of Glasgow, Scotland, in memory of his son, who died in May, 1886, while attending the Institute. This scholarship will be awarded to a third or fourth year student in Mechanical Engineering.

Nichols Scholarship. Founded by bequest of the late Mrs. Betsey F. M. Nichols in memory of her son, William Ripley Nichols, of the Class of '69, for sixteen years Professor of

General Chemistry at the Institute. Preference will be given to students in the Chemical Course.

Sherwin Scholarship. Founded by the English High School Association in memory of the late Thomas Sherwin. The pupil to receive the privilege of this scholarship is to be a graduate of the English High School of Boston and a regular student of the Institute.

The Class of 1891, on leaving the Institute, provided funds for a system of letter-boxes for the use of students. Any profits accruing from the rental of these letter-boxes will be applied to the assistance of scholarship applicants.

Graduate Scholarships and Fellowships. — Applications for graduate scholarships or fellowships should be handed in not later than April 1, this applying to applicants for reappointment as well as to those for original appointment. Holders of fellowships are expected to make formal reports of progress to the Secretary of the Faculty by January 1 and June 1 of each year. Each applicant for a graduate scholarship or fellowship is expected to present a detailed statement of his plans for advanced work for the approval of the Faculty. These plans will be referred to a special committee of the Faculty which will thereafter have the general oversight of the work done.

Five scholarships for graduates of the Institute, carrying free tuition, have been established, and will be awarded to such applicants as are recommended by the Faculty.

Austin Fund. The Institute has recently received from the estate of the late Edward Austin a bequest of $340,000 to assist needy meritorious students and teachers in payment of their studies. This munificent endowment places the Institute in a position to provide for the needs of its students and teachers in a manner heretofore impossible.

Dalton Graduate Scholarship. Founded by Charles H. Dalton, the income to be used for the payment of fees of American male students, graduates of the Institute, who may wish to pursue advanced chemical study and research, especially applicable to textile industries.

Perkins Graduate Scholarship. Founded by bequest of Willard B. Perkins, of the Class of '72. The income of six thousand dollars is available in every fourth year for a travelling scholarship in architecture.

James Savage Fellowship Fund. Founded by the late James Savage. Four hundred dollars from the income of this fund will be annually awarded to a graduate student of the Institute, or of some similar institution of equal standing. This sum will be awarded only to a student of distinguished ability engaged in the advanced study of some branch or branches of knowledge taught in the Institute.

Susan H. Swett Fellowship Fund. Four hundred dollars from the income of this fund will be annually awarded to a graduate student of the Institute, or of some similar institution of equal standing, who, by his character, capacity, training, and attainments, shall give evidence of special fitness to pursue advanced study in some branch or branches of knowledge taught in the Institute. The holder of this fellowship will be eligible to reappointment for a second year; and if in any year the sum above named cannot be advantageously used for the purpose prescribed, no appointment will be made.

For both of these fellowships the preference is given to graduate students who are candidates for advanced degrees.

Residence and Expenses. — As the exercises of the school begin at nine o'clock in the morning, and end before five o'clock in the afternoon, students may conveniently live in any of the nearer cities or towns, on the lines of the various railroads, if they prefer to do so.

The cost of board and rooms in Boston and the neighboring cities and towns need not exceed seven or eight dollars a week. The cost of books, drawing instruments, paper, etc., exclusive of chemical breakage, is from twenty-five to thirty-five dollars a year.

Attendance. — Regular students are expected to attend all the exercises of their several courses. Special students are expected to attend all the exercises in subjects applied for on their attendance cards, unless excused by special vote of the

Faculty. Students are in general expected to devote themselves to the work of the school between the hours of 9 A.M. and 4 P.M., except during the interval from 1 P.M. to 2 P.M. There are no exercises on Saturday afternoon, and the rooms are closed.

Conduct. — It is assumed that students come to the Institute for a serious purpose, and that they will cheerfully conform to such regulations as may be from time to time made by the Faculty. In case of injury to the building, or to any of the furniture, apparatus, or other property of the Institute, the damage will be charged to the student or students known to be immediately concerned; but if the persons who caused the damage are unknown, the cost of repairing the same may be assessed equally upon all the students of the school. Conduct inconsistent with the general good order of the school, if repeated after admonition, will be followed by suspension or dismissal. It is the aim of the Faculty so to administer the discipline of the school as to maintain a high standard of integrity and a scrupulous regard for truth; and *the attempt of any student to present as his own the work of another, or to pass any examination by improper means, is regarded as a most serious offence, rendering the offender liable to immediate expulsion.*

Register of Students.

For residence addresses in suburban portions of Boston the following abbrevations are used:

A.	Allston.	M.	Mattapan.
B.	Brighton.	N.	Neponset.
C.	Charlestown.	R.	Roxbury.
D.	Dorchester.	Ros.	Roslindale.
E. B.	East Boston.	S. B.	South Boston.
J. P.	Jamaica Plain.	W. R.	West Roxbury.

FELLOWS.

NAME.	HOME.	RESIDENCE.
Burgess, George Kimball	*Newtonville*	Paris, France.
S.B., Massachusetts Institute of Technology.		
Savage Fellow.		
Stevens, Gorham Phillips	*Cambridge*	Studying in Europe.
S.M., Massachusetts Institute of Technology.		
Swett Fellow.		

GRADUATE SCHOLARS.

(See page 165.)

NAME.	HOME.	RESIDENCE.
Keough, William Thomas	*E. Boston*	234 Saratoga St., E.B.
S.B., Massachusetts Institute of Technology.		
Scudder, Heyward	*New York, N. Y.*	The Ludlow.
B.A., Trinity College.		
S.B., Massachusetts Institute of Technology.		
Swan, Clifford Melville	*Brookline*	Brookline.
S.B., Massachusetts Institute of Technology.		

OTHER GRADUATE STUDENTS.

NAME.	HOME.	RESIDENCE.
Abbott, Lewis Benjamin	*Danvers*	Danvers.
S.B., Massachusetts Institute of Technology.		
Allen, Harry Vass	*Raleigh, N. C.*	30 Perrin St., R.
B.S., Davidson College.		

OTHER GRADUATE STUDENTS (*continued*).

NAME.	HOME.	RESIDENCE.
Baldwin, Charles Edward . . . A.B., Harvard University.	*Cambridge*	Cambridge.
Berry, Arthur Henry . . . . A.B., Colby College.	*Newburyport* . . .	Newburyport.
Blanchard, Harold . . . . . A.B., Harvard University.	*Boston*	8 Gloucester St.
Blauvelt, William Grove . . . A.B., Harvard University.	*Virginia City, Nev.* .	25 St. Botolph St.
Bowditch, Ingersoll . . . . . A.B., Harvard University.	*Jamaica Plain* . . .	Jamaica Plain.
Brock, Henry Matthias . . . A.B., Boston College.	*Roxbury*	15 Woodville St., R.
Butler, Lawrence Smith . . . A.B., Harvard University.	*New York, N. Y.* . .	66 Beacon St.
Canby, Harry Beaver . . . . A.B., Denison University.	*Dayton, Ohio* . . .	1096 Boylston St.
Carmichael, George Patrick . . A.B., Villanova College.	*Lawrence*	Lawrence.
Chambers, Henry Wick . . . B.A., Yale University.	*Cleveland, Ohio* . .	1 Willow St.
Chase, Aurin Moody . . . . B.S., Amherst College.	*Syracuse, N. Y.* . .	548 Mass. Ave.
Clarke, William Case, Jr. . . . B.S., Rhode Island College of Agriculture and Mechanic Arts.	*Wakefield, R. I.* . .	35 St. Botolph St.
Cleaves, Daniel Lunt . . . . B.S., University of Maine.	*Portland, Me.* . . .	563 Mass. Ave.
Culp, Charles Miller . . . . Ph.B., De Pauw University.	*Raymond, Ill.* . . .	34 Dartmouth St.
De Berard, Wilford Willis . . B.S., Beloit College.	*Fairfax, Iowa* . . .	4 Durham St.
Desloge, Firmin Vincent . . . A.B., Christian Brothers College.	*St. Louis, Mo.* . . .	29 Newbury St.
Dutton, Francis Bird . . . . A.B., Harvard University.	*Auburndale*	Auburndale.
Emerson, Frank Nelson . . . A.B., Princeton University.	*Peoria, Ill.*	39 St. Botolph St.
Estabrook, Mansfield . . . . A.B., Harvard University.	*St. Paul, Minn.* . .	Brookline.
Farnham, William Ellis . . . Ph.B., Brown University.	*Providence, R. I.* . .	566 Mass. Ave.
Fifield, Ethel Frances . . . . A.B., Smith College.	*Salem*	Salem.
Ford, George Burdett . . . . A.B., Harvard University.	*Clinton*	89 Charles St.
Galusha, Albert Leet . . . . B.S., Dartmouth College.	*Nashua, N. H.* . . .	453 Columbus Ave.
Goodrich, Robert Rhea . . . . S.B., Massachusetts Institute of Technology.	*Boston*	72 Westland Ave.
Green, Erik Hastings . . . . A.M., Brown University.	*Providence, R. I.* . .	112 Newbury St.

OTHER GRADUATE STUDENTS (*continued*).

NAME.	HOME.	RESIDENCE.
Haanel, Benjamin Franklin Cocker, B.S., Syracuse University.	*Syracuse, N. Y.*	130 St. Botolph St.
Hamlin, Ralph . . . . . B.C.E., University of Maine.	*Orono, Me.*	156 Pleasant St., D.
Hardy, Charles Ashley . . . . A.B., Harvard University.	*Boston*	Hotel Westminster.
Harper, Ernest Chipman . . . B.A., Acadia University.	*Sackville, N. B.* . .	Cambridgeport.
Heckman, James Conrad . . . E.E., Lafayette College.	*Philadelphia, Pa.* . .	110 Huntington Ave.
Heghinian, Garabed George . . A.B., Central Turkey College.	*Marash, Turkey* . .	127 Pembroke St.
Hern, Joseph Louis . . . . . S.B., Massachusetts Institute of Technology.	*Dorchester*	34 Sidney St., D.
Hildreth, Horace Edwin . . . A.B., Harvard University.	*Cambridge*	Cambridge.
Hirokawa, Tomokichi . . . . B.S., New Hampshire College.	*Imabari, Japan* . .	4 Harold St., R.
Howe, James Carleton . . . . A.B., Harvard University.	*Brookline*	Brookline.
Hyde, George Taylor . . . . B.Sc., McGill University.	*Montreal, Que.* . . .	264 Newbury St.
Kern, Le Roy Eskridge . . . A.B., Randolph-Macon College.	*Nashville, Tenn.* . .	15 Concord Sq.
Kimball, Lemuel Cushing, Jr. . A.B., Harvard University.	*Boston*	271 Beacon St.
Lage, Antonio Martius . . . . B.S., Neuchatel.	*Paris, France* . . .	66 Beacon St.
Lewis, Hortense Witter . . . A.B., Vassar College.	*Mount Vernon, N. Y.*	62 Rutland Sq.
Little, James Lovell, Jr. . . . A.B., Harvard University.	*Brookline*	Brookline.
McDowell, Pauline . . . . . A.B., Wellesley College.	*Newark, N. J.* . . .	Weston.
McIver, Jean Bond . . . . . B.S., Wellesley College.	*Worcester*	Lynn.
Matteossian, Zenas Nerses . . . A.B., Robert College.	*Constantinople, Turkey*	73 Montgomery St.
Mead, George Houk . . . . B.L., Hobart College.	*Dayton, Ohio* . . .	93 Mt. Vernon St.
Mitchell, George LeRoy . . . B.S., Monmouth College.	*Boston*	14 James St.
Morton, Robert Bass . . . . B.S., University of Vermont.	*Randolph, Vt.* . . .	69 Appleton St.
Mulherin, Charles Patrick . . . A.B., St. Joseph's College.	*Augusta, Ga.* . . .	12 Yarmouth St.
Newlin, William Jesse . . . . A.B., Amherst College.	*Port Carbon, Pa.* . .	51 Falmouth St.
Oliver, Leslie Allen . . . . . A.B., St. John's College.	*Annapolis, Md.* . .	89 Charles St.

OTHER GRADUATE STUDENTS (*continued*).

NAME.	HOME.	RESIDENCE.
Osgood, Paul Moody B.S., Dartmouth College.	*Amesbury*	Amesbury.
Parke, Julius Leonard A.B., Yale University.	*Cincinnati, Ohio*	69 Appleton St.
Pearse, Langdon A.B., Harvard University.	*Roxbury*	317 Walnut Ave., R.
PenDell, Charles William S.B., Massachusetts Institute of Technology.	*Cleburne, Tex.*	207 W. Newton St.
Perkins, Grace Hamilton A.B., Wellesley College.	*Arlington*	Arlington.
Perry, Thomas Doane A.B., Doane College.	*Crete, Neb.*	8 Pearl St., C.
Player, Preston A.B., Harvard University.	*Boston*	Hotel Westminster.
Price, Paul Leon Ph.M., Simpson College.	*Winterset, Iowa*	32 Union Park.
Rash, Frank Dillman A.B., South Kentucky College.	*Earlington, Ky.*	19 Claremont Park.
Riley, Frank Morris C.E., University of Wisconsin.	*Madison, Wis.*	232 Mass. Ave.
Ripley, Philip Franklin A.B., Yale University.	*Andover*	357 Columbus Ave.
Robbins, Edwin Thurston B.A., Amherst College.	*Columbus, Ohio*	4 Yarmouth St.
Sayward, William James B.S., University of Vermont.	*Woodstock, Vt.*	69 Appleton St.
Schlesinger, Bart Ernest A.B., Harvard University.	*Brookline*	Brookline.
Smith, Frederick Williamson B.A., Johns Hopkins University.	*Baltimore, Md.*	1 Willow St.
Taylor, Alexander Jenifer C.E., Delaware College.	*Wilmington, Del.*	9 Concord Sq.
Tillinghast, Frederick Howard C.E., Brown University.	*Providence, R. I.*	137 Pembroke St.
Trenholme, Arthur Kingsley A.B., McGill University.	*Westmount, Que.*	101 W. Springfield St.
Walker, Frank Bates C.E., University of Minnesota.	*Minneapolis, Minn.*	67 Westland Ave.
Wall, Mabel Persis A.B., Wellesley College.	*Boston*	52 Myrtle St.
Walworth, Arthur Clarence, Jr. B.A., Yale University.	*Newton Centre*	Newton Centre.
Wilson, Alice Virginia A.B., Ashville College.	*Lenoir, N. C.*	25 W. Cedar St.
Wilson, George Davis A.B., Southwestern Presbyterian University.	*Clarksville, Tenn.*	458 Mass. Ave.
Wonson, Samuel Lamson A.B., Harvard University.	*Everett*	Everett.

REGULAR STUDENTS.

CANDIDATES FOR ADVANCED DEGREES.

NAME.	HOME.	RESIDENCE.
Abbott, Lewis Benjamin, S.B.	*Danvers*	Danvers.
Swan, Clifford Melville, S.B.	*Brookline*	Brookline.

FOURTH YEAR.

NAME.	COURSE.	HOME.	RESIDENCE.
Abeel, David Gustavus	I.	*Catskill, N. Y.*	17 St. James Ave.
Adams, George Orlando	V.	*No. Andover*	No. Andover.
Allen, Elbert Grover	II.	*Brockton*	Brockton.
Ashley, Harrison Everett	X.	*New Bedford*	42 Rutland Sq.
Badlam, Stephen	III.	*Dorchester*	530 Columbia Road, D.
Balcom, Reuben Wilfred	V.	*Framingham*	11 Columbus Sq.
Baldwin, Charles Edward, A.B.	V.	*Cambridge*	Cambridge.
Barker, James Edmund	VI.	*Pasadena, Cal.*	118 Huntington Ave.
Barton, Charles Augustus, Jr.	VI.	*Ravenswood, Ill.*	10 Wellington St.
Batcheller, James Hervey	III.	*Charlestown*	34 Monument Sq., C.
Blair, Robert Sherman	VI.	*Waterbury, Conn.*	566 Mass. Ave.
Bowditch, Ingersoll, A.B.	I.	*Jamaica Plain*	Jamaica Plain.
Briggs, Albert Billings	I.	*Wollaston*	Wollaston.
Briggs, Charles Calvin, Jr.	XIII.	*Pittsburgh, Pa.*	261 Newbury St.
Brigham, Edmond Francis	X.	*Newton Highlands*	Newton Highlands.
Brooks, Miles Elijah	I.	*Boston*	19 Milford St.
Brooks, Paul Raymond	II.	*Chicago, Ill.*	Brookline.
Brown, Charles Hoyt	X.	*Wellsville, N. Y.*	168 St. Botolph St.
Brown, Clarence Clapp	VI.	*Reading*	Reading.
Brown, John Wesley	V.	*Newburyport*	126 Mass. Ave.
Brown, Stephen Pearson	II.	*Dover, Me.*	Brookline.
Buffum, Frederick Delano	II.	*Winchester, N. H.*	480 Mass. Ave.
Bugbee, Edward Everett	III.	*Brookline*	Brookline.
Burnham, Roy Gibson	II.	*Essex*	Essex.
Burroughs, Karl	X.	*Somerville*	Somerville.
Cade, Marion Louise	V.	*Cambridgeport*	Cambridgeport.
Campbell, John	III.	*Pittsburgh, Pa.*	566 Mass. Ave.

FOURTH YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Cayvan, Llewellyn Leopold	V.	*So. Boston*	660 Sixth St., S. B.
Chaffee, Walter Crane	IV.	*Detroit, Mich.*	264 Newbury St.
Chapman, Eben Lord	I.	*Franklin Falls, N. H.*	19 St. Botolph St.
Charles, Walter Nathan	I.	*Roxbury*	33 Forest St., R.
Chase, Frank David	I.	*Chicago, Ill.*	25 St. Botolph St.
Clary, Robert Hodgen	III.	*Seattle, Wash.*	Brookline.
Clausen, Rudolph Julius	IV.	*Davenport, Iowa*	38 St. Botolph St.
Clow, Percival Charles	IV.	*Orange*	Brockton.
Collier, William Rawson	VI.	*Atlanta, Ga.*	Brookline.
Conant, Franklin Norton	VI.	*Boston*	3 Wellington St.
Conant, Harold Sargent	VII.	*Gloucester*	54 Pinckney St.
Conant, John Bancroft	VI.	*Boston*	421 Mass. Ave.
Cooke, Frederick Hosmer	I.	*Cincinnati, Ohio*	458 Mass. Ave.
Croswell, Joseph Simonds	II.	*No. Cambridge*	No. Cambridge.
Dart, Albert Charles, Jr.	III.	*Rock Island, Ill.*	8 St. James Ave.
Dean, Walter Clark	VI.	*Dalton, Pa.*	18 Berwick Park.
Delano, Paul Holmes	I.	*Kingston*	109 Marlborough St.
Dorey, William Asbury	III.	*Cincinnati, Ohio*	27 Cumberland St.
Draper, Joseph Porter	IX.	*Canton*	Canton.
Dutton, Francis Bird, A.B.	X.	*Auburndale*	Auburndale.
Edson, Warren Adams	II.	*Dorchester*	11 Tremlett St., D.
Elbert, Samuel Bass	III.	*Des Moines, Iowa*	261 Newbury St.
Ellis, Carleton	V.	*Keene, N. H.*	148 Warren Ave.
Farnum, Dwight	III.	*Brookline*	Brookline.
Fifield, Ethel Frances, A.B.	IV.	*Salem*	Salem.
Fitch, Stanley Gay Hyde	X.	*Dorchester*	14 Morrill St., D.
Ford, George Burdett, A.B.	IV.	*Clinton*	89 Charles St.
Fosdick, Charles Mussey	XI.	*Fitchburg*	458 Mass. Ave.
Frink, Gerald	II.	*Seattle, Wash.*	240 W. Newton St.
Fulton, William Howard	VI.	*Chelmsford*	226 W. Canton St.
Gallagher, Edward Gerald	VI.	*So. Framingham*	So. Framingham.
Gardner, Stephen Franklin	II.	*Somerville*	Somerville.
Gibbs, George Crocker, 3d	I.	*New Bedford*	7 Walnut St.
Gladding, John Thomas Fiske	II.	*Providence, R. I.*	39 St. Botolph St.
Glover, Russell Henry	III.	*Harrington, Me.*	261 Newbury St.
Goodridge, Frederic Stanley	II.	*Lynn*	Lynn.
Grant, Harry Lamar	XIII.	*Covington, Ky.*	563 Mass. Ave.
Hall, Stephen Minard	VI.	*Waverly, N. Y.*	23 Marlborough St.
Hamilton, Arthur Little	III.	*Fond du Lac, Wis.*	16 Marlborough St.
Hapgood, Cyrus Howard	VI.	*Everett*	Everett.
Harps, Harry Macy	I.	*Nantucket*	Cambridgeport.
Heghinian, Garabed G., A.B.	I. XI.	*Marash, Turkey*	127 Pembroke St.
Herbert, Edward	VI.	*Broad Run, Va.*	121 Dartmouth St.
Hern, Joseph Louis, B.S.	II.	*Dorchester*	34 Sidney St., D.
Hinman, Dean	I.	*Taunton*	54 Pinckney St.
Hirokawa, Tomokichi, B.S.	VI.	*Imabari, Japan*	4 Harold St., R.

FOURTH YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Hodsdon, Charles Wentworth	II.	*Cambridgeport*	Cambridgeport.
Holbrook, George Myron	V.	*Cambridgeport*	Cambridgeport.
Hooper, Harris Greenwood	XIII.	*Brooklyn, N. Y.*	33 Fountain St.
Hopkins, Robert Milne	VI.	*Evanston, Ill.*	19 Linden St., A.
Horton, Frank Nelson	II.	*Southbridge*	13 Intervale Park, D.
Howe, Herbert Holmes	IX.	*Newton*	47 Mt. Vernon St.
Hunt, Herman Reynolus	XIII.	*New Bedford*	69 Pinckney St.
Hussey, James Whittlesey	XIII.	*Toledo, Ohio*	25 St. Botolph St.
Johnson, Charles Chaplin	X.	*Danversport*	Danversport.
Johnson, Daniel Stewart	III.	*Short Hills, N. J.*	18 Newbury St.
Jouett, Henry Detrick	I.	*Somerville*	Somerville.
Kattelle, Walter Roby	IV.	*Auburndale*	Auburndale.
Keay, Herbert Orestes	II.	*Kingston, N. H.*	18 Greenwich Park.
Keith, Leigh Shelton	VI.	*No. Easton*	No. Easton.
Kendall, Arthur Isaac	VII.	*Somerville*	Somerville.
Kingman, William Alden	V.	*So. Framingham*	So. Framingham.
Knight, George Washington	V.	*Dorchester*	38 Rosseter St., D.
Langford, Grace	VIII.	*Plymouth*	Wellesley.
Larrabee, John Heber	I.	*Melrose*	Melrose.
Lawrence, Lewis Morse	IV.	*Nashua, N. H.*	7 Follen St.
Leach, Robert Howland	III.	*Brockton*	Brockton.
Leonard, Clifford Milton	I.	*Chicago, Ill.*	1 W. Cedar St.
Lewis, Rondel	V.	*Malden*	Malden.
Liliencrantz, Edith	IV.	*Oakland, Cal.*	112 Newbury St.
Lincoln, Francis Church	III.	*Boston*	21 St. James Ave.
Lingley, Robert Ross	II.	*Cambridge*	Cambridge.
Littlefield, Frank William	III.	*Peabody*	Peabody.
Littlefield, Homer	VI.	*Troy, N. Y.*	Cambridgeport.
Luyties, Otto Gerhard	II.	*New York, N. Y.*	81 Montgomery St.
McCrudden, Francis Henry	V.	*Boston*	134 Castle St.
McGowan, Francis Xavier	II.	*Lawrence*	Lawrence.
Macintire, Benjamin Gould,	V.	*Boston*	150 W. Concord St.
Madero, Salvador Silvestre,	III.	*Parras-Coahuila, Mex.*	9 Newbury St.
Manley, Sumner Marshall	II.	*Brockton*	14 Rutland Sq.
Maxfield, Daniel Ellwood	II.	*Amesbury*	634 Warren St., R.
Melcher, Arthur Clarke	V.	*Newton Centre*	Newton Centre.
Merrick, Charles Van	IV.	*Syracuse, N. Y.*	563 Mass. Ave.
Merrill, Albert Sidney	X.	*Malden*	Malden.
Miller, Lewis Arthur	I.	*No. Easton*	No. Easton.
Moody, George Barrell	XIII.	*Bangor, Me.*	148 Warren Ave.
Morgan, Harold Loomis	VI.	*Springfield*	40 Rutland Sq.
Morris, Henry Curtis	III.	*New York, N. Y.*	34 St. Stephen St.
Moulton, Walter Augustus	III.	*Dorchester*	10 Upland Ave., D.
Neall, Newitt Jackson	VI.	*Philadelphia, Pa.*	73 Cedar St., R.
North, Edward, 2d	III.	*Brookline*	Brookline.
Osgood, Harry Edmund	II.	*Chicago, Ill.*	Marblehead.

FOURTH YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Osgood, Isaac	II.	*W. Newton*	W. Newton.
Oxnard, Horace Whitcomb	I.	*Norway, Me.*	18 Holyoke St.
Paul, Charles Edward	II.	*Belfast, Me.*	140 Chandler St.
Peck, Arthur Stearns	VIII.	*Wellington*	Wellington.
PenDell, Charles William, S.B.	II.	*Cleburne, Tex.*	207 W. Newton St.
Perry, Thomas Doane, A.B.	II.	*Crete, Neb.*	8 Pearl St., C.
Pigeon, William Gardner	IV.	*E. Boston*	139 Trenton St., E.B.
Pitcher, Edmund Henry	II.	*Keene, N. H.*	Melrose.
Plummer, Howard Clark	III.	*Milton*	Milton.
Porter, John Lewis	XI.	*No. Adams*	36 Holyoke St.
Price, Paul Leon, Ph.M.	IV.	*Winterset, Iowa*	32 Union Park.
Rand, William Proudman	IV.	*Peabody*	Peabody.
Rapp, Walter Louis	IV.	*Cincinnati, Ohio*	264 Newbury St.
Reardon, Thomas Frederick E.	VI.	*Wellesley*	Wellesley.
Redman, Arville C.	I.	*Belfast, Me.*	140 Chandler St.
Reimer, Arthur Adams	I.	*E. Orange, N. J.*	566 Mass. Ave.
Richardson, Chester Augustus	I.	*Pelham, N. H.*	32 Union Park.
Richardson, Clinton Leroy	I.	*Winchester*	566 Mass. Ave.
Richardson, James Herbert	I.	*Newtonville*	Newtonville.
Ripley, Philip Franklin, A.B.	V.	*Andover*	357 Columbus Ave.
Roberts, Robert Parker	III.	*Roxbury*	42 Quincy St., R.
Russell, George Edmond	I.	*Woburn*	Woburn.
Sanders, Warren Willard	V.	*W. Gardner*	135 Warren Ave.
Schmidt, Albert George Anton	II.	*Chicago, Ill.*	32 Berwick Park.
Schneller, George Otto	II.	*Ansonia, Conn.*	261 Newbury St.
Scott, Walter	II.	*Lawrence*	63 St. Botolph St.
Searle, Lewen Firth	I.	*Lawrence*	63 St. Botolph St.
Sears, Stanley Collamore	III.	*Winthrop*	264 Newbury St.
Seaver, Kenneth	I.	*Woodstock, Vt.*	566 Mass. Ave.
Shapley, Henry Tilton	X.	*Leominster*	488 Columbus Ave.
Sherman, Charles Edwin	IV.	*Westerly, R. I.*	264 Newbury St.
Silverman, Mortimer	VI.	*Allegheny, Pa.*	122 Huntington Ave.
Simpson, Robert Coffin	XIII.	*Chelsea*	Chelsea.
Smith, Charles Edward	I.	*Somerville*	Somerville.
Smith, Lawrence Southwick	II.	*Peabody*	Peabody.
Smith, Sumner Ives	VI.	*Elkhart, Ind.*	18 Berwick Park.
Smithwick, Harold	II.	*Boston*	160 St. Botolph St.
Snow, Frederick Willis	III.	*Lynn*	Lynn.
Southworth, Frederic Willard	IV.	*W. Stoughton*	W. Stoughton.
Sperry, Marcy Leavenworth	II.	*Brooklyn, N. Y.*	6 Louisburg Sq.
Stearns, Herbert Richardson	I.	*Dorchester*	108 Cushing Ave., D.
Stevens, William Leonard	III.	*Somerville*	Somerville.
Stone, Willard Wilberforce	I.	*Taunton*	6 Clarendon St.
Stratton, Charles Heywood	IV.	*Springfield*	135 Warren Ave.
Suhr, Carl Frederick	II.	*Chelsea*	Chelsea.
Sullivan, Henry Howard	II.	*Brighton*	98 Foster St., B.

FOURTH YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Suter, Russell	I.	*Cambridge*	Cambridge.
Thayer, Harry Martin	V.	*Brockton*	14 Rutland Sq.
Thurber, Clinton Draper	I.	*Attleboro*	282 Huntington Ave.
True, Percival Edward	X.	*Andover*	357 Columbus Ave.
Tuck, Theodore Calvin	I.	*Haverhill*	Haverhill.
Tudbury, Warren Chamberlain	I.	*Salem*	Salem.
Tweedy, George Augustus	III.	*Downey, Cal.*	23 Marlborough St.
Vogel, Emil Frederick	I.	*Roxbury*	40 Hartwell St., R.
Walworth, Arthur Clarence, Jr.	II.	*Newton Centre*	Newton Centre.
Warren, Frank Dinsmore	II.	*Northboro*	Marlboro.
Wastcoat, Richard	I.	*Taunton*	Taunton.
Wedlock, William Henry	I.	*Dorchester*	21 Ashmont St., D.
White, Arthur Burr	I.	*Allston*	10 Allston Heights, A.
Whitney, Walter Cummings	I.	*Newton*	Newton.
Wilson, Alice Virginia, A.B.	V.	*Lenoir, N. C.*	25 W. Cedar St.
Witherell, Frederick Whitefield	XI.	*Winchester*	Winchester.
Wyzanski, Isaac	XIII.	*Dorchester*	12 Wolcott St., D.
Ziegler, Percy Rolfe	II.	*Roxbury*	1 Ellis St., R.

THIRD YEAR.

NAME.	COURSE.	HOME.	RESIDENCE.
Albiston, Clayton	II.	*New Bedford*	34 Holyoke St.
Allen, George Winthrop	II.	*E. Bridgewater*	Matfield.
Andrew, Robert	II.	*Cincinnati, Ohio*	7 Follen St.
Appleton, William Cornell	IV.	*Auburn, R. I.*	566 Mass Ave.
Arsem, William Collins	V.	*Malden*	Malden.
Auer, Charles Israel	III.	*Cincinnati, Ohio*	21 Catawba St., R.
Bailey, Robert William	XIII.	*New York, N. Y.*	37 St. Botolph St.
Bass, Frederic Herbert	XI.	*Hyde Park*	Hyde Park.
Baxter, Francis Kernan, Jr.	III.	*Utica, N. Y.*	563 Mass Ave.
Beckwith, Edward Pierrepont	V.	*Milton*	6 Louisburg Sq.
Belcher, Edward Browne	II.	*Malden*	Malden.
Benson, Harry Frederic	II.	*Whitman*	147 Warren Ave.
Bickford, Warren Ira	VI.	*Washington, D. C.*	264 Newbury St.
Bigelow, Lyman Herbert	I.	*Charlestown*	376 Main St., C.
Bond, Frederick Henry, Jr.	IV.	*Brookline*	Brookline.
Booth, Arthur Robert Gregory	V.	*Lowell*	Lowell.
Boyd, Frederic RoyCourtenay	VI.	*Hartford, Conn.*	12 St. James Ave.
Boyle, John, Jr.	III.	*Newburyport*	91 Revere St.
Boynton, Perkins	XI.	*Newtonville*	Newtonville.
Briggs, John Porter	I.	*Plymouth*	Plymouth.
Brush, Matthew Chauncey	II.	*Duluth, Minn.*	563 Mass. Ave.
Cade, Charles Walker	X.	*Cambridgeport*	Cambridgeport.
Campau, Antoine Blackwell	IV.	*Grand Rapids, Mich.*	209 Huntington Ave.
Carr, James Henry	II.	*Salem*	Salem.

THIRD YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Carter, George William	VI.	*Chicopee*	331 Columbus Ave.
Casani, Albert Aeneas	I.	*Everett*	Everett.
Catlin, Joseph Priestley	VI.	*Gouverneur, N. Y.*	566 Mass. Ave.
Chandler, Howard Trueman	II.	*Mattapan*	32 Oakridge St., M.
Chandler, Leonard Dexter	II.	*Somerville*	Somerville.
Chubb, Chester Niles	I.	*Lawrence*	17 Magnolia Sq., D.
Church, Edwin Fayette, Jr.	XIII.	*Roxbury*	20 Holborn St., R.
Churchman, Albert Lawrence	II.	*Wilmington, Del.*	25 St. Botolph St.
Claflin, Fred Winslow	I.	*Hopkinton*	446 Mass. Ave.
Clapp, Frederick Gardner	XII.	*So. Boston*	169 Boston St., S. B.
Clark, George Adams	I.	*E. Boston*	72 Marginal St., E. B.
Cleveland, Ernest Elgin	VI.	*Somerville*	Somerville.
Coburn, Frederick Ward	X.	*Lowell*	16 Berwick Park.
Colby, Frank Arnold	IV.	*Cambridge*	Cambridge.
Crittenden, Philip Lee	VI.	*Geneva, Ill.*	3 Durham St.
Culp, Charles Miller, Ph.B.	I.	*Raymond, Ill.*	34 Dartmouth St.
Cummins, Harle Oren	II.	*Montpelier, Vt.*	Brookline.
Daloz, Laurent Esaie	V.	*Dorchester*	19 Mt. Vernon St., D.
Danforth, Newman Loring	II.	*Buffalo, N. Y.*	458 Mass. Ave.
Dart, Harry Edson	VI.	*New London, Conn.*	9 Concord Sq.
Davis, Arthur Colbey	V.	*Gloucester*	31 Warren Ave.
Davis, Edward Hatton	IX.	*Hyde Park*	Hyde Park.
Davis, Harold Henry	VI.	*Chelmsford*	117 Chandler St.
Dearden, Clinton Merrill	VIII.	*Fall River*	82 Huntington Ave.
Dennison, Charles Hamilton	X.	*Chelsea*	Chelsea.
Dodge, Lyman Edward	V.	*Newburyport*	91 Revere St.
Dooley, William Henry	V.	*Dorchester*	571 Dudley St., D.
Dow, Richard Ernest	V.	*Melrose*	Melrose.
Dow, Willard Wellman	IX.	*Malden*	Malden.
Driscoll, Francis Blair	I.	*Dorchester*	7 Michigan Ave., D.
Dubois, Norman Armin	V.	*Fall River*	92 Wyman St., J.P.
Dulude, Frederick Joseph	I.	*Woonsocket, R. I.*	34 Holyoke St.
du Pont, Lammot	I.	*Wilmington, Del.*	531 Mass. Ave.
Eager, Frank Joseph	III.	*Dorchester*	1 Hartford Terrace, D.
Emerson, Frank Nelson, A.B.	IV.	*Peoria, Ill.*	39 St. Botolph St.
Estabrook, Mansfield, A.B.	II.	*St. Paul, Minn.*	Brookline.
Eveland, Arthur John	III.	*Dorchester*	17 Nottingham St., D.
Farnham, William Ellis, Ph.B.	VI.	*Providence, R. I.*	566 Mass. Ave.
Fischer, Adolph Louis	VI.	*Salem, Mo.*	499 Columbus Ave.
Fleming, Edward Pickering	III.	*No. Cambridge*	No. Cambridge.
Flint, Charles Kimball	VI.	*Waban*	Waban.
Florsheim, Leonard S.	I.	*Chicago, Ill.*	205 Huntington Ave.
Folsom, Harry Gilman	VI.	*Malden*	Malden.
Foster, Mortimer Bristol	VI.	*Boston*	879 Beacon St.
Freeman, Frederic William	III.	*W. Newton*	W. Newton.
French, Philip Roland	V.	*Roxbury*	36 Magnolia St., R.

THIRD YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Gallup, Anna Billings	VII.	*Ledyard, Conn.*	623 Columbus Ave.
Garrett, William Warren	III.	*Cambridge*	Cambridge.
Gilson, Henry Robbins	II.	*Groton*	3 Oxford Terrace.
Gleason, Ethel Augusta	IX.	*Roxbury*	12 Ruthven St., R.
Goodrich, Robert Rhea, S.B.	II.	*Boston*	72 Westland Ave.
Gorfinkle, Emanuel	VI.	*Chelsea*	Chelsea.
Gray, Greta	IV.	*Cincinnati, Ohio*	20 Ashburton Pl.
Gustafson, Gustaf Edward	I.	*Campello*	Campello.
Haanel, Benjamin F.C., B.S.	XIII.	*Syracuse, N. Y.*	130 St. Botolph St.
Haley, Dennis Frederick	III.	*Lowell*	134 W. Newton St.
Hall, George Anthony	IX.	*Boston*	366 Commonwealth Ave.
Harper, Ernest Chipman, B.A.	I.	*Sackville, N. B.*	Cambridgeport.
Harris, Charles Hardy	VI.	*Natick*	Natick.
Hayden, Arthur Gunderson	I.	*Buffalo, N. Y.*	566 Mass. Ave.
Healey, Harry Raymond	X.	*Boston*	38 St. Botolph St.
Henrich, Louis Richard	IV.	*Buffalo, N. Y.*	2 Claremont Park.
Higgins, Albert Willis	X.	*Auburndale*	Auburndale.
Hildreth, Horace Edwin, A.B.	I.	*Cambridge*	Cambridge.
Hirt, Jules Hector	III.	*Brookline*	Brookline.
Hodgdon, Harry Augustine	II.	*Medford*	Medford.
Hogle, Milton Ward	II.	*Rochester, N. Y.*	19 Linden St., A.
Holford, William Gordon	IV.	*Hazardville, Conn.*	17 Hancock St.
Holmes, Valdemar Frank	V.	*Copenhagen, Denmark*	264 Newbury St.
Horne, Lewis Winslow	XIII.	*Malden*	Malden.
Hull, Floyd Byron	VI.	*Adrian, Mich.*	511 Mass. Ave.
Hutchinson, John Albert	VI.	*No. Evans, N. Y.*	9 Concord Sq.
Hyde, Austin Taber	X.	*Waltham*	Waltham.
Jewett, Arthur Crawford	II.	*Toledo, Ohio*	91 Pembroke St.
Johnson, Carl Francis	II.	*Boston*	67 Westland Ave.
Kelley, Will Ghost	VI.	*Burlington, Iowa*	7 Follen St.
Kennedy, Herbert Harley	VI.	*So. Framingham*	So. Framingham.
Knox, King Harding	VI.	*Baton Rouge, La.*	458 Mass. Ave.
Lange, Theodore Ferdinand	I.	*Springfield*	195 Warren Ave.
Lawrence, Ellis Fuller	IV.	*Charlestown*	Cambridge.
Lincoln, Charles Thayer	V.	*Boston*	21 St. James Ave.
Little, Arthur	V.	*Newbury*	Somerville.
Littlefield, Robert Stanley	XIII.	*Somerville*	Somerville.
Loring, Ralph Stoodley	I.	*Somerville*	Somerville.
Lunan, Thomas Mason	V.	*Andover*	31 Warren Ave.
Lundin, Laura Marie	VIII.	*Cambridgeport*	Cambridgeport.
McBurney, Henry	I.	*New York, N. Y.*	221 Newbury St.
McDaniel, Allen Boyer	IV.	*Dorchester*	21 Edson St., D.
McDonald, Harry Peake, Jr.	I.	*Louisville, Ky.*	100 Mt. Vernon St.
MacLeod, Grace	V.	*Cambridge*	Cambridge.
Marcus, Henry Charles	III.	*Menlo Park, Cal.*	187 St. Botolph St.
Marsh, George Everett, Jr.	VIII.	*Georgetown, Colo.*	9 Park Lane, J. P.

THIRD YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Martin, Charles Everett	IV.	*Antrim, N. H.*	14 James St.
Miller, Benjamin	VI.	*Cincinnati, Ohio*	150 Chandler St.
Mitchell, George LeRoy, B.S.	VI.	*Boston*	14 James St.
Montgomery, Robert James	V.	*Natick*	460 Mass. Ave.
Moore, Philip Wyatt	II.	*Brookline*	Brookline.
Morse, John Russell	I.	*Brockton*	116 Huntington Ave.
Morton, Robert Bass, B.S.	VI.	*Randolph, Vt.*	69 Appleton St.
Murray, Ray	I.	*Boston*	531 Mass. Ave.
Newlin, William Jesse, A.B.	II.	*Port Carbon, Pa.*	51 Falmouth St.
Nims, Lester Albert	I.	*Keene, N. H.*	Malden.
Nutter, Alfred DeWitt	I.	*Chelsea*	Chelsea.
Ober, Julius Edward	V.	*Boston*	748 Tremont St.
Ordway, Daniel Leighton	V.	*Newton Centre*	Newton Centre.
Paraschos, George Theophanes	I.	*Constantinople, Turkey*	100 Mt. Vernon St.
Parrock, Percy Harry	II.	*Youngstown, Ohio*	264 Newbury St.
Perkins, John McClary	VI.	*Arlington Heights*	Arlington Heights.
Perry, Oliver Hazard, Jr.	XIII.	*Lowell*	264 Newbury St.
Persons, Ashton Clifford	V.	*Winsted, Conn.*	79 Montgomery St.
Peters, Anthony Winfred	I.	*W. Roxbury*	Gould St., W. R.
Philbrick, Joseph Ernest	X.	*Roxbury*	1 Wabon St., R.
Player, Preston, A.B.	II.	*Boston*	Hotel Westminster.
Potter, Philip Arthur	II.	*Springfield*	20 Newbury St.
Priest, Russell Parker	I.	*Malden*	Malden.
Proulx, Elzear Joseph	I.	*Holyoke*	415 Columbus Ave.
Puckey, Francis Willard	IV.	*Wilkes-Barre, Pa.*	566 Mass. Ave.
Putnam, James Russell	II.	*Newton Centre*	Newton Centre.
Rash, Frank Dillman, A.B.	III.	*Earlington, Ky.*	19 Claremont Park.
Read, Walter Augustine	XIII.	*Boston*	24 St. Stephen St.
Robbins, Edwin T., B.A.	XIII.	*Columbus, Ohio*	4 Yarmouth St.
Robinson, Ralph Chandler	V.	*No. Andover*	85 Dartmouth St.
Ross, John Alexander, Jr.	XIII.	*Hampton, N. H.*	27 Falmouth St.
Rowe, Allan Winter	X.	*Boston*	194 Huntington Ave.
Sabin, Jay Horace	III.	*Aurora, Ill.*	209 Huntington Ave.
St. Clair, Samuel Winthrop	IV.	*E. Milton*	E. Milton.
Sammet, George Victor	V.	*Jamaica Plain*	73 Sheridan St., J. P.
Sayward, William James, B.S.,	IV.	*Woodstock, Vt.*	69 Appleton St.
Schlesinger, Bart Ernest, A.B.	V.	*Brookline*	Brookline.
Seaver, Edward, Jr.	II.	*Roxbury*	22 Westminster Ave., R.
Sexton, Frederic Henry	III.	*Billerica*	Billerica.
Shivers, Clifford Hopkins	IV.	*Woodbury, N. J.*	566 Mass. Ave.
Shute, George Percival	X.	*Malden*	Malden.
Simonds, Roland Emerson	II.	*Winchester*	Winchester.
Skene, Norman Locke	XIII.	*Roxbury*	58 Copeland St., R.
Smith, Frederick W., B.A.	I.	*Baltimore, Md.*	1 Willow St.
Stearns, Ralph Hamilton	XI.	*Dorchester*	108 Cushing Ave., D.
Stockman, Orlando Sargent	III.	*Newburyport*	48 W. Cedar St.

THIRD YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Sturtevant, William Isaac	VI.	*Ogden, Utah*	8 Wellington St.
Sucro, William George	I.	*Catonsville, Md.*	205 Huntington Ave.
Sulzer, Albert Fredrick	X.	*Chicago, Ill.*	2 St. Paul St.
Sweetser, William Jordan	II.	*Newton Highlands*	Newton Highlands.
Taft, Theodore Howard	II.	*No. Cambridge*	No. Cambridge.
Taylor, Alexander Jenifer, C.E.	XI.	*Wilmington, Del.*	9 Concord Sq.
Taylor, Warren Crosby	I.	*Arlington*	Arlington.
Thatcher, Edward Gordon	V.	*Middleboro*	458 Mass. Ave.
Trenholme, Arthur K., A.B.	IV.	*Westmount, Que.*	101 W. Springfield St.
Tufts, Charles Gilman	X.	*Arlington Heights*	Arlington Heights.
Walcott, William Wright	IX.	*Natick*	Natick.
Webster, Fred Bibber	XIII.	*Cambridge*	Cambridge.
Weil, Asher Lowenstein	II.	*New York, N. Y.*	122 Huntington Ave.
Welch, William Wells	III.	*W. Quincy*	W. Quincy.
Whipple, William	II.	*Massapequa, N. Y.*	6 Louisburg Sq.
White, Harry Ransome	XIII.	*Arlington Heights*	Arlington Heights.
White, Robert, Jr.	VI.	*Boston*	321 Hanover St.
Whitman, Ralph	I.	*Roxbury*	109 Walnut Ave., R.
Whittemore, Charles Augustus	IV.	*Scranton, Pa.*	35 Linden St., A.
Wight, Roger Willard	XIII.	*Natick*	Natick.
Wilcox, Frank Patten	I.	*Boston*	398 Northampton St.
Wilder, Lowell Bosworth	III.	*Newton Highlands*	Newton Higlands.
Wildes, Waldo Gilman	I.	*Melrose Highlands*	Melrose Highlands.
Willard, Charles Franklin	II., XIII.	*Marlboro*	3 Oxford Terrace.
Williams, Louis Ezra	II.	*Duluth, Minn.*	170 Huntington Ave.
Williams, Robert Longfellow	II.	*Chelsea*	Chelsea.
Wilson, Archibald Henry	II.	*Lawrence*	Lawrence.
Wood, Harold Blake	II.	*Arlington*	Arlington.
Wood, Howard Irving	V.	*Rockville, Conn.*	85 Dartmouth St.
Wood, Leonard Percy	I.	*Brooklyn, N. Y.*	Stoneham.
Woodsome, James Chadbourne	VI.	*Dorchester*	120 Cushing Ave., D.

SECOND YEAR.

NAME.	COURSE.	HOME.	RESIDENCE.
Adams, Isaac Rayne	IV.	*No. Cambridge.*	No. Cambridge.
Allen, Carlton Brigham	XIII.	*Somerville*	Somerville.
Allen, Clarence Mason	II.	*Barre*	299 Dudley St., R.
Allen, Frank David, Jr.	I.	*Gloucester*	37 St. Botolph St.
Allyn, Alfred Warren	IV.	*Lawrence*	37 St. Botolph St.
Ames, Henry Allison	II.	*Lowell*	Lowell.
Annett, Cecil Bancroft	II.	*E. Jaffrey, N. H.*	83 Montgomery St.
Appleton, Allen Lansing	XIII.	*Springfield*	261 Newbury St.
Avery, Francis Deane	I.	*Buckland*	69 Montgomery St.
Baker, Edward Sherman	I.	*Dedham*	Dedham.

SECOND YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Baker, James McFarlan	IV.	*Brooklyn, N. Y.*	124 Chandler St.
Ballard, Joseph William	II.	*Griswoldville*	69 Montgomery St.
Barry, Henry Bailey	II.	*Chelsea*	Chelsea.
Bartlett, Homer Eugene	IV.	*No. Adams*	25 Rutland Sq.
Bassett, William Manning	I.	*Boston*	65 St. Botolph St.
Beale, Forrest Wilbur	I.	*Newburyport*	Newburyport.
Beckler, Edith Arthur	V.	*So. Boston*	590 Seventh St., S.B.
Belcher, Donald Minor	XI.	*Winchester*	Winchester.
Best, Edna May Williston	V.	*Roxbury*	14 Danube St., R.
Blanchard, Harold, A.B.	XIII.	*Boston*	8 Gloucester St.
Blodgett, George Raymond	VI.	*W. Newton*	W. Newton.
Boardman, Charles Henry, Jr.	IV.	*Lynn*	Lynn.
Bonnemort, Charles Judson	I.	*Walnut Hill*	Walnut Hill.
Borden, Norman Easton	II.	*Salem*	Salem.
Bosworth, Harold Otis	X.	*Denver, Colo.*	21 St. Botolph St.
Bradley, Francis	II.	*Brookline*	Brookline.
Brainerd, Erastus LeRoy	I.	*Philadelphia, Pa.*	33 St. Botolph St.
Brewer, Charles Duncan	III.	*Duluth, Minn.*	Auburndale.
Bright, George, Jr.	III.	*Pottsville, Pa.*	261 Newbury St.
Brown, Robert Vaughan	X.	*Roxbury*	94 Bird St., R.
Brown, William Nathaniel	V.	*Gloucester*	7 Follen St.
Burdick, Herbert Clemens	VI.	*Cambridge*	Cambridge.
Burr, Charles Henry	III.	*W. Newton*	W. Newton.
Capen, Bernard Winslow	VI.	*Stoughton*	Stoughton.
Cates, Louis Shattuck	III.	*Newton Centre*	Newton Centre.
Chapman, Harlen Monroe	V.	*Turners Falls*	6 Chestnut St.
Church, Albert Thomas	III.	*Oakland, Cal.*	470 Mass. Ave.
Coburn, Lawrence Gardiner	VI.	*Malden*	Malden.
Colgan, James Arthur Herbert	VI.	*Springfield, N. B.*	16 Joy St.
Collier, Arthur Luke	XIII.	*Chelsea*	Chelsea.
Comins, Waldo Hunter	III.	*Glen Ridge, N. J.*	5 Walnut St.
Cook, Walter Lorrain	III.	*Burlington, Iowa*	261 Newbury St.
Crowell, Allan Webb	I.	*New Bedford*	219 W. Canton St.
Culver, Llora Robinson	V.	*Boston.*	Hotel Westland.
Currey, Harold Young	II.	*Evanston, Ill.*	5 Walnut St.
Curtis, Charles Warren	V.	*Lowell*	44 Chandler St.
Cutter, Edward Henry	II.	*Chicago, Ill.*	458 Mass. Ave.
Dunham, Milton Cornelius,	III.	*Brockton*	759 Tremont St.
Durbin, Joseph Wilber	VI.	*Burlington, N. J.*	2 Claremont Park.
Durgin, William Andrew	VI.	*Rochester, N. Y.*	Chelsea.
Eames, Jesse Jennings	II.	*So. Framingham*	So. Framingham.
Everett, Harold Arthur	XIII.	*Boston*	1 Oxford Terrace.
Ewart, Charles Wallace	III.	*Spokane, Wash.*	458 Mass. Ave.
Farmer, Walter Havens	I.	*Hartford, Conn.*	531 Mass. Ave.
Ferrin, Henry Abbott	XIII.	*Lowell*	Lowell.
Fitch, Charles Henry	V.	*Boston*	40 Hancock St.

SECOND YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Fitch, Walter Spencer	II.	*Rockville, Conn.*	49 Hemenway St.
FitzGerald, John Mark	II.	*Cambridgeport*	Cambridgeport.
Fletcher, Harold Hervey	I.	*Brookline*	Brookline.
Foote, Thomas Witherbee	III.	*Chicago, Ill.*	Auburndale.
Fowler, Theodore Vietor, Jr.	II.	*Buffalo, N. Y.*	Brookline.
Franklin, Duncan Rogers	V.	*Brighton*	153 Foster St., B.
French, George Henry	II.	*Pittsfield*	49 Hemenway St.
Friend, Alfred William	VI.	*Manchester*	Manchester.
Frost, Richard Lincoln	II.	*Waltham*	Waltham.
Fruit, John Clyde	IV.	*La Crosse, Wis.*	96 Chestnut St.
Galaher, Francis Brisbane	II.	*Lawrence*	3 Wellington St.
Gannett, Farley	XI.	*Washington, D. C.*	470 Mass. Ave.
Gardner, Archibald	XIII.	*Babylon, N. Y.*	54 St. Stephen St.
Gardner, Stephen A., Jr.	XIII.	*New London, Conn.*	31 Concord Sq.
Geromanos, Hercules Wallace	V.	*Springfield*	9 Berwick Park.
Gifford, Ralph Percy	VI.	*Lynn*	Lynn.
Goldenberg, Maurice	IV.	*E. Boston*	391 Meridan St., E.B.
Grant, Kenneth Crothers	I.	*Newport, R. I.*	302 Columbus Ave.
Greeley, William Roger	IV.	*Lexington*	Lexington.
Green, Henry Lincoln	IX.	*Boston*	6 Louisburg Sq.
Hadcock, Edward Webster	I.	*Roxbury*	2702 Washington St., R.
Hall, Arthur Parker	X.	*Charlestown*	3 Cordis St., C.
Hamblet, Abel Martin	V.	*Salem*	Salem.
Hammond, Lester Clark	I.	*Kingston*	17 Maryland St., D.
Hansen, August Ernst	XI.	*Viersen, Germany*	299 Dudley St., R.
Hansen, Paul	XI.	*Washington, D. C.*	559 Mass. Ave.
Harkness, Arthur Fuller	V.	*Walpole*	Walpole.
Harris, Wilson Park	VII.	*Brooklyn, N. Y.*	566 Mass. Ave.
Haskell, Albert Adams	V.	*Essex*	Essex.
Henne, Ernst	IV.	*Chicago, Ill.*	38 St. Botolph St.
Hervey, Elmer Merrill	VI.	*Dorchester*	8 Humphreys Sq., D.
Hill, Beulah Chapin	VIII.	*Dorchester*	107 King St., D.
Hollis, Charles Bertram	III.	*Natick*	Natick.
Hooker, Henry Keene	VI.	*Wellesley Hills*	Wellesley Hills.
Howe, James Carleton, A.B.	VI.	*Brookline*	Brookline.
Hudson, Henry Norman	II.	*Cambridge*	Cambridge.
Hunt, Howard Nelson	II.	*Newton*	Newton.
Hunter, Frederick Huston	IV.	*Newburyport*	So. Natick.
Jones, John Larrabee	VI.	*Deering, Me.*	9 Durham St.
Judson, Howard Campbell	II.	*Holyoke*	191 Warren Ave.
Kellogg, Charles Wetmore, Jr.	VI.	*Brookline*	Brookline.
Kern, LeRoy Eskridge, A.B.	IV.	*Nashville, Tenn.*	15 Concord Sq.
Kimball, Edwin Elliot	VI.	*Salt Lake City, Utah*	17 Yarmouth St.
Kimball, Ralph Elmore	I.	*Lynn*	Lynn.
Knight, Elliot Walker	III.	*Allston*	55 Ashford St.
Knights, Charles Fox	I.	*Melrose*	Melrose.

SECOND YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Lage, Antonio Martius, B.S.	VI.	*Paris, France*	66 Beacon St.
Larrabee, Harold Davis	VI.	*Bennington, Vt.*	457 Mass. Ave.
Litchman, Harold Bartlett	III.	*Marblehead*	Marblehead.
Lockett, Kenneth	II.	*Chicago, Ill.*	7 Follen St.
Lombard, Albert Eaton	I.	*Kansas City, Mo.*	563 Mass. Ave.
Lowe, Russell Bryant	IX.	*Fitchburg*	1 Willow St.
McCarthy, Charles Emmet	X.	*Haverhill*	Cambridge.
McKechnie, Benjamin Edward	III.	*Dorchester*	66 Bird St., D.
McNaughton, Ernest Boyd	IV.	*Cambridge*	Cambridge.
Magrane, Patrick Henry	IX.	*Lynn*	Lynn.
Marvin, John Regniold	II.	*Brookline*	Brookline.
Mather, George Everett	XI.	*W. Brattleboro, Vt.*	51 Falmouth St.
Matteossian, Zenas N., A.B.	IV.	*Constantinople, Turkey*	73 Montgomery St.
May, Herbert Schaw	II.	*Jamaica Plain*	28 Alveston St., J.P.
Mayo, Robert, Jr.	II.	*Philadelphia, Pa.*	23 Worcester Sq.
Mendenhall, Byard William	VI.	*Springville, Utah*	302 Columbus Ave.
Merrick, Silas Clarence	II.	*New Brighton, Pa.*	261 Newbury St.
Miller, Theodore Gazlay	II.	*Sandusky, Ohio*	6 Louisburg Sq.
Mixter, Charles Galloupe	VII.	*Boston*	180 Marlborough St.
Mixter, William Jason	VII.	*Boston*	180 Marlborough St.
Montgomery, Frank Park	VI.	*Brunswick, Me.*	21 Yarmouth St.
More, Arthur Smith	I.	*Springfield*	563 Mass. Ave.
Morrill, Robie Walter	VI.	*Salisbury*	603 Tremont St.
Morse, Willard Vaughan	III.	*Monterey, Mexico*	559 Mass. Ave.
Nash, Arthur Edgar	X.	*Newton Highlands*	Newton Highlands.
Nelson, Arthur Thomas	I.	*E. Boston*	208 PrincetonSt., E.B.
Nelson, Edwin Eugene	VI.	*Lowell*	14 Yarmouth St.
Nichols, Arthur Richardson	IV.	*Monson*	15 Gordon St., A.
Nickerson, Arthur Henry	II.	*Newburyport*	Newton Highlands.
Obear, George Barrows	VI.	*Lynn*	Lynn.
O'Connell, George Paul	I.	*Holyoke*	157 Warren Ave.
Odell, John Ripley	V.	*Detroit, Mich.*	Auburndale.
Page, Newell Caldwell	VI.	*Newburyport*	Newburyport.
Patch, Claude Eldred	XIII.	*Stoneham*	Stoneham.
Pember, Walter Purton Ross	IV.	*Needham*	Needham.
Pendergast, Roland Ball	VI.	*Chicago, Ill.*	33 St. Botolph St.
Philbrick, Burton Garfield	VII.	*Newburyport*	Newburyport.
Philbrick, Joseph	X.	*Newburyport*	Newburyport.
Place, Clyde Richmond	II.	*Mount Upton, N. Y.*	23 Worcester Sq.
Pollard, Edson Thompson	II.	*Rutland, Vt.*	62 Crawford St., R.
Pond, Harry Bradford	I.	*Unionville, Conn.*	25 Concord Sq.
Poole, Frederick Arthur	XIII.	*Chicago, Ill.*	531 Mass. Ave.
Proctor, Redfield, Jr.	II.	*Proctor, Vt.*	Brookline.
Randall, Fred Chesley	VI.	*Woodfords, Me.*	13 Yarmouth St.
Rathbun, Eleanor Packer	VII.	*Boston*	449 Mass. Ave.
Raymond, Herbert Emmons	XIII.	*Cambridge*	Cambridge.

SECOND YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Reed, Franklin Holmes	VI.	*Canton*	Canton.
Reynolds, Irving Wood	VI.	*Brockton*	13 Yarmouth St.
Ricketts, Alfred Henry	V.	*Providence, R. I.*	Providence, R. I.
Robbins, Frank Ambrose, Jr.	II.	*Pittsfield*	68 W. Rutland Sq.
Rogers, Gardner	VI.	*Boston*	601 Boylston St.
Rogers, George Dennison	VI.	*Gloucester*	69 Pinckney St.
Sawyer, Arthur Harold	III.	*Arlington*	Arlington.
Sawyer, Charles Adrian, Jr.	III.	*Chicago, Ill.*	189 Huntington Ave.
Saylor, Henry Hodgman	IV.	*Pottstown, Pa.*	563 Mass. Ave.
Schwartz, Aaron	XIII.	*Boston*	10 Wall St.
Seabury, George Tilley	I.	*Newport, R. I.*	264 Newbury St.
Sears, Walton Harvey	II.	*Arlington*	Arlington.
Sherman, Herbert Leslie	V.	*Cambridge*	Cambridge.
Simpson, Walter Henry	XIII.	*E. Boston*	118 White St., E. B.
Smith, Charles Alfred	III.	*Oconto, Wis.*	563 Mass. Ave.
Smith, Horace Millikin	II.	*Hamilton, Ohio*	4 St. Botolph St.
Smith, James Woodberry	I.	*Lexington*	Lexington.
Sprague, Nathaniel, Jr.	VI.	*Lanesville*	Houston Ave., M.
Starr, Clarence Douglass	II.	*New London, Conn.*	31 Concord Sq.
Stimson, Henry Stanton Bogue	VI.	*Pittsford, Vt.*	Auburndale.
Stow, Kent Tillinghast	II.	*Buffalo, N. Y.*	21 St. Botolph St.
Sturtevant, Edwin Whitman	II.	*Chicago, Ill.*	261 Newbury St.
Swan, Arthur Eugene	VI.	*Roxbury*	25 Wabon St., R.
Taylor, Grant Sterne	XIII.	*Newport, R. I.*	401 Mass. Ave.
Taylor, James Loockermann, Jr.	I.	*London, England*	6 Louisburg Sq.
Teague, Walter Owen	XIII.	*Lowell*	122 Huntington Ave.
Tolman, Charles Prescott	VI.	*Dorchester*	755 Washington St., D.
Towne, Willis Harvey	II.	*W. Gardner*	89 Surrey St., B.
Townsend, Gilbert	IV.	*Newton*	Newton.
Trowbridge, Henry Otis	II.	*Newton*	Newton.
Turner, Howard Chubbuck	XIII.	*Arlington*	264 Newbury St.
Turner, John Bice	I.	*St. Louis, Mo.*	531 Mass. Ave.
Upham, Everett Lyman	IX.	*E. Woodstock, Conn.*	566 Mass. Ave.
Vatter, Wilbur Lewis	VI.	*Lawrence*	472 Norfolk St., D.
Vaughan, Louis Edgar	IV.	*Worcester*	134 St. Botolph St.
Wadleigh, John Winthrop	I.	*Charlestown*	Navy Yard, C.
Wales, Royal Linfield	X.	*Groveland*	Haverhill.
Walker, Murray John	VI.	*Danversport*	Danversport.
Wellman, Walter Jesse	IV.	*E. Jaffrey, N. H.*	83 Montgomery St.
Wells, Chester Harold	XI.	*Lawrence*	3 Wellington St.
Wendel, Conrad	I.	*Hazleton, Pa.*	673 Boylston St.
Westcott, Henry Wilmarth	II.	*Hopedale*	285 Columbus Ave.
Wetmore, Wade Lyndon	II.	*Essex*	Essex.
Whittet, Rufus Mason	XI.	*Lowell*	14 Yarmouth St.
Williams, Elizabeth Langdon	VIII.	*Chelsea*	Chelsea.
Williams, Robert Seaton	V.	*Jackson, Mich.*	189 St. Botolph St.

SECOND YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Williston, William High	II.	*Somerville*	Somerville.
Wonson, Samuel Lamson, A.B.	I.	*Everett*	Everett.
Wood, Austin Clarence	IV.	*Dorchester*	3 Shawmut Park, D.
Worcester, Philip Henry	I.	*Portland, Me.*	9 Concord Sq.
Wright, Charles Lawrence	X.	*Lynn*	Lynn.

FIRST YEAR.

NAME.	HOME.	RESIDENCE.
Adams, Louis Winfield	*Washington, D. C.*	31 St. Botolph St.
Adams, Walter Holbrook	*Winchester*	Winchester.
Aguilar, José Hilario	*Hermosillo, Mexico*	222 W. Springfield St.
Aldrich, Chester Stanley	*Indian Orchard*	9 Milford St.
Allbright, Edwin Francis	*Dorchester*	24 Virginia St., D.
Allen, Arthur Benjamin	*Allston*	7 Amboy St., A.
Anderson, August Edward T.	*Roslindale*	Metropolitan Av., Ros.
Arnold, Perrie Morgan	*Hartford, Conn.*	331 Columbus Ave.
Atwood, Ichabod Francis	*Rock*	Chelsea.
Avery, Charles Henry	*Newtonville*	Newtonville.
Avery, Winthrop Chandler	*So. Lancaster*	30 Appleton St.
Aylsworth, Joseph Wheeler	*Newport, R. I.*	422 Mass. Ave.
Babcock, Frank Gilbert	*Tolland, Conn.*	213 W. Canton St.
Babson, Roger Derby	*Gloucester*	7 Follen St.
Baker, Andrew Percy	*Kingston*	15 Humphreys Sq., D.
Baker, Sheldon King	*Washington, D. C.*	68 Brent St., D.
Ballou, Roland Hunnewell	*Woonsocket, R. I.*	82 Huntington Ave.
Barker, Wilbur Stuart	*Harrisburg, Pa.*	566 Mass. Ave.
Barnaby, George Albert	*Peabody*	Peabody.
Barnes, Willard Carleton	*So. Weymouth*	So. Weymouth.
Barrows, Allan Hanscom	*Reading*	Reading.
Barter, Henry Alexander	*Portland, Me.*	234 W. Canton St.
Bateman, George William	*Cambridge*	Cambridge.
Bates, Charles Lynn	*Sterling, Ill.*	Cambridge.
Bay, William Johnston	*Ironton, Ohio*	12 St. James Ave.
Bennett, Arthur Francis	*Wayland*	Wayland.
Beverstock, Charles Whitney	*Keene, N. H.*	21 Follen St.
Blatt, Herman Otto	*Lead City, S. Dak.*	17 Yarmouth St.
Blood, Alice Frances	*Lynn*	Cambridge.
Bradley, Franklin Sawyer	*Dover, N. H.*	Chestnut Hill.
Breed, Howard	*Cincinnati, Ohio*	261 Newbury St.
Bridges, John Samuel, Jr.	*Baltimore, Md.*	210 W. Newton St.
Brine, Francis Joseph	*Somerville*	Somerville.
Broome, George Wiley, Jr.	*St. Louis, Mo.*	31 Newbury St.
Brown, Moses, Jr.	*Newburyport*	Newburyport.
Brown, Seneca Porter	*Plymouth*	Plymouth.

FIRST YEAR (*continued*).

NAME.	HOME.	RESIDENCE.
Bryan, Clark Albert	*Springfield*	226 Newbury St.
Buhler, Henry Waldeck	*Boston*	11 Irvington St.
Burnham, Alfred Worcester	*Waltham*	Waltham.
Burnham, William Winslow	*Biddeford, Me.*	Watertown.
Burns, Findley	*Baltimore, Md.*	80 Pinckney St.
Burr, Roger Ames	*Chestnut Hill*	Chestnut Hill.
Calley, Walter England	*Cambridge*	Cambridge.
Calnan, John William Joseph	*Boston*	16 E. Canton St.
Camp, Roland Heaton	*Waterbury, Conn.*	Brookline.
Capelle, George Curtis	*E. Cambridge*	E. Cambridge.
Carlisle, Ralph Edward	*Wakefield*	Wakefield.
Carmichael, George Patrick, A.B.	*Lawrence*	Lawrence.
Cass, Herman Jacob	*Lawrence*	Lawrence.
Chamberlin, Noel	*Roxbury*	Parker Hill, R.
Chase, Charles Edward	*Dorchester*	69 Pleasant St., D.
Clapp, George Huntington	*Leominster*	158 St. Botolph St.
Clark, George Howard	*Everett*	Everett.
Clark, Myron Henry	*Bedford*	Concord.
Cole, Charles Stinchfield	*Detroit, Mich.*	1096 Boylston St.
Cole, James Thomas	*W. Somerville*	W. Somerville.
Comer, Ernest Albert	*Salem*	Salem.
Cook, Robert Avery	*Woonsocket, R. I.*	82 Huntington Ave.
Cooper, Claudius Howard	*Houghton, Mich.*	29 St. James Ave.
Cooper, Mayes	*Memphis, Tenn.*	12 St. James Ave.
Copeland, Durward	*Chelsea*	Chelsea.
Cox, Charles Barrows	*Newton*	Newton.
Craven, Walter Sidney	*Kalispell, Mont.*	140 Chandler St.
Crocker, Frederic William	*Roxbury*	22 Copley St., R.
Cronenbold, Ernest John	*New York, N. Y.*	453 Columbus Ave.
Crosby, Fred Bickford	*Woodsville, N. H.*	19 Upton St.
Crosby, Hewitt	*Buffalo, N. Y.*	13 Howe St., D.
Crosby, John William	*Boston*	19 Warren Pl.
Cross, Harold Newton	*Exeter, N. H.*	32 Union Park.
Crowell, Harry Clifford	*Salem*	Salem.
Currier, Harold Stephen	*Boston*	190 Warren St.
Currier, Warren Franklin	*E. Kingston, N. H.*	Winchester.
Cushman, James Allerton	*Taunton*	W. Newton.
Danforth, George Clapp	*Gardiner, Me.*	142 Marlborough St.
Daniels, Robert Wheaton	*Brookline*	Brookline.
Davis, Francis Woodward	*W. Newton*	Trinity Court.
Davis, William Robert	*Scranton, Pa.*	64 W. Rutland Sq.
Denham, Howard Sumner	*E. Pepperell*	8 Claremont Park.
Dillon, Harold Hayward	*Hastings, Neb.*	11 Wellington St.
Dimock, Roy Ernest	*Brockton*	Brockton.
Dodge, Alvah Webster	*Somerville*	Somerville.
Donovan, William Henry	*Roxbury*	287 Highland St., R.

FIRST YEAR (*continued*).

NAME.	HOME.	RESIDENCE.
Dooley, John James	*Roxbury*	804 Parker St., R.
Drake, Henry Philkins	*W. Medford*	W. Medford.
Druehl, Hugo William	*Salt Lake City, Utah*	462 Mass. Ave.
Drury, Walter Maynard	*Evanston, Ill.*	171 Mass. Ave.
Dudley, Henry Harrison	*Natick*	Natick.
Eaton, Ralph Waldo	*Haverhill*	7 Follen St.
Eddy, William Osgood	*Middleboro*	368 Columbus Ave.
Egerton, Charles Ozro	*Springfield*	110 Huntington Ave.
Elmer, Charles Wickersham	*Baltimore, Md.*	19 Linden St., A.
Endres, Kenneth Windram	*Brookline*	Brookline.
Evans, William Haines	*Lockport, N. Y.*	331 Columbus Ave.
Faelten, Otto	*Roxbury*	71 Crawford St., R.
Fales, Henry Hammett	*Pondville*	Pondville.
Farnham, Frank Rollins	*Newton Centre*	Newton Centre.
Feltis, Eva Loring	*No. Weymouth*	No. Weymouth.
Ferris, Mortimer Yale	*Waban*	Trinity Court.
Field, Richard Manning	*Brooklyn, N. Y.*	531 Mass. Ave.
Finer, Percy	*Roxbury*	26 Copeland St., R.
Finnegan, Joseph Bernard	*Stoneham*	Stoneham.
Finneran, Thomas Alphonsus	*Roxbury*	28 Fisher Ave., R.
Fitzler, Henry	*Tiverton, R. I.*	68 W. Rutland Sq.
Flanders, Howard Nelson	*Malden*	Malden.
Fletcher, Samuel Adams	*Milton*	Milton.
Fogg, Benjamin Greely	*Newburyport*	Newburyport.
Foster, Stanley Alfred	*Henniker, N. H.*	7 Follen St.
Fowle, Robert Halsey	*Marquette, Mich.*	Somerville.
Gaenslen, George Ralph	*San Antonio, Tex.*	613 Tremont St.
Gallup, Harry Wallace	*Norwich, Conn.*	9 Concord Sq.
Gammons, James Madison	*Long Plain*	42 Rutland Sq.
Garcelon, George Holland	*W. Somerville*	W. Somerville.
Garrett, Edmund Anthony	*Winchester*	Winchester.
Gibbs, Arthur Sherman	*No. Middleboro*	No. Middleboro.
Gibson, Carl Blanchard	*Roxbury*	33 Highland St., R.
Gilker, William Mansfield	*New Richmond, Que.*	163 Warren Ave.
Gilson, John Lawrence	*Rutland, Vt.*	Waban.
Gleason, Gilbert Howe	*Roxbury*	12 Ruthven St., R.
Godfrey, Otis Ingraham	*Martinsdale, Mont.*	212 Huntington Ave.
Goodwin, Edwin Gerrish	*No. Berwick, Me.*	Wakefield.
Gould, Le Roy Boardman	*Taunton*	Taunton.
Gray, Curtis Rockwell	*Boston*	38 Dartmouth St.
Green, Carlton Francis	*Spencer*	30 Greenwich Park.
Greene, George Melville	*Westminster, Conn.*	The Westland.
Grice, John Marriott	*St. Louis, Mo.*	65 St. Botolph St.
Griffin, Charles James	*Everett*	Everett.
Haddock, Isaac Thomas	*Tiverton, R. I.*	68 W. Rutland Sq.
Hamilton, Albert	*Holyoke*	Newtonville.

FIRST YEAR (*continued*).

NAME.	HOME.	RESIDENCE.
Hanson, Raymond Edward	*Reading*	Reading.
Hardenbergh, Clarence Morgan	*Minneapolis, Minn.*	66 Chestnut St.
Harlow, Justin Edwards	*Edgewood Park, Pa.*	Cambridgeport.
Harris, Galen Moses	*Portland, Me.*	563 Mass. Ave.
Harris, Henry George	*Boston*	36 Worcester Sq.
Harwood, Leon Martin	*Springfield*	11 Milford St.
Hatch, Mellen Chamberlain Mason	*Chelsea*	Chelsea.
Healy, Alexander	*Ogden, Utah*	11 Wellington St.
Heckman, John Francis	*No. Attleboro*	No. Attleboro.
Helmick, William Fred	*Cincinnati, Ohio*	113 Chandler St.
Hepburn, Andrew Hopewell	*Avondale, Pa.*	66 Mt. Vernon St.
Hill, Frank Albert	*Andover*	Andover.
Hood, Raymond Mathewson	*Pawtucket, R. I.*	30 Greenwich Park.
Howard, John Wardwell	*Dorchester*	147 Grampian Way, D.
Howell, Edward Winchester	*Boston*	23 Mt. Pleasant Ave.
Howell, William Allen	*Andover*	Andover.
Howes, Cyrus Pierce	*So. Yarmouth*	64 W. Rutland Sq.
Howes, Ralph Holt	*Keene, N. H.*	21 Follen St.
Hoxie, Edward Ely	*Duxbury*	229 Longwood Ave.
Jewett, Kenneth Du Bois	*Fitchburg*	673 Boylston St.
Johnson, Frank	*Lawrence*	Lawrence.
Jones, Joseph Russell	*Highland Park, Ill.*	270 W. Newton St.
Jordan, Ralph Curtis	*Columbus, Ga.*	23 Mt. Pleasant Av., R.
Jordan, Robert Rishworth	*Portland, Me.*	34 W. Cedar St.
Joseph, Jesse Strassburger	*Allegheny, Pa.*	124 Huntington Ave.
Joyce, Clarence Mason	*Medford*	Medford.
Kehew, Francis Donaldson	*Cambridgeport*	Cambridgeport.
Kershaw, George Elliott	*Somerville*	Somerville.
Kimball, Alfred Whitefield	*Newburyport*	Newburyport.
Kimball, Lemuel Cushing, Jr., A.B.	*Boston*	271 Beacon St.
King, Everett Howard	*Tewksbury*	Tewksbury.
King, Robert Joshua	*Billerica*	Billerica.
Kruse, Robert Louis	*Cincinnati, Ohio*	80 Huntington Ave.
Lang, Alfred Ernest	*Lawrence*	37 St. Botolph St.
Langley, Arthur Hooper	*Malden*	86 Huntington Ave.
Latham, Bernard Wilson	*Willimantic, Conn.*	98 Appleton St.
Lawton, Richard Mack	*Lowell*	Trinity Court.
Leary, Denis Gerald	*Springfield*	377 Columbus Ave.
Leavitt, Augustus Scamman	*Haverhill*	124 Dartmouth St.
Leavitt, Phil Amos	*Saco, Me.*	67 Westland Ave.
Lee, Lawrence Hargreave	*Buffalo, N. Y.*	1 Autumn St.
Lenth, George Caspar Doering	*Chicago, Ill.*	119 Warwick St.
Lewis, William Remsen	*Newport, R. I.*	302 Columbus Ave.
Libbey, George Eastman	*Melrose*	Melrose.
Littlefield, Emmett	*Troy, N. Y.*	Cambridgeport.
Livermore, Robert Gurdon	*Brookfield*	673 Boylston St.

FIRST YEAR (*continued*).

NAME.	HOME.	RESIDENCE.
Locke, Herbert Arey Garfield	*Cambridge*	Cambridge.
Loughlin, Gerald Francis	*Dorchester*	16 Thornley St., D.
Lounsbury, William C.	*Roslindale*	81 Montclair Ave., Ros.
Low, Harry Raymond	*Brockton*	116 Huntington Ave.
Lund, Harry Gardner	*Billerica*	Billerica.
Lyon, James Lawrence	*Central Falls, R. I.*	Central Falls, R. I.
MacGregor, Roderick James	*So. Lincoln, Me.*	Cambridge.
McInerney, Thomas Darsée	*Kingston, N. B.*	47 Appleton St.
McIntosh, Charles Jewell	*Racine, Wis.*	99 Pinckney St.
McKelvey, Lucius Blaine	*Youngstown, Ohio*	89 St. Botolph St.
McMenimen, William Vincent	*E. Cambridge*	E. Cambridge.
Magnitzky, Albert Louis	*Jamaica Plain*	127 Chestnut Ave., J.P.
Manahan, Robert Fulton	*Boston*	14 Newbury St.
Manson, Gyula Bennett	*E. Boston*	200 Trenton St., E. B
Markiewitz, David	*Boston*	51 Eliot St.
Marsh, Robert Penniman	*Springfield*	563 Mass. Ave.
Martin, Arthur Safford	*Chelsea*	Chelsea.
Mason, Stephen Nickerson	*Wakefield*	Wakefield.
Mears, Joseph Archibald	*Scranton, Pa.*	18 Berwick Park.
Mendell, Harold Hammett	*Allston*	127 Franklin St., A.
Merrill, Herbert Chandler	*Peabody*	Peabody.
Miles, Harold Fairman	*Worcester*	29 St. Botolph St.
Miller, Blaine Heston	*Indianapolis, Ind.*	563 Mass. Ave.
Mitchell, William Edward	*Milton*	Milton.
Mohler, David D.	*Colorado Springs, Colo.*	15 Concord Sq.
Moies, William Henry Haskell	*Central Falls, R. I.*	Central Falls, R. I.
Morris, Ralph Davis	*Monson*	158 St. Botolph St.
Morse, Howard Scott	*Dedham*	Dedham.
Myers, Leonard Fred	*Rochester, N. Y.*	449 Mass. Ave.
Nettleton, Van Irving	*Boston*	19 Claremont Park.
Newman, Rolf Raymond	*Riverside, Cal.*	Cambridge.
Nibecker, Claude Pendleton	*Glen Mills, Pa.*	44 Pinckney St.
Nickerson, Frederic	*Santa Barbara, Cal.*	8 Commonwealth Ave.
Nields, Benjamin, Jr.	*Wilmington, Del.*	60 Pinckney St.
Nolan, John Joseph Aloysius	*Somerville*	Somerville.
Norton, Harold Lee	*Medford*	Medford.
Nutter, Ralph Herbert	*Lynn*	Lynn.
O'Halloran, Thomas Henry	*Marlboro*	Marlboro.
Olmsted, Frederic Arthur	*Roxbury*	13 Rockland St., R.
Osborn, Harold	*Columbia, S. C.*	Somerville.
Palmer, Robert	*Larchmont, N. Y.*	39 Rosseter St., D.
Palmer, Virgil Maro	*Willimantic, Conn.*	98 Appleton St.
Parker, Paul Revere	*Cambridge*	Cambridge.
Peabody, Alfred	*Salem*	Salem.
Pearson, Albert William	*W. Roxbury*	205 Park St., W. R.
Peaslee, Hiram Fred	*Plaistow, N. H.*	28 Berwick Park.

FIRST YEAR (*continued*).

NAME.	HOME.	RESIDENCE.
Pell, John Francis	*Newark, N. J.*	51 Falmouth St.
Pemberton, Henry Augustus	*Auburndale*	Auburndale.
Pope, Mary Ritchie	*Brighton*	Academy Hill, B.
Porter, Stanley Lester	*Middleboro*	368 Columbus Ave.
Potter, Abraham	*Vilno, Russia*	15 Mayfair St., R.
Pulsifer, Harrie Bridgman	*Lebanon, N. H.*	4 Longwood Terrace.
Rapp, Louis Ballauf	*Cincinnati, Ohio*	264 Newbury St.
Reed, Rufus Cook	*Newburyport*	Newburyport.
Regan, John Ward	*Boston*	49 Winchester St.
Regestein, Walter Philip	*Jamaica Plain*	92 Wyman St., J. P.
Reid, Josiah Elnathan	*E. Boston*	173 Lexington St., E.B.
Reid, Walter David	*Dorchester*	19 Roslin St., D.
Reynolds, David Solomon	*Williamsfield, Jamaica*	Somerville.
Rice, Arthur Parkman	*Chelsea*	Chelsea.
Rice, Philip Benard	*Stamford, Conn.*	537 Columbus Ave.
Ricker, Elmer Francis	*Quincy*	Quincy.
Riddell, Guy Crosby	*Auburndale*	Auburndale.
Riley, James Garfield	*Waltham*	Waltham.
Roberts, Charles Horatio	*Cambridge*	Cambridge.
Robertson, Winfred Franklin	*Hinsdale, N. H.*	8 St. James Ave.
Robinson, Samuel	*Boston*	47 Allen St.
Roehr, Otto Louis	*Brooklyn, N. Y.*	553 Mass. Ave.
Rott, Walter Christian	*Pittsburgh, Pa.*	21 St. Botolph St.
Ruxton, Edward James	*Ludlow*	9 Milford St.
Sammet, Charles Frank	*Jamaica Plain*	73 Sheridan St., J. P.
Scherrer, Herman Adolph	*Indianapolis, Ind.*	144 Chandler St.
Schmidt, Caspar Anthony	*Detroit, Mich.*	78 E. Newton St.
Schriftgiesser, Carl John	*Boston*	11 Davis St.
Scofield, Edward Candee	*Stamford, Conn.*	537 Columbus Ave.
Scudder, Oliver Porter	*Brockton*	Brockton.
Sears, Thomas Everett	*Plymouth*	Plymouth.
Sexton, Walter Howard	*Somerville*	Somerville.
Seyms, George Beach	*Hartford, Conn.*	Cambridge.
Shaw, George Herbert	*Belmont*	Belmont.
Sherman, Frank Arnold	*Westerly, R. I.*	18 Newbury St.
Simpson, Horace Gardner	*Chelsea*	Chelsea.
Skowronski, Stanislaus	*Revere*	Revere.
Smith, Charles John	*Jamaica Plain*	49 Burroughs St., J. P.
Smith, Daniel Arthur, Jr.	*Newport, R. I.*	75 Camden St.
Smith, Herbert Bowen	*Waterbury, Conn.*	663 Tremont St.
Smith, John Monroe.	*Irvona, Pa.*	673 Boylston St.
Smith, Lowell Eldridge	*Chelsea*	Chelsea.
Smith, Walter Abbe	*Springfield*	110 Huntington Ave.
Solomon, Benjamin David	*Boston*	681 Shawmut Ave.
Spalding, George Riddell	*Newburyport*	Newburyport.
Stanhope, William Edward	*Newport, R. I.*	422 Mass. Ave.

FIRST YEAR (*continued*).

NAME.	HOME.	RESIDENCE.
Stearns, Gordon Weld	*Cincinnati, Ohio*	24 Gardner St., A.
Stetson, Edward Everett	*Mattapoisett*	586 Ashmont St., D.
Stevenson, Lucy Marion	*Lowell*	Lowell.
Stiles, Harry Allard	*Brighton*	50 Summit Ave., B.
Stoddard, Ava Marcella	*Roxbury*	4 Thwing St., R.
Stoddard, Edna Dwinel	*Roxbury*	4 Thwing St., R.
Sumner, Warren Ellis	*Brockton*	Brockton.
Swett, George Wright	*No. Cambridge*	No. Cambridge.
Taft, Augustus Read	*Chelsea*	The Marlborough.
Tanner, William Fitch	*Albany, N. Y.*	35 Moreland St., R.
Taylor, Floyd Thomas	*Norfolk, Va.*	13 St. James Ave.
Thompson, Edward Cutter	*Dorchester*	697 Columbia Road, D.
Tolman, Richard Chace	*W. Newton*	W. Newton.
Toohey, Francis Patrick	*Cambridge*	Cambridge.
Trull, John Eugene	*Chelsea*	Chelsea.
Tucker, Ralph Walter	*Wellesley*	Wellesley.
Tuell, Samuel Bennett	*New Bedford*	42 Rutland Sq.
Underwood, Lawrence Hosmer	*Omaha, Neb.*	34 Hancock St.
Valiquet, Harry Howell	*Lynn*	Lynn.
Wastcoat, Edward	*Taunton*	Taunton.
Waterman, Charles Perkins	*Providence, R. I.*	Providence, R. I.
Wertheimer, Milford	*New York, N. Y.*	38 St. Botolph St.
Wetherald, Frederick Harlow	*Dorchester*	294 Washington St., D.
Whitcomb, William Henry	*Roxbury*	13 Windsor St., R.
White, Edward Wallace	*Andover*	Andover.
White, Louis Benjamin	*Andover*	Andover.
Whitehead, Walter	*Medford*	Medford.
Whitmore, Walter	*Newburyport*	Newburyport.
Wilder, Richard Timothy	*Clearwater, Fla.*	169 St. Botolph St.
Williams, Ralph Brown	*Salem*	Salem.
Wilson, Daniel Scott	*Concord Junction*	Concord Junction.
Wilson, George Davis, A.B.	*Clarksville, Tenn.*	458 Mass. Ave.
Winchester, Henry Thornton	*Dorchester*	512 Washington St., D.
Wing, William Lawton	*New Bedford*	407 Mass. Ave.
Winter, William	*Indianapolis, Ind.*	563 Mass. Ave.
Wood, George Babcock	*Dorchester*	3 Shawmut Park, D.
Yerxa, Ralph Benjamin	*No. Cambridge*	No. Cambridge.

SPECIAL STUDENTS.

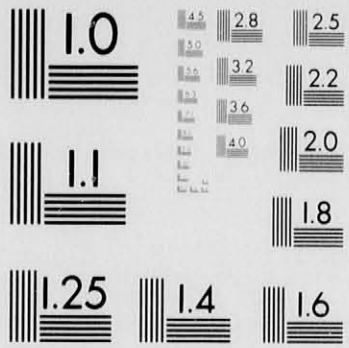
The abbreviations used in this list, which includes all students who are not in the full regular courses, are:

Ap. Mech. . Applied Mechanics.	Hist. . . . History.
Arch. . . . Architecture.	Lang. . . . Modern Languages.
Biol. . . . Biology.	Math. . . Mathematics.
Chem. . . . Chemistry.	Mech. Eng. . Mechanical Engineering.
Civ. Eng. . . Civil Engineering.	Min. Eng. . Mining Engineering.
Draw. . . . Drawing and Descriptive Geometry.	Nav. Arch. . Naval Architecture.
	Phys. . . . Physics.
Elect. Eng. . Electrical Engineering.	Pol. Sci. . . Political Science.
Eng. . . . English.	San. Eng. . Sanitary Engineering.
Geol. . . . Geology.	Shop. . . . Shopwork.

NAME.	HOME.	RESIDENCE.
Adams, Charles Ward	*Montpelier, Vt.* . . .	261 Newbury St.
Draw., Lang., Math., Mech. Eng., Phys., Pol. Sci.		
Adams, Irving Ellwood . . .	*Allston*	64 Aldie St., A.
Chem., Eng., Geol., Hist., Lang., Phys.		
Albin, Henry Allison	*Concord, N. H.* . . .	Copley Square Hotel.
Math., Mech. Eng., Phys.		
Aldrich, William Truman . . .	*Warwick Neck, R. I.* .	Brookline.
Ap. Mech., Arch., Draw., Lang., Phys., Pol. Sci.		
Allbright, Henry Glover, Jr. . .	*Dorchester*	24 Virginia St., D.
Draw., Eng., Hist., Lang., Math., Mech. Eng., Phys., Shop.		
Allen, Ernest Blake	*Winthrop*	Winthrop.
Ap. Mech., Lang., Math., Mech. Eng., Nav. Arch., Phys., Pol. Sci		
Allen, Harry Vass, B.S. . . .	*Raleigh, N. C.* . . .	40 Perrin St., R.
Ap. Mech., Draw.. Elec. Eng., Math., Mech. Eng., Phys.		
Anderson, Charles Louis Bates .	*Newburyport* . . .	Newburyport.
Civ. Eng., Eng., Math., Phys.		
Arnold, Albert Heber Bailey .	*Roxbury*	31 Waumbeck St., R.
Chem., Geol., Min. Eng., Phys., Pol. Sci.		
Ashley, George Francis . . .	*Somerville*	Somerville.
Arch., Draw., Hist.		
Atwood, George Desler . . .	*Brooklyn, N. Y.* . .	Brookline.
Ap. Mech., Math., Mech. Eng., Shop.		
Ayers, Frederic Chesley . . .	*Roxbury*	11 Forest St., R.
Ap. Mech., Lang., Math., Mech. Eng., Nav. Arch.		

NAME.	HOME.	RESIDENCE.
Bacon, Charles James	*Winthrop*	Winthrop.
Ap. Mech., Math., Mech. Eng., Phys., Pol. Sci., Shop.		
Bacon, Herbert Morton . . .	*Hartford, Conn.* . .	228 Huntington Ave.
Chem., Draw., Eng., Math.		
Bailey, Eric Waldorf	*Cambridgeport* . . .	Cambridgeport.
Chem., Civ. Eng., Geol., Min. Eng., Phys., Pol. Sci.		
Baker, Philip Stone	*San Francisco, Cal.* .	1 W. Cedar St.
Ap. Mech., Math., Mech. Eng., Phys., Shop.		
Baldwin, Robert Southwick . .	*Dorchester*	39 Columbia Road, D.
Chem., Eng., Geol., Hist., Math., Phys.		
Barney, Morgan	*New Bedford* . . .	66 Chestnut St.
Ap. Mech., Math., Mech. Eng., Nav. Arch., Phys., Shop.		
Barry, Charles Gardner . . .	*Melrose*	Melrose.
Ap. Mech., Civ. Eng., Lang., Phys., Shop.		
Bates, John Ross	*Hyde Park*	Hyde Park.
Chem., Civ. Eng., Draw., Hist., Math., Phys.		
Bates, Sarah Loveland . . .	*Newton*	Newton.
Chem., Eng., Geol., Hist., Math., Phys.		
Beekman, John Van Derveer, Jr.	*Plainfield, N. J.* . .	164 Huntington Ave.
Ap. Mech., Arch., Draw., Hist., Lang.		
Bender, Lowry Dravo Wilkinson	*Pittsburgh, Pa.* . . .	566 Mass. Ave.
Chem., Min. Eng.		
Berry, Arthur Henry, A.B. . .	*Newburyport* . . .	Newburyport.
Chem.		
Blaisdell, Robert Van Bergen .	*St. Louis, Mo.* . . .	Medford.
Arch., Chem., Draw.		
Blanchard, Huse Templeton . .	*Concord, N. H.* . . .	88 Charles St.
Ap. Mech., Arch., Draw., Lang., Phys., Pol. Sci.		
Blauvelt, William Grove, A.B. .	*Virginia City, Nev.* .	25 St. Botolph St.
Ap. Mech., Draw., Elect. Eng., Mech. Eng., Phys.		
Boardman, Charles	*Boston*	388 Marlborough St.
Chem., Draw., Eng., Lang., Math., Mech. Eng., Phys.		
Bolster, Roy Hale	*Roxbury*	10 Cobden St., R.
Ap. Mech., Elect. Eng., Math., Mech. Eng., Phys.		
Brigham, Theodore William . .	*Greenport, N. Y.* . .	Watertown.
Ap. Mech., Mech. Eng., Nav. Arch., Shop.		
Brock, Henry Matthias, A.B. .	*Roxbury*	15 Woodville St., R.
Math., Phys.		
Brodie, Matthew	*St. Paul, Minn.* . .	91 Pembroke St.
Draw., Eng., Hist., Lang., Math., Mech. Eng., Phys., Shop.		
Bronson, John Stanard . . .	*Nashville, Tenn.* . .	563 Mass. Ave.
Eng., Hist., Lang., Phys., Pol. Sci.		
Brown, James Hugh	*Boston*	6 Staniford St.
Eng., Hist., Lang., Math., Phys., Shop.		
Brown, John	*Fall River*	323 Columbus Ave.
Civ. Eng., Phys.		
Brownell, John Randolph . .	*Geneva, Ill.*	17 Yarmouth St.
Ap. Mech., Civ. Eng., Lang., Phys.		
Bucklin, Milton Pollard . . .	*Providence, R. I.* . .	80 Montgomery St.
Elect. Eng., Lang., Math., Mech. Eng., Phys.		
Burdick, Edwin Parks	*Cambridge*	Cambridge.
Ap. Mech., Civ. Eng., Lang., Mech. Eng.		

NAME.	HOME.	RESIDENCE.
Butler, Arthur Frank	*Lowell*	Lowell.
Draw., Eng., Hist., Lang., Math., Shop.		
Butler, Lawrence Smith, A.B. .	*New York, N. Y.* . .	66 Beacon St.
Arch., Draw.		
Butters, Charles Milton . . .	*Somerville*	Somerville.
Civ. Eng., Draw., Geol., Lang., Math., Phys., Pol. Sci.		
Buys, Arthur Francis	*Brooklyn, N. Y.* . .	7 Follen St.
Arch., Draw., Hist.		
Cady, Francis Elmore	*Chicago, Ill.* . . .	17 Yarmouth St.
Ap. Mech., Elect. Eng., Math., Mech. Eng., Phys.		
Cady, Frank Lippitt	*Providence, R. I.* . .	Providence, R. I.
Biol., Chem., Draw., Geol., Phys., Pol. Sci.		
Canby, Harry Beaver, A.B. . .	*Dayton, Ohio* . . .	1096 Boylston St.
Chem., Draw., Mech. Eng., Shop.		
Cavanaugh, Arthur Joseph . .	*Braintree*	Braintree.
Chem., Draw., Eng., Hist., Lang., Math., Shop.		
Chalifoux, Paul Ernest	*Lowell*	531 Mass. Ave.
Civ. Eng., Eng., Geol., Hist., Lang., Math., Phys.		
Chalmers, Harry Bishop . . .	*New York, N. Y.* . .	18 Berwick Park.
Ap. Mech., Chem., Mech. Eng., Phys.		
Chambers, Henry Wick, B.A. .	*Cleveland, Ohio* . .	1 Willow St.
Ap. Mech., Civ. Eng., Math.		
Chase, Aurin Moody, B.S. . . .	*Syracuse, N. Y.* . .	548 Mass. Ave.
Elect. Eng., Math., Phys.		
Cheney, John Tyrrell	*Kenilworth, Ill.* . .	189 Huntington Ave.
Chem., Draw., Eng., Lang., Math.		
Childs, Arthur Ramsey	*Lee*	E. Somerville.
Arch., Draw., Math.		
Clapp, Arthur Channing . . .	*So. Boston*	179 Boston St., S. B.
Draw., Eng., Lang., Math., Mech. Eng., Phys.		
Clark, Burton Stedman	*Worcester*	The Berkeley.
Ap. Mech., Arch., Draw., Hist.		
Clark, Reuben Bacon	*Washington, D. C.* .	6 Louisburg Sq.
Math., Phys.		
Clarke, William Case, Jr., B.S. .	*Wakefield, R. I.* . .	35 St. Botolph St
Eng., Hist., Pol. Sci.		
Cleaves, Daniel Lunt, B.S. . .	*Portland, Me.* . . .	563 Mass. Ave.
Chem.		
Coburn, Charles Bertrand . . .	*Worcester*	364 Columbus Ave.
Nav. Arch.		
Constantine, Arthur McGregor .	*Newburyport* . . .	Newburyport.
Biol., Eng., Geol., Hist., Pol. Sci.		
Corbett, Charles Walter, Jr. . .	*Boston*	42 Rutland Sq.
Eng., Hist., Lang., Pol. Sci.		
Corliss, Cyrus	*Randolph*	Randolph.
Ap. Mech., Elect. Eng., Math., Mech. Eng., Phys.		
Crane, Earl Benham	*Spokane, Wash.* . .	458 Mass. Ave.
Chem., Eng., Geol., Hist., Math., Shop.		
Crawford, Caroline	*Chicago, Ill.*	31 Mt. Vernon St.
Biol., Chem.		
Cronkrite, Daisy Wood	*Nashua, N. H.* . . .	Nashua, N. H.
Draw.		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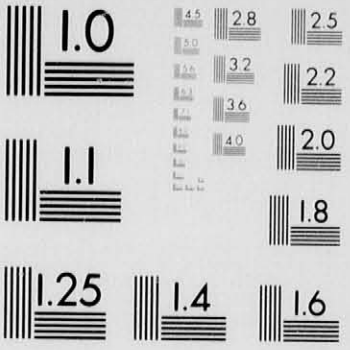
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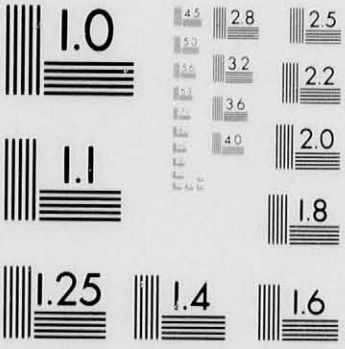
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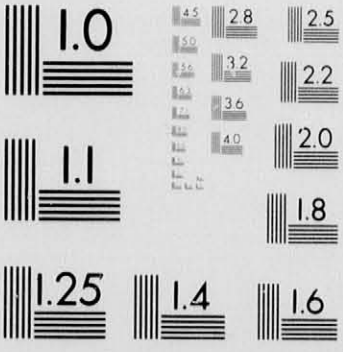
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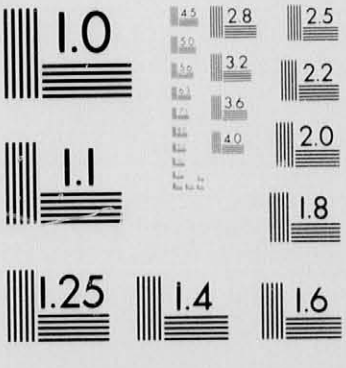
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NAME.	HOME.	RESIDENCE.
Cross, Frederick Cushing . . .	*Fitchburg*	531 Mass. Ave.
Eng., Hist., Lang., Pol. Sci.		
Cross, George Irving	*So. Boston*	73 Dorchester St., S. B.
Draw., Lang., Math., Mech. Eng., Pol. Sci.		
Crowell, Louis Austin	*E. Dennis*	458 Mass Ave.
Civ. Eng., Phys., Pol. Sci., Shop.		
Crowninshield, Katharine . . .	*Boston*	164 Marlborough St.
Eng.		
Curtis, Walter Molbray	*Whitman*	147 Warren Ave.
Ap. Mech., Draw., Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.		
Curtiss, John Lee	*Fishkill-on-Hudson, N. Y.*	531 Mass. Ave.
Ap. Mech., Draw., Elect. Eng., Math., Mech. Eng., Phys., Pol. Sci.		
Dacy, Alice Evelyn	*So. Boston*	28 Ward St., S. B.
Biol.		
Daly, Herbert Francis	*Portland, Oreg.* . .	352 Columbus Ave.
Draw., Lang., Math., Mech. Eng., Phys.		
Davidson, William Frederick . .	*New Castle, Pa.* . .	13 Concord Sq.
Ap. Mech., Lang., Math., Mech. Eng., Phys., Shop.		
Davis, Oliver Marcy	*Evanston, Ill.* . . .	Cambridge.
Ap. Mech., Eng., Mech. Eng., Nav. Arch.		
Davis, Walter Poore	*Newburyport* . . .	525 Columbus Ave.
Ap. Mech., Chem., Geol., Lang., Min. Eng., Phys., Pol. Sci.		
De Berard, Wilford Willis, B.S. .	*Fairfax, Iowa* . . .	4 Durham St.
Ap. Mech., Biol., Civ. Eng., Draw., Phys.		
Derby, Richard Baker	*Concord*	531 Mass. Ave.
Arch., Draw., Lang., Math., Phys.		
Derby, Robert Mason	*Boston*	352 Beacon St.
Ap. Mech., Civ. Eng., Draw., Lang., Math., Phys.		
Desloge, Firmin Vincent, A.B. .	*St. Louis, Mo.* . . .	29 Newbury St.
Ap. Mech., Chem., Civ. Eng., Geol., Lang., Min. Eng., Phys., Shop.		
Dexter, Katharine	*Boston*	484 Commonwealth Ave.
Biol., Draw., Eng., Geol., Hist., Pol. Sci.		
Dickson, Paul Richard Beresford	*Cambridgeport* . . .	Cambridgeport.
Draw., Eng., Math., Mech. Eng., Phys.		
Donham, George Hermann . .	*Rockland*	Rockland.
Draw., Shop.		
Doran, James Finton	*Waterbury, Conn.* . .	31 E. Newton St.
Chem., Draw., Eng., Lang., Math.		
Driscoll, James	*Roxbury*	73 Centre St., R.
Chem., Eng., Geol., Hist., Lang., Phys.		
Dunbar, Howard Reginald . .	*Canton*	Canton.
Ap. Mech., Phys., Pol. Sci., Shop.		
Durant, Frederick Clark, Jr. . .	*Philadelphia, Pa.* . .	198 Beacon St.
Draw., Eng., Hist., Lang., Math., Mech. Eng., Phys.		
Durgin, Clara Isabel	*Belmont*	Belmont.
Biol., Chem., Pol. Sci.		
Ehle, Archibald Hyde	*Fairbault, Minn.* . .	Brookline
Eng., Hist., Lang., Math., Shop.		
Elder, Harriet Bigelow . . .	*Pittsfield*	42 Mt. Vernon St.
Biol.		
Emery, Lewis, 3d	*Bradford, Pa.* . . .	131 Newbury St.
Ap. Mech., Chem., Civ. Eng., Min. Eng., Phys.		

NAME.	HOME.	RESIDENCE.
Enouye, Seisuke	*Osaka, Japan* . . .	272 Boylston St.
Ap. Mech., Civ. Eng., Math.		
Faxon, Harriet	*Salem*	Salem.
Eng.		
Field, David Dudley	*New York, N. Y.* . .	25 St. Botolph St.
Draw., Eng., Lang., Math., Mech. Eng., Phys.		
Fish, Harold Coburn	*Hyde Park*	Hyde Park.
Civ. Eng., Eng., Hist., Math., Phys.		
Fisher, Dana Hollis	*Norwood*	Norwood.
Draw., Hist., Lang., Math., Mech. Eng., Phys., Shop.		
Flanders, Herbert Merritt . . .	*Malden*	Malden.
Ap. Mech., Civ. Eng., Lang., Phys.		
Foljambe, Eugene Stillman . .	*Denver, Colo.* . . .	32 Berwick Park.
Ap. Mech., Math., Mech. Eng., Nav. Arch., Phys., Shop.		
Foster, Floyd J.	*New York, N. Y.* . .	458 Mass. Ave.
Geol., Min. Eng., Phys.		
Fowler, Frederick Newton, Jr. .	*Springfield*	195 Warren Ave.
Chem., Civ. Eng., Eng., Hist., Lang., Math., Phys.		
Franklin, Ralph Stowell . . .	*Melrose*	Melrose.
Chem., Draw., Eng., Math., Mech. Eng., Phys., Shop.		
Frazier, Loron Darling, Jr. . .	*W. Somerville* . . .	W. Somerville.
Draw., Shop.		
Galusha, Albert Leet, B.S. . .	*Nashua, N. H.* . . .	453 Columbus Ave.
Ap. Mech., Math., Mech. Eng., Phys., Shop.		
Gamage, Harry Charles . . .	*San Francisco, Cal.* .	21 Cumberland St.
Elect. Eng., Math., Mech. Eng., Phys.		
Gardner, Charles Francis . . .	*Brockton*	Brockton.
Draw., Eng., Hist., Lang., Math., Mech. Eng., Phys., Shop.		
Gaskill, Mary Mortimer . . .	*Worcester*	Hotel Brunswick.
Biol., Chem.		
Gates, Thayer Prescott	*Lowell*	Brookline.
Chem., Draw., Eng., Hist., Lang., Shop.		
Gauss, Carl Friedrich	*Colorado Springs, Colo.*	4 Oxford Terrace.
Eng., Geol., Hist., Phys., Pol. Sci.		
Goddard, Asa Eldridge . . .	*Boston*	201 Clarendon St.
Draw., Shop.		
Gonzalez, Alberto Primitivo . .	*Monterey, Mexico* . .	11 St. James Ave.
Ap. Mech., Chem., Min. Eng., Phys.		
Goodwin, Charles Carroll . . .	*Rochester, N. Y.* . .	592 Tremont St.
Chem., Draw., Eng., Hist., Lang., Math., Shop.		
Gowell, Louis Nelson	*Weston*	Weston.
Ap. Mech., Arch., Draw., Hist.		
Graff, Sheldon Dermitt	*Edgewood Park, Pa.* .	73 Cedar St., R.
Ap. Mech., Elect. Eng., Lang., Math., Mech. Eng., Phys.		
Green, Erik Hastings, A.M. . .	*Providence, R. I.* . .	112 Newbury St.
Chem.		
Greene, Bertram William Batcheder	*Paris, France* . . .	6 Louisburg Sq.
Eng., Lang., Pol. Sci.		
Griffin, Arthur Eugene	*Winthrop*	Winthrop.
Math., Mech. Eng., Phys., Shop.		
Gurza, Jaime	*Durango, Mexico.* .	9 Newbury St.
Chem., Draw., Lang., Math.		

NAME.	HOME.	RESIDENCE.
Haines, William Morris	*Linwood, Md.*	499 Columbus Ave.
Ap. Mech., Draw., Elect. Eng., Eng., Math., Mech. Eng., Phys.		
Hall, Milton Weston	*Evanston, Ill.*	563 Mass. Ave.
Biol., Chem.		
Hamilton, James Montgomery	*Fort Wayne, Ind.*	95 Pinckney St.
Arch., Draw.		
Hamlin, Ralph, B.C.E.	*Orono, Me.*	156 Pleasant St., D.
Civ. Eng., Geol., Mech. Eng., Phys., San. Eng.		
Hammond, Clifford Robson	*Buffalo, N. Y.*	Brookline.
Ap. Mech., Elect. Eng., Math., Mech. Eng., Phys.		
Hardy, Charles Ashley, A.B.	*Boston*	Hotel Westminster.
Ap. Mech., Chem., Min. Eng., Phys.		
Harrigan, William Augustine	*E. Boston*	236 Lexington St., E.B.
Chem., Draw., Eng., Lang., Math.		
Harwood, Charles Frank	*Warren*	Brookline.
Ap. Mech., Lang., Math., Mech. Eng., Phys., Shop.		
Haworth, Lloyd Bachelder	*Lowell*	Lowell.
Chem., Draw., Eng., Hist., Math., Mech. Eng., Phys., Shop.		
Hazlewood, Sumner	*Lynn*	Lynn.
Civ. Eng., Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.		
Heath, Aurora Alice	*Northborough*	Northborough.
Biol., Chem., Geol., Phys.		
Heckman, James Conrad, E.E.	*Philadelphia, Pa.*	110 Huntington Ave.
Chem.		
Hilken, Paul Gerhard Ludiger	*Baltimore, Md.*	65 St. Botolph St.
Ap. Mech., Lang., Mech. Eng., Nav. Arch.		
Hills, Harold Fellows	*Lowell*	33 St. Botolph St.
Civ. Eng., Draw., Eng., Lang., Math., Phys.		
Hobbs, Edith Morrill	*Roxbury*	102 Thornton St., R.
Arch., Hist.		
Hopeman, Bertram Cornelius	*Rochester, N. Y.*	19 Linden St., A.
Ap. Mech., Arch., Hist.		
Hopwood, Cora Stella	*Worcester*	Worcester.
Math., Phys.		
Horstman, William Henry	*St. Louis, Mo.*	155 W. Canton St.
Arch., Draw., Eng., Lang., Math.		
Hough, William Baldwin	*Williamsport, Pa.*	264 Newbury St.
Ap. Mech., Lang., Mech. Eng., Shop.		
Hounsfield, Lamont du Pont	*Anchorage, Ky.*	531 Mass. Ave.
Ap. Mech., Chem., Eng., Hist., Lang., Math., Mech. Eng., Phys.		
Huff, Montgomery Gerrans	*Manchester, Vt.*	89 Mt. Vernon St.
Chem., Draw., Eng., Hist., Lang., Math.		
Humphrey, Edwin Rowland	*Boston*	38 South St.
Chem., Draw., Eng., Lang., Math.		
Hutchins, Harry Pennell	*Minot, Me.*	W. Somerville.
Draw.		
Hyde, George Taylor, B.Sc.	*Montreal, Que.*	264 Newbury St.
Ap. Mech., Arch., Draw., Lang., Pol. Sci.		
Ingalls, Frederick Du Bois	*Kingston, N. Y.*	566 Mass. Ave.
Ap. Mech., Lang., Mech. Eng., Phys., Shop.		
Isham, Alonzo Keyt	*Cincinnati, Ohio*	458 Mass. Ave.
Ap. Mech., Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.		

NAME.	HOME.	RESIDENCE.
Kennard, William Oliver . . . Draw., Lang.	*Everett*	Everett.
Keough, William Thomas, S.B. . Nav. Arch.	*E. Boston*	234 Saratoga St., E.B.
Klieves, Archibald Lee . . . . Arch., Draw., Math., Phys.	*Wheeling, W. Va.* . .	Cambridge.
Koch, Harry George . . . . Ap. Mech., Arch., Draw., Lang., Pol. Sci.	*Milwaukee, Wis.* . .	261 Newbury St.
Lane, Frank George . . . . Ap. Mech., Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.	*Portland, Me.* . . .	9 Concord Sq.
Lane, William Thomas . . . . Ap. Mech., Draw., Eng., Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.	*Portland, Me.* . . .	9 Concord Sq.
Latshaw, William Herbert Morse, Chem., Eng., Hist., Geol., Math., Phys.	*Pueblo, Colo.*	35 Linden St., A.
Laws, James Bradford . . . . Eng., Hist., Lang., Phys., Pol. Sci.	*Cincinnati, Ohio* . .	6 Louisburg Sq.
Lee, Alice Terebia . . . . . Biol.	*Lowell*	Lowell.
Leonard, John Kelley . . . . Chem., Draw., Eng., Hist., Math., Mech. Eng., Phys., Shop.	*Jamaica Plain* . . .	11 Gordon St., J.P.
Lewis, Hortense Witter, A.B. . Chem.	*Mount Vernon, N. Y.*	62 Rutland Sq.
Little, James Lovell, Jr., A.B. . Arch., Draw., Hist.	*Brookline*	Brookline.
Lohbiller, Harry John . . . . Ap. Mech., Math., Phys., Pol. Sci., Shop.	*Roxbury*	21 Cranston St., R.
Lord, Frederick Kissam . . . Chem., Draw., Math.	*Bayonne, N. J.* . . .	86 Mt. Vernon St.
McAllep, James Albert . . . . Civ. Eng., Geol., Shop.	*Eastport, Me.* . . .	458 Mass. Ave.
McDonnell, Thomas Francis . . Chem., Draw., Eng., Hist., Lang.	*Buffalo, N. Y.* . . .	Quincy.
McDowell, Pauline, A.B. . . . Phys.	*Newark, N. J.* . . .	Weston.
Mace, Charles Austin . . . . Chem., Lang., Math., Phys., Pol. Sci.	*Dorchester*	11 Ashland St., D.
McGann, John Frederick . . . Civ. Eng., Draw., Geol., Phys.	*Somerville*	Somerville.
McInnes, Angus Archie . . . Civ. Eng., Geol., Phys., Pol. Sci.	*Dorchester*	23 Salcombe St., D.
McIntyre, Frederick William . . Math., Mech. Eng., Phys., Pol. Sci., Shop.	*Chelsea*	Chelsea.
McIver, Jean Bond, B.S. . . . Biol.	*Worcester*	Lynn.
McMaster, Herbert Milton . . Elect. Eng., Math., Mech. Eng., Phys.	*Portland, Oreg.* . .	80 Huntington Ave.
McNeil, Hector . . . . . Ap. Mech., Civ. Eng., Geol., Lang., Phys., Pol. Sci.	*Dorchester*	29 Stanley St., D.
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MacRae, Lillian Julia . . . . Biol.	*Dorchester*	103 Rosseter St., D.

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Madero, Emilio	*Parras-Coahuila, Mexico*	9 Newbury St.
Chem., Eng., Geol., Lang., Min. Eng., Phys.		
Magdeburg, Frederick William	*Ashland, Pa.*	376 Newbury St.
Arch., Draw., Hist., Math.		
Mague, Francis Joseph	*W. Newton*	W. Newton.
Ap. Mech., Civ. Eng., Phys.		
Mahar, James Joseph	*So. Boston*	68 L St., S. B.
Ap. Mech., Math., Mech. Eng., Phys., Pol. Sci., Shop.		
Manley, Henry, Jr.	*W. Roxbury*	116 Mt. Vernon St., W.R.
Chem., Eng., Geol., Lang., Math.		
Manning, Chauncey Percival	*Marlborough*	Lynn.
Chem., Draw., Eng., Hist., Lang., Math., Shop.		
Mansfield, William Burns	*Boston*	26 Cumberland St.
Chem., Civ. Eng., Eng., Hist., Lang., Math.		
Mardick, John Rice	*Roxbury*	19 Bainbridge St., R.
Chem., Draw., Eng., Geol., Hist., Math., Phys.		
Marshall, Harry Hale	*So. Framingham*	So. Framingham.
Chem., Math., Shop.		
Martin, Walter Irving	*Chicago, Ill.*	1 W. Cedar St.
Ap. Mech., Civ. Eng., Geol., Phys., Pol. Sci.		
Matthies, William Hugo	*Hoboken, N. J.*	39 Rosseter St., D.
Draw., Eng., Hist., Math., Phys., Shop.		
Maxson, Harry Wescote	*Westerly, R. I.*	18 Newbury St.
Ap. Mech., Arch., Draw., Lang., Phys., Pol. Sci.		
Mead, George Houk, B.L.	*Dayton, Ohio*	93 Mt. Vernon St.
Ap. Mech., Chem., Mech. Eng.		
Merrick, Frederick Ickes	*New Brighton, Pa.*	261 Newbury St.
Ap. Mech., Arch., Draw., Lang., Pol. Sci.		
Merrill, Arthur Potter	*Peabody*	Peabody.
Arch., Draw., Lang.		
Messinger, Harry Carleton	*E. Providence Cen., R.I.*	64 Whiting St., R.
Biol., Chem., Eng., Hist., Phys.		
Millar, Leslie Walker	*Boston*	116 W. Concord St.
Math., Mech. Eng., Phys., Pol. Sci., Shop.		
Millard, Emmor Hamilton	*Watertown*	Watertown.
Chem., Draw., Eng., Lang., Math.		
Millard, Maude Lovell	*Boston*	661 Boylston St.
Arch.		
Miller, Lester Freeman	*Pepperell*	458 Mass. Ave.
Ap. Mech., Arch., Draw., Lang., Phys., Pol. Sci.		
Miller, Stuart Berwick	*Cambridge*	Cambridge.
Ap. Mech., Chem., Math., Mech. Eng., Phys., Pol. Sci.		
Mitchell, Frank Kollock	*Hyde Park*	Hyde Park.
Ap. Mech., Chem., Eng., Hist., Lang., Math., Mech. Eng., Phys.		
Monaghan, James Francis	*Lowell*	134 W. Newton St.
Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.		
Mulherin, Charles Patrick, A.B.	*Augusta, Ga.*	12 Yarmouth St.
Chem., Draw., Lang., Math.		
Mullaly, Felix	*Dorchester*	6 Ashmont St., D.
Eng., Hist., Lang., Shop.		

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Murphy, Earle Warren	*Cambridge*	Cambridge.
Chem., Draw., Math.		
Murray, Joseph John	*Newton*	Newton.
Chem., Draw., Eng., Math.		
Nagel, Mortimer Livingston . .	*Buffalo, N. Y.* . . .	Brookline.
Chem., Civ. Eng., Eng., Hist., Lang., Math., Phys.		
Nagle, Francis Aloysius . . .	*Roxbury*	31 Howland St., R.
Chem., Draw., Eng., Math., Mech. Eng., Phys.		
Nichols, Margaret Homer . . .	*Boston*	55 Mt. Vernon St.
Chem., Shop.		
Nutter, Harry Godfrey	*Chelsea*	Chelsea.
Ap. Mech., Draw., Elect. Eng., Eng., Math., Mech. Eng., Phys., Pol. Sci.		
Nyhen, Joseph Albert Cameron .	*Brookline*	Brookline.
Draw., Shop.		
O'Hara, Anna Frances	*Dorchester* . . .	32 Spring Garden St., D.
Pol. Sci.		
Oliver, Leslie Allen, A.B. . . .	*Annapolis, Md.* . .	89 Charles St.
Arch., Draw., Hist.		
Osgood, Paul Moody, B.S. . . .	*Amesbury*	Amesbury.
Chem.		
Parke, Julius Leonard, A.B. . .	*Cincinnati, Ohio* . .	69 Appleton St.
Ap. Mech., Arch., Draw., Lang., Math.		
Patch, Emerette Ophelia . . .	*Boston*	W. Newton St.
Biol.		
Patch, James Alfred	*Stoneham*	566 Mass. Ave.
Ap. Mech., Chem., Mech. Eng.		
Patch, Nathaniel Knight Bailey .	*Buffalo, N. Y.* . . .	38 St. Botolph St.
Math., Phys.		
Pearse, Langdon, A.B.	*Roxbury*	317 Walnut Ave., R.
Ap. Mech., Civ. Eng., Draw., Geol., Math., Phys.		
Pembroke, Earl Richard . . .	*Salt Lake City, Utah* .	17 Yarmouth St.
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Pennard, Thomas Edward . .	*Paramaribo, D. Guiana*	Everett.
Ap. Mech., Elect. Eng., Math., Mech. Eng., Phys., Pol. Sci.		
Pendill, Pierre Barbeau . . .	*Marquette, Mich.* . .	511 Mass. Ave.
Ap. Mech., Elect. Eng., Lang., Math., Mech. Eng., Phys., Pol. Sci.		
Perkins, Grace Hamilton, A.B. .	*Arlington*	Arlington.
Chem.		
Peterson, Guy Crosby	*Duxbury*	38 E. Newton St.
Ap. Mech., Chem., Civ. Eng., Geol., Lang., Min. Eng., Phys., Pol. Sci.		
Phinney, Herbert	*Monument Beach* . .	566 Mass. Ave.
Chem., Draw., Eng., Hist., Lang., Math., Mech. Eng., Phys., Shop.		
Pigman, George Wood, Jr. . .	*Washington, D. C.* .	22 St. James Ave.
Ap. Mech., Elect. Eng., Lang., Math., Mech. Eng., Phys., Pol. Sci.		
Pike, Jay Nelson	*Lake City, Minn.* . .	13 St. James Ave.
Arch., Draw., Phys., Pol. Sci.		
Pitts, Earl Phelps	*Fitchburg*	34 Holyoke St.
Lang., Phys., Pol. Sci., Shop.		
Plumb, Ralph	*Buffalo, N. Y.* . . .	6 Louisburg Sq.
Ap. Mech., Math., Phys., Pol. Sci.		
Plummer, Laura Susanna . . .	*E. Boston*	110 Princeton St., E.B.
Biol.		

NAME.	HOME.	RESIDENCE.
Pope, Robert Anderson Chem., Civ. Eng., Eng., Hist., Lang., Math.	*Newburyport*	Newburyport.
Pottle, George Valentine Arch., Draw.	*Dayton, Ohio*	47 Dwight St.
Putnam, Harry Ames Draw., Lang., Math., Mech. Eng., Phys., Pol. Sci.	*Charlestown*	24 Soley St., C.
Records, Francis Barry, Jr. Ap. Mech., Chem., Civ. Eng., Phys.	*Arlington Heights*	Arlington Heights.
Rice, Winthrop Merton Ap. Mech., Math., Mech. Eng., Nav. Arch., Phys., Pol. Sci.	*Stamford, Conn.*	537 Columbus Ave.
Richardson, Robert Logan Draw., Shop.	*Concord*	Concord.
Riley, Frank Morris, C.E. Ap. Mech., Arch., Draw.	*Madison, Wis.*	232 Mass. Ave.
Ritchie, Andrew Eliot Ap. Mech., Math., Mech. Eng., Phys., Pol. Sci., Shop.	*Brookline*	Brookline.
Robinson, John Albert Chem., Draw., Eng., Hist., Lang., Phys.	*Canton*	Canton.
Root, Franklin Tinker Chem., Draw., Hist., Mech. Eng., Phys., Shop.	*E. Orange, N. J.*	264 Newbury St.
Root, Ralph Ap. Mech., Geol., Min. Eng., Phys., Pol. Sci.	*E. Orange, N. J.*	264 Newbury St.
Roper, Walter Frederic Chem., Draw., Eng., Lang., Math.	*Hopedale*	29 St. Botolph St.
Rossmassler, Carl Ap. Mech., Eng., Mech. Eng., Nav. Arch., Phys.	*Germantown, Pa.*	24 Adelaide St., J.P.
Schlemm, Leonard Earnest Chem., Civ. Eng., Draw., Eng., Math.	*Brookline*	Brookline.
Scudder, Heyward, B.A., S.B. Chem.	*Boston*	The Ludlow.
Scully, John Timothy, Jr. Ap. Mech., Civ. Eng., Geol., Lang., Phys., Pol. Sci.	*Cambridge*	16 St. James Ave.
Shedd, Charles Levi Civ. Eng., Draw., Eng., Hist., Lang., Math., Phys.	*Portsmouth, N. H.*	Somerville.
Shepard, Ralph Lunt Arch., Draw., Math., Phys.	*Newburyport*	Newburyport.
Sherman, Frederic Lyman Chem., Civ. Eng., Draw., Eng., Hist., Math., Phys.	*W. Springfield*	487 Mass. Ave.
Shillaber, Katharine Brewer Arch.	*Boston*	275 Beacon St.
Shores, Herbert Leighton Draw., Shop.	*Rockland*	Rockland.
Shumaker, Louis William Ap. Mech., Elect. Eng., Math., Mech. Eng., Phys.	*Ortonville, Minn.*	179 Warren Ave.
Smith, Frank Arthur Draw., Lang., Math., Mech. Eng., Phys., Pol. Sci.	*Newburyport*	26 Rosedale St., D.
Smith, Francis Fay Hill Draw., Eng., Math., Mech. Eng., Phys.	*Jamaica Plain*	1 West Cedar St.
Smith, Lillie Collamore Biol., Chem., Phys.	*Boston*	Newtonville.
Smith, Philip Reeder Chem., Draw., Eng., Hist., Lang., Math.	*Milwaukee, Wis.*	261 Newbury St.

NAME.	HOME.	RESIDENCE.
Sohier, Louis Amory	*Concord*	Concord.
Ap. Mech., Mech. Eng., Phys.		
Sohier, Walter	*Concord*	Concord.
Chem., Draw., Eng., Hist., Math.		
Southwick, George Scudder	*Rome, N. Y.*	353 Columbus Ave.
Chem., Draw., Eng., Hist., Math., Mech. Eng., Phys.		
Spamer, Richard Fuller	*St. Louis, Mo.*	58 Cedar St., R.
Chem., Draw., Eng., Lang., Math.		
Spear, George Morton	*Lowell*	16 Berwick Park.
Ap. Mech., Lang., Math., Mech. Eng., Nav. Arch., Phys., Pol. Sci.		
Stadler, Louis Andrew	*Helena, Mont.*	458 Mass. Ave.
Chem., Geol., Lang., Min. Eng., Phys., Pol. Sci.		
Steidemann, Theodore William	*St. Louis, Mo.*	155 W. Canton St.
Ap. Mech., Arch., Draw., Hist.		
Stetson, Albert Winthrop	*Brookline*	Brookline.
Chem., Draw., Lang., Math., Mech. Eng.		
Stewart, Lewis	*Trenton, N. J.*	6 Louisburg Sq.
Ap. Mech., Arch., Draw., Hist.		
Stone, Edward Josiah	*Springfield*	474 Columbus Ave.
Arch., Draw.		
Stone, Mary Gray	*Boston*	18 Chestnut St.
Chem.		
Stone, Solon Jones	*Boston*	24 Tyler St.
Ap. Mech., Civ. Eng., Geol. Lang., Phys., Pol. Sci.		
Storer, Harry Winthrop March	*Dorchester*	13 Winter St., D.
Draw., Math., Shop.		
Stover, Charles Clark	*Amesbury*	48 W. Cedar St.
Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.		
Strand, Harry Lancaster	*Keene, N. H.*	563 Mass. Ave.
Arch., Chem., Draw., Eng., Hist., Lang., Math.		
Swinson, Johannah Charlotte	*Wellesley*	Wellesley.
Biol.		
Teuteberg, Eugene Adolph	*St. Louis, Mo.*	25 Batavia St.
Ap. Mech., Arch., Draw., Eng., Lang., Phys., Pol. Sci.		
Thanisch, Otto Conrad	*Jamaica Plain*	3305 Washington St., J.P.
Ap. Mech., Mech. Eng., Shop.		
Thomas, Charles Sydney	*Denver, Colo.*	11 Irvington St.
Civ. Eng., Eng., Hist., Lang., Math., Phys.		
Thomson, David Peter	*Lynn*	Lynn.
Math.		
Thurlow, Leon Rhodes	*Lowell*	1128 Boylston St.
Ap. Mech., Biol., Chem., Civ. Eng., Geol., Lang., Phys., Pol. Sci.		
Thurston, Ralph Emery	*Fall River*	13 Concord Sq.
Draw., Eng., Hist., Lang., Math., Mech. Eng., Phys., Shop.		
Tillinghast, Frederick Howard, C.E.	*Providence, R. I.*	137 Pembroke St.
Biol., Chem., Civ. Eng., Phys., San. Eng., Shop.		
Titcomb, Roland Elbert	*Rowley*	Rowley.
Chem., Eng., Hist., Lang., Math., Phys., Shop.		
Towne, Lillian May	*Brighton*	89 Surrey St., B.
Biol.		

NAME.	HOME.	RESIDENCE.
Tucke., Fred Irving Ap. Mech., Elect. Eng., Mech. Eng., Phys., Pol. Sci., Shop.	*Boston*	57 Hemenway St.
Turner, Everett Pendleton Chem., Draw., Eng., Hist., Math., Shop.	*Arlington*	264 Newbury St.
Voss, Allen Bernard Draw., Eng., Hist., Lang., Math., Mech. Eng., Phys., Shop.	*Gloucester*	31 Warren Ave.
Walker, Clarence Howard Ap. Mech., Civ. Eng., Geol.	*Rumford, R. I.*	8 Berwick Park.
Walker, Frank Bates, C.E. Chem., Geol., Min. Eng.	*Minneapolis, Minn.*	67 Westland Ave.
Walker, Frank Ray Arch., Draw., Hist.	*Pittsfield*	68 W. Rutland Sq.
Walker, Harry Leslie Ap. Mech., Arch., Draw., Hist.	*Oak Park, Ill.*	264 Newbury St.
Wall, Mabel Persis, A.B. Chem.	*Boston*	52 Myrtle St.
Waterman, William, Jr. Chem., Draw., Eng., Lang., Math., Phys., Shop.	*Chicago, Ill.*	Auburndale.
Weeks, Gertrude Biol.	*Boston*	53 Mt. Vernon St.
Weeks, Irving Chambers Biol., Eng., Geol., Hist., Phys., Pol. Sci.	*Dorchester*	21 Ashmont St.
Weld, Lydia Gould Eng., Hist., Math., Mech. Eng., Phys.	*Falmouth*	Morton St., J. P.
Wemyss, Duncan Chem., Draw., Eng., Hist., Lang., Math., Mech. Eng., Phys., Shop.	*Somerville*	Somerville.
Wentworth, John Frank Ap. Mech., Mech. Eng., Nav. Arch., Shop.	*Rochester, N. H.*	323 Columbus Ave.
Wesson, Harold Chem., Draw., Eng., Math., Phys.	*Springfield*	6 Louisburg Sq.
Wesson, Leonard Chem., Civ. Eng., Geol., Mech. Eng.	*Roxbury*	21 Rockville Park, R.
Wetherbee, George Meserve Chem., Draw., Eng., Hist., Lang., Shop.	*W. Newton*	W. Newton.
Whitney, Philip Richardson Arch., Chem., Draw., Eng., Hist., Math., Phys.	*Newton*	Newton.
Whitney, Robert Fletcher Draw., Eng., Hist., Lang., Phys., Shop.	*Winchester*	Winchester.
Whiton, Harry Augustus Ap. Mech., Arch., Draw., Lang., Phys., Pol. Sci.	*Bloomfield, Conn.*	25 Concord Sq.
Wilder, Fred Blaisdell Chem., Min. Eng.	*Boston*	118 Huntington Ave.
Williams, Irving Draw., Eng., Lang., Math., Mech. Eng., Phys., Shop.	*Providence, R. I.*	9 Concord Sq.
Wilson, George Truman Ap. Mech., Draw., Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.	*Columbia Falls, Me.*	7 Concord Sq.
Winslow, William James Civ. Eng., Draw., Math., Phys.	*New Bedford*	23 Holyoke St.
Woodhull, Charles Richard Civ. Eng., Draw., Eng., Hist., Lang., Phys.	*Monroe, N. Y.*	Brookline.

SUMMARY.

Graduate Students	79	Regular Students, 2d year .	199
Regular Students, 4th year .	183	" " 1st year .	303
" " 3d year .	193	Special Students	296

Total	1,253
Deduct names counted twice	77
	1,176

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II. DIFFERENTIAL CALCULUS. Twelve lectures by Assistant Professor F. S. Woods.

III. DESCRIPTIVE GEOMETRY. Twelve lectures by Associate Professor Linus Faunce.

IV. ELECTRICAL MEASURING INSTRUMENTS. Twelve lectures by Assistant Professor F. A. Laws.

V. ELEMENTS OF MECHANISM. Twelve lectures by Associate Professor A. L. Merrill.

VI. RAILROAD ECONOMICS AND LEGISLATION. Twelve lectures by Assistant Professor William Z. Ripley.

VII. THE BEGINNINGS OF ENGLISH. Twelve lectures by Professor Arlo Bates.

VIII. SURVEYING, FIELDWORK, AND COMPUTATION. Twelve lectures by Assistant Professor A. G. Robbins.

IX. PLANE ANALYTIC GEOMETRY. Twelve lectures by Assistant Professor J. J. Skinner.

X. THE ELEMENTS OF NAVAL ARCHITECTURE. Twelve lectures by Professor Cecil H. Peabody.

XI. ADVANCES IN PHYSICS DURING THE LAST DECADE. Twelve lectures by Assistant Professor H. M. Goodwin.

XII. MODERN METHODS OF ELECTRIC TRANSMISSION OF POWER. Illustrated by working models.) Twelve lectures by Assistant Professor William L. Puffer.

XIII. AMERICAN FICTION SINCE 1850. Twelve lectures by Assistant Professor H. G. Pearson.

XIV. MUNICIPAL SANITATION. Twelve lectures by Professor W. T. Sedgwick.

XV. THE RELATION OF THE TOPOGRAPHICAL FEATURES OF THE EARTH'S SURFACE TO GEOLOGICAL STRUCTURE. Twelve lectures by Assistant Professor G. H. Barton.

XVI. MITTELHOCHDEUTSCHE SPRACHE UND LITTERATUR. Twelve lectures by Assistant Professor Frank Vogel.

XVII. ANCIENT ARCHITECTURE. Twelve lectures with stereopticon, by Associate Professor E. B. Homer.

XVIII. PROBLEMS IN RAILROAD CURVES AND TURNOUTS. Twelve lectures by Professor C. F. Allen.

XIX. (1) SIX CONFÉRENCES SUR L'HISTOIRE DU DRAME EN FRANCE (Première Partie). (2) Six lectures upon PHONETICS AND FRENCH PRONUNCIATION. By Professor A. Rambeau.

XX. ELEMENTS OF THE THEORY OF POTENTIAL. Twelve lectures by Assistant Professor H. E. Clifford.

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THE Lowell School of Practical Design was established in 1872, by the Trustee of the Lowell Institute, for the purpose of promoting industrial art in the United States. The Corporation of the Massachusetts Institute of Technology, having approved the purpose and general plan of the school as proposed by the Trustee of the Lowell Institute, assumed the responsibility of conducting it; and in the same year the first pupils were admitted.

The expenses of this school are borne by the Lowell Institute, and tuition is free to all pupils.

The school occupies a drawing-room in the building of the Institute of Technology on Garrison Street. It is constantly provided with samples of all the novelties in textile fabrics from Paris, such as brocaded silks, ribbons, alpacas, armures, and fancy woolen goods.

Course of Study. — Students are taught the art of making patterns for prints, ginghams, delaines, silks, laces, paper-hangings, carpets, oil-cloths, etc. The course is of three years' duration, and embraces:

1. Technical manipulations; 2. Copying and variations of designs; 3. Original designs or composition of patterns; 4. The making of working drawings, and finishing of designs.

Instruction is given personally to each student over his work. Students supply their own instruments and materials, the cost of which is about $5 per year.

The class is under the personal direction of MR. CHARLES KASTNER, assisted by Miss Florence Claflin.

Requirements for Admission. — To teach drawing is not among the objects of this school. Applicants must therefore possess a knowledge of drawing adequate to enable them advantageously to begin the work of composition and design. A considerable degree of skill in freehand drawing from nature, and in the use of the brush, will be positively required for entrance to the school.

Applicants for admission, or persons desiring further information regarding this school, may apply by letter to the Secretary of the Institute of Technology.

Regulations of the School. — The next school-year will begin on the last Wednesday of September. The number of students in the school, including those to be admitted, will be limited to forty-two. Examinations in freehand drawing of flowers from nature, and of historical ornament, for applicants for admission, will be held at 9 A. M. on the first Tuesday, Wednesday, and Thursday after September 15. Students are required to be regular in their attendance, the hours being from 9.30 A. M. to 12 M., and from 1 P. M. to 3.30 P. M. Only those students can be retained in the school who, after a fair and patient trial, are found to have some aptitude for the work. At the close of each half-year, the Director will, with the approval of the President of the Institute, convey the needed information to such students as shall be found gravely deficient in qualifications for an advantageous pursuit of their studies. No publication will be made of the fact, and such students will be left to withdraw as of their own motion.

Register of Students.

LOWELL SCHOOL OF DESIGN.

NAME.	HOME.	RESIDENCE.
Bell, Laura May	*Roxbury*	2842 Washington St., R.
Brayley, Eva Anna	*Dorchester*	3 Dyer St., D.
Clements, Ethel Pearce	*No. Easton*	No. Easton.
Curtis, Edgar Franklin	*Salem*	Salem.
Damon, Ethel Charles	*Reading*	Reading.
Dewhurst, Joseph Conrad	*Stoneham*	Stoneham.
Fisk, Florence	*Brattleboro, Vt.*	Brookline.
Gould, Ernest Moore	*East Dedham*	East Dedham.
Gray, Carroll Dean Asiel	*Medford*	Medford.
Greene, Georgia Evelyn	*Jamaica Plain*	305 Lamartine St., J.P.
Grundy, Mabel Anna	*Manchester, N. H.*	40 Berkeley St.
Gunther, Albert George	*Roslindale*	432 Beech St., Ros.
Harmon, May Flanders	*Wilmington*	Wilmington.
Hasey, Alice Woodward	*Dorchester*	9 Dyer St., D.
Hasey, Alma Mary	*Campello*	Campello.
Hawes, William Howard	*West Natick*	West Natick.
Heselton, William Brooks	*Reading*	Reading.
Hickey, Emma Marjorie	*Melrose*	Melrose.
Hill, Frederick Ephraim	*Northampton*	27 Cumberland St.
Hindenlang, Martha Emeline Nell	*Forest Hills*	58 Burnett St., J. P.
Kelheur, Warren	*Hyde Park*	Hyde Park.
Kelly, Bertha Angela	*Boston*	31 Pembroke St.
King, Ella Cora	*Boston*	80 Montgomery St.
Lee, Beatrice Maud	*Roxbury*	22 Brookford St., R.
Long, Georgena Lauretta	*Dorchester*	130 Rossetter St., D.
Loud, Charles Arthur	*Westhampton*	Watertown.
Lyon, Lawrence Andrew	*Malden*	Malden.
Lyons, Maurice Joseph	*E. Dedham*	E. Dedham.
Murray, Mary Elizabeth	*Milton*	Milton.
Ridgway, Alice Gwendoline	*Newtonville*	Newtonville.
Ronan, Cecilia Gertrude	*Revere*	Revere.
Russell, Elizabeth Eulalie	*Boston*	174 W. Canton St.
Sanford, Arthur Eugene	*Dorchester*	41 Corbet St., D.
Scales, Grace Helen	*Roxbury*	2966 Washington St., R.

NAME.	HOME.	RESIDENCE.
Scharnagel, Marie	*Atlantic*	Atlantic.
Smalley, Benjamin James	*Everett*	13 Franklin St.
Wadsworth, Grace Seymour	*Roxbury*	322 Blue Hill Ave., R.
Webber, John Francis	*Roxbury*	10 Sherman St., R.
Webster, Frances Emma	*Allston*	4 Webster Ave., A.
Wright, Lena Julia	*Boston*	65 Appleton St.

Alumni Association.

THE Alumni Association of the Institute holds its annual meeting in Boston in December (usually the last Friday); and at the close of each year gives a reception to the graduating class, the Corporation, and the Faculty of the Institute. It includes in its membership all graduates of the Institute. Associate or honorary membership is open to non-graduates and to members of the Faculty or Corporation.

Its officers for 1900 are:

President: EDWIN C. MILLER, '79.
Vice-President: CHARLES T. MAIN, '76.
Secretary: E. F. MILLER, '86, Massachusetts Institute of Technology.
Executive Committee: THE PRESIDENT, VICE-PRESIDENT, AND SECRETARY; FREDERIC H. FAY, '93; HOWARD C. FORBES, '91.

THE TECHNOLOGY CLUB.

The object of the Club is to promote the welfare of the Institute and the common social interests of its past and present officers and students. The Club-house is at No. 71 Newbury street, nearly opposite the Rogers Building, and the membership is at present nearly six hundred, including graduates and other former students, members of the Corporation and instructing staff, and undergraduates.

The officers for the current year are:

President: JAMES P. MUNROE, '82.
Vice-President: FRANCIS H. WILLIAMS, '73.
Secretary: WALTER HUMPHREYS, '97.
Treasurer: WALTER E. PIPER, '94.
Chairman of House Committee: PERCIVAL W. POPE, '86.
Chairman of Membership Committee: ARTHUR T. BRADLEE, '88.

The Executive Committee includes the above and the Secretary of the Institute, *ex officio*.

THE NORTHWESTERN ASSOCIATION, MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

President: I. W. LITCHFIELD, '85.

Vice-President: EDMUND L. ANDREWS, '94.

Secretary and Treasurer: E. McK. HAGAR, '93, The Rookery, Chicago, Ill.

Executive Committee: THE PRESIDENT, VICE-PRESIDENT, SECRETARY AND TREASURER; C. M. WILKES, '81; SOLOMON STURGES, '87; L. D. GARDNER, '98.

Monthly dinners at "The Bismarck," 180 Randolph St., on the sixteenth of each month, 6.30 P. M. All Institute men are invited.

Annual Dinner about February 1.

THE WESTERN ASSOCIATION, MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

President: EDWARD W. ROLLINS, '71.

Vice-President: BRADFORD H. LOCKE, '72.

Secretary and Treasurer: FRANK E. SHEPARD, '87, 924 Washington Ave., Denver, Colo.

THE M. I. T. SOCIETY OF NEW YORK.

Executive Committee: GEORGE L. HEINS, '82; WILLIAM B. DOWSE, '74; EDWARD R. FRENCH, '92; CHARLES A. MEADE, '94; ALEX. RICE MCKIM, *Secretary and Treasurer*, 106 East Twenty-third St., New York, N. Y.

Annual Meeting first Saturday after February 1.

THE CONNECTICUT VALLEY ASSOCIATION, M. I. T.

Executive Committee: GUY KIRKHAM, '87, *Chairman*, Springfield, Mass.; HENRY SOUTHER, '87; N. P. A. CARTER, '87; JAMES S. NEWTON, '88; HENRY A. FRANCIS, '83.

THE TECH. SOCIETY OF PHILADELPHIA.

Secretary-Treasurer: SAMUEL S. SADTLER, '95.

Executive Committee: AMOS J. BOYDEN, '75; SAMUEL A. NEIDICH, '98; AUGUSTUS B. STOUGHTON, '86; BENJAMIN ADAMS, '95.

Annual dinner second Saturday in November; semi-annual dinner in April.

THE PITTSBURGH ASSOCIATION, MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

President: WILLIAM H. REA.

Vice-President: ARTHUR B. BELLOWS, '89.

Secretary and Treasurer: PERLEY H. BLODGETT, '95, National Tube Co., Pittsburgh, Pa.

M. I. T. SOCIETY OF WESTERN NEW YORK.

Executive Committee: MAURICE B. PATCH, '72; ELGOOD C. LUFKIN, '86; HARRY L. NOYES, '90; CHARLES W. RICKER, '91; HENRY A. BOYD, '79, *Secretary-Treasurer*, 125 Erie Co. Bank Bldg., Buffalo, N. Y.

Annual Meeting second Saturday in September.

WASHINGTON SOCIETY OF THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

President: FREDERICK H. NEWELL, '85.

Vice-President: HARRY A. PRESSEY, '96.

Secretary: REUBEN E. BAKENHUS, '96, P. O. Box, 455, Washington, D. C.

Treasurer: ALFRED W. PROCTOR, '99.

Executive Committee: THE PRESIDENT, VICE-PRESIDENT, SECRETARY, and TREASURER; FOSTER E. L. BEAL, '71.

Institute men visiting Washington, or expecting to reside there, are invited to communicate with the officers of the Society.

ASSOCIATION OF CLASS SECRETARIES.

This association includes the secretaries of the Alumni classes and certain other members, *ex-officiis*. It has tended to promote Alumni interest, and has undertaken the publication of the "Technology Review," a quarterly magazine. The present officers of the association are *Secretary*, WALTER B. SNOW, '82, Watertown, Mass.; *Assistant Secretary*, FREDERIC H. FAY, '93.

Register of Graduates.

For names of deceased graduates see the Alphabetical List, page 299.

The Roman numerals in the column marked "Course" denote the course in which the Graduate received the degree of S.B., as follows:

I. Civil Engineering.
II. Mechanical Engineering.
III. Mining Engineering and Metallurgy.
IV. Architecture.
V. Chemistry.
VI. Electrical Engineering.
VII. Biology.
VIII. Physics.
IX. General Studies.
X. Chemical Engineering.
XI. Sanitary Engineering.
XII. Geology.
XIII. Naval Architecture.

Courses no longer maintained are Sci. and Lit., Science and Literature, Phil. Philosophy, and Elective.

1868.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ELLERY C. APPLETON P.O. Box 248, Westboro, Mass.	III.	Civil Engineer.
WHITNEY CONANT Long Branch, N. J.	III.	Secretary, Long Branch Water Supply Co.
ELI FORBES Clinton, Mass.	Sci. and Lit.	Chemist, Lancaster Mills.
CHARLES C. GILMAN Marshalltown, Iowa.	III.	General Contractor.
CHAS. E. GREENE, A.M., C.E. Ann Arbor, Mich.	I.	Professor of Civil Engineering; Dean, Department of Engineering, University of Michigan.
ALBERT F. HALL 3 Cordis St., Charlestown, Mass.	II.	Constructing Engineer, with The Geo. F. Blake Manufacturing Co. (East Cambridge, Mass.).
WILLIAM E. HOYT Rochester, N. Y.	I.	Chief Engineer, Buffalo, Rochester, & Pittsburgh R. R.
ROBERT H. RICHARDS Boston, Mass.	III.	Professor of Mining Engineering and Metallurgy, Mass. Institute of Technology.
WALTER H. SEARS Plymouth, Mass.	I.	Civil Engineer.
JOSEPH STONE 53 State St., Boston.	I.	

1868. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
BRYANT P. TILDEN . . . Bismarck, N. Dak.	III.	In Office of U. S. Surveyor-General.
JAMES P. TOLMAN . . . . 115 Congress St., Boston.	III.	President, Samson Cordage Works.

1869.

WILLIAM H. BAKER . . . 140 Main St., Fitchburg, Mass.		In Insurance Business.
HOWARD A. CARSON . . . 20 Beacon St., Boston.	I.	Chief Engineer, Boston Transit Commission.
J. RAYNER EDMANDS . . . Garden St., Cambridge, Mass.	II.	Assistant, Harvard College Observatory.
CHANNING WHITAKER . . Tyngsborough, Mass.	II.	Investigating Questions of Infringement and Patentability for the Lowell Machine Shop (Lowell, Mass.).

1870.

CHARLES R. CROSS Boston, Mass.	Sci. and Lit.	Thayer Professor of Physics; Director of the Rogers Laboratory, Mass. Institute of Technology.
CHARLES W. HINMAN . . 53 Front St., Charlestown, Mass.	III.	Manufacturer of Gas Meters.
SAMPSON D. MASON . . . Port Townsend, Wash.	I.	Assistant, U. S. Fortification Works at Admiralty Head.
N. FREDERICK MERRILL . Burlington, Vt.	V.	Professor of Chemistry, University of Vermont.
THEODORE F. TILLINGHAST 37 Eighth St., New Bedford, Mass.	I.	
EDMUND K. TURNER . . . 53 State St., Boston.	I.	Civil Engineer.
DANIEL W. WILLARD . . Redlands, Cal.	II.	Architect.
LAURENCE F. J. WRINKLE Thebe, Inyo Co., Cal.	III.	Mining Engineer.

1871.

FOSTER E. L. BEAL . . . Washington, D. C.	I.	Assistant Biologist, Biological Survey, U. S. Department of Agriculture.
EDWARD H. FOOTE . . . 77 So. Market St., Boston.	I.	Of the Firm of Skilton, Foote, & Co., Manufacturers of Pickles.
FRANK L. FULLER . . . . 12 Pearl St., Boston.	I.	Civil and Hydraulic Engineer.

1871. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HENRY M. HOWE, A.M. . 27 W. Seventy-third St., New York, N. Y.	III.	Professor of Metallurgy, Columbia University.
ALBERT H. HOWLAND, A.M. 60 Congress St., Boston.	I.	Civil Engineer.
G. RUSSELL LINCOLN . . Dufourstrasse, 40. Zurich, Switzerland.	III.	
GEORGE H. PRATT . . . . 31 Tenth St., Long Island City, N. Y.	V.	Superintendent for D. D. Williamson & Co., Manufacturing Chemists.
EDWARD W. ROLLINS . . 19 Milk St., Boston.	III.	Banker, E. H. Rollins & Sons.
CHARLES F. STONE . . . . Waltham, Mass.	III.	Treasurer, Waltham Savings Bank.
ISAIAH S. P WEEKS . . . 1327 H St., Lincoln, Neb.	I.	Chief Engineer, Burlington & Missouri River R. R., in Nebraska.
RANDAL WHITTIER . . . . Columbia Bldg., Louisville, Ky.	V.	Cashier, Kentucky Branch Office, New York Life Insurance Co.

1872.

C. FRANK ALLEN . . . . Boston, Mass.	I.	Professor of Railroad Engineering, Mass. Institute of Technology.
BENJAMIN E. BREWSTER . 942 High St., Dedham, Mass.	III.	Of Firm of Brewster & Co., Cattle Breeders (Sioux County, Neb.).
FREDERIC A. EMMERTON . 9 Bratenahl Bldg., Cleveland, O.	V.	Analytical Chemist and Metallurgist.
JAMES A. HERRICK . . . Wyncote, Montgomery Co., Pa.	V.	Consulting Engineer and Contractor for Steel Plants, Tube Mills, Gas Producers, Furnaces, etc. (Twenty-third St. and Washington Ave., Philadelphia, Pa.).
JAMES M. HODGE . . . . Big Stone Gap, Va.	III.	Geologist and Engineer.
BRADFORD H. LOCKE . . Denver Club, Denver, Colo.	III.	Mining Engineer.
CHAS. S. MINOT, S.D., LL.D. 688 Boylston St., Boston.	V.	Professor of Histology and Human Embryology, Harvard Medical School.
MAURICE B. PATCH . . . 1 Austin St., Buffalo, N. Y.	III.	Superintendent, Buffalo Smelting Works, Calumet & Hecla Mining Co.
WALTER SHEPARD, A.B. . Boston Terminal Station, Boston, Mass.	I.	Chief Engineer, Boston & Albany R. R.
RICHARD H. SOULE, A.B. . 1217 Monadnock Bldg., Chicago, Ill.	II.	Western Representative Baldwin Locomotive Works.

1872. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CLARENCE S. WARD, LL.B. (B. U.) 926 Tremont Bldg., Boston.	III.	Lawyer.

1873.

AMORY AUSTIN, A.B. 4 Redwood St., Newport, R. I.	V.	
GEORGE W. BLODGETT 407 Central St., Auburndale, Mass.	I.	Electrical Engineer, Boston & Albany R. R.; Consulting Electrician.
WILLIAM E. BROTHERTON Carew Bldg., Cincinnati, Ohio.	V.	With Rogers, Brown, & Co.
SAMUEL M. FELTON Monadnock Bldg., Chicago, Ill.	I.	Chicago & Alton R. R.; Receiver, Columbus, Sandusky, & Hocking R. R.; Receiver, Kentucky & Indiana Bridge Co.
FREDERICK L. FISHER 35 Howland St., Roxbury, Mass.	I.	In Insurance Business (35 Kilby St., Boston, and Medway, Mass.).
FREDERICK GUILD, JR. Sci. and Lit. Hingham, Mass.		
W. DALE HARRIS 263 MacLaren St., Ottawa, Ont.	I.	Managing Director, Pontiac Pacific Ry.; President, Montreal Island Belt Line Ry.
CLAR. L. HOWES, A.B., M.D. Hanover, Mass.	II.	Physician.
FRANK B. MORSE 3 Benito Juarez, No. 12, Oaxaca, Estado de Oaxaca, Mexico.	I.	Negociacion de Minas de Oro; El Riscate y Anexas; El Parian.
GEORGE PHILLIPPS Green Harbor, Mass.	III.	
HENRY A. PHILLIPS 120 Tremont St., Boston.	IV.	Architect.
ELLEN H. RICHARDS, A.M. Mrs. R. H. Richards, Boston, Mass.	V.	Instructor in Sanitary Chemistry, Mass. Institute of Technology.
HENRY L. RIPLEY Manila, P. I.	I.	Captain and Adjutant, Third Cavalry, U.S.A.
ROBERT A. SHAILER 610 Western Union Bldg., Chicago, Ill.	I.	President of Shailer & Schniglau Co., Engineers and Contractors.
C. EDWARD STAFFORD South Chicago, Ill.	III.	Manager, Open Hearth and Plate Mill, Illinois Steel Co.
SAMUEL E. TINKHAM City Hall, Boston.	I.	Assistant Engineer, Engineering Department, City of Boston; Secretary, Boston Society of Civil Engineers.

1873. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FRANK W. VERY . . . . . 507 Morris Ave., Providence, R. I.	V.	Engaged in Scientific Research.
WEBSTER WELLS . . . . . Boston, Mass.	I.	Professor of Mathematics, Mass. Institute of Technology.
RANDAL WHITTIER . . .	I.	(See Class of 1871.)
FRANCIS H. WILLIAMS, M.D. 505 Beacon St., Boston.	V.	Physician.
LOUIS F. WOOD . . . . . 112 St. Botolph St., Boston.	V.	Chemist and Manufacturer.

1874.

HERBERT BARROWS . . . Reading, Mass.	I.	Mining Engineer.
GEORGE H. BARRUS . . . 95 Milk St., Boston.	II.	Expert and Consulting Steam Engineer.
WILLIAM T. BLUNT . . . Toledo, Ohio (Residence).	I.	U. S. Assistant Engineer (185 Euclid Ave., Cleveland, Ohio).
GEORGE E. DOANE . . . . Middleboro, Mass.	I.	Of the Firm of J. & G. E. Doane, Hardware.
WILLIAM B. DOWSE . . . 35 Howard St., New York, N. Y.	IV.	Of the Metropolitan Rubber Co.
JOSEPH S. EMERSON . . . Honolulu, Hawaiian Islands.	I.	Engineer and Surveyor, Office of Hawaiian Government Survey.
ELLIOT HOLBROOK . . . . Princeton, Ind.	I.	Chief Engineer, Louisville, Evansville, & St. Louis Consolidated R. R.
AECHIRAU HONGMA . . . 2 Kabutocho Nihonbashiku, Tokio, Japan.	I.	President, Sobu R.R. Co.; Consulting Engineer, Hokkaido Coal Mine and Ry. Co., Hokuyetsu Ry. Co.; and Director, Tobu Ry. Co.
CHARLES P. HOWARD . . Hartford, Conn.	I.	Secretary, J. L. Howard & Co., Dealers in Railway and Car Builders' Supplies.
FRANK H. JACKSON . . . 105 So. Broadway, Los Angeles, Cal.	III.	Mining and Hydraulic Engineer.
HERBERT B. PERKINS . . Pasadena, Cal.	I.	Professor of Mathematics, Throop Polytechnic Institute.
FRANK H. POND . . . . . 277 Dearborn St., Chicago, Ill.	II.	President, The Pond Machinery Co.
EDWARD S. SHAW . . . . 12 Pearl St., Boston.	I.	Consulting Engineer.
FRANCIS H. SILSBEE . . . Lawrence, Mass.	II.	Superintendent, Cotton Department, Pacific Mills.
STEPHEN H. WILDER, Sci. and Lit. Blymyer Bldg., Cincinnati, Ohio.		Attorney-at-Law.

1875.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SAMUEL E. ALLEN . . . . 66 Worth St., New York, N. Y.	I.	Selling Agent, Nashawannuck Manufacturing Co.
JAMES L. ARNOTT. Manchester, N. H.	Sci. and Lit.	Civil Engineer.
AMOS J. BOYDEN . . . . 413 Walnut St., Philadelphia, Pa.	IV.	Architect, and Superintendent of Construction, new U. S. Mint.
MOSES D. BURNET . . . . Cokedale, Kans.	III.	General Superintendent, Eastern Coal and Coke Co.
HENRY K. BURRISON . . . Boston, Mass.	I.	Instructor in Mechanical Drawing, Mass. Institute of Technology.
CHRISTOPHER A. CHURCH . Yazoo City, Miss.	I.	In Cotton Business.
FRANK S. DODGE . . . . 402 Punahou St., Honolulu, Oahu, H. I.	I.	Land Agent, Estate of Bernice Panahi Bishop.
EDGAR S. DORR . . . . . 28 Court Sq., Boston.	I.	Chief Engineer, Sewer Division, Street Department, City of Boston.
WILLIAM C. EDES . . . . 321 Market St., San Francisco, Cal.	I.	Principal Assistant Engineer, San Francisco & San Joaquin Valley Ry.
CHARLES W. GOODALE . . Great Falls, Mont.	III.	Assistant Superintendent, Boston & Montana Consolidated Copper and Silver Mining Co.
EDWARD A. W. HAMMATT 53 State St., Boston.	I.	Civil and Hydraulic Engineer.
EDWARD A. HANDY . . . 57 Cornell St., Cleveland, Ohio.	I.	Chief Engineer, Lake Shore & Michigan Southern Ry.
THOMAS HIBBARD . . . . South Boston, Mass.	II.	Treasurer, George Lawley & Son Corporation.
L. P. KINNICUTT, S.D. (Harv.) W[illegible]r, Mass.	V.	Professor of Chemistry, Worcester Polytechnic Institute.
J. AUSTI KNAPP . . . . Brockton, Mass.	II.	Manufacturer.
WILFRED LEWIS . . . . . 5901 Drexel Road, Philadelphia, Pa.	II.	Assistant Engineer, with William Sellers & Co.
SAMUEL J. MIXTER, M.D. 185 Marlborough St., Boston.	VIII.	Physician.
BENJAMIN A. OXNARD . . Adeline, La.	III.	Sugar Planter.
THOMAS D. PLIMPTON . . Walpole, Mass.	II.	In Business.
WILLIAM A. PRENTISS, Holyoke, Mass.	Sci. and Lit.	Of the Firm of George W. Prentiss & Co., Manufacturers of Wire.

1875. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FRANCIS T. SARGENT . . 31 Nassau St., New York, N. Y.	II.	Granite Quarrying and Contracting.
WELLAND F. SARGENT . . 146 Franklin St., Boston.	I.	Manager, Atlantic Refrigerating Co. (Springfield, Mass.).
WILLIAM H. SHOCKLEY . . Bridgewater, Mass.	III.	With Pekin Syndicate (China).
JAMES B. STANWOOD . . . 2927 Reading Road, Cincinnati, Ohio.	II.	Secretary and Engineer, The Houston, Stanwood, & Gamble Co.; Secretary, Cincinnati Technical School.
H. L. J. WARREN . . . . Atlas Bldg., Salt Lake City, Utah.	III.	Mining Journalist.
WILLIAM R. WEBSTER . . 413 Walnut St., Philadelphia, Pa.	III.	Civil Engineer.

1876.

CHARLES F. ALLEN . . . . South Duxbury, Mass.	III.	Mining Engineer and Metallurgist.
THOMAS ASPINWALL . . . 3 Hamilton Pl., Boston.	I.	Civil Engineer.
WILLIAM P. ATWOOD . . . 11 Harding St., Lowell, Mass.	V.	Chemist, Hamilton Print Works.
THOMAS W. BALDWIN, A.B. Boothbay Harbor, Me.	I.	In Business.
WALTER B. BARROWS . . Agricultural College, Ingham Co., Mich.	VII.	Professor of Zoölogy and Geology, Michigan Agricultural College; Consulting Entomologist, State Experiment Station.
AARON D. BLODGETT . . . 301 Congress St., Boston.	II.	Manufacturer of Electric Clocks.
JOSHUA B. F. BREED . . . 1749 First St., Louisville, Ky.	I.	First Assistant Engineer, Bureau of Engineering.
HARRY T. BUTTOLPH . . . 1725 Amherst St., Buffalo, N. Y.	I.	Assistant Chief Engineer, Bureau of Engineers.
FREDERICK K. COPELAND . 54 No. Clinton St., Chicago, Ill.	I.	President, Sullivan Machinery Co.
WILLIAM O. CROSBY . . . Boston, Mass.	VII.	Assistant Professor of Structural and Economic Geology, Mass. Institute of Technology.
WILLIS E. DAVIS . Safe Deposit Bldg., San Francisco, Cal.	Sci. and Lit.	Mining.
CHARLES R. FLETCHER . . 82 Equitable Bldg., Boston.	V.	Consulting Chemist and Metallurgist.
JOHN R. FREEMAN . . . . 812 Banigan Bldg., Providence, R. I.	I.	President and Treasurer, Manufacturers', Rhode Island, and Mechanics' Mutual Fire Insurance Cos.; Consulting Hydraulic and Mill Engineer.

1876. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FRANCIS E. GALLOUPE . . 54 Ames Bldg., Boston.	II.	In Real Estate Business, and Consulting Engineer.
JOHN B. HENCK, JR. . . 206 Franklin Pl., Flushing, N. Y.	VIII.	Engineer in charge of Survey and Construction, New York & North Shore Ry. Co.
FRANK W. HODGDON . . . 18 Wellington St., Arlington, Mass.	I.	Engineer, Harbor and Land Commissioners of Massachusetts (Room 131, State House, Boston).
SILAS W. HOLMAN . . . 18 Elm St., Brookline, Mass.	VIII.	Professor of Physics, Emeritus, Mass. Institute of Technology.
WILLIAM W. JACQUES, Ph.D. 469 Beacon St., Boston, Mass.	VIII.	
SAMUEL JAMES, JR. . . . Denver, Colo.	III.	Metallurgist, Globe Plant, Assaying, Smelting and Refining Co.
ALFRED C. KILHAM . . . 1245 Washington Ave., Springfield, Mo.	II.	Storekeeper, St. Louis & San Francisco R. R.
THEODORE J. LEWIS . . . 212 No. Thirty-fourth St., Philadelphia, Pa.	II.	Secretary and Assistant Treasurer, Standard Steel Works.
ALBERT H. LOW . . . . P. O. Box 1537, Denver, Colo.	V.	Chemist and Assayer.
CHARLES T. MAIN . . . . 53 State St., Boston.	II.	Of Dean & Main, Mill and Mechanical Engineers.
ARTHUR L. MILLS . . . . 2278 Ashland Ave., Toledo, Ohio.	I.	Vice-President, The Paddock, Hodge Co.
WILLIAM E. NICKERSON . Box 2576, Boston.	V.	Inventor.
DAVID W. PHIPPS . . . . 1607 First Ave., Seattle, Wash.	Phil.	In Business.
CHARLES F. PRICHARD . . 90 Exchange St., Lynn, Mass.	II.	General Superintendent, Lynn Gas and Electric Co.
HENRY RAEDER . . . . . 218 La Salle St., Chicago, Ill.	I.	Architect.
CHARLES L. RICH . . . . East Jaffrey, N. H.	I.	Cashier, Monadnock National Bank.
CHARLES A. SAWYER, Sci. and Lit. 107 Dearborn St., Chicago, Ill.		In Law and Real Estate Business.
THEODORE E. SCHWARZ . 4 Bank Block, Denver, Colo.	III.	Mining Engineer, and Manager Iron Silver Mining Co. (Leadville, Colo.).
JULIUS H. SUSMANN . . . 83 Fulton St., New York, N. Y.	III.	Consulting Mining Engineer.
WALTER D. TOWNSEND . Chemulpo, Korea.	III.	Of the Firm of Townsend & Co.
CHARLES N. WAITE . . . Cranford, N. J.	V.	In Business.

1876. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HENRY M. WAITT . . . . Chicago, Ill.	I.	Bridge Engineer, with Chicago, Burlington, & Quincy R. R.
HENRY B. WOOD . . . . Room 138, State House, Boston.	I.	Chief Engineer, Mass. Topographical Survey Commission.

1877.

JOHN ALDEN . . . . . Lawrence, Mass.	V.	Chemist, Pacific Mills.
CHARLES S. BACHELDER . Watsonville, Cal.	V.	Chemist, Western Beet Sugar Co.
GEORGE BARTOL . . . . . Cleveland, Ohio.	III.	General Manager, The Otis Steel Co. (Limited).
J. WILLIAMS BEAL . . . . 55 Kilby St., Boston.	IV.	Architect.
WILLIAM H. BEECHING . . . 19 John St., Boston.	II.	Cork Manufacturer.
G. WALTER CAPEN . . . . 85 Water St., Boston.	IV.	Architect.
HENRY H. CARTER . . . 95 Milk St., Boston.	I.	President, Metropolitan Contracting Co.; Consulting Engineer.
WILLIAM E. CHAMBERLIN . 27 Clinton St., Cambridgeport, Mass.	IV.	Architect.
LINUS FAUNCE . . . . . Boston, Mass.	II.	Associate Professor of Drawing, Mass. Institute of Technology.
CHARLES H. FISHER . . . Ponkapog P. O., Canton, Mass.	II.	
MARTIN GAY . . . . . 13–21 Park Row, New York, N. Y.	I.	Assistant Engineer, Department of Bridges.
JOSEPH P. GRAY . . . . . 31 Milk St., Boston.	I.	Vice-President, Boston Manufacturers' Mutual Fire Insurance Co.
EDMUND GROVER . . . . 851 Tremont Bldg., Boston.	I.	Civil Engineer and Landscape Gardener.
RICHARD A. HALE . . . . Lawrence, Mass.	I.	Civil Engineer.
JOHN E. HARDMAN . . . Room 3, Windsor Hotel, Montreal, Que.	III.	Consulting Mining Engineer.
HENRY D. HIBBARD . . . 253 Broadway, New York, N. Y.	III.	Manufacturer of Burglar-proof Safes and Vaults.
WALTER JENNEY . . . 291 First St., South Boston.	III.	Superintendent, Petroleum Refinery, Jenney Manufacturing Co.
GEORGE W. KITTREDGE . . Cincinnati, Ohio.	I.	Chief Engineer, Cleveland, Cincinnati, Chicago, & St. Louis Ry.

1877. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CHARLES F. LAWTON . . . New Bedford, Mass.	I.	Superintendent of Public Works.
BENJAMIN C. MUDGE . . . 510 Summer St., Lynn, Mass.	I.	Vice-President and Secretary, Superior Fast Black and Chemical Co. (Cambridge St., Charlestown, Mass.).
CECIL H. PEADODY . . . Boston, Mass.	II.	Professor of Marine Engineering and Naval Architecture, Mass. Institute of Technology.
ARTHUR L. PLIMPTON . . 101 Milk St., Boston.	I.	Civil Engineer, In charge of Department of Civil Engineering, Bureau of Surface Lines, Boston Elevated Ry. Co.
HARRY C. SOUTHWORTH . West Stoughton, Mass.	III.	Mining Engineer.
THOMAS F. STIMPSON . . Providence, R. I.	III.	Superintendent of Printing, Silver Spring Bleaching and Dyeing Co.
GEORGE F. SWAIN . . . . Boston, Mass.	I.	Hayward Professor of Civil Engineering, Mass. Institute of Technology; Engineer, Mass. Railroad Commission.
FREDERICK W. WOOD . . Sparrow's Point, Md.	III.	President, Maryland Steel Co.

1878.

WILLIAM B. ALLBRIGHT . Union Stock Yards, Chicago, Ill.	V.	Manager, Swift & Co., Lard Refinery.
CHARLES M. BAKER . . . Ames Bldg., Boston.	IV.	With Chase & Barstow, Stock Brokers.
TAKUMA DAN . . . . . 17 Tango-cho Akasaka-ku, Tokio, Japan.	III.	Managing Director, Mitsui Mining Co.
CHARLES S. EATON . . . 219 Washington St., Boston.	IV.	In Business.
ALFRED S. HIGGINS . . . 142 Atlantic Ave., Boston.	IV.	With R. R. Higgins & Co.
JULIAN A. KEBLER . . . . 720 Boston Bldg., Denver, Colo.	I.	Second Vice-President, The Colorado Fuel and Iron Co.
EVERELL J. NICHOLS . . . 4 Mt. Vernon St., Boston.	I.	Civil Engineer.
FREDERICK H. PRENTISS . P. O. Box 1132, Chicago, Ill.	II.	President, The Buckeye Electric Co.
JAMES RITCHIE . . . . . 305 City Hall, Cleveland, Ohio.	I.	Chief Engineer, Department of Public Works, City of Cleveland.
JAMES W. ROLLINS, JR. . 12 Rutledge St., West Roxbury, Mass.	I.	Of the Firm of Holbrook, Cabot, & Daly, General Contractors (Boston).
C. D. SAWIN, M.D., Sci. and Lit. 349 Main St., Charlestown, Mass.		Physician.

1878. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
PETER SCHWAMB . . . . . Boston, Mass.	II.	Professor of Mechanism, Mass. Institute of Technology.
FREDERIC P. SPALDING . . Boston, Mass.	I.	Assistant Engineer, Engineering Department, City of Boston.
ISAAC M. STORY . . . . . 238 Summer St., Somerville, Mass.	I.	Resident Engineer, New York, New Haven, and Hartford R.R. (Groton, Conn.).
LINWOOD O. TOWNE . . . Haverhill, Mass.	III.	Sub-Master, Haverhill High School.
EMILE F. WILLIAMS . . . 42 Franklin St., Boston.	I.	Of the Firm of Arthur Williams, Jr., & Co., East India and Turkish Carpets and Rugs.
JAMES G. WOOLWORTH . . 435 Angell St., Providence, R. I.	V.	Superintendent, John D. Lewis Dyewood Extract Manufactory.

1879.

WALTER S. ALLEN . . . . Commonwealth Bldg., Boston.	V.	Secretary, Board of Paris Exposition Managers of Massachusetts.
SAMUEL T. BRALEY . . . 41 Park St., Rutland, Vt.	II.	Mechanical Engineer, Howe Scale Co.
JOHN W. CABOT . . . . . Capital Hotel, Johnstown, Pa.	III.	Assistant Superintendent of Blast Furnaces, Cambria Iron Co.
HARRY H. CAMPBELL . . Steelton, Dauphin Co., Pa.	III.	Superintendent and General Manager, The Pennsylvania Steel Co.
FREDERICK S. COFFIN . . 152 Congress St., Boston.	III.	Of the Firm of Stoddard, Haserick, Richards, & Co., Importers and Commission Merchants.
W. OTIS DUNBAR . . . . 1218 Thirteenth St., Altoona, Pa.	II.	Assistant in Test Department, Pennsylvania R. R.
GEORGE W. FABENS . . . Union Depot, Ottumwa, Iowa.	I.	Trainmaster, Chicago, Burlington, & Quincy R. R.
CHARLES S. GOODING . . . 28 School St., Boston.	II.	Mechanical Engineer and Solicitor of Patents.
RAPHAEL M. HOSEA . . . 817 Boston Bldg., Denver, Colo.	I.	Chief Engineer, The Colorado Fuel and Iron Co.
HORACE J. HOWE . . . . Room 512, Grand Central Station, New York, N.Y.	I.	Assistant in office of Chief Engineer.
FREDERICK B. KNAPP . . . Duxbury, Mass.	I.	Principal, Powder Point School.
FREDERIC H. LANE . . . 49 Leonard St., New York, N. Y.	II.	With the Allen-Lane Co., Commission Merchants.
FREDERIC R. LORING . . . Pottstown, Pa.	VII.	Teacher, Pottstown High School.
WILLIAM W. MACFARLANE 522 W. Ninth St., Chester, Pa.	V.	Superintendent, Sharpless Dye Wood Extract Co.

1879. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ARTHUR H. METCALF . . Pawtucket, R. I.	II.	Mechanical Engineer.
EDWIN C. MILLER . . . . Wakefield, Mass.	II.	Assistant Superintendent, Henry F. Miller & Sons' Piano Co. (88 Boylston St., Boston).
WILLIAM H. PICKERING . Cambridge, Mass.	VIII.	Astronomer, Harvard College Observatory.
GEORGE F. RIGGS . . . . Eglon, Preston Co., W. Va.	I.	
FRANK G. STANTIAL . . . Everett, Mass.	V.	Superintendent, Cochrane Chemical Co.
WILLIAM S. STEARNS . . . Cincinnati, Ohio.	I.	Superintendent, Stearns & Foster Co.'s Cotton Factory.
ARTHUR M. WAITT . . . . Grand Central Station, New York, N. Y.	II.	Superintendent of Motive Power and Rolling Stock, New York Central and Hudson River R.R.

1880.

GEORGE H. BARTON . . . Boston, Mass.	III.	Assistant Professor of Geology, Mass. Institute of Technology.
CHARLES H. BROWN . . . Willington, Conn.	I.	Clergyman.
EDWIN E. CHASE . . . . . 509 Mining Exchange, Denver, Colo.	I.	Mining Engineer.
FREDERICK W. CLARK . . 4 Sherman St., Chicago, Ill.	III.	President, Jonathan Clark & Sons' Co., General Contractors.
GEORGE W. HAMILTON . . 28 Court Sq., Boston.	I.	District Engineer, Sewer Division, Street Department, City of Boston.
LORING R. MILLEN . . . . 70 Beaver St., New York, N. Y.	III.	Wholesale Lumber Merchant.
WILLIAM T. MILLER . 88 Boylston St., Boston.	Elective.	In charge of Boston Warerooms, Henry F. Miller & Sons' Piano Co.

1881.

IRA ABBOTT . . . . . 150 Broadway, New York, N. Y.	I.	Civil Engineer.
JOHN H. ALLEN . . . . . Elizabeth, N. J.	III.	Manager, Maryland Mountain Copper Co. (Limited).
AMOS BINNEY, A.B. . . . 53 State St., Boston.	V.	Real Estate Agent.
DAVID S. BISSELL . . . . Woodland Road, E. E., Pittsburgh, Pa.	III.	President, Duquesne Forge Co., Iron and Steel Forgings.

1881. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION
FRANK H. BRIGGS . . . . 2 High St., Boston.	IX.	Commission Merchant, W. L. Montgomery & Co.
FRANK E. CAME . . . . . 17 Place d'Armes Hill, Montreal, Que.	I.	Manufacturer of Railway Specialties; Canadian Manager Q. & C. Co.; Chicago Railway Equipment Co.; Chicago Grain Door Co.
FRANK D. CHASE . . . . Elizabeth, N. J.	III.	Metallurgist.
BENJAMIN G. COLLINS . . Edgartown, Mass.	II.	Surveyor.
HARRY H. CUTLER . . . . Twelfth St. and St. Paul Ave., Milwaukee, Wis.	II.	General Manager, The Cutler-Hammer Manufacturing Co.
F. GRAEF DARLINGTON . . 1218 No. Delaware St., Indianapolis, Ind.	IX.	
JOHN DUFF, M.D. . . . . 5 Dexter Row, Charlestown, Mass.	V.	Physician.
DAVID S. GODDARD . . . 61 Mt. Vernon St., Somerville, Mass.	III.	
WALTER J. KOEHLER . . . Freemantle, West Australia.	V.	General Manager, Western Australia Smelting Co.
EDWIN J. LEWIS, JR. . . . 9 Park St., Boston.	IV.	Architect.
WILLIAM B. LINDSAY, A.B. Carlisle, Pa.	V.	Professor of Chemistry, Dickinson College.
JAMES LUND . . . . . Everett, Mass.	V.	Superintendent, West Department, Cochrane Chemical Co.
GEORGE A. MOWER . . . 75 Queen Victoria St., London, England.	II.	General Manager, Sturtevant Engineering Co.
WEBSTER NORRIS . . . . Montreal, Que.	III.	Superintendent, Mechanical Department Canadian Rubber Co.
EVELYN W. ORDWAY . . . Mrs. John M. Ordway, New Orleans, La.	V.	Professor of Chemistry, Newcomb College, Tulane University.
THEODORE PARKER . . . . 65 City Hall, Boston, Mass.	I.	In Engineering Department, City of Boston.
NATHANIEL W. SHED . . . Third St. and Lehigh Ave., Philadelphia, Pa.	V.	Metallurgist.
WILLIAM R. SNEAD . . . 813 W. Market St., Louisville, Ky.	IV.	General Manager, The Snead Co. Iron Works.

1881. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HAROLD E. STEARNS . . . Montreal, Que.	II.	Superintendent and Treasurer, Dominion Wadding Co.
EDWARD R. WARREN . . 319 No. Webber St., Colorado Springs, Colo.	VII.	Civil Engineer.
CHARLES M. WILKES . . . 1142 The Rookery, Chicago, Ill.	IV.	Sanitary Engineer.
ARTHUR WINSLOW . . . . 306 Lyceum Bldg., Kansas City, Mo.	III.	General Manager, United States and British Columbia Mining Co.

1882.

CLARA P. AMES . . . . . Northampton, Mass.	V.	Teacher, Mary A. Burnham Classical School.
THOMAS B. CARSON . . . 709 Perry St., Davenport, Iowa.	II.	Secretary, Bettendorf Metal Wheel Co. (Davenport, Iowa, and Springfield, Ohio).
CARRIE RICE CLARK . . . Mrs. S. P. Clark, Drawer D., Phœnix, Ariz.	V.	
EDWARD F. ELY, A.B. . . 32 Westminster St., Providence, R. I.	IV.	Architect, of Firm of Hoppin & Ely.
GEORGE FAUNCE, A.B. . . Carnegie, Pa.	III.	President, and General Manager, Pennsylvania Smelting Co.
CHARLES A. FRENCH, M.D. 47 Winter St., Boston.	III.	Optician.
HOWARD V. FROST, Ph.D. 3958 Drexel Boul., Chicago, Ill.	V.	Chemist, Anglo-American Provision Co., and Fowler Brothers, Limited.
EDW. G. GARDINER, Ph.D. 131 Mt. Vernon St., Boston.	VII.	
FRANCIS P. HALL . . . . Emporia, Kans.	V.	Stock Raising.
GEORGE L. HEINS . . . . Temple Court, New York, N. Y.	IV.	Architect, of Firm of Heins & La Farge.
CHARLES D. JENKINS . . . 32 Hawley St., Boston.	V.	State Inspector of Gas and Gas Meters.
JAMES W. JOHNSON . . . . Riverside, Cal.	I.	City Engineer.
JOHN F. LOW . . . . . 129 Portland St., Boston.	V.	President, Low Tile Co.
HARRY G. MANNING . . . 121 Summer St., Fitchburg, Mass.	II.	Mechanical Engineer, Simonds Manufacturing Co.
GEORGE W. MANSFIELD . . Melrose Highlands, Mass.	III.	

1882. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FRANK C. MORRISON . . . Address unknown.	I.	
JAMES P. MUNROE . . . . 179 Devonshire St., Boston.	III.	Treasurer, Munroe Felt and Paper Co., Manufacturers of Paper.
HENRY F. ROSS . . . . . 178 Devonshire St., Boston.	III.	Treasurer, The Boston Thread and Twine Co.
JOHN H. ROSS . . Sci. and Lit. 178 Devonshire St., Boston.		President, The Boston Thread and Twine Co.
GRENVILLE TEMPLE SNELLING, 111 Fifth Ave., New York, N. Y.	IV.	Of Firm of Snelling & Potter, Architects; Instructor in Architectural Engineering, Columbia University.
WALTER B. SNOW . . . . Watertown, Mass.	II.	Mechanical Engineer, B. F. Sturtevant Co. (Jamaica Plain, Mass.).

1883.

HERBERT T. BARDWELL . . 37 Woodside Ave., Springfield, Mass.	I.	Civil Engineer.
GEORGE H. BRYANT . . . 15 Summer St., Newport, R. I.	II.	Principal, Townsend Industrial School.
HARVEY S. CHASE . . . . 8 Congress St., Boston.	II.	Auditor and Expert Examiner of Accounts.
FRANK E. DAVIS . . . . Worcester, Mass.	II.	With Washburn & Moen Department, American Steel and Wire Co.
JOHN G. EPPENDORFF . . 156 Pearl St., Buffalo, N. Y.	IV.	Decorator.
GEORGE J. FORAN . . . . 356 Harvard St., Cambridge, Mass.	II.	With The Geo. F. Blake Manufacturing Co. (54 Oliver St., Boston).
WILLIAM B. FULLER . . . 143 Linden Ave., Malden, Mass.	I.	Civil and Sanitary Engineer.
HORACE B. GALE . . . . Natick, Mass.	II.	Consulting Mechanical and Electrical Engineer.
GEORGE H. GUSTIN . . . Elizabeth, N. J.	III.	With Bowker Fertilizer Co.
FREDERIC O. HARRIMAN . Jaltipan, Mexico.	I.	Civil Engineer and Contractor; Land Agent.
JAMES H. HUTCHINGS . . 113 Devonshire St., Boston.	II.	In Real Estate Business.
H. WARD LEONARD . . . Bronxville, N. Y.	III.	President, Ward Leonard Electric Co., and Carpenter Enamel Rheostat Co.
HARVEY M. MANSFIELD . Fairfield, Me.	III.	Agent, Somerset & Kennebec Co.

1883. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ROBERT W. SCOTT . . . 917 Arch St., Philadelphia, Pa.	II.	Manager, Philadelphia Engraving Co.
GEORGE A. SMITH . . . . Chelsea, Mass.	V.	Superintendent, Thos. . Strahan & Co., Branch of the National Wall Paper Co.
FRANK TENNEY . . . . . Steelton, Dauphin Co., Pa.	III.	Assistant to the President, The Pennsylvania Steel Co.
CHARLES H. TOMPKINS . . 120 Liberty St., New York, N. Y.	III.	Civil Engineer: President, American Diamond Rock Drill Co.
GEORGE R. UNDERWOOD . Peabody, Mass.	V.	Superintendent, Upton Factory of American Glue Co.
DAVID WESSON . . . . . Savannah, Ga.	V.	Chemist and General Manager, Wesson Process Co.

1884.

CHARLES B. APPLETON . . Netherlands Road, Brookline, Mass.	II.	
HENRY F. BALDWIN . . . Jersey City, N. J.	II.	Engineer, Maintenance of Way, Erie R. R.
FRED L. BARDWELL, B.S. . Boston, Mass.	V.	Assistant Professor of General Chemistry, Mass. Institute of Technology.
T. HARRIS BARTLETT . . . Grangeville, Idaho.	III.	Attorney-at-law.
HENRY A. BOARDMAN . . Jewett City, Conn.	V.	With The Aspinook Co.
CHARLES C. BOTHFELD . . 34 Home Bank Bldg., Detroit, Mich.	I.	Consulting Engineer on Iron and Steel Structures.
W. FRANK CARR, B.S. . . 291 Pleasant St., Milwaukee, Wis.	I.	General Superintendent and Engineer, The Falk Co.
CHRISTOPHER J. CARVEN . 34 Centre St., Dorchester, Mass.	I.	Assistant Engineer, Engineering Department, City of Boston.
ROSCOE L. CHASE . . . . North Adams, Mass.	V.	Chemist, Arnold Print Works.
ALFRED O. DOANE . . . . 3 Mt. Vernon St., Boston.	III.	Assistant Engineer, Metropolitan Water Board.
ALFRED L. FITCH . . . . 236 Randolph St., Chicago, Ill.	II.	In Paper Business.
GEORGE L. R. FRENCH . . Boston, Mass.	I.	Roadmaster, Eastern Division, Boston & Maine R.R.
AUGUSTUS H. GILL, Ph.D. Boston, Mass.	V.	Assistant Professor of Gas Analysis, Mass. Institute of Technology.
FRANK M. HAINES . . . . 15 Washington Ave., Elyria, Ohio.	III.	With the Johnson Co.; Manager, Lorain Street Ry. Co. (Lorain, Ohio).

1884. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JAMES G. HOLDER, Ph.G. . 119 Broad St., Lynn, Mass.	V.	Apothecary.
G. FREDERICK KNAPP . . . Harrison Bldg., Philadelphia, Pa.	V.	With Oglebay, Norton, & Co., Iron Ores (Cleveland, Ohio, and Philadelphia, Pa.).
D. A. LYLE, Maj. Ord. Dept., U. S. A. P. O. Box 1606, Philadelphia, Pa.	III.	Inspector of Ordnance, U. S. A.
PHILIP S. MORSE, A.B. . . Leadville, Colo.	III.	With the American Smelting and Refining Co.
CHARLES O. PRESCOTT . . Duxbury, Mass.	V.	Teacher of German and Natural Science, Powder Point School.
WILLIAM L. PUFFER . . . 198 Mt. Vernon St., West Newton, Mass.	III.	Assistant Professor of Electrical Engineering, Mass. Institute of Technology.
ARTHUR J. PURINTON . . . 138 Grand St., Waterbury, Conn.	II.	Secretary, N. E. Engineering Co.; Vice-President, Monarch Mfg. Co.
WILLIAM J. RICH, LL.M. . 208 Eleventh St., N. E., Washington, D. C.	III.	First Assistant Examiner, U. S. Patent Office.
FRANKLIN B. RICHARDS . Cleveland, Ohio.	III.	With M. A. Hanna & Co.
C. SNELLING ROBINSON . . 615 Broadway, Pueblo, Colo.	III.	General Superintendent, Colorado Fuel and Iron Co.
THEODORE W. ROBINSON . Joliet, Ill.	III.	General Superintendent, Joliet Works, Illinois Steel Co.
A. LAWRENCE ROTCH, A.M. 53 State St., Boston.	II.	Director of Blue Hill Meteorological Observatory (Hyde Park, Mass.).
J. PETERSON RYDER . . . Philadelphia, Pa.	V.	Director of Physical Training, Drexel Institute.
ALFRED STEBBINS, JR. . . 4 Ripley Terrace, Newton Highlands, Mass.	III.	Civil Engineer.
ELLIOT T. STURGIS . . . 125 Milk St., Boston.	III.	Chief Clerk, Boston Division, New England Telephone and Telegraph Co.
ALICE BROWN TYLER . . . Mrs. H. W. Tyler, Newton Centre, Mass.	V.	
HARRY W. TYLER, Ph.D. . Boston, Mass.	V.	Professor of Mathematics and Secretary, Mass. Institute of Technology.
NAHUM WARD . . . . . Schellstrasse 8, Berlin, Germany.	V.	
WILLIAM M. WHITNEY . . Winchendon, Mass.	II.	With Baxter D. Whitney, Manufacturer of Wood-working Machinery.
FRANCIS C. WILLIAMS, JR. Sheridan, Wyo.	I.	City Engineer and County Surveyor.

1885.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CHARLES R. ALLEN . . . New Bedford, Mass.	V.	Head Science Teacher, New Bedford High School.
DAVID BAKER . . . . . South Chicago, Ill.	III.	Superintendent Blast Furnace Department, South Works, Illinois Steel Co.
EDWARD R. BENTON, Ph.D. 27 Doane St., Boston.	IV.	Architect.
MARCELLA O. BOVERI . . Mrs. Theodor Boveri, Pleischerglacisstrasse 8, Würzburg, Bavaria.	IX.	
HEYWOOD COCHRAN . . . 132 Lunen St., Johnstown, Pa.	II.	With Lorain Steel Co.
EDWARD H. DEWSON, JR. . 168 Broadway, New York, N. Y.	II.	Chief Engineer, Standard Air Brake Co.
FREDERICK FOX, JR., S.M., Ph.D. 77 State St., Portland, Me.	V.	Analytical Chemist.
THOMAS W. FRY . . . . . Claremont, N. H.	II.	Secretary and Superintendent, Sullivan Machinery Co.
ROBERT R. GOODRICH . . Boston, Mass.	III.	Graduate Student, Mass. Institute of Technology.
WALTER K. HARRINGTON . First Ave. and Twenty-first St., New York, N. Y.	I.	Superintendent, Repair Shops, Consolidated Gas Co. of New York.
ELEAZER B. HOMER . . . Boston, Mass.	IV.	Associate Professor of Architecture, Mass. Institute of Technology.
TRACY LYON . . . . . St. Paul, Minn.	II.	General Superintendent, Chicago Great Western Ry.
HUGH MACRAE . . . . . Wilmington, N. C.	III.	President, The Wilmington Cotton Mills.
HENRY MARTIN . . . . . South Gardiner, Me.	V.	With Richards Paper Co.
ALLYNE L. MERRILL . . . Boston, Mass.	II.	Associate Professor of Mechanism, Mass. Institute of Technology.
EVERETT MORSS . . . . . 79 Cornhill, Boston.	III.	With Morss & Whyte; Vice-President, Simplex Electrical Co.
FREDERICK H. NEWELL . . Washington, D. C.	III.	Chief Hydrographer, U. S. Geological Survey.
JOSEPH E. NUTE . . . . . 14 Bedford St., Fall River, Mass.	I.	Superintendent, Fall River Gas Works Co.
FRANK A. PICKERNELL . . 22 Thames St., New York, N. Y.	VI.	Chief Engineer, American Telephone and Telegraph Co.
RICHARD H. PIERCE, A.B. Manhattan Bldg., Chicago, Ill.	VI.	Of Pierce & Richardson, Electrical and Mechanical Engineers.
NEWBERT M. RANDALL . . Sparrow's Point, Md.	III.	Chief Chemist, Maryland Steel Co.

1885. — *Continued.*

NAME AND ADDRESS	COURSE.	OCCUPATION.
CHARLES RUSSELL RICHARDS New York, N. Y.	II.	Director, Department of Manual Training, Teachers College, Columbia University.
OTIS T. STANTIAL . . . . 515 Diversey Ave., Chicago, Ill.	III.	Superintendent, Illinois Malleable Iron Co.
HENRY P. TALBOT, Ph.D. . Boston, Mass.	V.	Professor of Analytical Chemistry, Mass. Institute of Technology.
GEORGE P. VANIER . . . Steelton, Pa.	III.	Chemist, Pennsylvania Steel Co.
ERASTUS WORTHINGTON . Dedham, Mass.	I.	Civil Engineer.

1886.

GEORGE P. ABORN . . . . Third St., East Cambridge, Mass.	II.	Constructing Engineer, The Geo. F. Blake Manufacturing Co. and Knowles Steam Pump Works.
ARTHUR C. ANTHONY . . 44 Pine St., New York, N. Y.	III.	General Agent, Traders Insurance Co. of Chicago.
DANA P. BARTLETT . . Boston, Mass.	VI.	Associate Professor of Mathematics, Mass. Institute of Technology.
BIRNEY C. BATCHELLER . . Witherspoon Bldg., Philadelphia, Pa.	II.	Engineer, Batcheller Pneumatic Tube Co.
WILLIAM L. BRAINERD . . 227 Broadway, Paducah, Ky.	IV.	Architect.
JOHN K. BURGESS . . . . Dedham, Mass.	II.	Engineer.
CHARLES L. BURLINGHAM . 207 So. Canal St., Chicago, Ill.	III.	With McDermid Manufacturing Co.
WM. H. CHADBOURN, JR. . 405 Custom House Bldg., Cincinnati, Ohio.	III.	United States Assistant Engineer, River and Harbor Improvements.
WILLIAM L. CHURCH . . . 1654 Massachusetts Ave., Cambridge, Mass.	VI.	
HARRY E. CLIFFORD . . . Boston, Mass.	VI.	Assistant Professor of Theoretical Physics, Mass. Institute of Technology.
LOUIS R. COBB . . . . . . 101 Milk St., Boston.	I.	Assistant Engineer Elevated Lines, Boston Elevated Ry. Co.
LOUIS F. CUTTER . . . . . 15 Rangeley, Winchester, Mass.	I.	Assistant Engineer, Engineering Department, City of Boston.
CHARLES C. DOE . . . . . South Newbury, Vt.	VII.	Proprietor, Mt. Hag Stock Farm.
ORRIN S. DOOLITTLE . . . 445 Oley St., Reading, Pa.	V.	

1886. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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ELGOOD C. LUFKIN . . . . Snow and Roesser Aves., Buffalo, N. Y.	II.	Manager, The Snow Steam Pump Works.
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HARRY B. MERRIAM . . . Minneapolis, Minn.	I.	

1886. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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1886. — *Continued.*

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1887. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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1887. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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1888. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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1888. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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1888. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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1889. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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1889. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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1889. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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ARTHUR E. TRUESDELL . . 82 Plume St., Norfolk, Va.	VI.	Constructing Engineer, Virginia Electric Co.
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VICTOR WINDETT . . . . South Chicago, Ill.	II.	With Illinois Steel Co., South Works.

1889. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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1890. — *Continued.*

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1890. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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1890. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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1890. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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1890. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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1891. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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DIXIE LEE BRYANT . . . Greensboro, N. C.	XII.	Teacher of Geology and Biology, State Normal and Industrial College.
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1891. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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MEDOREM W. GREER, Dawson, N. W. T.	VI.	Prospecting.
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1891. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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1891. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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FREDERICK T. SNYDER . . Peterborough, Ont.	VI.	Metallurgic Engineer, with The Wm. Hamilton Mfg. Co. (Limited).
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1891. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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C. HANCOCK WOOD . . . 25 Davis Ave., Brookline, Mass.	II.	With New England Structural Co. (East Everett, Mass.).

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GUY J. BURNHAM . . . . P.O. Box 207, Valleyfield, Que.	X.	With Montreal Cotton Co.
HARRY A. BURNHAM . . . Passaic, N. J.	II.	Mechanical Superintendent, Passaic Print Works.
SEVERANCE BURRAGE . . La Fayette, Ind.	VII.	Instructor in Sanitary Science, Purdue University.
HUBER D. CARD . . . . . 807 Main St., Willimantic, Conn.	XII.	City Civil Engineer, Putnam and Willimantic.
RAUL DE R. CARVALHO . Amparoda Barra Mansa, Rio de Janeiro, Brazil.	IX.	Coffee Planter.

1892. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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JOHN A. CURTIN . . . . . Tremont Bldg., Boston.	I.	Attorney-at-law.
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BARRON P. DU BOIS . . . Care Navy Department, Washington, D. C.	VI.	Passed Assistant Paymaster, U. S. Navy.
GEORGE F. ELDRIDGE . . Bullitt Bldg., Philadelphia, Pa.	V.	With C. R. Baird & Co., Pig Iron, Steel and Iron.
SUMNER B. ELY . . . . . Pittsburgh, Pa.	II.	Assistant Mechanical Engineer, Pressed Steel Car Co.
LOGAN FELAND . . . . . Philippine Islands.	IV.	First Lieutenant, 3d Battalion, U. S. Marine Corps.
HENRY A. FISKE	VI.	(See Class of 1891.)
HOWARD C. FORBES . . .	VI.	(See Class of 1891.)

1892. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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GEORGE H. INGRAHAM . . 528 Tremont Bldg., Boston.	IV.	Architect.

1892. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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JOSEPH B. LUKES . . . . 139 Adams St., Chicago, Ill.	VI.	With Chicago Edison Co.
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LEONARD METCALF . . . Concord, Mass.	I.	Civil Engineer (14 Beacon St., Boston).

1892. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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FREDERICK L. RHODES . . 42 Farnsworth St., South Boston.	VI.	With American Bell Telephone Co.

1892. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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ROBERT R. TAYLOR . . . 679 Sterling Ave., Cleveland, Ohio.	IV.	Draughtsman with C. W. Hopkinson, Architect.

1892. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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ORTON W. ALBEE, Marlboro, Mass.	III.	
HERBERT W. ALDEN, Park and Laurel Sts., Hartford, Conn.	II.	Assistant Mechanical Engineer, Columbia and Electric Vehicle Co.

1893. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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1893. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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1893. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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WALLACE K. GAYLORD . . Pasadena, Cal.	V.	Professor of Chemistry, Throop Polytechnic Institute.
HOWARD GILMORE	VI.	(See Class of 1892.)
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LAWRENCE S. JAMES . . . 32 Hawley St., Boston.	V.	Assistant State Inspector of Illuminating Gas and Gas Meters.

1893. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ARTHUR H. JAMESON . . . Phoenixville, Pa.	V.	Secretary, Logan Manufacturing Co.
SIMEON C. KEITH, JR. . . 81 Austin St., Charlestown, Mass.	VII.	Of the Firm of O. Douglass Butter Culture Co.; Bacteriologist for H. P. Hood & Sons, Milk Contractors.
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NAME AND ADDRESS.	COURSE.	OCCUPATION.
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FRANCIS C. NORTON . . . . Rockland, Me.	IX.	With Cobb Lime Co.
CHARLES L. NUTTER . . . East Bridgewater, Mass.	II.	Mechanical Engineer, Carver Cotton-Gin Co.
CECIL E. PAINE . . . . . Bath, Me.	II.	With Hyde Windlass Co.
JOSEPH Y. PARCE, JR. . . . Denver, Colo.	II.	Teacher, Manual Training High School.
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LEO W. PICKERT . . . . . Granite St., Boston.	V.	Chemist, American Sugar Refining Co.
JAMES H. REED . . . . . 126 Pearl St., Boston.	VI.	Treasurer, National Machine and Tool Co.
WILLIAM S. RESOR . . . . 436 E. Third St., Cincinnati, Ohio.	VI.	Inspector, American Telephone and Telegraph Co.
HENRY L. RICE . . . . . Norfolk, Va.	X.	Superintendent, City Gas Co.
FRANK D. RICHARDSON . . 22 Thames St., New York, N.Y.	II.	With American Telephone and Telegraph Co.
HAROLD A. RICHMOND . . 325 Waterman St., Providence, R. I.	II.	President, American Emery Wheel Works.
FENWICK F. SKINNER . . . 2849 Washington St., Roxbury, Mass.	I.	With J. R. Worcester (53 State St., Boston).
A. BLAKELEY SMITH . . . 24 Davis St., Providence, R.I.	IX.	Member of Firm of Albert W. Smith & Co., Domestic and Foreign Wools (Branch Office 125 Federal St., Boston).
FREDERICK D. SMITH . . . 25 Waverly St., Malden, Mass.	I.	Assistant Engineer, Metropolitan Sewerage Commission.
JOHN I. SOLOMON . . . . . 123 W. Ninety-Seventh St., New York, N. Y.	VI.	With General Electric Co.
J. RAMSEY SPEER . . . . . Pittsburgh, Pa.	II.	First Vice-President and Superintendent, Shoenberger Steel Co.
CHARLES M. SPOFFORD . . Boston, Mass.	I.	Instructor in Civil Engineering, Mass. Institute of Technology.

1893. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
GEORGE W. STOSE . . . . Washington, D.C.	I.	Editor of Geologic Maps, U. S. Geological Survey.
LOVELL BAKER STOWE . . 332 Main St., Springfield, Mass.	VI.	With New England Telephone and Telegraph Co.
FRED B. STUDLEY . . . . North Duxbury, Mass.	VI.	
FREDERICK C. SUTTER . . Pittsburgh, Pa.	VI.	Of Pittsburgh Transformer Co.
WALTER I. SWANTON . . Southern Union Station, Boston.	I.	Bridge Inspector, Boston & Albany R. R. Co.
KILBURN S. SWEET . . . Boston, Mass.	I.	Instructor in Civil Engineering, Mass. Institute of Technology.
CHARLES WILSON TAINTOR 9 Pickering Bldg., Manchester, N. H.	VI.	Manager, New England Telephone & Telegraph Co.
CHARLES M. TAYLOR . . . Weymouth Heights, Mass.	II.	
WINTHROP P. TENNEY . . 85 Water St., Boston.	VI.	With Field & Cowles.
ALFRED C. THOMAS . . . 81 Willoughby St., Brooklyn, N. Y.	VI.	With The New York & New Jersey Telephone Co.
PERCY H. THOMAS . . . . East Pittsburgh, Pa.	VI.	With Engineer's Department, Westinghouse Electric and Manufacturing Co.
WINTHROP L. TIDD . . . City Hall, Taunton, Mass.	II.	Assistant to City Engineer.
JOHN F. TOMFOHRDE . . . 24 Mt. Vernon St., Charlestown, Mass.	II.	Counsellor-at-law.
CHARLES A. TRIPP . . . . Room 35, 89 State St., Boston.	VI.	Engineer, Bemis Bro. Bag Co.
WILLIAM A. TUCKER . . . Ponkapog, Mass.	III.	
LOUIS B. VINING . . . . 534 Columbus Ave., Boston.	VI.	With Gamewell Fire Alarm Telegraph Co. (Newton Upper Falls, Mass.).
A. B. WADSWORTH, M.D. . 112 W. Fifty-fifth St., New York, N. Y.	VII.	Physician.
SAMUEL PAYSON WALDRON Pittsburgh, Pa.	I.	With Keystone Bridge Works, The Carnegie Steel Co. (Limited).
CHARLES R. WALKER . . 155 Western Ave., Cambridgeport, Mass.	V.	With General Chemical Co. of New York.
GEORGE L. WALKER, B.S. 874 Broadway, New York, N. Y.	I.	Chief Engineer, Building and Sanitary Inspection Co.

1893. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FREDERIC A. WALLACE . . Lawrence, Mass.	II.	Chief Engineer, Pacific Mills.
ROBERT N. WALLIS . . . Fitchburg, Mass.	IX.	Treasurer, Fitchburg & Leominster Street Ry.
HARRY C. WATERMAN . . 55 Kilby St., Boston.	IV.	Draughtsman with J. Williams Beal, Architect.
S. EDGAR WHITAKER, A.M. 135 Shurtleff St., Chelsea, Mass.	VI.	Electric Railway Contractor.
PARKER H. WILDER . . . 403 Neave Bldg., Cincinnati, Ohio.	VI.	Manager, Cincinnati Gas Saving Co.
JONATHAN E. WOODBRIDGE 120 Liberty St., New York, N.Y.	VI.	Editor, "American Electrician."
HENRY T. WOODS . . . . 32 Kilby St., Boston.	II.	Wholesale Coal Dealer.
GEORGE M. YORKE . . . . 15 Dey St., New York, N.Y.	VI.	With American Telephone and Telegraph Co.

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RALEIGH B. ADAMS. . . . 2 Gleason St., Dorchester, Mass.	X.	With Boston Belting Co.
GEORGE H. ANDERSON . . 176 High St., Newburyport, Mass.	X.	Chemist, Missouri Furnace Co. ("B" St. Louis, Mo.).
EDMUND LATHROP ANDREWS, 105 Quincy St., Chicago, Ill.	VI.	With American Telephone and Telegraph Co.
FRED C. BAKER . . . . . Penn Ave., Scranton, Pa.	II.	Draughtsman, The Dickson Manufacturing Co. (Penn Ave. Works).
GEORGE E. BARSTOW . . . 416 Union St., Lynn, Mass.	II.	Designer for E. E. Winkley & Co., Mechanical Engineers.
HOWARD R. BARTON . . . 95 Liberty St., New York, N.Y.	VI.	Vice-President, The Atwood Power and Speed Gauge Co.
HARRY R. BATES . . . . North Weymouth, Mass.	V.	Chemist and Assistant to General Manager, Bradley Fertilizer Co.
WALTER V. BATSON . . . 3 Hamilton Pl., Boston.	VI.	With Hollis French & Allen Hubbard, Consulting Engineers.
CHARLES BURR BEACH . . 1183 Locust St., Dubuque, Iowa.	X.	Chemical Engineer, J. Beach & Sons, Soap Manufacturers.
IRVING EVERETT BEACH . Lawrence, Mass.	V.	Of Beach Soap Co.
NORWIN S. BEAN . . . . 23 Prospect St., Manchester, N.H.	VI.	With Second National Bank.

1894. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
VALLETTE L. BENEDICT . 722 Union St., Schenectady, N.Y.	VI.	Electrical Engineer, General Electric Co.
HEREFORD BERRY . . . . First Ave. and Thirty-third St., New York, N. Y.	VI.	With General Incandescent Arc Light Co.
GROSVENOR T. BLOOD, S.B.	II.	(See Class of 1893.)
SARAH HALL BONESTEELE Mrs. P. F. Bonesteele, 36 Concord Ave., Cambridge, Mass.	VIII.	
CHARLES ROYCE BOSS . . 34 Broad St., New London, Conn.	IX.	Manufacturer.
WILLIAM H. BOVEY . . . 12 So. Thirteenth St., Minneapolis, Minn.	VI.	With Washburn-Crosby Co., Merchant Millers.
STEPHEN ALEC BREED . . 9 Portland St., Lynn, Mass.	II.	Superintendent of Mill, S. N. Breed & Co.
WALTER VAIL BROWN . . 44 W. Twentieth St., New York, N. Y.	VI.	With Pattison Bros., Electrical Engineers (141 Broadway).
WILLIAM W. CARTER, S.B.	VI.	(See Class of 1893.)
MASON S. CHACE . . . . Newport News, Va.	II.	Assistant Inspector of Battleships, Newport News Shipbuilding and Dry Dock Co.
JOHN WINSLOW CHAPMAN . Hartford, Conn.	II.	Engineer of Power and Plant Construction, Columbia and Electric Vehicle Co.
NATHAN C. W. CHAPMAN . 225 Pine St., Providence, R. I.	II.	Draughtsman, Brown & Sharpe Manufacturing Co.
HAROLD M. CHASE . . . Wilmington, N. C.	X.	Chemist and Assistant Superintendent, Wilmington Cotton Mills.
ALAN A. CLAFLIN . . . . Littleton, Mass.	V.	Superintendent, Avery Chemical Co.
FRED H. CLARKE . . . . City Hall, Boston.	I.	With City Engineer, City of Boston.
ARTHUR A. CLEMENT . . 277 Dearborn St., Chicago, Ill.	X.	Chemist, The American Cotton Oil Co.
PRESCOTT H. COOLIDGE . 57-67 Bethune St., New York, N. Y.	I.	With Western Electric Co.
HENRY F. COPELAND . . . Hudson & Duane Sts., New York, N. Y.	I.	With Export Department, J. S. Barron & Co.
NATHANIEL R. CRAIGHILL, S.B.	VI.	(See Class of 1893.)
HORACE A. CRARY . . . . Sheffield, Warren Co., Pa.	I.	General Superintendent, Horton, Crary, & Co.

1894. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CHARLES H. CUTLER . . . 15 Dey St., New York, N. Y.	VI.	With Construction Department, New York Telephone Co.
NELSON W. DALTON . . . Bath, Steuben Co., N. Y.	VI.	Treasurer and General Manager, Bath Electric Illuminating and Power Co.
HENRY B. DATES . . . . Potsdam, N. Y.	VI.	Professor of Electrical Engineering and Physics, Clarkson School of Technology.
T. CLIVE DAVIES . . . . Honolulu, H. I.	II.	In Business.
LEON K. DAVIS . . . . . West Newton, Mass.	X.	Chemist, in charge of Glycerine Plant, Fairchild & Shelton (Bridgeport, Conn.).
NATHAN B. DAY, A.B. . . 280 Newbury St., Boston.	II.	Student, Harvard University Law School.
HARRIET GALLUP DELANCEY, Mrs. Darragh deLancey, Care Eastman Kodak Co., Rochester, N. Y.	V.	Travelling abroad.
CHARLES W. DICKEY . . . Honolulu, H. I.	IV.	Architect.
HARRY S. DUCKWORTH . . Dover, N. H.	V.	Chemist, Cocheco Manufacturing Co.
H. BELIN DU PONT . . . Wilmington, Del.	X.	With E. I. du Pont, De Nemours, & Co.
JOHN ELLIS . . . . . Lonsdale, R. I.	VI.	Manager, Lonsdale Co.'s Electric Light Plant.
ARTHUR J. FARNSWORTH . 30 Beechwood Ave., New Rochelle, N. Y.	VI.	Chief Engineer, Larchmont Electric Co. (Mamaroneck, N. Y.).
JOHN N. FERGUSON . . . 3 Mt. Vernon St., Boston.	I.	Assistant Engineer, Metropolitan Water Board.
FREDERICK E. FOWLE, JR. 1925 Fourth St., N. W., Washington, D. C.	VIII.	Assistant, Astrophysical Observatory, Smithsonian Institution.
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J. HOWLAND GARDNER . . Harlem River Station, New York, N. Y.	II.	Assistant Superintendent of Marine Construction, New York, New Haven, & Hartford R.R.
R. WALDO GILKEY . . . . 9 Irving St., Watertown, Mass.	II.	With Metropolitan Water Board.
LEWIS S. GREENLEAF . . Maiden Lane & Chapel St., Albany, N. Y.	VI.	Engineer.
BURT S. HARRISON . . . Batavia Bank Bldg., La Crosse, Wis.	IV.	Architect, Schick & Harrison.

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NAME AND ADDRESS.	COURSE.	OCCUPATION.
HARRY P. HASTINGS . . . South Framingham, Mass.	I.	In Business.
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WILLIAM REED HILL . . . 67 Moffat Block, Detroit, Mich.	IV.	With John Scott & Co., Architects.
CHARLES F. HOPEWELL . . City Hall, Cambridge, Mass.	VI.	City Electrician, City of Cambridge.
THEODORE HORTON . . . 1 Mt. Vernon St., Boston.	XI.	Assistant Engineer, Metropolitan Sewerage Commission.
CLIFTON A. HOWES . . . 55 Kilby St., Boston.	VI.	Inspector, Boston Board of Fire Underwriters.
WILLIAM S. HULSE . . . . Buenos Ayres, Argentine Republic.	VI.	Electrical Engineer for Union Electricitäts-gesellschaft of Berlin.
ALBERT F. HUNT, JR. . . 220 Broadway, New York. N.Y.	I.	Attorney and Counsellor-at-law.
EDWARD M. HUNT . . . . City Hall, Portland, Me.	I.	Secretary of Commission of Public Works, City of Portland.
NED H. JANVRIN . . . . . 1500 Grand Ave., Kansas City, Mo.	I.	Assistant Bridge Engineer, Metropolitan St. Ry. Co.
CHARLES H. JOHNSON . . 24 Warren St., Roxbury, Mass.	I.	Civil Engineer with Bell & Co., Engineers and Contractors.
HERBERT E. JOHNSON . . . 11 So. Main St., Oberlin, Ohio.	VI.	Manager, Oberlin Telephone Co.
ALBERT L. KENDALL . . . 31 Milk St., Boston.	II.	Head Draughtsman, Plan Department, Associated Factory Mutual Fire Insurance Cos.
JOSEPH H. KIMBALL . . . West Newton, Mass.	XI.	In Office of City Engineer, City of Newton.
WILLIAM HERBERT KING . 18 E. Fortieth St., New York, N.Y.	IX.	Attorney-at-law, with Judge of Supreme Appellate Court.
ROBERT H. KIRK . . . . 514 Ashland Ave., St. Paul, Minn.	II.	With American Hoist and Derrick Co.
JOHN W. KITTREDGE . . . Eldora, Colo.	II.	Civil and Mining Engineer, U. S. Deputy Mineral Surveyor.
CHARLES R. KNAPP . . . 1709 First St., Louisville, Ky.	IV.	With Henry Wolters, Architect.
HENRY O. LACOUNT . . . 31 Milk St., Boston.	II.	Electrical Inspector, Associated Factory Mutual Fire Insurance Cos.
LUCIUS PAGE LANE, A.M. . Boston, Mass.	IX.	Assistant, Statistical Department, Boston Public Library.

1894. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FREDERICK M. LEONARD . 64 Coleberg Ave., Roslindale, Mass.	I.	Civil Engineer.
ROBERT LORING . . . . . 192 Devonshire St., Boston.	X.	Salesman and Assistant to New England Agent, R. Hoe & Co., of New York.
FRANK W. LOVEJOY . . . Kodak Park, Rochester, N.Y.	X.	Assistant Manager, Kodak Park Works, Eastman Kodak Co.
GUY LOWELL, A.B., grad. École des Beaux Arts . . . . . 805 Tremont Bldg., Boston.	IV.	Architect.
PATRICK M. LYNCH . . . . 69 Dwight St., Holyoke, Mass.	I.	Civil Engineer.
COLBERT A. MACCLURE . . 53 State St., Boston.	IV.	With Peabody & Stearns, Architects.
HENRY K. MCGOODWIN, B.S. 63 Broad St., Charleston, S.C.	IV.	With A. W. Todd, Architect.
WILLIAM D. MCJENNETT . 351 W. Fifty-first St., New York, N. Y.	X.	Superintendent, D. S. Brown & Co., Soap Manufacturers (Fifty-first St. and North River).
ANGUS R. MACKAY . . . . Deadwood, S. Dak.	III.	With Horseshoe Mining and Milling Co.
FRANK P. MCKIBBEN . . . Boston, Mass.	I.	Instructor in Civil Engineering, Mass. Institute of Technology.
MARION L. MAHONY . . . 281 W. Adams St., Chicago, Ill.	IV.	Draughtsman with Frank L. Wright, Architect.
FREDERICK M. MANN, C.E., S.M. 328 Chestnut St., Philadelphia, Pa.	IV.	Architect.
VIRGINIUS A. MAYER . . . 506 Atlantic Ave., Boston.	VI.	President, Taber and Mayer Co., Manufacturers of Telephones.
CHARLES A. MEADE . . . . 303 E. Eighteenth St., New York, N. Y.	I.	Superintendent of Final Disposition, Street Cleaning Department, New York City.
LESLIE R. MOORE . . . . . 133 Hunnewell Ave., Newton, Mass.	V.	Chemist.
LUTHER R. NASH . . . . . 4 Post-Office Sq., Boston.	VI.	With Stone & Webster, Electrical Experts and Engineers.
PARKER C. NEWBEGIN . . . Patten, Me.	I.	Superintendent, Patten & Sherman R. R.
HENRY L. NEWHOUSE . . . 4630 Prairie Ave., Chicago, Ill.	IV.	Architect.
FREDERIC M. NOA . . . . 28 Whitney Place, Buffalo, N. Y.	IX.	Teacher of Languages.
JOHN C. NOWELL . . . . . Eleventh and Filbert Sts., Philadelphia, Pa.	VI.	Superintendent of Maintenance, The Bell Telephone Co. of Philadelphia.

1894. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
GEORGE OWEN, JR. . . . . P. O. Box 253, Bristol, R. I.	II.	Draughtsman, with Herreshoff Manufacturing Co.
EDWIN M. PARKER . . . . West Acton, Mass.	IV.	In Business.
WALTER W. PATCH . . . . Framingham Road, Marlboro, Mass.	I.	Assistant Engineer, Sudbury Department, Metropolitan Water Works.
JOSEPH W. PHELAN . . . . Boston, Mass.	V.	Instructor in General Chemistry, Mass. Institute of Technology.
WALTER E. PIPER . . . . Fells, Mass.	V.	Assistant Superintendent, Boston Rubber Shoe Co.
CLARENCE D. POLLOCK . . 21 Municipal Department Bldg., Brooklyn, N. Y.	I.	Assistant Civil Engineer, Department of Highways, Borough of Brooklyn.
WILLIAM H. PRATT . . . 60 Eastern Ave., Lynn, Mass.	VI.	Electrical Engineer, with General Electric Co.
SAMUEL C. PRESCOTT . . . Boston, Mass.	V.	Instructor in Biology, Mass. Institute of Technology.
RAYMOND BEACH PRICE . . 118 No. Lincoln St., Chicago, Ill.	X.	With Calumet Rubber Tire Co.
RICHARD W. PROCTOR . . Cincinnati, Ohio.	V.	Assistant Superintendent, William S. Merrell Chemical Co.
LOUIS W. PULSIFER, A.B. . 101 Rue de Lille, Paris, France.	IV.	Architect; Holder of Rotch Travelling Scholarship.
NARCISO T. QUEVEDO, B.S. 21 Calle Oriente N° 3, Guatemala, Guatemala, C.A.	II.	Professor of Higher Mathematics, "Escuela de Ingenieria."
SAMUEL G. REED . . . . Roland St., Charlestown, Mass.	II.	Superintendent, Crosby Steam Gauge and Valve Co.
HOWARD S. REYNOLDS . . Brockton, Mass.	VI.	Roadmaster, Brockton Street Ry. Co.
ROBERT D. REYNOLDS . . 45 Orchard St., Jamaica Plain, Mass.	II.	Draughtsman, B. F. Sturtevant Co.
THOMAS G. RICHARDS . . 29 Hampshire St., Cambridgeport, Mass.	II.	Superintendent, Boston Woven Hose and Rubber Co.; Treasurer, Colonial Rubber Co.
HENRY F. RIPLEY . . . . 39 Franklin St., Boston.	II.	In Business.
FRANKLIN H. ROBBINS . . 3 Mt. Vernon St., Boston.	II.	Draughtsman, Metropolitan Water Board.
ARTHUR S. ROGERS . . . Eighteenth and Douglas Sts., Omaha, Neb.	VI.	With American Telephone and Telegraph Co.
S. ANTHONY SAVAGE . . . 44 Franklin Ave., Chelsea, Mass.	II.	Assistant Superintending Engineer, U. S. Light-house Board.

1894. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ALBERT H. SAWYER . . . 19 Pearl St., Boston.	IX.	With Industrial Development Co.
WILLIAM H. SAYWARD, JR. 69 Monadnock St., Dorchester, Mass.	VII.	Physician.
FERDINAND ALFRED SCHIEATZ Lock Box 1, Auburndale, Mass.	III.	With Anglo-Mexican Mining Co. (San José de Gracia Sinaloa, Mexico).
WALTER O. SCOTT, S.M. . P. O. Box 556, Providence, R. I.	V.	
GEORGE W. SHERMAN . . Room 509, 53 State St., Boston.	X.	Mechanical Engineer, Factory and Manufacturing Specialist.
ARTHUR A. SHURTLEFF, B.S. 9 W. Cedar St., Boston.	II.	With F. L. & J. C. Olmsted, Landscape Architects.
FREDERIC P. SIMONDS . . 55 Kilby St., Boston.	IV.	Draughtsman, with J. Williams Beal, Architect.
WILLIAM A. SOLEY . . . 209 Maple St., Chelsea, Mass.	III.	Of Firm of John Soley & Sons, Building Movers and Contractors.
FRANCIS M. SOUTHARD . . 11 Broadway, New York, N. Y.	VI.	Timber Merchant, Southard & Co.
AUSTIN SPERRY . . . . . 2100 Pacific Ave., San Francisco, Cal.	II.	With U. S. Naval Constructor, Union Iron Works.
JOHN CONYNGHAM STEVENS, 1914 Rittenhouse Sq., Philadelphia, Pa.	XI.	With Guarantee Trust & Safe Deposit Co. (318 Chestnut St.).
HENRY A. SWANTON . . . Sparrows Point, Md.	II.	Draughtsman, Marine Department, Maryland Steel Co.
GEORGE AYMAR TABER . . 106 E. Twenty-third St., New York, N. Y.	I.	Civil Engineer.
GEORGE TAYLOR . . . . . P. O. Box 29, Ludlow, Mass.	II.	Draughtsman, Ludlow Manufacturing Co.
ALBERT B. TENNEY . . . 35 Fremont Ave., Everett, Mass.	II.	Assistant Secretary, N. V. Perry Manufacturing Co. (18 Arch St., Boston).
JOSEPH E. THROPP, JR. . . Everett, Bedford Co., Pa.	III.	General Manager, Everett Furnace Mines and Coke Works.
ARTHUR W. TIDD . . . . Clinton, Mass.	I.	Assistant Engineer, Reservoir Department, Metropolitan Water Works.
TOROS H. TOROSSIAN, B.A. Karavansérai Hadji Mir Hassan, Casvin, Persia.	I.	Contractor on the Road Enzeli-Casvin-Teheran.
THEODORE VARNEY . . . 67 E. Twenty-first St., Chicago, Ill.	VI.	With Underwriters Bureau of Fire Protection Engineering.
HENRY E. WARREN . . . Saginaw, Mich.	VI.	Engineer, Saginaw Valley Traction Co.

1894. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
RIGBY WASON . . . . . 8 Sussex Gardens, Hyde Park, London, W., England.	VI.	Student-at-law, Middle Temple; with Expanded Metal Co.
WILLIAM R. WESTCOTT, A.B. 42 Farnsworth St., Boston.	VI.	With American Bell Telephone Co.
ROBERT C. WHEELER . . Corcoran Bldg., Washington, D. C.	I.	Assistant Engineer, with Isthmian Canal Commission.
KENNETH F. WOOD . . . . Saylesville, R. I.	II.	In charge of Construction and Repairs, Sayles Bleacheries.
C. NELSON WRIGHTINGTON . Ludlow, Mass.	II.	Mechanical Engineer, Ludlow Manufacturing Co.

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LOUIS ANDREW ABBOT . . . 108 Pembroke St., Boston, Mass.	II.	With Boston & Maine R. R.
BENJAMIN ADAMS . . . . . 406 Market St., Philadelphia, Pa.	VI.	Inspector, American Telephone and Telegraph Co.
CHARLES M. ADAMS . . . . 59 Waverley St., Roxbury, Mass.	VI.	With Metropolitan Water Board (3 Mt. Vernon St., Boston).
EDWIN CLEMENT ALDEN . . 416 Seventh Ave., Pittsburgh, Pa.	VI.	With American Telephone and Telegraph Co.
AZEL AMES, JR. . . . . New York, N. Y.	I.	Road Master, Second Sub-division New York Central & Hudson River R.R.
ERNEST FRANKLIN BADGER . Lawrence, Mass.	V.	In Experiment Station, Mass. State Board of Health.
LATIMER W. BALLOU . . . 16 Harris Ave., Woonsocket, R.I.	II.	Agent of the Guerin Spinning Co.
LAWRENCE BARR, A.B. . . Telephone Bldg., Pittsburgh, Pa.	VI.	Engineer, Central District and Printing Telegraph Co.
HAROLD K. BARROWS . . . 3 Mt. Vernon St., Boston.	I.	With Metropolitan Water Board.
EDMUND D. BARRY . . . . Philadelphia, Pa.	XIII.	Draughtsman, with William Cramp & Sons.
ETHEL BARTHOLOMEW, B.L. Chariton, Iowa.	IV.	
FRANCIS W. BELKNAP . . . Pier "A," North River, New York, N. Y.	I.	With Department of Docks and Ferries, New York City.
CHARLES W. BERRY . . . . Boston, Mass.	VI.	Assistant in Mechanical Engineering, Mass. Institute of Technology.
S. LAWRENCE BIGELOW, Ph.D. Ann Arbor, Mich.	V.	Instructor of Physical Chemistry, University of Michigan.

1895. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
GEORGE L. BIXBY, S.M. . . Nineteenth St. & Allegheny Ave., Philadelphia, Pa.	X.	With The Electric Storage Battery Co.
WALTER D. BLISS . . . . . Claus Spreckels Bldg., San Francisco, Cal.	IV.	Architect.
PERLEY HARTWELL BLODGETT Conestoga Bldg., Pittsburgh, Pa.	V.	With National Tube Co.
JOHN BOEDEKER . . . . . Care Treasury Department, Washington, D. C.	VI.	Cadet, U. S. S. "Chase," Revenue Cutter Service.
EDGAR A. BOESEKE . . . San Francisco, Cal.	II.	Of the Sunset Automobile Co.
THOMAS B. BOOTH . . . . Washington, D. C.	VI.	Examiner, U. S. Patent Office.
FRANK A. BOURNE, S.M. . 849, Tremont Bldg., Boston.	IV.	Architect.
JESSE H. BOURNE . . . . 21 Brockton Ave., Haverhill, Mass.	II.	Instructor in Manual Training, Haverhill High School.
WALLACE C. BRACKETT . . Room 1001, 101 Milk St., Boston, Mass.	XI.	With Chief Engineer, Elevated Lines, Boston Elevated Ry. Co.
ALLEN P. BROWN . . . . Schuyler, Neb.	IX.	Stock Farming.
ARTHUR L. CANFIELD . . Fulton and Carpenter Sts., Chicago, Ill.	II.	With George W. Pitkin Co.
WALTER S. CHASE . . . . 41 Richmond St., Boston.	IV.	With The Quincy Market Cold Storage Co.
WILLIAM B. CLAFLIN . . . 28 E. Forty-first St., New York, N.Y.	IV.	With Carrère & Hastings, Architects.
SIDNEY K. CLAPP . . . . 179 Boston St., South Boston.	I.	With Metropolitan Water Board (3 Mt. Vernon St.).
CARL H. CLARK . . . . Boston, Mass.	XIII.	Instructor in Naval Architecture, Mass. Institute of Technology.
SCHUYLER S. CLARK, C.S. 6 Spitzer Bldg., Toledo, Ohio.	VIII.	Christian Science Healer.
ARTHUR S. COBURN . . . 49 Oak St., Lowell, Mass.	III.	Assistant Inspecting Engineer for Boston Elevated Ry. Co., at Pencoyd Iron Works.
LUTHER CONANT, JR. . . . 17 Beaver St., New York, N.Y.	IX.	Editor, "Outside Securities," Journal of Commerce and Commercial Bulletin.
CHARLES P. COOKE . . . . Victor, Colo.	VI.	With Colorado Electric Power Co.

1895. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
J. WILLIAMSON COOKE . . 3 Head Pl., Boston.	VI.	Testing Engineer, with Edison Electric Illuminating Co.
JOHN WINFIELD COOKE . . Victor, Colo.	VI.	With Colorado Electric Power Co.
FREDERIC E. COX . . . . 3838 Russell Ave., St. Louis, Mo.	IV.	Architect (St. Louis and Council Bluffs, Iowa).
WALTER N. CRAFTS, A. B. . Glassport, Pa.	III.	With Pittsburgh Steel Foundry.
HENRY M. CRANE . . . . 57 Bethune St., New York, N. Y.	II.	With Western Electric Co.
GEORGE A. CUTTER . . . . Dover, N. H.	II.	With Cocheco Manufacturing Co.
WILLIAM E. DAVIS, JR. . . 503 Chestnut St., Philadelphia, Pa.	IV.	Resident Engineer, American Luxfer Prism Co.
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ALFRED L. DEJONGE . . . Richmond Turnpike, Stapleton, S. I., N. Y.	II.	With Louis Dejonge & Co.
EDWARD E. DENISON . . . 30 Broad St., New York, N. Y.	X.	With Purchasing Department, International Paper Co.
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JOHN THOMPSON DORRANCE, Ph.D. 32 Front St., Camden, N. J.	V.	Chemist for Joseph Campbell Preserve Co.
ALBERT W. DRAKE . . . . 406 Market St., Philadelphia, Pa.	VI.	With American Telephone and Telegraph Co.
FRED W. DRAPER . . . . . Rolla, Mo.	III.	Professor of Metallurgy, State School of Mines.
WILLIAM J. DRISKO . . . Waterville, Me.	VIII.	Professor of Physics, Colby College.
ALBERT DUNBAR . . . . . Brookline, Mass.	V.	Superintendent in Charge, Distribution Department, Brookline and Brighton Divisions, Brookline Gas Light Co.
ROLFE M. ELLIS . . . . . McKeesport, Pa.	V.	With National Tube Co.
CHARLES F. EVELETH . . . 239 Causeway St., Boston.	VI.	With Braman, Dow & Co.

1895. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ROBERT D. FARQUHAR, A.B. Durant St., Newton, Mass.	IV.	Student, École des Beaux-Arts (Paris, France).
FRANCIS E. FAXON . . . . Auburn, N. Y.	II.	Draughtsman and Assistant in Experimental Department, D. M. Osborne & Co., Manufacturers of Harvesting Machinery.
MILTON L. FISH . . . . . 306 Bryant St., Buffalo, N. Y.	VI.	
F. A. J. FITZ GERALD, B.A. Niagara Falls, N. Y.	VI.	With Carborundum Co.
ANDREW D. FULLER . . . 30 Tremont St., Boston.	I.	Assistant Engineer, Street Department, City of Boston.
JOHN H. GARDINER . . . Stonington, Conn.	II.	With The Atwood-Morrison Co., Makers of Textile Machinery.
CHARLES M. GAY, JR., A.B. 28 East Forty-first St., New York, N. Y.	IV.	Architect, with Carrère & Hastings.
PERLEY F. GILBERT . . . Central Block, Lowell, Mass.	IV.	Of Firm of Merrill & Gilbert, Architects.
WATSON E. GOODYEAR . . Naugatuck, Conn.	VI.	Electrician for The Bristol Co.
FRANCIS C. GREEN . . . . 63 Fifth Ave., New York, N. Y.	XI.	With Weir Filter Co.
JOHN H. GREGORY . . . . St. Paul Bldg., New York, N. Y.	I.	With Allen Hazen, Consulting Engineer.
WILLIAM T. HALL . . . . Boston, Mass.	V.	Assistant in Chemistry, Mass. Institute of Technology.
FREDERICK A. HANNAH . Brooklyn, N. Y.	II.	Instructor in Mechanical Engineering, Brooklyn Polytechnic Institute.
FREDERICK W. HARRIS . . 42 Prospect St., Clinton, Mass.	XI.	With Reservoir Department, Metropolitan Water Board.
HARRY M. HAVEN . . . . Somerville, Mass.	II.	With Quincy Market Cold Storage Co. (Boston).
GEORGE W. HAYDEN . . . 493 Warren St., Roxbury, Mass.	VI.	With New England Telephone and Telegraph Co.
HENRY A. HOLDREGE . . 203 Washington St., Chicago, Ill.	VI.	With Chicago Telephone Co.
L. FREDERIC HOWARD . . 38 Rutland Sq., Boston.	VI.	With Boston Elevated Railway Co. (439 Albany St.).
GEORGE R. HOWARTH . . 3 Young Ave., Providence, R. I.	II.	
GEORGE E. HOWE . . . . 20 Wesley Park, Somerville, Mass.	I.	With Metropolitan Water Board (3 Mt. Vernon St., Boston).
SAMUEL P. HUNT . . 261 Triangle St., Buffalo, N. Y.	VI., X.	With American Telephone and Telegraph Co.

1895. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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Edward H. Huxley . . 29 Hampshire St., Cambridgeport, Mass.	II.	With Boston Woven Hose and Rubber Co.
Hermann Kotzschmar, Jr. St. Petersburg, Fla.	II.	Engineer, U. S. S. "McLane."
Henry O. Lacount, S.B. .	VI.	(See Class of 1894.)
Ralph R. Lawrence . . Boston, Mass.	VI.	Instructor in Physics, Mass. Institute of Technology.
Maurice Le Bosquet . . 328 E. Eagle St., East Boston.	V.	Superintendent, Wm. H. Swift & Co., Manufacturers of Chemicals.
Dorville Libby, Jr. . . . Room 1, Flood Bldg., San Francisco, Cal.	VI.	Electrical and Mechanical Engineer.
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Andrew J. Logan . . . . 27 Davis St., Bangor, Me.	I.	Roadmaster, Eastern Division Maine Central R. R.
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Walter C. Marmon . . . Indianapolis, Ind.	II.	Secretary and Treasurer, Nordyke & Marmon Co.
Frank B. Masters . . . . Belvidere St., Boston.	II.	Instructor in Drawing, Mechanic Arts High School.
François E. Matthes . . Washington, D. C.	I.	Topographer, U. S. Geological Survey.
Gerard H. Matthes . . . Washington, D. C.	I.	Assistant Hydrographer, U. S. Geological Survey.
Charles A. Meserve, Ph.D. Pawtucket, R. I.	V.	Junior Master, Pawtucket High School.
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John D. J. Moore . . . . 120 Broadway, New York, N. Y.	II.	Sales Agent, Westinghouse Electric and Manufacturing Co.
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Arthur F. Nesbit, A.B. . Durham, N. H.	VI.	Instructor in Physics and Electrical Engineering, New Hampshire College.

1895. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JOHN L. NEWELL . . . . . 38 Equitable Bldg., Boston.	X.	Attorney and Counsellor at Law, with Lowell, Smith & Lowell.
FRANKLIN A. PARK. . . . Winchendon, Mass.	II.	With Baxter D. Whitney, Manufacturer of Wood-working Machinery.
WINTHROP D. PARKER . . Tremont Bldg., Boston.	IV.	With Wheelwright & Haven, Architects.
CHARLES L. PARMELEE . 35 Wall St., New York, N. Y.	I., XI.	Chief Engineer, Continental Filter Co.
WILLIAM F. PATTEN . . . 125 Milk St., Boston.	VI.	With American Bell Telephone Co.
WALTER C. POWERS . . . 116 Pearl St., Springfield, Mass.	X.	With Powers Paper Co. (Holyoke, Mass.).
WALTER W. REED . . . . Care Citizens Electric Light and Power Co., Houston, Tex.	VI.	In charge of Electrical Construction, General Electric Co.
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WALTER J. RICKEY . . . Schenectady, N. Y.	II.	With General Electric Co.
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SAMUEL S. SADTLER . . . 235 Jefferson Ave., Brooklyn, N. Y.	V.	Chemist in Laboratory, U. S. Appraisers of Merchandise.
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FRANK C. SCHMITZ . . . . 908 Lawyers Bldg., Newark, N. J.	I.	Assistant Engineer, Continuous Rail Joint Co.
EDWARD P. SCHOENTGEN . Baldwin Bldg., Council Bluffs, Iowa.	IV.	Architect.
ROBERT K. SHEPPARD . . 94 Grove St., Worcester, Mass.	X.	With Washburn & Moen Department, American Steel & Wire Co.
RICHARD G. B. SHERIDAN 39 Victoria St., Westminster, S. W., London, England.	XIII.	In European Office, The Brown Hoisting and Conveying Machinery Co.
JOHN CARLETON SHERMAN . Boston, Mass.	VI.	Assistant Editor, "Youth's Companion."

1895. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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ALFRED PRITCHARD SLOAN, JR. Harrison, N. J.	VI.	With Hyatt Roller Bearing Co.
WALTER F. STEVENS . . . Newton Highlands, Mass.	II.	With Freeman Wight (25 Hayward Pl., Boston).
WILLIAM E. SWIFT . . . 27 William St., New York, N. Y.	I.	With Munson Steamship Line.
GERARD SWOPE . . . . . Security Bldg., St. Louis, Mo.	VI.	Representative, Western Electric Co. of Chicago.
C. CHESTER TAFT . . . . 2300 Hamilton St., Philadelphia, Pa.	X.	With E. H. Godshalk Co.
JAMES W. THOMAS . . . Wyoming, Pa.	II.	Assistant Manager, The Wyoming Shovel Works.
STURGIS H. THORNDIKE, A.B. 60 City Hall, Boston.	I.	With City Engineer, City of Boston.
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EDWARD A. TUCKER . . . 14 Beacon St., Boston.	I.	Architectural Engineer.
HUGH M. TUCKER . . . . 214 E. Pike's Peak Ave., Colorado Springs, Colo.	II.	With Ernest Flagg, Construction Department.
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DAVID B. WESTON . . . . Watertown, Mass.	V.	Chemist, Crystal Springs Manufacturing Co.
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WALTER S. WILLIAMS . . Box 341, North Adams, Mass.	X.	Assistant Chemist, Arnold Print Works.

1895. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WILLIAM H. WINKLEY . 58 Kilby St., Boston.	XIII.	Special Agent, Hartford Fire Insurance Co.
JOHN J. C. WOLFE . . . 4318 Berkeley Ave., Chicago, Ill.	II.	With National Supply Co. (1407 Manhattan Bldg.).
LUTHER K. YODER . . . Clybourn and Fullerton Aves., Chicago, Ill.	II.	Experimental Department, Deering Harvester Co.
HENRY YOERG . . . . . 215 W. Isabel St., St. Paul, Minn.	II.	Chief Draughtsman, Great Northern Ry.
ALFRED E. ZAPF . . . . . 70 Kilby St., Boston.	IV.	Draughtsman, with W. T. Sears, Architect.

1896.

BUTLER AMES . . . . . U. S. Bunting Co., Lowell, Mass.	II.	Agent of Wamesit Power Co.
WILLIAM P. ANDERSON . . P. O. Box 587, Leadville, Colo.	III.	Assistant Metallurgist, Boston Gold Copper Smelting Co.
WILLIAM M. ANDREW . . . 213 Liberty St., Schenectady, N. Y.	VI.	With Power and Mining Department, General Electric Co.
GEORGE F. ASHTON . . . . 39 Church St., Salem, Mass.	II.	Of Firm of Metcalf & Ashton, Civil Engineers.
ERNEST C. ATKINS . . . 136 Mitchell St., Providence, R. I.	II.	Draughtsman, International Power Co. (operating Rhode Island Locomotive
CHARLES E. BATCHELDER . 29 John St., Boston.	VI.	With J. D. Batchelder & Co., Commission Merchants.
DANIEL M. BATES, JR. . . . Wilmington, Del.	X.	Assistant Superintendent, Joseph Bancroft & Sons Co.
DAVID W. BEAMAN . . . . 26 Seventh St., New Bedford, Mass.	VI.	Station Superintendent, New Bedford Gas and Edison Light Co.
FRANCIS P. BLAKE . . . . Birmingham, Ala.	III.	With Louisville & Nashville R.R.
GEORGE S. BOWES . . . . . New England Bldg., Cleveland, Ohio.	II.	With The Wellman Seaver Engineering Co.

ERRATUM.

Reuben E. Bakenhus 735 No. Capitol St., Washington, D. C.	I.	Draughtsman and Computer, U. S. Engineer Office for Erection of New Building for Government Printing Office.

1895. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
William H. Winkley 58 Kilby St., Boston.	XIII.	Special Agent, Hartford Fire Insurance Co.
John J. C. Wolfe 4318 Berkeley Ave., Chicago, Ill.	II.	With National Supply Co. (1407 Manhattan Bldg.).
Luther K. Yoder Clybourn and Fullerton Aves., Chicago, Ill.	II.	Experimental Department, Deering Harvester Co.
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Alfred E. Zapf 70 Kilby St., Boston.	IV.	Draughtsman, with W. T. Sears, Architect.

1896.

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Francis P. Blake Birmingham, Ala.	III.	With Louisville & Nashville R.R.
George S. Bowes New England Bldg., Cleveland, Ohio.	II.	With The Wellman Seaver Engineering Co.

1896. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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HARRY W. BROWN	VI.	With General Electric Co.
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HARRY P. BROWNE	VI.	Electrician, Experimental Model Basin. Construction & Repair Department, U. S. N.
Navy Yard, Washington, D.C.		
RUSSELL S. BUCHER	IV.	Of Wm. M. Bucher & Son, Architects and Builders.
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GEORGE K. BURGESS	VIII.	Student, University of Paris.
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Mrs. H. W. Chamberlain, Boston, Mass.		
HAROLD M. CHASE	V.	(See Class of 1894.)
WINTHROP H. CHENERY, A.M.,	IV.	Studying abroad.
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JOSEPH W. CLARY	XIII.	Draughtsman with Superintending Constructor, U. S. N.
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WILLIAM D. COOLIDGE, Ph.D.,	VI.	Assistant in Physics, Massachusetts Institute of Technology.
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WINTHROP COOLIDGE	III.	Metallurgist, Chicago Copper Refining Co.
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1896. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
EDWIN CLAASSEN CRAMER 725 Marshall St., Milwaukee, Wis.	IV.	Draughtsman with Crans & Barkhausen.
HENRY M. CRANE	VI.	(See Class of 1895.)
STEPHEN D. CRANE 160 Market St., Newark, N. J.	VI.	Electrician, New York & New Jersey Telephone Co.
CALVIN IRA CROCKER Charlestown, Mass.	I.	Draughtsman, Department of Yards and Docks, U. S. Navy Yard.
RALPH W. CROSBY Newport News, Va.	XIII.	Draughtsman with Superintending Constructor, U. S. N.
HENRY CUMMINGS, JR. 1143 Tremont Bldg., Boston.	IV.	With Norcross Bros.
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HAROLD W. DE LONG Weymouth, Mass.	XIII.	With Fore River Engine Co.
LEONARD D. P. DICKINSON Broadway, New Haven, Conn.	VI.	Instructor in Electricity and Physics, Boardman Manual Training School.
HELEN CHAMBERLIN DODD Mrs. Walter S. Dodd, Wrentham, Mass.	IV.	
WILLIAM T. DORRANCE, A.B. Rochester, N. Y.	I.	Assistant Engineer, Buffalo, Rochester, & Pittsburgh Ry.
JAMES M. DRISCOLL Clinton, Mass.	I.	Instrument Man, Dam and Aqueduct Department, Metropolitan Water Works.
JOSEPH DRISCOLL 11 Kent St., Brookline, Mass.	I.	Of Firm of James Driscoll & Son, Contractors.
ALPHONSUS L. DRUM De Soto Hotel, Savannah, Ga.	VI.	Manager, Edison Electric Illuminating Co.
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GEORGE FRESCH, JR. Address unknown.	IV.	
MYRON L. FULLER Boston, Mass.	XII.	Instructor in Geology, Mass. Institute of Technology.

1896. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ROBERT L. FULLER . . . . 452 Main St., Worcester, Mass.	IV.	Draughtsman with Fuller & Delano, Architects.
STEPHEN DEM. GAGE . . . Lawrence, Mass.	V.	With Mass. State Board of Health, Lawrence Experiment Station.
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LEONARD H. GOODHUE . . Fells, Mass.	V.	Chemist, Boston Rubber Shoe Co.
EDWARD B. GORDON, JR. . 174 Lewis St., Lynn, Mass.	II.	With A. B. Franklin (167 Fort Hill Sq., Boston).
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ANDREW H. GREEN, A.B. . 178 So. Water St., Chicago, Ill.	I.	President, Green's Dredging Co.
NATHAN C. GROVER, B.C.E. Orono, Me.	I.	Professor of Civil Engineering, University of Maine.
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ROBERT S. HARDY . . . . P.O. Box 40, Tomahawk, Wis.	VI.	With Bradley Co.
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JOSEPH HARRINGTON . . . Aetna, Lake Co., Ind.	II.	Superintendent, Rojo El Mining Co., (Guachinango, Estado de Jalisco, Mexico).
HIRAM B. HARTWELL . . . Roland St., Charlestown, Mass.	II.	Draughtsman, Crosby Steam Gage and Valve Co.
JAMES H. HASTE . . . . . Kodak Park, Rochester, N. Y.	V.	With Eastman Kodak Co.
HARVEY F. HAWLEY . . . Baldwinsville, N. Y.	I.	Transitman, Topographical Survey Commission (11 Mt. Vernon St., Boston).
HARRISON W. HAYWARD . Boston, Mass.	X.	Assistant in Mechanical Engineering, Mass. Institute of Technology.

1896. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HENRY R. HEDGE . . . . 12 Central St., Boston.	IX.	With Johnson & Higgins, Insurance Brokers and Adjusters.
WILLIAM R. HEDGE . . . 12 Central St., Boston.	IX.	With Johnson & Higgins, Insurance Brokers and Adjusters.
FREDERICK M. HEERMANN . 31 Milk St., Boston.	II.	Inspector, Associated Factory Mutual Fire Insurance Cos.
JAMES B. HENDERSON . . . 38 Rutland Sq., Boston.	II.	With Boston Woven Hose and Rubber Co. (29 Hampshire St., Cambridgeport, Mass.).
RALPH C. HENRY, S.M. . . 122 Ames Bldg., Boston.	IV.	With Shepley, Rutan, & Coolidge.
JOSEPH HEWETT . . . . 32 Allen St., Brockton, Mass.	VIII.	With Geo. E. Keith Co., Shoe Manufacturers.
WALTER M. HOLLIS . . . Schenectady, N. Y.	VI.	With General Electric Co.
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WALTER H. JAMES . . . . Boston, Mass.	II.	Assistant in Mechanical Engineering, Mass. Institute of Technology.
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THEODORE I. JONES . . . . 15 Dey St., New York, N. Y.	VI.	With American Telephone and Telegraph Co.
JOSEPH H. KNIGHT . . . . 60 State St., Boston.	IX.	Lawyer, in Office of Ropes, Gray, & Gorham.
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CHARLES E. LAWRENCE, M.A. 81 Willoughby St., Brooklyn, N. Y.	VI.	With Engineering Department, New York & New Jersey Telephone Co.

1896. — *Continued.*

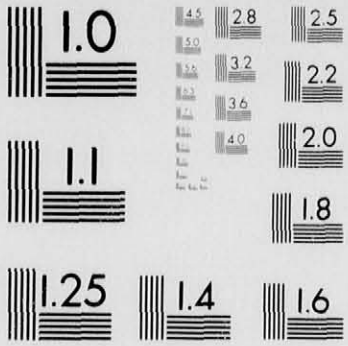
NAME AND ADDRESS.	COURSE.	OCCUPATION.
EUGENE H. LAWS . . . . . Spanish Town, Jamaica, W. I.	V.	With The West Indies Chemical Works, Limited.
MARSHALL O. LEIGHTON . 456 Bloomfield Ave., Montclair, N. J.	VII.	Agent, Montclair Board of Health.
WALTER S. LELAND . . . . Charlestown, Mass.	XIII.	Assistant Draughtsman, Construction and Repair Department, U. S. Navy Yard.
PAUL W. LITCHFIELD . . . 19 Winnisimmet St., Chelsea, Mass.	X.	Factory Superintendent, International Automobile and Vehicle Tire Co.
CHARLES E. LOCKE . . . . Boston, Mass.	III.	Assistant to Professor Richards, Mass. Institute of Technology.
JOHN F. LONNGREN . . . . 327 So. Highland Ave., Pittsburgh, Pa.	II.	With Shoenberger Steel Co.
ALF C. LOOTZ . . . . . 216 St. Botolph St., Boston.	I.	Draughtsman, Department of Yards and Docks, U. S. Navy Yard (Charlestown).
HERMANN CHARLES LYTHGOE, 501 State House, Boston.	V.	Assistant Analyst of Food and Drugs, Mass. State Board of Health.
WILLIAM H. MCALPINE . . 3 Mt. Vernon St., Boston.	XI.	With Metropolitan Water Board.
FRANK G. MCCANN . . . . 44 Dey St., New York, N. Y.	II.	Draughtsman for Evans, Almirall, & Co., Heating and Ventilation Engineers and Contractors.
JOHN H. MANAHAN . . . . 1140 Monadnock Block, Chicago, Ill.	VI.	With Sargent & Lundy, Engineers.
EDWARD S. MANSFIELD . . 3 Head Pl., Boston.	VI.	With Edison Electric Illuminating Co.
JAMES G. MELLUISH . . . Eagle Block, Bloomington, Ill.	IX.	Of Firm of Bell & Melluish, Civil and Sanitary Engineers.
IRVING SEWARD MERRELL . 340 W. Fayette St., Syracuse, N. Y.	II.	Factory Superintendent, Merrell-Soule Co.
GEORGE E. MERRYWEATHER, Providence, R. I.	II.	With Brown & Sharpe Manufacturing Co.
CHARLES P. MOAT . . . . 71 Newbury St., Boston.	V.	In Chemical Business.
CHARLES MORRIS, JR. . . . Care Navy Department, Washington, D. C.	VI.	Assistant Paymaster U. S. Navy.
CHARLES K. B. NEVIN . . 220 Devonshire St., Boston.	IV.	With Francis R. Allen and J. McArthur Vance, Architects.
HERBERT D. NEWELL . . . Boston, Mass.	I.	Draughtsman, U. S. Engineer's Office.

1896. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CHARLES S. NEWHALL . . . 74 Broad St., Lynn, Mass.	III.	Mining Engineer.
FRED B. OWEN . . . . . 9 Parsonage St., Providence, R. I.	VI.	Electrician, Narragansett Electric Lighting Co.
KARL A. PAULY . . . . . 540 Liberty St., Schenectady, N. Y.	VI.	In Testing Department, General Electric Co.
WALTER O. PENNELL . . . Eleventh & Filbert Sts., Philadelphia, Pa.	VI.	With Bell Telephone Co. of Philadelphia.
CLARENCE W. PERLEY . . . Boston, Mass.	VII.	Librarian of Engineering Library, Mass. Institute of Technology.
JOEL H. PILLSBURY . . . . St. Augustine, Fla.	I.	In U. S. Engineer's Office.
EDWIN D. PINGREE . . . . 812 Banigan Bldg., Providence, R. I.	II.	Draughtsman, Associated Factory Mutual Insurance Cos.
HENRY A. PRESSEY, B.S. . . Washington, D. C.	I.	Assistant Hydrographer, U. S. Geological Survey.
JOHN L. PUTNAM . . . . . 105 Quincy St., Chicago, Ill.	VI.	With American Telephone and Telegraph Co.
HARRY D. RAWSON . . . . 615 Walnut St., Des Moines, Iowa.	IV.	Architect.
JAMES W. RAYNOLDS . . . Las Vegas, New Mexico.	III.	With First National Bank.
DANIEL A. RICHARDSON . . 44 Willard St., Hartford, Conn.	II.	Engineer of Tests, Columbia and Electric Vehicle Co.
EDWIN H. ROBERTS . . . . Perry Park, Colo.	II.	Plaster Manufacturer.
J. ARNOLD ROCKWELL, JR., M.D. 3 Worcester Sq., Boston.	VII.	Physician, Boothby Surgical Hospital.
WILLIAM LACY ROOT . . . Manlius, N. Y.	X.	Instructor in Mathematics and Science, St. John's School.
A. RUCKGABER . . . . . Amber Club, Pittsburgh, E. E., Pa.	VI.	With Westinghouse Electric and Manufacturing Co.
A. LE BARON RUSSELL . . . 28 State St., Boston.	IX.	Note Broker.
NORMAN F. RUTHERFORD . . Bathurst, N. S. W., Australia.	VI.	With The De La Vergne Refrigeration Machine Co. (New York, N. Y.).
LAWRENCE K. SAGER . . . . Washington, D. C.	VI.	Assistant Examiner, U. S. Patent Office.
NATHAN H. SANDERSON . . 70 Kilby St., Boston.	I.	Draughtsman, Boston Bridge Works.
MORITZ SAX . . . . . Hurricane Island, Me.	IV.	Draughtsman for Booth Bros. and Hurricane Isle Granite Co.

1896. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FREDERICK F. SCHALLER . . South Natick, Mass.	VI.	With Engineering Department, Boston & Albany R. R. (Boston).
DONALD C. SCOFIELD . . . 338 Erie St., Cleveland, Ohio.	IV.	Of Firm of Scofield, Architects.
JOHN C. SCOVEL, JR. . . . 883 Winthrop Ave., Chicago, Ill.	II.	Mechanical Engineer with Fredj W. Wolf Co., Manufacturers of the Linde Ice Machines.
HENRY K. SEARS . . . . . Tewksbury Centre, Mass.	IX.	Principal of High School.
MORTIMER A. SEARS . . . Southbridge, Mass.	III.	Superintendent, Mass. Graphite Co.
GEORGE F. SHEPARD, JR. . 111 Fifth Ave., New York, N. Y.	IV.	Draughtsman with Brite & Bacon, Architects.
FRANK N. SMALLEY . . . . South Framingham, Mass.	V.	With Smalley & Co.
SAMUEL T. SMETTERS, Ph.B. 50 Wabansia Ave., Chicago, Ill.	I.	Civil Engineer with Illinois Steel Co., North Works.
F. HASKELL SMITH . . . . Hartford, Conn.	X.	With Hartford Rubber Works Co.
HERBERT E. SMITH, S.M. . 221 Main St., Gloucester, Mass.	IV.	Sanitary Architect with L. E. Smith.
HOWARD EVERETT SMITH . Portsmouth, N. H.	XI.	On Engineering of Dry Dock, U. S. Navy Yard.
ALBERT E. SMYSER, S.M. . 4941 Centre Ave., Pittsburgh, E.E., Pa.	II.	Superintendent, Pittsburgh Plant, American Steel Casting Co. (Twenty-sixth St.).
FREDERIC W. SMYSER . . . 910 Highland Ave., Chester, Pa.	II.	Superintendent, American Steel Casting Co.
JAMES S. SMYSER . . . . . Box 886, Schenectady, N. Y.	II.	With General Electric Co.
WALTER M. STEARNS . . . 478 Main St., Waltham, Mass.	VI.	Assistant Superintendent, Waltham Gas and Electric Light Co.
HAROLD C. STEVENS . . . . 3 Mt. Vernon St., Boston.	I.	With Metropolitan Water Board.
JOSEPH W. STICKNEY . . . 15 Dey St., New York, N. Y.	VI.	With Inspection Department, American Telephone and Telegraph Co.
CHARLES H. STONE . . . . 502 State House, Boston.	V.	Chemist with Mass. State Board of Health.
ESTHER STONE . . . . . 49 Westminster St., Providence, R. I.	IV.	Draughtsman with Stone, Carpenter, & Willson, Architects.
BRADLEY STOUGHTON, Ph.B. Western Reserve Bldg., Cleveland, Ohio.	III.	With American Steel and Wire Co.
GRACE A. VAN EVEREN STOUGHTON Mrs. Bradley Stoughton, 2481 Euclid Ave., Cleveland, Ohio.	V.	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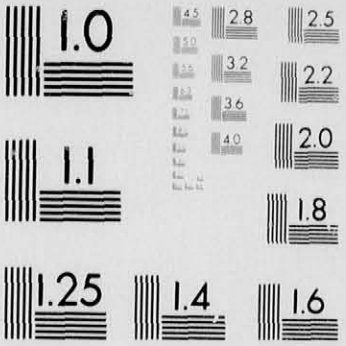
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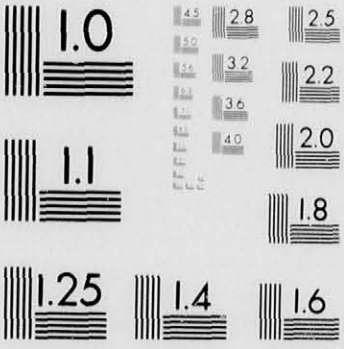
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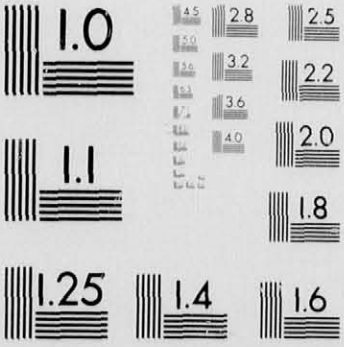
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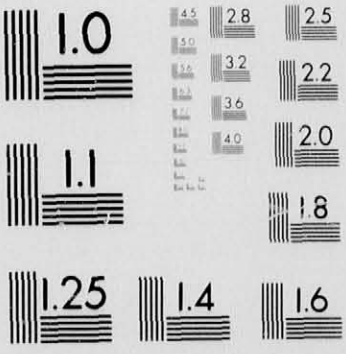
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1896. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
MEYER J. STURM 27–29 So. Clinton St., Chicago, Ill.	IV.	Chief Engineer, Luminous Prism Co.
GEORGE W. SUMNER 709 So. Twenty-ninth St., Omaha, Neb.	VI.	In Business.
HARRISON S. TAFT, B.P. Chicago, Ill.	II.	With Chicago Shipbuilding Co.
LEWIS HOOPER TAPPAN 315 Banigan Bldg., Providence, R. I.	II.	Of Fletcher & Tappan, Bankers and Brokers.
FRANK A. THANISCH Lima, Peru, and Valparaiso, Chile.	III.	Mining Engineer, with W. R. Grace & Co.
WILLIAM H. THOMAS, JR. Magog, Que.	V.	Chemist, Dominion Cotton Mills Co., Magog Print Works Branch.
ALBERT W. THOMPSON Manchester, N. H.	II.	With Amoskeag Manufacturing Co.
LUCY D. THOMSON, A.B. 33 Lyman St., Springfield, Mass.	IV.	Draughtsman for Guy Kirkham, Architect.
SAMUEL F. THOMSON 292 King St., Charleston, S. C.	I.	
JOHN TILLEY 18 Cortlandt St., New York, N. Y.	VI.	With Engineering Department, New York Telephone Co.
HENRY H. TOZIER Lawrence, Mass.	V.	At Lawrence Experiment Station, Mass. State Board of Health.
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CHARLES W. TUCKER 8 Grover St., Lynn, Mass.	V.	Leather Chemist, with Thomas W. Kelley & Co., Glazed Kid Manufacturers.
ARTHUR P. UNDERHILL 38 Westminster St., Springfield, Mass.	VI.	Commercial Traveller, with The Elektron Manufacturing Co.
HERMANN V. VON HOLST, A.B. 1780 Old Colony Bldg., Chicago, Ill.	IV.	Draughtsman with Shepley, Rutan, & Coolidge, Architects.
WILLIAM G. WALL 1418 E. Carey St., Richmond, Va.	VI.	Electrical Engineer, Smith-Courtney Co.
ROBERT S. WASON 61 Chatham St., Boston.	V.	Of Firm of Wason & Co., Wholesale Grocers and Importers.
HENRY A. WATERMAN Providence, R. I.	II.	Assistant Mechanical Engineer, Brown & Sharpe Manufacturing Co.
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ALBERT J. WELLS 277 Dearborn St., Chicago, Ill.	II.	Draughtsman, Otis Elevator Co.

1896. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CHARLES A. WENTWORTH . Boston, Mass.	I.	Assistant Engineer, Maintenance of Way Department, Fitchburg R. R.
LAMBERT N. WHITNEY . . 15 Dey St., New York, N. Y.	VI.	With American Telephone and Telegraph Co.
WILLIAM H. WHITTEN, JR., 59 School St., Roxbury, Mass.	S.M. VIII.	Teacher.
JOHN H. WILLIS, A.B. . . Windsor Road, Waban, Mass.	IV.	Draughtsman with Shepley, Rutan, & Coolidge, Architects.
WILLETT A. WOOD . . . . 115 Griswold St., Detroit, Mich.	VI.	Electrical Engineer.
JULIAN E. WOODWELL . . . Care Treasury Department, Washington, D. C.	II.	Inspector of Electric Light Plants.
CONRAD H. YOUNG . . . . 37–49 Housatonic Ave., Bridgeport, Conn.	II.	Mechanical Engineer, with The Nonpareil Cork Manufacturing Co.

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JOHN T. ALDEN . . . . . 104 Milk St., Boston.	II.	With New England Telephone and Telegraph Co.
WILLIAM H. ALLEN, JR. . 67 Chauncy St., Boston.	XIII.	In Business.
ROBERT ANDERSON, Ph.B. . 2459 Grandin Road, Cincinnati, Ohio.	VI.	Inspector, The Bullock Electric Manufacturing Co. (East Norwood, Ohio).
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CHARLES F. BALDWIN . . . Jefferson St., Chicago, Ill.	VI.	With Western Electric Co.
HENRY W. BALLOU . . . . 63 Princeton Ave., Providence, R. I.	I.	Civil Engineer, with Central Engineering Co. of New York.
WILFRED BANCROFT . . . . 1600 Hamilton St., Philadelphia, Pa.	II.	With Wm. Sellers & Co. (Incorporated).
EDGAR L. BARKHOUSE . . . Care Metropolitan Street Ry. Co., Ninety-sixth St. and First Ave., New York, N. Y.	VI.	With General Electric Co.
WARREN H. BARNES . . . Boone, Iowa.	I.	With Maintenance of Way Department, Chicago & Northwestern Ry.
BERNARD BARROWS . . . . Washington, D. C.	X.	Assistant Examiner, U. S. Patent Office.
HERBERT P. BEERS . . . . 218 La Salle St., Chicago, Ill.	IV.	With M. L. Beers, Architect.
WILLIAM BINLEY, JR. . . . P. O. Box 36, Newport News, Va.	XIII.	Assistant Draughtsman in Office of U. S. Naval Constructor.

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
PERCY E. BLOOD . . . . . 101 Milk St., Boston.	I.	With Engineering Department, Boston Elevated Ry. Co.
HUGH BORLAND . . . . . Charlestown, Mass.	I.	Draughtsman, U. S. Navy Yard.
EDGAR C. BOWEN, JR. . . . 520 Providence Bldg., Duluth, Minn.	II.	Junior Engineer, U. S. Engineer Department.
RALPH A. BOWEN . . . . 130–132 Pearl St., New York, N. Y.	V.	Manager of New York Office, Charles S. Norton, Importer of Aniline and Alizarine Colors.
JOHN BOYD . . . . . 11 E. Main St., Webster, Mass.	V.	Superintendent, Printing and Coloring Departments, Slater Mills (East Webster).
CHARLES W. BRADLEE . . 32 Union St., Boston.	IX.	With Magee Furnace Co.
EDWIN A. BRAINERD . . . 70 Pleasant St., Worcester, Mass.	I.	Structural Draughtsman with Norcross Bros.
CHARLES T. BRAMHALL . . Plymouth, Mass.	II.	Draughtsman, Files & Stowell Co. (Milwaukee, Wis.).
CHARLES B. BREED . . . . Boston, Mass.	I.	Assistant in Civil Engineering, Mass. Institute of Technology.
E. PERCY BROWN . . . . 16 So. Park St., Halifax, N. S.	III.	Mining Engineer.
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FRED E. BUSBY . . . . . Boston, Mass.	V.	Assistant in Industrial Chemistry, Mass. Institute of Technology.
WALTER M. BUSH . . . . 99 Cedar St., New York, N. Y.	II.	Secretary, Central Contracting Co.
JOHN E. CARTY . . . . . 30 Tremont St., Boston.	I.	Draughtsman, Sewer Division, Street Department, City of Boston.
CHARLES BEVAN CLARK, A.B. Loan & Trust Bldg., Washington, D. C.	I.	Office Assistant, Southern Ry. Co.
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EZRA A. COLEMAN . . . . 193 W. Newton St., Boston.	VI.	Inspector of Underground Cables, Edison Electric Illuminating Co.

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JOHN A. COLLINS, JR., S.M. 55 Jackson St., Lawrence, Mass.	X.	With the Arlington Mills.
LUZERNE S. COWLES . . . 101 Milk St., Boston.	I.	With Engineering Department, Boston Elevated Ry. Co.
ALLEN S. CROCKER . . . . Rochester, N. Y.	II.	Instructor, Rochester Athenæum and Mechanics Institute.
CHARLES R. CURRIER . . . 382 Lamartine St., Jamaica Plain, Mass.	II.	Draughtsman and Inspector, B. F. Sturtevant Co.
ARTHUR V. CURTIS . . . . Washington, D. C.	XIII.	Draughtsman, Bureau of Construction and Repair, U. S. Navy Yard.
WILLIAM H. CUTLER . . . 806 The Temple, Chicago, Ill.	IV.	With Frost & Granger, Architects.
JERE R. DANIELL . . . . . 31 State St., Boston.	XIII.	Naval Architect, with B. B. Crowninshield.
HENRY M. DEAVITT . . . 242 So. Jefferson St., Chicago, Ill.	V.	Chemist, with Western Electric Co.
LEONARD M. DEMERITT . No. Sixteenth and Hamilton Sts., Philadelphia, Pa.	II.	Draughtsman with Wm. Sellers & Co.
ARTHUR S. DEWOLF . . . 156 Tremont St., Boston, Mass.	II.	With the American School of Correspondence.
EDWIN S. DODGE . . . . 71 High St., Newburyport, Mass.	IV.	Student (Paris, France).
FRANKLIN W. DOLIBER . . 291 Atlantic Ave., Boston.	IX.	With Mellin's Food Co.
JOHN A. DONOVAN . . . . 256 Branch St., Lowell, Mass.	IX.	Teacher, Lowell High School.
ALFRED R. DOTEN . . . . 913 L St., N.W., Washington, D. C.	II.	
PROCTOR L. DOUGHERTY . . Washington, D. C.	VI.	Electrical Engineer, in Office of Supervising Architect, Treasury Department.
ALFRED K. DOWNES . . . Bangor House, Bangor, Me.	I.	Assistant Roadmaster Maine Central R. R.
IRÉNÉE DU PONT, S.M. . . 792 Broad St., Newark, N. J.	X.	Treasurer, Manufacturers' Contracting Co.
JOHN R. DWYER . . . . . Columbia Bldg., Eighth and Locust Sts., St. Louis, Mo.	IV.	Architect and Superintendent.
CHARLES H. EAMES . . . . 67 Middle St., Lowell, Mass.	VI.	Superintendent, Light, Heat, and Power Corporation.
WILLIAM W. EATON . . . 222 Rochelle Ave., Wissahickon, Pa.	II.	With Pencoyd Iron Works (Pencoyd, Pa.).

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FREDERICK L. EDMANDS. 408 Spruce St., N. W., Washington, D.C.	II.	Assistant Examiner, U. S. Patent Office.
ARTHUR ELSON, A.B. 122 Pearl St., New York, N. Y.	X.	Chemist with A. Klipstein & Co., Dyestuffs.
FRANK W. EVERETT 41 Cedar St., New York, N. Y.	VI.	Of Firm of Field & Everett, Engineers.
MALCOLM F. EWEN 16 Hill St., Finsbury, London, E. C., England.	IV.	With Luxfer Prism Co.
FLORENCE WOOD EWING Mrs. W. C. Ewing, 77 Cedar St., Roxbury, Mass.	VIII.	
WILLIAM C. EWING 2380 Washington St., Boston.	VI.	With C. H. W. Wood, Civil Engineer and Surveyor.
JOHN S. EVNON 20 Kilby St., Boston.	VI.	Insurance Inspector, John C. Paige & Co.
WILLIAM ALECK FAXON 401 Main St., Buffalo, N. Y.	V.	With Faxon, Williams, & Faxon, Wholesale and Retail Grocers.
FRANK G. FEELEY Kodak Park, Rochester, N. Y.	II.	With Eastman Kodak Co.
ROBERT M. FERRIS, JR. 81 Willoughby St., Brooklyn, N. Y.	VI.	In Engineering Department, New York & New Jersey Telephone Co.
JOHN WATSON FITZGERALD, San Juan, Porto Rico.	S.B. VI.	Mechanical Engineer, FitzGerald, Marquardt Engineering Co.
MORTIMER FRANK 233 Hampden Court, Chicago, Ill.	I.	Medical Student, University of Illinois.
FREDERIC WILLIAM FULLER, Cary Bldg., Springfield, Mass.	VI.	General Agent, Equitable Life Assurance Society of New York.
JAMES L. FYFE 417 Home Ave., Oak Park, Ill.	IV.	
LAWRENCE L. GAILLARD 32 Park Pl., New York, N. Y.	VI.	With Electrical Construction Department, Manhattan Ry. Co.
J. MONROE GILMORE, B.L., B.S. Renne Ave., Pittsfield, Mass.	VI.	With Stanley Electric Manufacturing Co.
WALTER A. GLEASON 70 Kilby St., Boston.	I.	Draughtsman, Boston Bridge Works.
GEORGE M. GOODSPEED McKeesport, Pa.	V.	With National Tube Co.
SUMNER GOWEN 242 So. Jefferson St., Chicago, Ill.	I.	Draughtsman, Phœnix Bridge Co.
OWEN H. GRAY Carthage, Mo.	VI.	With Western Electric Co.
R. GEORGE HALL Pueblo, Colo.	V.	Chief Assayer and Chemist, Pueblo Plant, American Smelting and Refining Co.

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ALFRED STARR HAMILTON . 41 Liberty St., New York, N. Y.	IX.	With Lawyers' Engineering and Surveying Co.
CHARLES L. HAMMOND . . 45 Billings St., Atlantic, Mass.	I.	Assistant, with Hodges & Harrington, Civil Engineers (60 State St., Boston).
CHARLES N. HASKINS, S. M. Cambridge, Mass.	VIII.	Graduate Student, Harvard University.
ISRAEL HATCH, JR. . . . . Rochester, N. Y.	X.	Chemist, Photo-Materials Co.
EDGAR M. HAWKINS . . . Steelton, Pa.	II.	Engineer, The Pennsylvania Steel Co.
NATHAN HAYWARD, A.B. . Eleventh and Filbert Sts., Philadelphia, Pa.	VI.	With Bell Telephone Co. of Philadelphia.
ROYAL H. HAYWARD . . . 107 Union St., Schenectady, N. Y.	VI.	With Engineering Department, General Electric Co.
FREDERICK E. HEALY . . . 2 Sixth St., N. E., Washington, D. C.	II.	With Bureau of Yards and Docks, Navy Department.
FREDERICK J. HEMMINGS . 12 Pearl St., Boston.	V.	Chemist, with Henry Carmichael, Analytical and Consulting Chemist.
WILLIAM G. HILL, JR. . . 84 Converse Ave., Malden, Mass.	V.	Chemist, Boston Rubber Shoe Co.
ARTHUR T. HOPKINS . . . Long Island, Boston.	XI.	Superintendent, Boston Almshouse and Hospital.
ROGER F. HOSFORD . . . . 30 Farnsworth St., Boston.	V.	With American Bell Telephone Co.
ETHAN HENRY HOWARD . 366 Delaware Ave., Buffalo, N. Y.	VI.	In Business.
BENJAMIN A. HOWES . . . Bloomfield, N. J.	VI.	Photographer, Sprague Electric Co.
CHESTER D. HUBBARD . . 2804 West Ave., Newport News, Va.	VI.	With Newport News Shipbuilding and Dry Dock Co.
WALTER HUMPHREYS . . . Boston, Mass.	II.	Assistant to the Secretary, Mass. Institute of Technology; Editor of "The Technology Review."
FREDERICK A. HUNNEWELL, 116 Twenty-eighth St., Newport News, Va.	XIII.	Assistant Draughtsman, in Office of U. S. Naval Constructor.
HARRY B. HUNT . . . . . Susquehanna, Pa.	II.	Engineer of Tests, Erie R. R. Co.
HARRY D. HUNT . . . . . 44 Elen St., North Attleboro, Mass.	IX.	Proprietor and Publisher, "The Evening Chronicle."
JOHN P. ILSLEY, JR. . . . . 136 Liberty St., New York, N. Y.	II.	With The Niles Tool Works Co.

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ELBRIDGE C. JACOBS . . . Burlington, Vt.	III.	Instructor in Chemistry and Mineralogy, University of Vermont.
ARTHUR L. JENNINGS . . . Logansport, Ind.	II.	Special Apprentice, Pittsburgh, Cincinnati, Chicago, & St. Louis Ry. Shops.
FRANK H. KEISKER . . . . 1510 Real Estate Trust Bldg., Philadelphia, Pa.	IV.	Draughtsman with Edgar V. Seeler, Architect.
WILLIAM A. KENT . . . . 625 E. Capitol St., Washington, D. C.	I.	Lieutenant, Twenty-third U. S. Infantry.
JAMES W. KILLAM . . . . 3 Mt. Vernon St., Boston.	I.	With Metropolitan Water Board.
ALBERT E. KIMBERLY . . . 40 Stone St., New York, N. Y.	V.	With The Farbenfabriken of Elberfeld Co.
GEORGE H. KNIGHT . . . Fitchburg, Mass.	II.	With Putnam Machine Co.
AUGUSTUS C. LAMB . . . . South Lee, Mass.	X.	With American Writing Paper Co., Hurlbut Paper Manufacturing Co. Division.
GEORGE S. LAWLER . . . . 259 Webster St., East Boston.	VI.	With Boston Elevated Ry. Co.
WILLIAM H. LEACH, JR. . . 245 William St., Bridgeport, Conn.	II.	With The Union Metallic Cartridge Co.
ERNEST F. LEARNED . . . 4 Post Office Sq., Boston.	VI.	With Stone & Webster, Electrical Experts and Engineers.
FREDERIC N. LEBARON . . 160 Fifth Ave., New York, N. Y.	IV.	With American Luxfer Prism Co.
JAMES E. LEWIS . . . . . 14 Beacon St., Boston.	I.	With Engineering Department, Metropolitan Park Commission.
HENRY M. LOOMIS . . . . Niagara Falls, N. Y.	V.	With Mathieson Alkali Works.
BENJAMIN A. LOVELAND . 7 Water St., Boston.	I.	Draughtsman, U. S. Engineer Office.
ROBERT S. LUNT . . . . . 19 Pond St., Newburyport, Mass.	X.	With Kuttroff, Pickhardt, & Co. (60 Pearl St., Boston).
GEORGE H. MCCARTHY . . 446 Columbus Ave., New York, N. Y.	IX.	With Frank L. Fisher Co., Real Estate.
EDMUND B. MCCORMICK . Bozeman, Mont.	II.	Instructor in Mathematics and Mechanical Engineering, Montana Agricultural College.
JOHN P. MCMILLAN . . . Petrolia, Ont.	X.	
THOMAS F. J. MAGUIRE . . 8 Shawmut Park, Ashmont, Mass.	VI.	With Engineering Department, City of Boston.

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JOSEPH M. MAHONEY . . . 21 Bailey St., Dorchester Mass.	VI.	Deputy Inspector, Wire Department, City of Boston (Old Court House).
EDMUND S. MANSON, JR., S.M. 7 Holiday St., Dorchester, Mass.	VIII.	
HERMAN W. MARSHALL . . Kingston, R. I.	VII.	Assistant Biologist, Rhode Island Agricultural Experiment Station.
EARL P. MASON . . . . . P. O. Box 344, Hopedale, Mass.	II.	Mechanical Engineer, with Draper Co.
GEORGE A. MORAN . . . . Lawrence, Mass.	V.	Assistant Chemist, Pacific Mills.
EDWARD R. MOTCH . . . 19 So. Water St., Cleveland, Ohio.	II.	With Cleveland Branch, Marshall & Huschart Machinery Co.
HAROLD T. MULHALL . . . 205 La Salle St., Chicago, Ill.	VI.	With Armour & Co., Grain Department.
HOWARD A. NOBLE . . . . Twenty-first and Liberty Sts., Pittsburgh, Pa.	II.	In Mechanical Department, A. French Spring Co.
ALBERT P. NORRIS . . . . 760 Mass. Ave., Cambridge, Mass.	V.	Student, Harvard Medical School (Boston).
EDWIN R. OLIN . . . . . 101 Milk St., Boston.	X.	With Boston Elevated Ry. Co. (Elevated Lines).
HUGH ORR . . . . . 53 State St., Boston.	IV.	With Cram, Goodhue, & Ferguson, Architects.
EDWIN P. OSGOOD . . . . 309 Chestnut St., Clinton, Mass.	XI.	Engineering Inspector, Metropolitan Water Board.
CHARLES B. PAINE . . . . Augusta, Me.	IV.	With Hallowell Granite Works (Hallowell, Me.).
W. THORNTON PARKER, JR. 6 Little's Block, Cambridge, Mass.	IX.	Student, Harvard Law School.
ARCHIBALD L. PARSONS . . 735 No. Capitol St., Washington, D. C.	I.	Draughtsman, U. S. Engineer Office for Erection of New Building for Government Printing Office.
JOHN SHELLEY PECHIN . . Vernon Row, Washington, D. C.	II.	With Punch Cutting Department, Lanston Monotype Machine Co.
VERNON M. PEIRCE . . . . 30 Tremont St., Boston.	I.	With Sewer Division, Street Department, City of Boston.
CHARLES L. W. PETTEE . . 3 Farmington Ave., Hartford, Conn.	V.	Chemist with Henry Souther, Consulting Metallurgical Engineer.
OTTO S. PIKE . . . . . Room 50, 89 State St., Boston.	II.	Mechanical Engineer, with Boston Pneumatic Transit Co.
WILLIAM C. POTTER . . . Libby, Mont.	III.	Mill Superintendent, Libby Creek Mining Co.
GILBERT H. PRATT . . . . 502 State House, Boston.	V.	Assistant Chemist, Mass. State Board of Health.

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ACHILLES H. PUGH, JR. . . Madison Ave., Cincinnati, Ohio.	X.	
WILLIAM EDGAR REED . . East Pittsburgh, Pa.	VI.	Electrical Engineer, with Westinghouse Electric and Manufacturing Co.
WILLIAM STEVENS RHODES . State House, Boston.	XII.	Draughtsman, State Board of Agriculture.
LOUIS J. RICHARDS . . . . City Hall, Elizabeth, N. J.	XI.	Health Officer.
ELMER H. ROBINSON . . . 61 Woburn St., Reading, Mass.	VI.	In Construction Department, New England Telephone and Telegraph Co.
JOHN R. ROGERSON . . . . 7 Doane St., Boston.	I.	With G. E. Sleeper, Civil Engineer.
WARREN A. ROOKE . . . . 10–12 E. Twenty-third St., New York, N. Y.	IV.	Draughtsman, with Ingle & Almirall, Architects.
JAMES C. ROYCE . . . . . 645 No. Fifteenth St., Philadelphia, Pa.	II.	With The Baldwin Locomotive Works.
WALTER B. RUSSELL . . . Boston, Mass.	II.	Assistant in Mechanical Engineering, Mass. Institute of Technology.
LUTHER R. SAWIN . . . . 34 Robbins St., Waltham, Mass.	V.	Biologist, Mass. State Board of Health (Room 502 State House, Boston).
CARL SCHUTTLER . . . . . 11 Broadway, New York, N. Y.	II.	With Diesel Motor Co. of America.
DAVID SCHWARTZ . . . . New Orleans, La.	V.	With the Southern Cotton Oil Co.
WILLIAM H. SELLEW . . . 608 Forest Ave., Avondale, Cincinnati, Ohio.	II.	With Cleveland, Cincinnati, Chicago, & St. Louis Ry.
HENRY A. SHERMAN . . . 537 Mass. Ave., Boston.	III.	With Sewer Division, Street Department, City of Boston.
JESSIE W. SHUMAN . . . . 416 Corn Exchange, Minneapolis, Minn.	VI.	With The Edw. P. Allis Co., of Milwaukee, Wis.
HARRISON W. SMITH, A.B. . Boston, Mass.	II.	Assistant in Physics, Mass. Institute of Technology.
JAMES W. SMITH . . . . . Boston, Mass.	XIII.	Assistant in Mechanical Engineering, Mass. Institute of Technology.
OREN B. SMITH, JR. . . . Phœnix, B. C.	III.	Engineer and Assayer for the "Old Ironsides" and "Knob Hill" Mines.
PERCY M. SMITH . . . . . 54 Kirk St., Lowell, Mass.	II.	With Lawrence Manufacturing Co.
W. FRANKLIN SMITH . . . 247 College St., Lewiston, Me.	II.	Principal, Manual Training School.

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WALTER E. SPEAR . . . . Clinton, Mass.	XI.	Draughtsman, Metropolitan Water Board.
ARTHUR D. SPIESS . . . . 2 E. Fifteenth St., New York, N.Y.	IV.	
RUSSELL C. SPRING . . . . 1129 Tremont Bldg., Boston.	IV.	Draughtsman with Wheelwright & Haven, Architects.
G. FRANKLIN STARBUCK . . Box G, Waltham, Mass.	II.	Draughtsman, Motive Power Department, Boston & Maine R. R.
CHARLES B. STEBBINS . . . Marblehead, Mass.	XIII.	Draughtsman, Marblehead Yacht Yard.
KLAUS J. STEINER . . . . 58 Washington St., Allegheny, Pa.	III.	
PERCY G. STILES . . . . . Baltimore, Md.	VII.	Student, Johns Hopkins University.
HARRISON S. TAFT, B.P. .	XIII.	(See Class of 1896.)
JOHN TAYLOR . . . . . Lowell, Mass.	VI.	With New England Telephone and Telegraph Co.
EDGAR L. TINKHAM, B.P. . Eleventh and Filbert Sts., Philadelphia, Pa.	VI.	In Maintenance Department, Bell Telephone Co. of Philadelphia.
JAY E. TONE . . . . . 109 Court Ave., Des Moines, Iowa.	X.	With Tone Bros., Manufacturers of Flavoring Extracts.
MORRIS K. TRUMBULL . . . 1201 Avenue A, Council Bluffs, Iowa.	I.	Assistant Engineer on Track Laying, Illinois Central R. R.
LUCIUS S. Tyler . . . . . 43 So. Market St., Boston.	VI.	With Geo. Tyler & Co.
T. ERNEST VIDETO, S.M. . Searsdale Estates, White Plains, N. Y.	IV.	Architect.
RALPH SUMNER VINAL . . Warren St., Brookline, Mass.	IV.	Draughtsman with Olmsted Bros., Landscape Architects.
GEORGE R. WADLEIGH . . U. S. R. S. Wabash, Navy Yard, Charlestown.	II.	With Geo. Lawley & Son Corporation (South Boston).
FRANCIS H. WATTS . . . . Boston, Mass.	I.	Assistant in Civil Engineering, Mass. Institute of Technology.
THOMAS R. WEYMOUTH . . 40 Wall St., New York, N. Y.	VI.	With International Hydraulic Co.; Secretary, Jacques Cartier Water Power Co.
DAVID T. WHITON . . . . Hingham Centre, Mass.	II.	Draughtsman, Fore River Engine Co. (Weymouth, Mass.).
WILLIAM R. WOOD . . . . Bath, Me.	XIII.	With Bath Iron Works.

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ALPHEUS G. WOODMAN . . Boston, Mass.	V.	Assistant in Sanitary Chemistry, Mass. Institute of Technology.
GEORGE M. WOODMAN . . Woodsville, N. H.	I.	With Boston & Maine R. R.
E. HAROLD WOODWORTH . P. O. Box 352, Jamestown, N. Y.	V.	Manager, Aristo Chemical Co.
ERNEST WOODYATT . . . . 1142 The Rookery, Chicago, Ill.	IV.	With D. H. Burnham & Co., Architects.

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DONALD N. ALEXANDER . . 608 Hancock Bldg., Boston.	IV.	Draughtsman with F. Joseph Untersee, Architect.
LEON ALLAND . . . . . 661 Broadway, New York, N. Y.	I.	Of Firm of Alland Bros., Manufacturers of Straw and Felt Goods.
ROBERT STARR ALLYN . . . 1016 Tenth St., Washington, D. C.	II.	Student, Columbian University Law School.
LYMAN ARNOLD . . . . . 104 So. Common St., Lynn, Mass.	VI.	With General Electric Co.
MILAN V. AYRES . . . . . P. O. Box 67, Schenectady, N. Y.	VI.	In Testing Department, General Electric Co.
ROGER WARD BABSON . . . 7 Water St., Boston.	I.	Broker, Municipal and Street Railway Bonds.
LYMAN E. BACON . . . . . Williams, Ariz.	I.	Assistant Engineer, Santa Fé Pacific R. R. Co.
JOSEPH BANCROFT . . . . Wilmington, Del.	X.	With Joseph Bancroft & Sons Co., Dyers and Bleachers.
ELLIOTT R. BARKER . . . Worcester, Mass.	V.	Assistant Chemist, Sewer Department, City of Worcester.
HARRINGTON BARKER . . . 17 Grant Pl., Washington, D. C.	II.	Assistant Examiner, U. S. Patent Office.
WILLIAM H. BARLOW . . . 75 Grand Ave., Pasadena, Cal.	V.	
HENRY C. BELCHER . . . Proctor, Vt.	II.	Mechanical Engineer, with Vermont Marble Co.
FRANCIS P. BERGEN . . . . Oelwein, Iowa.	VI.	Electrician, Chicago Great Western Ry.
FREDERIC L. BISHOP . . . Peoria, Ill.	VIII.	Director of Physics, Bradley Polytechnic Institute, University of Chicago.
WILLIAM D. BLACKMER . . 631 No. Cascade Ave., Colorado Springs, Colo.	III.	Superintendent, Strickler Tunnel.
ARTHUR A. BLANCHARD . . Boston, Mass.	V.	Assistant in Theoretical Chemistry, Mass. Institute of Technology.

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JOHN S. BLEECKER . . . . 30 Farnsworth St., Boston.	II.	With American Bell Telephone Co.
HOWARD L. BODWELL. . . Brock House, Rutland, Vt.	II.	Draughtsman with Howe Scale Co.
GEORGE H. BOOTH . . . . Newport News, Va.	II.	With Engineering Department, Newport News Shipbuilding and Dry Dock Co.
MARTIN BOYLE . . . . . Newburyport, Mass.	V.	With Towle Manufacturing Co., Silversmiths.
WILLIAM BREWSTER . . . . 11 Court St., Plymouth, Mass.	II.	With Plymouth Mills.
DICKSON Q. BROWN, A.B. . Schöneberger Ufer 16, Berlin, Germany.	VI.	Student, Königliche Technische Hochschule (Charlottenburg).
GEORGE BURNHAM . . . . 41 Union Sq., West, New York, N. Y.	IV.	Architect.
WILLIAM L. BUTCHER . . . 197 Lake View Ave., Cambridge, Mass.	I.	With Boston Elevated Ry. Co.
ELWELL R. BUTTERWORTH . 111 Putnam Ave., Cambridge, Mass.	II.	Mechanical Engineer, Reversible Collar Co.
LE ROY H. BYAM . . . . Care Office of Division Engineer, Watertown, N. Y.	I.	Rodman, Rome, Watertown, & Ogdensburg Division, New York Central & Hudson River R.R.
DONALD C. CAMPBELL . . . 328 Hyde Bldg., Spokane, Wash.	II.	Agent, Rand Drill Co., of New York.
IRA M. CHACE, JR. . . . . Galveston, Tex.	I.	With C. F. W. Felt, Chief Engineer, Gulf, Colorado, & Santa Fé Ry. Co.
EDWARD S. CHAPIN . . . . 115 High St., Boston.	V.	With New York and Boston Dyewood Co.
PAUL CLIFFORD . . . . . 125 Milk St., Boston.	II.	With American Telephone and Telegraph Co.
HERBERT FRANKLIN COBB . So. Orianna St., Philadelphia, Pa.	II.	Manager, Philadelphia Branch of Palatable Water Still Co.
HERBERT LUTHER COBB . . 984 E. Garfield Boulevard, Chicago, Ill.	VI.	With Chicago Telephone Co.
HOWARD L. COBURN . . . 143 Appleton St., Boston.	II.	Head Draughtsman, Electrical Machine Co. (27 Beach St.).
JOSEPH G. COFFIN . . . . Boston, Mass.	VIII.	Assistant in Physics, Mass. Institute of Technology.
FRANK F. COLCORD . . . . White Pine, Colo.	III.	Superintendent of Smelter, Granite Mountain Gold Mining Co.
FRANK E. COOMBS . . . . 3 Hamilton Pl., Boston.	IV.	Dealer in Building Materials.

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WORTHINGTON CORNELL . . 4 Post Office Sq., Boston, Mass.	VI.	With Stone & Webster, Electrical and Mechanical Experts and Engineers.
WILLIAM E. COTTER . . . 101 Milk St., Boston.	IV.	Draughtsman, Architectural Department, Boston Elevated Ry. Co., "Elevated Lines."
GEORGE THURSTON COTTLE . 39 Curtis Ave., Wallingford, Conn.	V.	With New York Insulated Wire Co.
EVA H. CRANE . . . . . 56 Trowbridge St., Cambridge, Mass.	IV.	Draughtsman.
GEORGE W. CRAVEN. . . . Lock Box 1310, Butte, Mont.	VI.	With Boston & Montana Mining Co.
LUTHER A. CROWELL . . . 16 Berwick Pk., Boston.	VI.	With Boston Electric Light Co.
HARVEY L. CURRIER . . . 841 No. Seventh St., Philadelphia, Pa.	II.	With Erecting Department, Wm. Cramp & Sons, Ship and Engine Building Co.
EVERETT N. CURTIS . . . . 26 Cumberland St., Boston.	IX.	Student Boston University Law School.
FRED. B. CUTTER . . . . . 41 Mall St., Lynn, Mass.	VI.	With General Electric Co.
WILLIAM S. B. DANA . . . 272 W. One Hundred and Seventh St., New York, N. Y.	IV.	Architectural Draughtsman with Bradford L. Gilbert.
RAYMOND H. DANFORTH . 4 Arbella St., Salem, Mass.	II.	Assistant Engineer, National Transportation Co. (Boston).
PHILIP H. DATER, B.A. . . 45 Triangle Bldg., Rochester, N. Y.	I.	Draughtsman, Western Division, New York State Engineer's Office.
ALVAN L. DAVIS . . . . . Boston, Mass.	III.	Assistant in Mining Engineering, Mass. Institute of Technology.
HUNTLY W. DAVIS . . . . 27 Common St., Montreal, Que.	IV.	
GEORGE R. DAVISON . . . Plane and Orange Sts., Newark, N. J.	VI.	With Manhattan General Construction Co.
ROBERT S. DE GOLYER . . 1819 Hinman Ave., Evanston, Ill.	IV.	
JOHN B. DIXON . . . . . Franklin Falls, N. H.	V.	Assistant Dyer, Sulloway Mills.
IRVING B. DODGE . . . . . 2 Danforth Pl., Roxbury, Mass.	II.	Draughtsman with Lombard Water Wheel Governor Co. (Boston).
CHESTER F. DRAKE . . . . 15 Cortlandt St., New York, N. Y.	XI.	Civil Engineer.

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ROBERT M. DRAPER . . . . 1306 Sixth Ave., No., Great Falls, Mont.	III.	With Boston & Montana Consolidated Copper and Silver Mining Co.
ALBERT T. DREW . . . . . 40 Stone St., New York, N. Y.	X.	With Farbenfabriken of Elberfeld Co., Aniline and Alizarine Dyes.
DANIEL W. EDGERLY, S.M. . College Point, Long Island, N. Y.	V.	Chemist, Chilton Paint Co.
RAY C. FAUGHT . . . . . 465 Summer St., Lynn, Mass.	VI.	With General Electric Co.
ALBERT J. FEARING . . . . Boston, Mass.	I.	Bridge Engineer, with Boston & Albany R. R.
DAVID C. FENNER, Ph.B. . South Bethlehem, Pa.	II.	With Bethlehem Steel Co.
FINLAY F. FERGUSON, A.B., B.S. Citizens Bank Bldg., Norfolk, Va.	IV.	Draughtsman with J. E. R. Carpenter, Architect.
HOWELL FISHER . . . . . Everett, Mass.	X.	With New England Gas and Coke Co.
GEORGE I. FISKE . . . . . Pawtucket, R. I.	VI.	With Howard & Bullough, American Machine Co., Limited.
SIMON FLEISHER . . . . . Maple St., Marlboro, Mass.	VI.	With Marlboro Electric and Machine Co.
MABEL F. FORREST . . . . Lowell, Mass.	VII.	
EDWARD T. FOULKES . . . 1 Somerset St., Boston.	IV.	With C. H. Blackall, Architect.
WILLIAM C. FOWNES, JR. . Pittsburgh, Pa.	X.	Secretary, S. Jarvis Adams Co.
ARTHUR I. FRANKLIN . . . 100 Canal St., Cleveland, Ohio.	V.	Assistant Chemist, Sherwin-Williams Paint Co.
ALBERT I. FRYE . . . . . 263 Yamhill St., Portland, Oreg.	I.	Chief Engineer, Pacific Bridge Co.
FREDERIC FURBISH, B. S. . 13 Exchange St., Boston.	IV.	Architect, with H. D. Hale.
ERNEST A. GALLISON . . . Border St., East Boston.	II.	Draughtsman for Bertelsen & Petersen, Designers and Builders of Marine Engines.
LESTER D. GARDNER . . . New York, N. Y.	IX.	Graduate Student, Columbia University.
FREDERIC C. GILBERT . . . Pueblo, Colo.	V.	With American Smelting and Refining Co., Eilers Plant.
CHARLES H. GODBOLD, JR. . 609 Polk St., San Francisco, Cal.	XIII.	Assistant Draughtsman in Office of Naval Constructor, Union Iron Works.
JOHN N. GODDARD . . . . Monterey, Nuevo Leon, Mexico.	V.	Chemist, La Gran Fundicion Nacional Mexicana.

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
GEORGE M. GODLEY . . . . Kurfürstenstrasse 112, Berlin, Germany.	III.	Student, Königliche Bergakademie.
CLARENCE GOLDSMITH . . . North Andover, Mass.	II.	Superintendent of Water Works.
ARTHUR L. GOODRICH . . . 2103 Baronne St., New Orleans, La.	X.	Assistant Chemist, Union Oil Co., Gretna Refinery.
GEORGE O. HASKELL . . . Macon, Ga.	II.	Manager, Mechanical Engineering Department, McCaw Manufacturing Co.
LEWIS A. HAYDEN . . . . P.O. Box 848, Cripple Creek, Colo.	III.	Superintendent, Work Mining and Milling Co.
JAMES E. HAZELTINE . . . Warren, Pa.	VI.	With Bashlin & Co.
FRANK B. HEATHMAN . . . 17 E. Third St., Dayton, Ohio.	IV.	With F. A. Brooks, Architect.
LYMAN F. HEWINS . . . . Washington, D. C.	XIII.	Draughtsman with Department of Construction and Repair, Navy Yard.
CARL S. HIGH . . . . . McPherson, Kans.	VI.	Engineer, Water Works and Electric Light Co.
HEBER A. HOPKINS . . . . 278 Congress St., Boston.	II.	With James W. Tufts, Soda Fountains, Bottling Machinery.
RALPH T. HORTON . . . . . 56½ Arsenal St., Watertown, N. Y.	I.	Bridge Inspector, Rome, Watertown & Ogdensburg Division of New York Central & Hudson River R.R.
ARTHUR F. HOWARD, B.S. . Room 2, Congress Block, Portsmouth, N. H.	VI.	Assistant Superintendent, Portsmouth Electric Ry.
WINFRED DEAN HUBBARD . Concord, Mass.	XI.	With Leonard Metcalf (14 Beacon St., Boston).
GEORGE D. HUNTINGTON, A.B. 33A Franklin St., Watertown, N. Y.	I.	Transitman, New York Central & Hudson River R.R.
CHARLES S. HÜRTER . . . 712 Third Ave., South, Great Falls, Mont.	III.	Chemist, with Boston & Montana Consolidated Copper and Silver Mining Co.
GEORGE A. HUTCHINSON . Care Nordberg Manufacturing Co., Milwaukee, Wis.	II.	With Boston & Montana Consolidated Copper and Silver Mining Co.
HARRY C. INGALLS . . . . 229 Ocean St., Lynn, Mass.	IV.	Student (Paris, France).
ARELI H. JACOBY . . . . 176 Purchase St., Boston.	V.	Chemist, with F. E. Alteaux & Co.
PAUL F. JOHNSON . . . . 120 Sycamore St., Milwaukee, Wis.	II.	Factory Superintendent, Johnson Electric Service Co.

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FREDERIC A. JONES . . . . Needham, Mass.	I.	Instrument Man, Chicago Great Western Ry.
IRVIN H. KAUFMAN . . . Third St., East Cambridge, Mass.	II.	Draughtsman, The Geo. F. Blake Manufacturing Co.
ARTHUR SAMUEL KEENE . 122 Ames Bldg., Boston.	IV.	With Shepley, Rutan, & Coolidge, Architects.
WILLIAM KELLEY . . . . . Houston, Tex.	V.	With Southern Oil Co.
FRANKLIN M. KELLOGG . . 9 Montague Terrace, Brooklyn, N. Y.	VI.	
ROBERT E. KENDALL . . . 96 Warren St., Glens Falls, N. Y.	V.	Chemist, Bureau of Tests, International Paper Co.
ELWELL F. KIMBALL . . . 38 Prospect St., Newburyport, Mass.	I.	With New England Structural Co. (East Everett, Mass.).
WALTER E. KIMBALL . . . 1 Robin Hood St., Roxbury, Mass.	XIII.	
CARLETON S. KOCH . . . . 1600 Hamilton St., Philadelphia, Pa.	V.	With William Sellers & Co.
EDWIN KUTTROFF . . . . . 126 Duane St., New York, N. Y.	X.	Studying abroad (Berlin, Germany).
ROBERT LACY, A.B. . . . . Care Chief Engineer, Southern Ry., Washington, D. C.	I.	In Engineering Department, Southern Ry. Co.
EDWARD P. LANE. . . . . 322 W. Church St., Elmira, N. Y.	I.	With Elmira Bridge Co.
VAN RENSSELAER LANSINGH, B.S. 5109 Kimbark Ave., Chicago, Ill.	VI.	Electrical Engineer, Engineering Department, Western Electric Co.
WALTER H. LEE . . . . . Sixth and Vine Sts., Cincinnati, Ohio.	IV.	Draughtsman, Samuel Hannaford & Sons, Architects.
OWEN L. LEONARD . . . . 189 Kinzie St., Chicago, Ill.	V.	Chemist and Salesman, Farbenfabriken of Elberfeld Co.
JESSE T. LIPPINCOTT . . . Cincinnati, Ohio.	X.	With Citizens National Bank.
EDMUND C. LITTLE . . . . 166 Devonshire St., Boston.	IV.	With H. P. Cummings & Co., Contractors.
PERCIVAL H. LOMBARD, A.B., Eleventh and Filbert Sts., Philadelphia, Pa.	VI.	With Construction Department, American Bell Telephone Co.
CHARLES E. LORD . . . . 1901 Fourth St., N. W., Washington, D. C.	VI.	Fourth Assistant Examiner, U. S. Patent Office.
WALTER G. MCCONNELL . . 516 Warren St., Roxbury, Mass.	XIII.	

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JAMES S. MCINTYRE . . . . 1 Somerset St., Boston, Mass.	IV.	Draughtsman with C. K. Cummings, Architect.
PAUL MCJUNKIN . . . . . Allegheny, Pa.	VIII.	With Sawyer-Marr Electric Co.
WILLIAM ADAMSON MARSHALL, 182 Lake St., Chicago, Ill.	X.	With Baeder, Adamson, & Co., Manufacturers.
GEORGE EUGENE MATHEWS, Room 918, Reibold Bldg., Dayton, Ohio.	IV.	Draughtsman with Frank M. Andrews Architect.
DURAND MAYER . . . . . 1512 Fisher Bldg., Chicago, Ill.	VI.	In Designing Department, Chicago Mining Machine Co.
SUMNER M. MILLIKEN. . . Canajoharie, N. Y.	I.	Assistant Supervisor of Track, New York Central & Hudson River R. R.
JOSEPH J. MOEBS . . . . . 235 Magnolia St., Dorchester, Mass.	I.	Office Assistant, Mass. Highway Commission.
RICHARD MOMMERS . . . . Taylor St. and the River, Chicago, Ill.	V.	Chemist, with Glucose Sugar Refining Co.
EDWARD F. MORRILL . . . 81 Willoughby St., Brooklyn, N. Y.	VI.	With Engineering Department, New York & New Jersey Telephone Co.
JAMES FRED MUHLIG . . . Orange, N. J.	II.	Draughtsman, Edison Phonograph Works.
SAMUEL A. NEIDICH, Ph.B., A.M. 732 Drexel Bldg., Philadelphia, Pa.	II.	Mechanical Engineer.
WILLARD B. NELSON . . . 275 Carlton Ave., Brooklyn, N. Y.	VI.	Junior Teacher of Physics, Manual Training High School.
GEORGE K. NEWBURY . . . Bath, Me.	XIII.	Draughtsman, Bath Iron Works.
HENRY B. NEWHALL, JR. . 26 Cortlandt St., New York, N. Y.	VI.	With Electrical Construction Department, New Jersey Foundry and Machine Co.
CLARENDON NICKERSON . . 349 Grand St., Waterbury, Conn.	X.	With Waterbury Farrel Foundry and Machine Co.
HENRY D. OSGOOD . . . . Cementon, Pa.	XI.	With Whitehall Portland Cement Co.
ALPHEUS A. PACKARD . . Bristol, R. I.	XIII.	Draughtsman with Herreshoff Manufacturing Co.
WALTER PAGE . . . . . 912 Witherspoon Bldg., Philadelphia, Pa.	XIII.	With New York Shipbuilding Co. (Camden, N. J.).
CHARLES H. PEASE . . . . 500 No. Broad St., Philadelphia, Pa.	II.	Draughtsman, Baldwin Locomotive Works.

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
LEROY D. PEAVEY . . . . 1123 Broadway, New York, N. Y.	I.	With Foster & Greene, Architectural Engineers.
CHARLES W. PENDELL . . Boston, Mass.	VI.	Graduate Student, Mass. Institute of Technology.
WILLIAM M. PERLEY . . . Bartow, Fla.	V.	Chemist, J. H. Pratt Laboratory.
FRANK B. PERRY . . . . . 95 Broadway, Providence, R. I.	II.	Mechanical and Mill Engineer, Howard & Bullough, American Machine Co. (Pawtucket, R. I.).
SHIRLEY S. PHILBRICK . . P. O. Box 222, Laconia, N. H.	II.	Draughtsman, Laconia Car Co. Works.
ARTHUR F. PORTER . . . . Pompton Lakes, N. J.	V.	Chemist, Smokeless Powder Department, Laflin & Rand Powder Co.
ROBERT W. PRATT, JR. . . 140 State House, Boston.	I.	Assistant, Engineering Department, Mass. State Board of Health.
BENSON B. PRIEST . . . . 101 Milk St., Boston.	I.	With Boston Elevated Ry. Co.
WILLIAM E. PUTNAM, JR., A.B., 3 Hamilton Pl., Boston.	IV.	With W. H. Kilham, Architect.
EDWARD B. RICHARDSON . 3 Hamilton Pl., Boston.	VI.	Draughtsman.
HENRY P. RICHMOND . . . Pawtucket Ave., East Providence, R. I.	IV.	
JOSEPH C. RILEY . . . . . Boston, Mass.	II.	Assistant in Mechanical Engineering, Mass. Institute of Technology.
EDWARD W. RITCHIE . . . Walnut St., Newton Highlands, Mass.	IV.	Civil Engineering (16 Court St., White Plains, N. Y.).
THOMAS MAYO ROBERTS, A.B. 537 Congress St., Portland, Me.	VI.	Electrical Engineer and Mechanical Draughtsman, U. S. Engineer Office.
ERNEST F. RUSS . . . . . 143 Milk St., Boston.	IX.	General Salesman for Baeder, Adamson, & Co.
BENJAMIN F. W. RUSSELL . 13 Exchange St., Boston.	IV.	Draughtsman with Herbert D. Hale, Architect.
EUGENE W. RUTHERFORD . Boston, Mass.	II.	Assistant in Mechanical Engineering, Mass. Institute of Technology.
HOMER E. SARGENT, JR., Ph.B. 4210 Drexel Boul., Chicago, Ill.	VI.	With Western Electric Co.
HARRY F. SAWTELLE . . . 12 Magazine St., Cambridge, Mass.	I.	With Cambridge Bridge Commission (City Hall, Boston).
ERNEST H. SCHROEDER . . 1608 So. Tenth St., Omaha, Neb.	IV.	With John Latenser, Architect (515 Karback Block).
HENRY F. SCOTT . . . . . 38 Prospect St., Brockton, Mass.	II.	With Dennison Manufacturing Co.

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HEYWARD SCUDDER, B.A. . Boston, Mass.	V.	Graduate Student, Mass. Institute of Technology.
JOSEPH H. SEARS . . . . . 225 E. Nineteenth St.,Chicago, Ill.	V.	Assistant Chemist, American Cotton Oil Co., at the N. K. Fairbanks Co. Works.
LEWIS J. SEIDENSTICKER . 178 Thornton St., Roxbury, Mass.	V.	Chemist for E. Atkins & Co., Central Soledad, Cienfuegos, Cuba.
ALBION W. SHAW . . . . 4 Post Office Sq., Boston.	VI.	In Testing Department and Draughting Room, Stone & Webster, Electrical Experts and Engineers.
ALBERT R. SHEDD . . . . 6441 Kimbark Ave., Chicago, Ill.	II.	Mechanical Engineer, with Illinois Steel Company.
EDWARD C. SHERMAN . . 60 City Hall, Boston.	I.	With Cambridge Bridge Commission.
CHARLES J. SKINNER . . . Ottawa, Kans.	I.	
CHARLES H. SMITH . . . . 107 Warren St., Charlestown, Mass.	II.	Draughtsman, Providence Engineering Works (Providence, R. I.).
HORACE T. SMITH . . . . 137 E.Main St.,Bridgeport, Conn.	V.	Chemist, Fairst Steel Co.
WILLIAM GRAVES SMITH . . Main St., Falmouth, Mass.	I.	Superintendent Falmouth Water Co.'s Water System.
FRANK A. SPAULDING . . . P. O. Box 117, West Stockbridge, Mass.	I.	
WILLIAM D. STAPLES . . . 406 Market St., Philadelphia, Pa.	VI.	With Inspection Department, American Telephone and Telegraph Co.
WILLIAM F. STEFFENS, . . 301 Railroad Bldg., New Haven, Conn.	I.	Draughtsman, Bridge Department, New York, New Haven, & Hartford R. R.
GORHAM P. STEVENS, S.M. 26 Gray St., Cambridge, Mass.	IV.	Studying abroad.
WILLIAM W. STEVENS . . . 1445 Binney St. Washington, D. C.	IV.	Computor, Supervising Architect's Office, Treasury Department.
LEWIS S. STRENG . . . . . 70 Heller Parkway, Newark, N. J.	VI.	With People's Light and Power Co.
WILLIAM R. STRICKLAND . Columbus, Ohio.	I.	With Case Manufacturing Co.
EDWARD STURTEVANT . . . Sea View Ave., Newport, R. I.	IX.	Teacher of Mathematics and Science, St. George's School.
THOMAS E. TALLMADGE . . Evanston, Ill.	IV.	Draughtsman with D. H. Burnham & Co., Architects (Chicago, Ill.).
EDWARD MOLINEUX TAYLOR, Scranton, Pa.	II.	With Dickson Manufacturing Co.

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
MARK E. TAYLOR . . . . 500 No. Broad St., Philadelphia, Pa.	II.	Draughtsman, Baldwin Locomotive Works.
HORACE R. THAYER . . . Portsmouth, N. H.	I.	Draughtsman, Department of Yards and Docks, U. S. Navy Yard.
MAURICE DE K. THOMPSON, JR. Boston, Mass.	VIII.	Assistant in Physics, Mass. Institute of Technology.
MARY JANE THOMSON . . . Greenfield, Mass.	V.	Teacher of Science, Prospect Hill School.
RUDOLPH TIETIG . . . . . 725 Broadway, New York, N. Y.	IV.	Draughtsman with Robert Maynicke, Architect.
GEORGE W. TREAT . . . . 52 Broadway, New York, N. Y.	I.	With The Lamprecht Bros. Company, Bankers (Cleveland and New York).
ATHERTON H. TUCKER . . 120 Tremont St., Boston.	IV.	With Henry A. Phillips, Architect.
FRANK S. TUCKER . . . . 6 W. Sixty-Sixth St., New York, N. Y.	II.	Draughtsman with Pettee & McCutchan.
FRED H. TWOMBLEY . . . 30 Broad St., New York, N. Y.	IX.	With Flint Eddy & Co., Exporting Commission Merchants.
GEORGE F. ULMER . . . . Foot of Pearl St., Brooklyn, N. Y.	V.	Chemist, Arbuckle Bros., Sugar Refinery.
SUSANNAH USHER . . . . 9 Kirkland Pl., Cambridge, Mass.	VII.	
GEORGE R. WADSWORTH . . Albany, N. Y.	I.	Assistant Engineer, Middle Division, New York Central & Hudson River R. R.
JOHN E. WARREN . . . . 96–100 No. Clinton St., Chicago, Ill.	II.	Draughtsman.
KARL W. WATERSON . . . 30 Farnsworth St., Boston.	VI.	With American Bell Telephone Co.
EDGAR A. WEIMER . . . . Lebanon, Pa.	II.	Consulting Mechanical and Blast Furnace Engineer; Superintendent for P. L. Weimer's Heirs.
JOHN F. WESSEL, A.B. . . 7 No. Ferry St., Schenectady, N. Y.	VI.	With Testing Department, General Electric Co.
PAUL B. WESSON . . . . . Lowell, Mass.	II.	Draughtsman for Lowell Machine Shops.
ROSCOE B. WHITTEN . . . 130 Johnson Ave., Winthrop, Mass.	IV.	Draughtsman.

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CLIFTON W. WILDER . . . 3 Head Pl., Boston.	II.	With Edison Electric Illuminating Co.
RALPH E. WILDER . . . . 324 Pine St., Steelton, Pa.	I.	Draughtsman, Bridge and Construction Department, Pennsylvania Steel Co.
DAVID L. WING . . . . . Trout Creek, Mich.	IX.	With Trout Creek Lumber Co.
C.-E. A. WINSLOW, S. M. . Boston, Mass.	VII.	Assistant in Biology, Mass. Institute of Technology.
WINTHROP B. WOOD . . . Concord, Mass.	I.	With Leonard Metcalf, Civil Engineer (14 Beacon St., Boston).
WALTER G. ZIMMERMANN . 619 Cleveland Ave., Chicago, Ill.	II.	With American Steel and Wire Co. (Waukegan, Ill.).

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LEWIS B. ABBOTT . . . . . Boston, Mass.	IV.	Graduate Student, Mass. Institute of Technology.
HERBERT H. ADAMS, B. A. . Detroit, Mich.	I.	Draughtsman, Office of Chief Engineer, Michigan Central R. R.
JOHN H. ADAMS . . . . . 351 Broadway, Pawtucket, R. I.	IV.	Draughtsman with W. H. Kilham (3 Hamilton Pl., Boston).
WALTER O. ADAMS . . . . 1776 Massachusetts Ave., North Cambridge, Mass.	X.	Chemist, in charge of Laboratory, Curtis Davis & Co., Soap Works.
LAWRENCE ADDICKS . . Santa Rita, N. M.	II., VI.	Draughtsman, Santa Rita Copper Mines.
J. WALTER ALLEN . . . . 17 Foster St., Newtonville, Mass.	VI.	In Electrical Department, Boston Elevated Ry. Co. (439 Albany St., Boston).
HAROLD O. AYER . . . . . 16 Marlborough St., Boston.	V.	Private Assistant to Dr. Whitney, Mass. Institute of Technology.
T. WENDELL BAILEY . . . 120 Tremont St., Boston.	IV.	With Winslow, Wetherell, & Bigelow Architects.
BERTHA L. BALLANTYNE . Wellesley, Mass.	VII.	Instructor in Zoölogy, Wellesley College.
WALTER R. BEAN . . . . 211 Twenty-ninth St., Newport News, Va.	XIII.	With Newport News Shipbuilding and Dry Dock Co.
RAYMOND F. BENNETT . . Clinton, Mass.	I.	With Reservoir Department, Metropolitan Water Board.
CARROLL A. BENNINK . . . 1017 Vallejo St., San Francisco, Cal.	IV.	Draughtsman with Willis Polk, Architect.
NEWTON D. BENSON . . . East Everett, Mass.	IV.	Draughtsman, New England Structural Co.
GEORGE E. BERGSTROM . . Broadway & Twenty-fifth St., New York, N. Y.	IV.	Draughtsman, with Tanner & Wallace.

1899. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ARTHUR E. BLACKMER . . 12 Warren Ave., Plymouth, Mass.	I.	Draughtsman, General Electric Co. (Lynn, Mass.).
FRANCIS M. BLAKE . . . . 426 Marlborough St., Boston.	II.	Draughtsman with B. F. Sturtevant Co. (Jamaica Plain).
KENNETH M. BLAKE . . . Newton, Mass.	II.	With Locomobile Co. of America.
WALTER W. BONNS . . . . 719 Goldthwaite Bldg., Milwaukee, Wis.	IV.	Draughtsman with Alexander C. Eschiveiler, Architect.
ARTHUR H. BROWN . . . . Reading, Mass.	II.	
CARROLL W. BROWN . . . Cleveland, Ohio.	I.	With The Brown Hoisting and Conveying Machine Co.
PHILIP BURGESS . . . . . 15 Cortlandt St., New York, N. Y.	XI.	With C. W. Leavitt, Jr., Civil Engineer.
FREDERICK W. CALDWELL . 5 Wilson St., Winchester, Mass.	II.	Resident Engineer, with Mass. Highway Commission (Boston).
HARRY A. B. CAMPBELL . . 53 State St., Boston.	II.	With Dean & Main, Mill and Mechanical Engineers.
SYLVESTER Q. CANNON. . . 11 So. Main St., Salt Lake City, Utah.	III.	Travelling in Europe.
WILLARD T. CANNON . . . 11 Main St., Salt Lake City, Utah.	II.	With Union Light and Power Co.
HERBERT M. CASE . . . . 200 Summer St., Boston.	VI.	With Construction Department, General Electric Co.
EDNA M. CHANDLER . . . 13 Mason St., Brunswick, Me.	V.	Teacher of Mathematics and History, Brunswick High School.
JAMES F. CHAPMAN, S.B. . Pueblo, Colo.	VI.	Master Mechanic's Clerk, Colorado Fuel and Iron Co.
DAVID C. CHURCHILL . . . Pittsburgh, Pa.	II.	With Westinghouse Gas Engine Co.
FREDERICK O. CLAPP, A.B., A.M. 11 Bridgham St., Providence, R.I.	I.	In City Engineer's Office.
JAMES K. CLARK . . . . . Warren, Pa.	II.	Draughtsman, Struthers, Wells, & Co.
CLARENCE B. CLUFF . . . Chicago, Ill.	V.	Assistant Chemist, American Cotton Oil Co.
JOHN E. CONGDON . . . . 73 Auburn St., Paterson, N. J.	II.	With J. W. Ferguson, Mill Engineer.
HERBERT K. CONKLIN . . . 47 Cedar St., New York, N. Y.	IV.	Draughtsman, Howells & Stokes, Architects.

1899. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
GEORGE I. COPP . . . . . Worcester, Mass.	II.	Draughtsman, with Cereal Machine Co.
WILLIAM M. CORSE . . . . Fifth & Butler Sts., Cincinnati, Ohio.	V.	Chemist, for Wm. S. Merrell Chemical Co.
WILLIAM L. CURRY . . . . 168 Homewood Ave., Pittsburgh, Pa.	VI.	
HARVEY M. CUSHING . . . 186 E. Maple Ave., Ottumwa, Iowa.	VI.	Electrician for The Janney Manufacturing Co.
HARRY S. DAMON . . . . Edison Laboratory, Orange, N. J.	II.	Engineer with Edison Portland Cement Co.
HENRIETTA C. DOZIER . . 299 Centre St., Newton, Mass.	IV.	With Library Bureau (530 Atlantic Ave., Boston).
CHARLES D. DREW, A.B. . Care Chief Engineer, Buena Vista Estacion, Mexico, Mexico.	I.	With Engineering Department, Mexican Central Ry.
TIMOTHY J. DRISCOLL . . 7 Hamburg St., Boston.	VI.	Draughtsman, United Coke and Gas Co. (Everett, Mass.).
HENRY C. EATON . . . . 1064 Mary St., Elizabeth, N. J.	II.	With Worthington Pump Co. (Elizabethport, N. J.).
JAMES B. ELLERY . . . . . 322 Pine St., Steelton, Pa.	V.	With Open Hearth Department, Pennsylvania Steel Co.
GEORGE D. EMERSON . . . 1 Alfred St., Jamaica Plain, Mass.	VI.	With H. A. Carson, Civil Engineer.
JOHN B. FERGUSON . . . . Alliance, Neb.	I.	Assistant Engineer, Burlington & Missouri River R.R.
LEONARD H. FIELD, JR., A.B. 53 State St., Boston.	IV.	Draughtsman with Peabody & Stearns, Architects.
FREDERIC ALONZO FIFIELD, 210 Wilder St., Lowell, Mass.	II.	Draughtsman, Lamson Consolidated Store Service Co.
JOHN A. FLEMINGS . . . . Central St., Lowell, Mass.	VI.	With Central Division, New England Telephone and Telegraph Co.
WILLIAM B. FLYNN . . . . 81 Willoughby St., Brooklyn, N. Y.	VI.	Electrician, New York & New Jersey Telephone Co.
ARTHUR B. FOOTE . . . . 262 Park Ave., East Orange, N. J.	I.	With Crocker-Wheeler Electric Co. (Ampere, N. J.).
FRANK F. FOWLE . . . . 22 Thames St., New York, N. Y.	VI.	Assistant Electrical Engineer, American Telephone and Telegraph Co.

1899. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
GARDNER M. GALE . . . . 528 Tremont Bldg., Boston.	IV.	Draughtsman with G. H. Ingraham, Architect.
CHARLES B. GILLSON . . . Lewistown, Pa.	X.	Assistant Chemist in Laboratory of Standard Steel Works (Burnham, Pa.).
RUSSELL GILPIN . . . . . 1304 Broome St., Wilmington, Del.	II.	With New York Shipbuilding Co. (Philadelphia, Pa.).
GEORGE CURTIS GLOVER . . 271 Tremont St., Melrose Highlands, Mass.	IV.	Draughtsman with Chase & Ames, Architects (Boston).
HARRY W. GOLDTHWAITE . 14 Babcock Pl., West Orange, N. J.	II.	Mechanical Engineer with Edison Portland Cement Co.
HERBERT C. GREER . . . . 219 No. Jefferson St., New Castle, Pa.	III.	With American Tin Plate Co.
ASA WATERS GROSVENOR, B.S. Treasury Department, Washington, D. C.	II.	Heating and Ventilating Engineer, Office of Supervising Architect.
FREDERICK W. GROVER . . Middletown, Conn.	VIII.	Assistant in Physics, Wesleyan University.
EDWARD H. HAMMOND . . Care Edison Laboratory, Orange, N. J.	V.	Chemist with Thomas A. Edison.
ROSS HASBROUCK . . . . . Globe, Ariz.	I.	Civil Engineer.
LAURENCE A. HAWKINS, B.A. Pittsfield, Mass.	VI.	With Stanley Electric Manufacturing Co.
BENJAMIN P. HAZELTINE . McKeesport, Pa.	VI.	Draughtsman, National Tube Works Co.
R. STEWART HENDERSON, B.S., Lake City, Iowa.	I.	In Engineering Department, Chicago & Northwestern Ry.
BERNARD HERMAN . . . . Wilmington, Del.	I.	Draughtsman, Edge Moor Bridge Works.
FRANK E. HERMANNS . . . Phœnixville, Pa.	I.	Draughtsman, Phœnix Bridge Co.
JOSEPH L. HERN . . . . . Boston, Mass.	VI.	Graduate Student, Mass. Institute of Technology.
HENRY H. HEWITT, A.B. . 3 Rue Soufflot, Paris, France.	IV.	Student in Architecture.
BENJAMIN S. HINCKLEY . . 147 Western Ave., St. Paul, Minn.	II.	With Northern Pacific Ry. Co.
EVERETT H. HINCKLEY . . 4 Liberty Sq., Boston.	X.	With Victor G. Bloede Co.
AMASA A. HOLDEN . . . . West Lebanon, Me.	IX.	Principal of Lebanon High School.

1899. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ALEXANDER R. HOLLIDAY . Allegheny, Pa.	I.	Assistant on Engineering Corps, Maintenance of Way, Eastern Division, Pittsburgh, Fort Wayne, & Chicago Ry.
FRANK J. HUSE . . . . . 315 Garden City Block, Chicago, Ill.	II.	Mechanical Engineer, with George Messersmith & Co., Contractors.
JEROME P. JACKSON, A.B. . 122 Ames Bldg., Boston.	IV.	Draughtsman with Shepley, Rutan & Coolidge, Architects.
HENRY P. JAMES . . . . Room 63, 31 Milk St., Boston.	II., VI.	Insurance Draughtsman and Surveyor.
HANS P. JENSEN . . . . 1 Mt. Vernon St., Boston.	I.	With Metropolitan Sewerage Commission.
EDWARD JOHNSON, JR. . . Lawrence, Mass.	I.	With Essex Co.
HARRY G. JOHNSON . . . 44 Oliver St., Boston.	V.	Salesman, American Radiator Co.
LANE JOHNSON . . . . . 338 Olive St., Kansas City, Mo.	II.	Assistant Superintendent, Kansas City Bolt and Nut Co.
HARRY M. KEYS . . . . . 1820 Filbert St., Philadelphia, Pa.	VI.	Assistant on Specifications, Construction Department, Bell Telephone Co.
FRED L. H. KIMBALL . . . Boston, Mass.	III.	Assistant in Mining Engineering, Mass. Institute of Technology.
WILLIAM B. KING . . . . Room 85, 125 Milk St., Boston.	VI.	Draughtsman, New England Telephone and Telegraph Co.
WILLIAM A. KINSMAN . . Bridgeport, Conn.	II.	Draughtsman, American Ordnance Co.
JAMES G. LEIPER, JR. . . . 27 Walter Hastings, Cambridge, Mass.	II.	Student, Harvard University Law School.
THOMAS F. LENNAN . . . Joplin, Mo.	V.	With Frank Nicholson, Consulting Engineer.
CLANCEY M. LEWIS . . . . Canton, China.	III.	Professor of Chemistry and Applied Mathematics, Christian College.
JOSEPH E. LEWIS . . . . . Elmwood, Conn.	II.	Mechanical Engineer, with The Whitlock Coil Pipe Co.
ALLEN LOOMIS . . . . . Weymouth, Mass.	XIII.	Machinist, Fore River Engine Co.
RALPH W. LOUD . . . . . 1 Mt. Vernon St., Boston.	I.	Draughtsman and Office Assistant, Engineering Department, Metropolitan Sewage Commission.
LEE R. LOVEMAN . . . . 125 No. Jefferson Ave., Peoria, Ill.	VI.	With Peoria General Electric Co.
ALMERON W. MCCREA, B.S. 24 W. Forty-fifth St., New York, N. Y.	IV.	Draughtsman with Ernest Flagg, Architect (35 Wall St.).

1899. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WILLIAM S. MATHESON . . 857 Columbus Ave., Boston.	II.	Draughtsman, Atlantic Works (East Boston).
CARL S. MILLIKEN . . . . Flint, Mich.	VII.	Teacher of Sciences, Flint High School.
CLARENCE ALFRED MOORE . 29 Stebbins St., Worcester, Mass.	X.	With American Steel and Wire Co., Washburn & Moen Department.
CARL L. MORGAN . . . . . 53 State St., Boston.	VI.	Engineer with New England Electric Vehicle Co.
HARRY S. MORK . . . . . 21 Wabeno St., Roxbury, Mass.	V.	
BENJAMIN E. MORSE . . . Canton, Mass.	II.	Office of Morse Bros.
HARRY L. MORSE . . . . Winchester, Mass.	II., VI.	With McKay Metallic Fastening Association.
STANLEY MOTCH . . . . . 1553 Madison Ave., Covington, Ky.	III.	
ALBERT F. NATHAN, JR. . . 528 New York Life Bldg., Kansas City, Mo.	X.	Superintendent, Industrial Zinc Mining Co.
LESTER ALLAN NEWELL . . Ketchum, Idaho.	III.	Mining Engineer.
WILLIAM S. NEWELL . . . Boston, Mass.	XIII.	Assistant in Mechanical Engineering, Mass Institute of Technology.
TIMOTHY C. O'HEARN . . . 86 Spencer St., Rochester, N. Y.	X.	Chemist with Eastman Kodak Co.
WILLIAM H. J. O'LEARY, A.M. 437 Albany St., Boston.	VI.	With Boston Elevated Ry. Co.
EDWIN A. PACKARD . . . . 32 West St., Mansfield, Mass.	II.	Draughtsman, Providence Engineering Works (521 So. Main St., Providence, R. I.).
CHARLES BARNARD PAGE . . Sparrows Point, Md.	XIII.	With Maryland Steel Co.
WORTHINGTON PALMER . . 272 State St., Albany, N. Y.	IV.	
WILL R. PARKER . . . . . 603 County St., New Bedford, Mass.	VI.	
WILLIAM E. PARKER . . . Dedham, Mass.	I.	With E. Worthington, Civil Engineer.
GEORGE A. PENNOCK . . . P. O. Box L, Kansas City, Mo.	II.	Assistant Business Manager, Kansas City Bolt and Nut Works.
GEORGE HAWTHORNE PERKINS, Ludlow, Mass.	II.	With Ludlow Manufacturing Co.
WILLIAM C. PHALEN . . . Socorro, New Mexico.	V.	Instructor of Geology and Chemistry, New Mexico School of Mines.

1899. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
EARLE B. PHELPS . . . . . Lawrence, Mass.	V.	With State Board of Health, Lawrence Experiment Station.
E. EVERETT PIERCE . . . . 211 Twenty-ninth St., Newport News, Va.	XIII.	Draughtsman with Newport News Shipbuilding and Dry Dock Co.
RALPH H. PINKHAM . . . Broad St. Station, Philadelphia, Pa.	I.	Assistant Engineer, Maintenance of Way Department, Pennsylvania R. R.
WILLARD A. PRICE . . . . Steelton, Pa.	I.	Draughtsman, Bridge and Construction Department, Pennsylvania Steel Co.
GEORGE H. PRIEST . . . . Boston, Mass.	X.	Assistant in Oil and Gas Analysis, Mass. Institute of Technology.
JUAN REAL Y GAILLARD, A.B. 3 St. Gerómino, Santiago de Cuba.	I.	With Cuban Steel Ore Co.
ERNEST A. REGESTEIN. . . 92 Wyman St., Jamaica Plain, Mass.	VI.	In Electrical Department, B. F. Sturtevant Co.
CLARENCE RENSHAW . . . 804 Wood St., Wilkinsburg, Pa.	VI.	Inspector, Westinghouse Electric and Manufacturing Co. (East Pittsburgh, Pa.).
ALBERT A. REYNOLDS, B.A. Williamstown, Mass.	V.	Assistant in Chemistry, Williams College.
GERALD MARTIN RICHMOND, 4 Post Office Sq., Boston.	VI.	With Stone & Webster, Electrical Experts and Engineers.
HERBERT H. RIDDLE . . . 2535 Indiana Ave., Chicago, Ill.	IV.	With James G. Rogers, Architect (1314 Ashland Block, Chicago).
LEWIS W. RIDDLE . . . . 2535 Indiana Ave., Chicago. Ill.	XIII.	
GEORGE H. RIKER . . . . Boston, Mass.	X.	Assistant in Mechanical Drawing, Mass. Institute of Technology.
SAMUEL B. ROBERTSON . . 301 Railroad Bldg., New Haven, Conn.	I.	Draughtsman, Bridge Department, New York, New Haven, & Hartford R. R.
EDWIN F. SAMUELS . . . . 21 Austin St., Hyde Park, Mass.	II.	Draughtsman, Readville Machine Works.
WILLIAM O. SAWTELLE . . 50 Penobscot St., Bangor, Me.	VIII.	With Mount Desert & Penobscot Bay Real Estate Co.
HAVEN SAWYER . . . . . Vernal, Vintah Co., Utah.	II.	With Vintah Copper Summit Co.
NORMAN E. SEAVEY . . . Boston, Mass.	VI.	Assistant in Physics, Mass. Institute of Technology.
MILES S. SHERRILL . . . . Boston, Mass.	V.	Assistant in Analytical Chemistry, Mass. Institute of Technology.
EDWARD W. SIBLEY . . . Weston, Mass.	II.	

1899. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FREDERICK R. SITES . . . Steelton, Pa.	I.	Draughtsman, Bridge and Construction Department, Pennsylvania Steel Co.
HERVEY J. SKINNER . . . Boston, Mass.	V.	Private Assistant to Prof. Noyes, Mass. Institute of Technology.
CHARLES A. SMITH . . . . 149 Broadway, New York, N. Y.	I.	With Ford, Bacon, & Davis, Engineers.
LAWRENCE CLEMENT SOULE, 8 Grand Circle, Eighth Ave. and Fifty-ninth St., New York, N. Y.	X.	With The Locomobile Co. of America.
HERBERT H. STARR . . . . 826 Jefferson St., Wilmington, Del.	I.	Draughtsman, Edge Moor Bridge Works.
FREDERIC B. STEARNS . . 3 Hamilton Pl., Boston.	IV.	Draughtsman with Winslow, Wetherell, & Bigelow, Architects.
PHILIP STOCKTON, A.B. . . 390 Beacon St., Boston.	I.	Assistant Engineer, Merrimack Manufacturing Co. (Huntsville, Ala.).
JACOB STONE, JR. . . . . 416 Nicollet Ave., Minneapolis, Minn.	IV.	In Fire Insurance Business.
GERALD B. STREET . . . . Golden, Colo.	II.	Student, Colorado State School of Mines.
EDWIN SUTERMEISTER . . . Cumberland Mills, Me.	V.	Assistant Chemist for S. D. Warren & Co.
WALTER HANNEN SUTLIFF, 306 Corn Exchange, Minneapolis, Minn.	IV.	Draughtsman with The Barnett & Record Co., Engineers and Contractors.
CLIFFORD M. SWAN . . . . Boston, Mass.	V.	Graduate Student, Mass. Institute of Technology.
CHARLES W. SWIFT . . . . 100 Westford St., Lowell, Mass.	II.	Draughtsman, Tremont and Suffolk Mills.
FRANK R. SWIFT . . . . . Boston, Mass.	X.	Assistant in Mechanical Engineering, Mass. Institute of Technology.
FREDERIC TAPPAN . . . . 18 Cortlandt St., New York, N. Y.	VI.	With New York Telephone Co.
DENZIL H. TAYLOR . . . . 142 Henry St., Brooklyn, N. Y.	I.	Draughtsman with Continental Filter Co. (35 Wall St.).
CHARLES A. TORREY, JR. . P. O. Box 625, Baltimore, Md.	V.	Student, Johns Hopkins University.
EDWARD P. TRASK . . . . 211 Twenty-ninth St., Newport News, Va.	XIII.	Draughtsman, Scientific Department, Newport News Ship Building and Dry Dock Co.
ALBERT W. TUCKER . . . . Gold Hill, N. C.	III.	Superintendent, Concentrating Mill, Union Copper Mining Co.
JOHN L. TUFTS . . . . . 50 Woodbine St., Roxbury, Mass.	V.	With General Chemical Co. (New York, N. Y.).

1899. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ROBERT M. VINING . . . . 21 Union St., South Weymouth, Mass.	II.	
FREDERICK C. WADDELL. . Cleveland, Ohio.	I.	Draughtsman, Brown Hoisting and Conveying Machine Co.
ETHEREDGE WALKER . . . Boston, Mass.	III.	Assistant in Mining Engineering, Mass. Institute of Technology.
ROBERT B. WALLACE . . . Cleveland, Ohio.	XIII.	With American Ship Building Co.
JOHN ABBET WALLS . . . 215 First St., Niagara Falls, N. Y.	VI.	In Office of W. C. Johnson, Engineer for Hydraulic Power and Manufacturing Co.
EDWARD P. WALTERS . . . 905 Illinois St., Urbana, Ill.	V.	On State Water Survey at University of Illinois.
WILLIAM J. WALTHER . . . 37 Arch St., Boston.	I.	Agent for C. S. Knowles.
JAMES H. WALTON, JR. . . Champaign, Ill.	V.	Assistant in Chemical Laboratory, University of Illinois.
FREDERICK A. WATKINS . 277 Dearborn St., Chicago, Ill.	II.	Draughtsman, Otis Elevator Co.
CHARLES ALBERT WATROUS, 8 Exchange Pl., Boston.	IV.	Draughtsman with Chapman & Frazer, Architects.
WALTER W. WELLS . . . 451 Marshall Ave., St. Paul, Minn.	VI.	Inspector with American Telephone and Telegraph Co.
LEWIS R. WHITAKER . . . 12 Pearl St., Boston.	I.	With E. S. Shaw, Consulting Engineer.
HARRY KEITH WHITE . . . 160 Fifth Ave., New York, N. Y.	IV.	Draughtsman with McKim, Mead, & White, Architects.
WILLIAM WHITE . . . . . South Amboy, N. J.	V.	Chemist for the International Smokeless Powder and Dynamite Co.
EDWARD S. WIARD . . . . Wardner, Idaho.	III.	Assayer and Assistant Engineer, Empire State-Idaho Mining and Developing Co.
CHARLES F. WING, JR. . . 37 So. Sixth St., New Bedford, Mass.	VI.	
PERCY W. WITHERELL . . 91 Causeway St., Boston.	VI.	With Warren F. Witherell Co., Wholesale and Retail Grocers.
WILLIAM L. WOOD, JR. . . 694 Western Ave., Lynn, Mass.	VI.	With General Electric Co.
JOHN W. WOOLLETT . . . 826 Jefferson St., Wilmington, Del.	I.	Draughtsman, Edge Moor Bridge Works (Edge Moor, Del.).

Alumni will confer a favor by informing the Secretary of the Faculty of any change of address or occupation.

Other persons who have been connected with the Institute for one year or more will also confer a favor by informing the Secretary of the Faculty of their address and occupation.

It should be noticed that the graduates comprise but about one-third of all the students who have in the past been connected with the Institute.

NUMBER OF GRADUATES BY CLASSES.

Class of 1868	14	Class of 1884	36
" " 1869	5	" " 1885	28
" " 1870	10	" " 1886	59
" " 1871	17	" " 1887	58
" " 1872	12	" " 1888	77
" " 1873	26	" " 1889	75
" " 1874	18	" " 1890	103
" " 1875	28	" " 1891	103
" " 1876	42	" " 1892	133
" " 1877	32	" " 1893	129
" " 1878	19	" " 1894	138
" " 1879	23	" " 1895	144
" " 1880	8	" " 1896	189
" " 1881	28	" " 1897	179
" " 1882	24	" " 1898	200
" " 1883	19	" " 1899	172

Total	2,148
Deduct names counted twice	12
	2,136

ALPHABETICAL LIST OF GRADUATES.

NAME.	COURSE.	CLASS.
Abbot, Charles G.	VIII.	1894
Abbot, Louis A.	II.	1895
Abbott, Frederic B.	VI.	1893
Abbott, Ira	I.	1881
Abbott, Lewis B.	IV.	1899
Aborn, George P.	II.	1886
Adams, Arthur H.	II.	1890
Adams, Benjamin	VI.	1895
Adams, Charles M.	VI.	1895
Adams, Herbert H.	I.	1899
Adams, John H.	IV.	1899
Adams, Raleigh B.	X.	1894
Adams, Walter O.	X.	1899
Addicks, Lawrence	II., VI.	1899
Aiken, Charles W.	II.	1891
Albee, Orton W.	III.	1893
Alden, Charles H., Jr.	IV.	1890
Alden, Edwin C.	VI.	1895
Alden, Herbert W.	II.	1893
Alden, John	V.	1877
Alden, John T.	II.	1897
Alexander, Donald N.	IV.	1898
Alland, Leon	I.	1898
Allbright, William B.	V.	1878
Allen, C. Frank	I.	1872
Allen, Charles F.	III.	1876
Allen, Charles R.	V.	1885
Allen, Charles V.	VI.	1893
*Allen, Henry W. (July 2, '97)	X.	1897
Allen, James W.	VI.	1899
Allen, John H.	III.	1881
Allen, Samuel E.	I.	1875
Allen, Walter S.	V.	1879
Allen, William H., Jr.	XIII.	1897
Allyn, Robert Starr	II.	1898
Ames, Azel	I.	1895
Ames, Butler	II.	1896
Ames, Clara P.	V.	1882
Anderson, George H.	X.	1894
Anderson, Robert	VI.	1897
Anderson, William P.	III.	1896
Andrew, William M.	VI.	1896
Andrews, Edmund L.	VI.	1894
Anthony, Arthur C.	III.	1886
Anthony, John G.	III.	1893
Appleton, Charles B.	II.	1884
Appleton, Ellery C.	III.	1868
Armington, George A.	II.	1887
Arnold, Lyman	VI.	1898
Arnott, James L.	Sci. and Lit.	1875
Ashton, George F.	II.	1896
Aspinwall, Thomas	I.	1876
Atkins, Ernest C.	II.	1896
*Atkinson, James S. (Dec. 17, '83)	II.	1881
Atwood, Frank W.	V.	1890
Atwood, Thomas C.	I.	1897
Atwood, William P.	V.	1876
Austin, Amory	V.	1873
Ayer, Arthur W.	II.	1890
Ayer, Harold O.	V.	1899
Ayres, Milan V.	VI.	1898
Babb, Cyrus C.	I.	1890
Babson, Roger Ward	I.	1898
Bachelder, Charles S.	V.	1877
Bacon, Lyman E.	I.	1898
Badger, Ernest F.	V.	1895
Badger, Frank S.	I.	1893
Bailey, Thomas Ward	I.	1896
Bailey, Thomas Wendell	IV.	1899
Bakenhus, Reuben E.	I.	1896
Baker, Charles M.	IV.	1878
Baker, David	III.	1885
Baker, Fred C.	II.	1894
Baker, Frederic W.	II.	1893
Baker, Joseph B.	VI.	1890
Baker, William H.	I.	1869
Baldwin, Charles F., Jr.	VI.	1897
Baldwin, E. Arthur	VI.	1896
Baldwin, Henry F.	II.	1884
Baldwin, Hiram E.	I.	1890
Baldwin, Thomas W.	I.	1876
Ball, Robert S.	II.	1891
Ballantyne, Bertha L.	VII.	1899
*Ballard, Hetty O. (Dec. 20, '97)	XII.	1893
Ballou, Henry W.	I.	1897
Ballou, Latimer W.	II.	1895
Bancroft, Joseph	X.	1898
Bancroft, Wilfred	II.	1897
Barbour, Minard T.	II.	1893
Bardwell, Fred L.	V.	1884
Bardwell, Herbert T.	I.	1883
Barker, Elliott R.	V.	1898
Barker, Harrington	II.	1898
Barkhouse, Edgar L.	VI.	1897
Barlow, William H.	V.	1898
Barnes, Warren H.	I.	1897

*Deceased.

NAME.	COURSE.	CLASS.
Barnes, William T.	I.	1893
Barr, Lawrence	VI.	1895
Barri, Joel G.	I.	1891
Barrows, Bernard	X.	1897
Barrows, Harold K.	I.	1895
Barrows, Herbert	I.	1874
Barrows, Walter B.	VII.	1876
Barrus, George H.	II.	1874
Barry, Edmund D.	XIII.	1895
Barstow, George E.	II.	1894
Bartholomew, Ethel	IV.	1895
Bartlett, Dana P.	VI.	1886
Bartlett, Sidney R.	VII.	1887
Bartlett, Spaulding	V.	1890
Bartlett, T. Harris	III.	1884
Bartol, George	III.	1877
Barton, Charles A.	II.	1887
Barton, George H.	III.	1880
Barton, Howard R.	VI.	1894
Basford, George M.	II.	1889
Bassett, William H.	V.	1891
Batchelder, Charles E.	VI.	1896
Batchelder, John L., Jr.	VII.	1890
Batcheller, Birney C.	II	1886
Bates, Daniel M., Jr.	X.	1896
Bates, Harry R.	V.	1894
Bates, Henry D.	IV.	1888
Batson, Walter V.	VI.	1894
Beach, Charles B.	X.	1894
Beach, Edward J.	V.	1889
Beach, Irving E.	V.	1894
Beal, Charles A.	VI.	1892
Beal, Foster E. L.	I.	1871
Beal, J. Williams	IV.	1877
Beaman, David W.	VI.	1896
Bean, Norwin S.	VI.	1894
Bean, Walter R.	XIII.	1899
Beasom, Charles B.	II.	1890
Beattie, Roy H.	I.	1893
Beckler, Alice H.	VII.	1892
Beeching, William H.	II.	1877
Beers, Herbert P.	IV.	1897
Belcher, Henry C.	II.	1898
Belknap, Francis W.	I.	1895
Bellows, Arthur B.	II.	1889
Bemis, Albert F.	I.	1893
Benedict, Vallette L.	VI.	1894
Bennett, Raymond F.	I.	1899
Bennink, Carroll A.	IV.	1899
Benson, Newton D.	IV.	1899
Benton, Edward R.	IV.	1885
Bergen, Francis P.	VI.	1898
Bergstrom, George E.	IV.	1899
Berry, Charles W.	VI.	1895
Berry, Hereford	VI.	1894
Bickford, Elizabeth E.	VII.	1890

NAME.	COURSE.	CLASS.
Bigelow, Charles H.	VI.	1892
Bigelow, Henry F.	IV.	1888
Bigelow, Samuel Lawrence	V.	1895
Binley, William, Jr.	XIII.	1897
Binney, Amos	V.	1881
Bird, Adelaide	VII.	1891
Bird, Herbert S.	V.	1888
Birks, John H.	II.	1891
Biscoe, Maurice B.	IV.	1893
Bishop, Frederic L.	VIII.	1898
Bissell, David S.	III.	1881
Bixby, George L.	X.	1895
Bixby, Willard G.	II.	1889
Blackmer, Adelaide S.	V.	1890
Blackmer, Arthur E.	I.	1899
Blackmer, William D.	III.	1898
Blackwell, Ethel B.	VII.	1891
Blake, Edmund E.	II.	1893
Blake, Francis M.	II.	1899
Blake, Francis P.	III.	1896
Blake, Kenneth M.	II.	1899
Blake, William B.	I.	1887
Blanchard, Arthur A.	V.	1898
Blanchard, Frederick C.	II.	1891
Blanchard, Winslow	II.	1888
Bleecker, John S.	II.	1898
Bliss, Walter D.	IV.	1895
Bliss, Zenas W.	II.	1889
Blodgett, Aaron D.	II.	1876
Blodgett, George W.	I.	1873
Blodgett, Perley H.	V.	1895
Blood, Grosvenor T.	II. 1894	VI. 1893
Blood, John B.	VI.	1890
Blood, Percy E.	I.	1897
Blunt, William T.	I.	1874
Boardman, Henry A.	V.	1884
Bodwell, Howard L.	II.	1898
Boedeker, John	VI.	1895
Boeseke, Edgar A.	II.	1895
Bolan, Thomas V.	VI.	1891
Bonesteele, Sara Hall	VIII.	1894
Bonns, Walter W.	IV.	1899
Booth, George H.	II.	1898
Booth, Thomas B	VI.	1895
Borden, Charles N.	II.	1889
Borland, Hugh	I.	1897
Boss, Austin D.	II.	1890
Boss, Charles R.	IX.	1894
Bothfeld, Charles C.	I.	1884
Bourne, Frank A.	IV.	1895
Bourne, Jesse H.	II.	1895
Bourne, Phillips P.	II.	1892
Boveri, Marcella O.	IX.	1885
Bovey, William H.	VI.	1894
Bowen, Edgar C., Jr.	II.	1897
Bowen, Ralph A.	V.	1897

NAME.	COURSE.	CLASS.
Bowen, Stephen	II.	1892
Bowes, George S.	II.	1896
Bowie, Augustus J., Jr.	II., VI.	1896
Boyd, John	V.	1897
Boyden, Amos J.	IV.	1875
Boyle, Martin	V.	1898
Brace, Walter C.	III.	1887
Brackett, E. Raymond	V.	1896
Brackett, Wallace C.	XI.	1895
Bradlee, Arthur T.	II.	1888
Bradlee, Charles W.	IX.	1897
Bradlee, Henry G.	VI.	1891
Bradley, Frederick W.	VI.	1889
Bradley, Harry C.	I.	1891
Bragg, Charlotte A.	V.	1890
Bragg, Edward F.	II.	1890
Bragg, Edward M.	XIII.	1896
Brainerd, Dwight	IX.	1887
Brainerd, Edwin A.	I.	1897
Brainerd, Frederick H.	III.	1889
Brainerd, Henry B.	IX.	1887
Brainerd, Wallace H.	VI.	1891
Brainerd, William L.	IV.	1886
Braley, Samuel T.	II.	1879
Braman, Samuel N.	II.	1893
Bramhall, Charles T.	II.	1897
Brand, Horace L.	II.	1891
Breed, Charles B.	I.	1897
Breed, Joshua B. F.	I.	1876
Breed, Lewis B.	VI.	1896
Breed, Stephen Alec	II.	1894
Brewster, Benjamin E.	II.	1872
Brewster, William	II.	1898
Bridges, Luther W.	II.	1889
Briggs, Frank H.	IX.	1881
Brooks, John F.	II.	1896
Brotherton, William E.	V.	1873
Brown, Alice I. (*see* Tyler).		
Brown, Allen P.	IX.	1895
Brown, Arthur H.	II.	1899
Brown, Bertha M.	VII.	1892
Brown, Carroll W.	I.	1899
Brown, Charles H.	I.	1880
Brown, Dickson Q.	VI.	1898
*Brown, Edward D. (July 16, '98)	VI.	1890
Brown, Edward Percy	III.	1897
Brown, Harry W.	VI.	1896
Brown, James M.	II.	1897
Brown, John Clifford	VI.	1893
Brown, Walter Vail	VI.	1894
Brown, Warren D.	VI.	1897
Browne, Harry P.	VI.	1896
Brownell, Ernest H.	I.	1890
Bryant, Dixie L.	XII.	1891
Bryant, Ernest C.	I.	1893
Bryant, George H.	II.	1883
Bryant, Henry F.	I.	1887
Bryant, William P.	X.	1891
Bryden, George W.	II.	1891
Buchanan, Leonard B.	VI.	1893
Bucher, Russell S.	IV.	1896
Buchholz, Charles E.	I.	1893
Buck, Arthur A.	VI.	1893
Bulkley, J. Norman	VI.	1889
Burbank, Philip M.	VI.	1892
Burdick, Howard H.	II.	1897
Burgess, Gelett	I.	1887
Burgess, George K.	VIII.	1896
Burgess, John K.	II.	1886
Burgess, Philip	XI.	1899
Burke, John R.	I.	1893
Burlingham, Charles L.	III.	1886
Burnet, Moses D.	III.	1875
Burnham, Charles M.	VI.	1892
Burnham, Edward C.	II.	1890
Burnham, George	IV.	1898
Burnham, Guy J.	X.	1892
Burnham, Harry A.	II.	1892
Burrage, Severance	VII.	1892
Burrison, Henry K.	I.	1875
Burton, Frank H.	II.	1891
Busby, Fred E.	V.	1897
Bush, Walter M.	II.	1897
Butcher, William L.	I.	1898
Butterworth, Elwell R.	II.	1898
Buttolph, Benjamin G.	II.	1888
Buttolph, Harry T.	I.	1876
Byam, LeRoy H.	I.	1898
Cabot, John W.	III.	1879
Caldwell, Frederick W.	II.	1899
Calkins, Gary N.	IX.	1890
Callahan, Dennis E.	VI.	1893
Callan, John G.	VI.	1896
Came, Frank E.	I.	1881
Cameron, Julian A.	II.	1887
Campbell, Donald C.	II.	1898
Campbell, George A.	I.	1891
Campbell, Harry A. B.	II.	1899
Campbell, Harry H.	III.	1879
Canfield, Arthur L.	II.	1895
Cannon, Lewis T.	IV.	1896
Cannon, Sylvester Q.	III.	1899
Cannon, Willard T.	II.	1899
Capen, Barnard, Jr.	VI.	1891
Capen, G. Walter	IV.	1877
Card, Huber D.	XII.	1892
Carleton, Elbridge S.	IV.	1888
Carlisle, Morten	VI.	1890
Carlton, Chester V.	I.	1890
Carney, Edward B.	II.	1893
Carney, Frank D.	III.	1887
Carney, James A.	V.	1890

* Deceased.

NAME.	COURSE.	CLASS.
Carpenter, Anne E.	V.	1891
Carr, W. Frank	I.	1884
Carson, Howard A.	I.	1869
Carson, Thomas B.	II.	1882
Carter, Henry H.	I.	1877
Carter, William W.	VI. 1894	X. 1893
Carty, John E.	I.	1897
Carvalho, Raul deR.	IX.	1892
Carven, Christopher J.	I.	1884
Case, Herbert M.	VI.	1899
Cater, Douglas A.	II.	1892
Center, David A.	VI.	1888
Chace, Ira M., Jr.	I.	1898
Chace, Mason S.	II.	1894
Chadbourn, William H., Jr.	III.	1886
*Chamberlain, Herbert W. (May 26, '99)	IV.	1895
Chamberlain, Marion Lewis	IV.	1896
Chamberlin, Helen (*see* Dodd).		
Chamberlin, William E.	IV.	1877
Chandler, Edna M.	V.	1899
Chapin, Edward S.	V.	1898
*Chapman, George H. (Jan. 21, '79)	II.	1877
Chapman, George D.	II.	1890
Chapman, James F.	VI.	1899
Chapman, John Winslow	II.	1894
Chapman, Nathan C. W.	II.	1894
Chase, Charles H.	VI.	1892
Chase, Edwin E.	I.	1880
Chase, Frank D.	III.	1881
Chase, Frank L.	I.	1890
Chase, Harold M.	V. 1896	X. 1894
Chase, Harvey S.	II.	1883
Chase, Richard D.	XI.	1892
Chase, Roscoe L.	V.	1884
Chase, Walter S.	IV.	1895
Chenery, Winthrop H.	IV.	1896
*Childs, Edward L. (Mar. 3, '94)	II.	1891
Childs, Stephen	I.	1888
Church, Albert K.	V.	1892
Church, Christopher A.	I.	1875
Church, William L.	VI.	1886
Churchill, David C.	II.	1899
Cilley, Frank H.	I.	1889
Claflin, Alan A.	V.	1894
Claflin, George E.	VI.	1888
Claflin, William B.	IV.	1895
Clapp, Frederick O.	I.	1899
Clapp, Harry L.	X.	1893
Clapp, Sidney K.	I.	1895
Clapp, Wilfred A.	I.	1893
*Clark, Arthur H. (June 21, '99)	VI.	1895
Clark, Carl H.	XIII.	1895
Clark, Carrie Rice	V.	1882
Clark, Charles B.	I.	1897
*Clark, Edward K. (Sept. 10, '78)	II.	1870
Clark, Frederick W.	III.	1880
Clark, Henry A.	II.	1897
Clark, James, Jr.	VI.	1890
Clark, James K.	II.	1899
Clark, Schuyler S.	VIII.	1895
*Clarke, Edward D. (July 30, '98)	VI.	1894
Clarke, Fred H.	I.	1894
Clary, Joseph W.	XIII.	1896
Clement, Arthur A.	X.	1894
Clement, Hugh B.	IV.	1891
Clifford, Harry E.	VI.	1886
Clifford, Paul	II.	1898
Clough, Albert L.	VI.	1891
Cluett, Albert E.	VI.	1896
Cluff, Clarence B.	V.	1899
Cobb, Herbert F.	II.	1898
Cobb, Herbert L.	VI.	1898
Cobb, Louis R.	I.	1886
Cobb, Sylvanus H.	VI.	1888
Coburn, Arthur S.	III.	1895
Coburn, Howard L.	II.	1898
Cochran, Heywood	II.	1885
Codman, John S.	VI.	1893
Cody, Lewis P.	VI.	1892
Coffin, Frederick S.	III.	1879
Coffin, Joseph G.	VIII.	1898
Cogswell, Charles P., Jr.	I.	1892
Colby, John M., Jr.	II.	1892
Colby, Russell H.	V.	1888
Colcord, Frank F.	III.	1898
Cole, Fred A.	II.	1891
Cole, Fred B.	II.	1888
Cole, Harrison I.	II.	1891
Cole, Winthrop	II.	1887
Coleman, Ezra A.	VI.	1897
Coley, John L.	II.	1896
Collins, Benjamin G.	II.	1881
Collins, Bertrand R. T.	II.	1888
Collins, Edward, Jr.	VI.	1888
Collins, John A., Jr.	X.	1897
Collins, Reuben B.	I.	1891
Collins, William H.	V.	1890
Colman, Willard H.	II.	1896
Conant, Francis M.	X.	1896
Conant, Henry J.	II.	1887
Conant, Luther, Jr.	IX.	1895
Conant, Roger W.	VI.	1891
Conant, Whitney	III.	1868
Congdon, John E.	II.	1899
Conklin, Herbert K.	IV.	1899
Conner, Arthur J.	V.	1888
*Connor, Addison (Jan. 4, '91)	I.	1871
Cook, Charles Nourse	X.	1893
Cook, Walter F.	IX.	1890
Cooke, Charles P.	VI.	1895
Cooke, J. Williamson	VI.	1895

* Deceased.

NAME.	COURSE.	CLASS.
Cooke, John Winfield	VI.	1895
Cooley, Helen	V.	1887
Coolidge, Prescott H.	I.	1894
Coolidge, William D.	VI.	1896
Coolidge, Winthrop	III.	1896
Coombs, Frank E.	IV.	1898
Copeland, Frederick K.	I.	1876
Copeland, Henry F.	I.	1894
Copp, George I.	II.	1899
Cornell, Worthington	VI.	1898
Corse, William M.	V.	1899
Cotter, William E.	IV.	1898
Cottle, George T.	V.	1898
Cowles, Luzerne S.	I.	1897
Cox, Frederic E.	IV.	1895
Crabtree, Fred	V.	1889
Crafts, Walter N.	III.	1895
Craighill, Nathaniel R. VI. 1894	II.	1893
*Craigin, Henry A. (Nov. 27, '96)	II.	1889
Cramer, Edwin Claassen	IV.	1896
Crane, Eva H.	IV.	1898
*Crane, Francis H. (Apr. 15, '93)	VI.	1886
Crane, Henry M. VI.	1896 II.	1895
Crane, John G.	I.	1890
Crane, Joshua, Jr.	VI.	1892
Crane, Stephen D.	VI.	1896
Crary, Horace A.	I.	1894
Craven, George W.	VI.	1898
Crocker, Allen S.	II.	1897
Crocker, Calvin Ira	I.	1896
Cromwell, Charles H.	II.	1889
Crosby, Ralph W.	XIII.	1896
Crosby, William O.	VII.	1876
Crosby, William W.	II.	1893
Cross, Charles R. Sci. and Lit.		1870
Crowell, Luther A.	VI.	1898
Cummings, Henry, Jr.	IV.	1896
Cunningham, Edward	X.	1891
Currier, Charles R.	II.	1897
Currier, Harvey L.	II.	1898
Curry, William L.	VI.	1899
Curtin, John A.	I.	1892
Curtis, Arthur V.	XIII.	1897
Curtis, Everett N.	IX.	1898
Curtis, Ralph E.	II.	1887
*Curtis, Russell H. (June 8, '97)	I.	1870
Cushing, Harvey M.	VI.	1899
Cushing, William C.	I.	1887
Cutler, Charles H.	VI.	1894
Cutler, Harry H.	II.	1881
*Cutler, Henry M. (May 16, '77)	I.	1871
Cutler, William H.	IV.	1897
Cutter, Fred B.	VI.	1898
Cutter, George A.	II.	1895
Cutter, Louis F.	I.	1886
Cutter, Roland N.	I.	1889

NAME.	COURSE.	CLASS.
Dadmun, George E.	II.	1892
Daggett, Herbert C.	I.	1891
Dalton, Nelson W.	VI.	1894
Dame, Frank L.	VI.	1889
Damon, Harry S.	II.	1899
Dan, Takuma	III.	1878
Dana, Gorham	I.	1892
Dana, William S. B.	IV.	1898
Danforth, Raymond H.	II.	1898
Daniell, Jere R.	XIII.	1897
Daniels, Nathan H., Jr.	VI.	1896
Darlington, F. Graef	IX.	1881
Darrow, Courtland R.	I.	1893
Dater, Philip H.	I.	1898
Dates, Henry E.	VI.	1894
Davenport, William S.	V.	1889
Davies, T. Clive	II.	1894
Davis, Albert G.	VI.	1893
Davis, Alvan L.	III.	1898
Davis, Arthur L.	II.	1889
Davis, Carleton E.	I.	1893
Davis, Frank E.	II.	1883
Davis, Franklin H.	III.	1896
Davis, Huntly W.	IV.	1898
Davis, Leon K.	X.	1894
Davis, Robert A.	VI.	1896
Davis, William E., Jr.	IV.	1895
Davis, Willis E. Sci. and	Lit.	1876
Davison, George R.	VI.	1898
Dawes, Herbert N.	II.	1893
Day, Nathan B.	II.	1894
Day, Sarah L.	V.	1887
Dean, Arthur D.	VI.	1895
Dearborn, George K.	IX.	1893
Deavitt, Henry M.	V.	1897
Defren, George	V.	1895
De Golyer, Robert S.	IV.	1898
Dejonge, Alfred L.	II.	1895
de Lancey, Darragh	II.	1890
deLancey, Harriet Gallup	V.	1894
Delano, Alexander J.	I.	1890
DeLong, Harold W.	XIII.	1896
Demeritt, Leonard M.	II.	1897
Demond, Charles D.	III.	1893
Denison, Edward E.	X.	1895
*Dennett, Clarence L. (June 6, '78)	II.	1876
Dennett, Hartley	IV.	1892
Densmore, Edward D.	VI.	1893
Derr, Louis	VI.	1892
Devens, Richard	II.	1888
De Wolf, Arthur S.	II.	1897
De Wolf, John O.	II.	1890
Dewson, Edward H., Jr.	II.	1885
Dickerman, Judson C.	X.	1895
Dickey, Charles W.	IV.	1894
Dickinson, Leonard D. P.	VI.	1896

* Deceased.

NAME.	COURSE.	CLASS.
Dill, Howard A.	I.	1891
Dillon, Frederick N.	V.	1893
Dixon, John B.	V.	1898
Dixon, Laurence B.	VI.	1893
Doane, Alfred O.	III.	1884
Doane, George E.	I.	1874
Dodd, Helen Chamberlin	IV.	1896
Dodd, Margaret E.	VII.	1892
Dodge, Charles B.	IX.	1889
Dodge, Edwin S.	IV.	1897
Dodge, Frank S.	I.	1875
Dodge, Frederick H.	II.	1890
Dodge, Irving B.	II.	1898
Dodge, Samuel D.	I.	1893
*Dodge, William B. (Jan. 29, '98)	I.	1872
Doe, Charles C.	VII.	1886
Dolan, Peter F.	VI.	1893
Doliber, Franklin W.	IX.	1897
Donham, Benjamin C.	I.	1895
Donn, Edward W., Jr.	IV.	1891
Donovan, John A.	IX.	1897
Doolittle, Orrin S.	V.	1886
Dorman, Theodore T.	X.	1893
Dorr, Edgar S.	I.	1875
*Dorr, Frank H. (Jan. 8, '97)	VI.	1891
Dorrance, John Thompson	V.	1895
Dorrance, William T.	I.	1896
Doten, Alfred R.	II.	1897
Dougnerty, Proctor L.	VI.	1897
Douglass, Walter B.	I.	1892
Downes, Alfred K.	I.	1897
Dowse, William B.	IV.	1874
Dozier, Henrietta C.	IV.	1899
Drake, Albert W.	VI.	1895
Drake, Chester F.	XI.	1898
Draper, Fred W.	III.	1895
Draper, Robert M.	III.	1898
Dresser, Henry C.	II.	1892
Drew, Albert T.	X.	1898
Drew, Charles D.	I.	1899
Driscoll, James M.	I.	1896
Driscoll, Joseph	I.	1896
Driscoll, Timothy J.	VI.	1899
Drisko, William J.	VIII.	1895
Drum, Alphonsus L.	VI.	1896
Du Bois, Barron P.	VI.	1892
Duckworth, Harry S.	V.	1894
Duff, James C.	V.	1886
Duff, John	V.	1881
Dunbar, Albert	V.	1895
Dunbar, Francis W.	VI.	1890
Dunbar, W. Otis	II.	1879
Dunham, Lewis A.	I.	1891
du Pont, Henry Belin	X.	1894
du Pont, Irénée	X.	1897
du Pont, Pierre S.	V.	1890
Durfee, Nathan	II.	1889
Dutton, Edgar F.	VI.	1888
Dwelley, Edwin F.	I.	1890
Dwyer, John R.	IV.	1897
Dyar, Harrison G.	V.	1889
Eames, Charles H.	VI.	1897
Eastman, Henry F.	II.	1888
Eaton, Charles S.	IV.	1878
Eaton, Henry C.	II.	1899
Eaton, William W.	II.	1897
Edes, William C.	I.	1875
Edgerly, Daniel W.	V.	1898
Edmands, Frederick L.	II.	1897
Edmands, J. Rayner	II.	1869
*Edwards, Arthur V. (Aug. 3, '97)	IV.	1889
Eldridge, George F.	V.	1892
Ellery, James B.	V.	1899
Ellis, John	VI.	1894
Ellis, Rolfe M.	V.	1895
*Ellis, Walter H. (Oct. 4, '99)	I.	1895
*Ellsworth, Alfred B. (Jan. 10, '93)	I.	1888
Elson, Arthur	X.	1897
Ely, Edward F.	IV.	1882
Ely, Sumner B.	II.	1892
Emerson, George D.	VI.	1899
Emerson, Joseph S.	I.	1874
Emery, Elwood A.	IV.	1890
Emery, James A.	I.	1893
Emmerton, Frederic A.	V.	1872
England, Paul W.	VI.	1891
Ensworth, Horace H.	VI.	1891
Eppendorff, John G.	IV.	1883
Eppes, Richard, Jr.	II.	1888
Esty, William	VI.	1893
Eveleth, Charles F.	VI.	1895
Everett, Frank W.	VI.	1897
Ewen, Malcolm F.	IV.	1897
Ewing, Florence Wood	VIII.	1897
Ewing, William C.	VI.	1897
Eynon, John S.	VI.	1897
Fabens, George W.	I.	1879
*Fabens, S. A., Jr. (Mar. 14, '75)	I.	1873
Farmer, George W.	II.	1886
Farnsworth, Arthur J.	VI.	1894
Farquhar, Robert D.	IV.	1895
Farwell, Arthur	VI.	1893
Faught, Ray C.	VI.	1898
*Faunce, Elmer (July 6, '82)	III.	1871
Faunce, George	III.	1882
Faunce, Linus	II.	1877
Favor, George W.	III.	1891
Faxon, Francis E.	II.	1895
Faxon, William A.	V.	1897
Fay, Frederic H.	I.	1893
Fearing, Albert J.	I.	1898
Feeley, Frank G.	II.	1897

*Deceased.

NAME.	COURSE.	CLASS.
Feland, Logan	IV.	1892
Felton, Samuel M.	I.	1873
Fenn, William H.	I.	1890
Fenner, David Colton	II.	1898
Ferguson, Finlay F.	IV.	1898
Ferguson, John B.	I.	1899
Ferguson, John N.	I.	1894
Ferguson, Louis A.	VI.	1888
Field, Leonard H., Jr.	IV.	1899
Ferris, Robert M., Jr.	VI.	1897
Field, Frederick E.	XI.	1896
Fifield, Frederick A.	II.	1899
*Firth, Frank R. (June 9, '72)	I.	1868
Fish, Milton L.	VI.	1895
Fish, Walter C.	VI.	1887
Fisher, Charles H.	II.	1877
Fisher, Elizabeth F.	XII.	1896
Fisher, Frederick L.	I.	1873
Fisher, Howell	X.	1898
Fisk, Harry G.	IX.	1896
Fiske, George I.	VI.	1898
Fiske, Henry A. VI. 1892	X.	1891
Fiske, J. Parker B.	VI.	1889
Fitch, Alfred L.	II.	1884
Fitz Gerald, Francis A. J.	VI.	1895
Fitz Gerald, John W.	VI.	1897
Fleisher, Simon	VI.	1898
Flemings, John A.	VI.	1899
Fletcher, Charles R.	V.	1876
Flint, Bertram P.	II.	1888
*Flint, Wm. C. (June 14, '81)	III.	1877
Flint, William P.	II.	1890
Flynn, William B.	VI.	1899
Flood, Samuel D.	II.	1890
Foote, Arthur B.	I.	1899
Foote, Edward H.	I.	1871
Foque, Theodore A.	II.	1888
Foran, George J.	II.	1883
Forbes, Eli Sci. and Lit.		1868
Forbes, Fred B.	V.	1893
Forbes, Howard C. VI. 1892	X.	1891
Forbush, Gayle T.	X.	1892
Forrest, Mabel F.	VII.	1898
Forster, Frederick E.	X.	1896
*Foss, Edward S. (Oct. 3, '90)	V.	1886
Foss, Fred E.	I.	1886
*Foss, Harry A. (Aug. 19, '85)	II.	1882
*Foster, Theodore R. (Apr. 15, '97)	II.	1886
Foulkes, Edward T.	IV.	1898
Fowle, Arthur E.	X.	1893
Fowle, Frank F.	VI.	1899
Fowle, Frederick E., Jr.	VIII.	1894
Fownes, William C.	X.	1898
Fox, Frederick, Jr.	V.	1885
Fox, John M.	VI.	1887
Francis, Frederick L.	IV.	1892
Frank, Mortimer	I.	1897
Franklin, Arthur I.	V.	1898
Freeman, John R.	I.	1876
French, Alfred W.	I.	1889
French, Allen	IX.	1892
French, Charles A.	III.	1882
French, Edward R.	VI.	1892
French, Edward V.	II.	1889
French, George L. R.	I.	1884
French, Hollis	VI.	1889
French, Lester G.	II.	1891
Fresch, George, Jr.	IV.	1896
Frisbie, Walter L.	II.	1893
Frost, Howard V.	V.	1882
Fry, Thomas W.	II.	1885
Frye, Albert I.	I.	1898
Füger, Frederick W.	II.	1891
Fukuzawa, Stejiro	I.	1888
Fuller, Andrew D.	I.	1895
Fuller, Charles E.	II.	1892
Fuller, Frank L.	I.	1871
Fuller, Frederic W.	VI.	1897
Fuller, George W.	V.	1890
Fuller, J. Edward, Jr.	IV.	1888
Fuller, Myron L.	XII.	1896
Fuller, Robert L.	IV.	1896
Fuller, William B.	I.	1883
*Furber, Pierce P. (Apr. 7, '93)	IV.	1877
Furbish, Frederic	IV.	1898
Fyfe, James L.	IV.	1897
Gage, Stephen De M.	V.	1896
Gaillard, Lawrence L.	VI.	1897
Gale, Gardner M.	IV.	1899
Gale, Horace B.	II.	1883
Gallison, Ernest A.	II.	1898
Galloupe, Francis E.	II.	1876
Gallup, Harriet T. (*see* de Lancey).		
Gamble, William Burt	IX.	1893
Gannett, Earl W.	VI.	1889
Gardiner, Edward G.	VII.	1882
Gardiner, John H.	II.	1895
Gardner, Harry W.	IV.	1894
Gardner, Henry	II.	1896
Gardner, J. Howland	II.	1894
Gardner, Lester D.	IX.	1898
Garfield, Abram	IV.	1896
Garfield, Alexander S.	II.	1886
Garrison, Charles	VI.	1891
Gay, Charles M., Jr.	IV.	1895
Gay, Joseph B.	IV.	1887
Gay, Martin	I.	1877
Gaylord, Wallace K.	V.	1893
Gerrish, William H.	II.	1888
Gilbert, Frederick C.	V.	1898
Gilbert, James P.	V.	1889
Gilbert, Perley Fred	IV.	1895

* Deceased.

NAME.	COURSE.	CLASS.
Gilkey, R. Waldo	II.	1894
Gill, Augustus H.	V.	1884
Gill, Edward P.	IV.	1892
Gillson, Charles B.	X.	1899
Gilman, Charles C.	III.	1868
Gilmore, George L.	II.	1890
Gilmore, Howard . . VI.	1893	II. 1892
Gilmore, Jonathan Monroe . .	VI.	1897
Gilpin, Russell	II.	1899
Gleason, Walter A.	I.	1897
Gleason, Walter P.	V.	1887
Glidden, John W.	II.	1890
Glover, George C.	IV.	1899
*Glover, Marie O. (*see* Holman).		
Godbold, Charles H., Jr.	XIII.	1898
Goddard, David S.	III.	1881
Goddard, John N.	V.	1898
Godley, George M.	III.	1898
Goldsmith, Clarence	II.	1898
Goldthwaite, Harry W.	II.	1899
Goodale, Charles W.	III.	1875
Goodell, George H.	II.	1892
Goodhue, Leonard H.	V.	1896
Gooding, Charles S.	II.	1879
Goodrich, Arthur L.	X.	1898
Goodrich, Robert R.	III.	1885
Goodspeed, George M.	V.	1897
Goodwin, Harry M.	VIII.	1890
Goodyear, Watson E.	VI.	1895
Gordon, Edward B., Jr.	II.	1896
Gorham, Marvine	II.	1893
*Gould, Robert H. (Nov. 19,'78)	Metall.	1876
Gowen, Sumner	I.	1897
Grabau, Amadeus W.	XII.	1896
Gray, Joseph P.	I.	1877
Gray, Owen H.	VI.	1897
Gray, William P.	VI.	1892
Green, Andrew H.	I.	1896 *
Green, Francis C.	XI.	1895
Green, William W.	I.	1892
Greene, Charles E.	I.	1868
*Greene, Irving G. (Feb. 24, '91)	I.	1888
Greenlaw, Frank M.	VI.	1890
Greenleaf, Lewis S.	VI.	1894
Greer, Herbert C.	III.	1899
Greer, Medorem W.	VI.	1891
Gregory, John H.	I.	1895
Grimes, Charles B.	V.	1892
Gross, Harold G.	VII.	1888
Grosvenor, Asa W.	II.	1899
Grover, Edmund	I.	1877
Grover, Frederick W.	VIII.	1899
Grover, Nathan C.	I.	1896
Grush, Henry G.	VI.	1896
Guild, Frederick, Jr. .	Sci. and Lit.	1873
Guppy, Benjamin W.	I.	1889
Guptill, Frank E.	VI.	1896
Gustin, George H.	III.	1883
Hadaway, William S., Jr.	VIII.	1887
Hadley, Frederick W.	VI.	1893
Hagar, Edward M.	II.	1893
Haines, Frank M.	III.	1884
Hale, George E.	VIII.	1890
Hale, Richard A.	I.	1877
Hall, Albert F.	II.	1868
Hall, Edward C., Jr.	II.	1892
Hall, Francis P.	V.	1882
Hall, John R.	VI.	1890
Hall, Robert G.	V.	1897
Hall, Sara A. (*see* Bonesteele).		
Hall, Walter A.	VI.	1896
Hall, William T.	V.	1895
Hallaran, John S.	I.	1896
Hamblet, George W.	II.	1888
Hamilton, Alfred Starr	IX.	1897
Hamilton, Edgar L.	III.	1891
Hamilton, George W.	I.	1880
Hammatt, Edward A. W.	I.	1875
Hammett, Philip M.	II.	1890
Hammond, Charles F.	I.	1891
Hammond, Charles L.	I.	1897
Hammond, Edward H.	V.	1899
Hanchett, George T.	VI.	1893
Handy, Edward A.	I.	1875
Hannah, Frederick A.	II.	1895
Hapgood, Charles W.	V.	1896
Hardman, John E.	III.	1877
Hardy, Robert S.	VI.	1896
Harkness, George E.	I.	1896
Harriman, Frederic O.	I.	1883
Harrington, Joseph	II.	1896
Harrington, Walter K.	I.	1885
Harris, Frederick W.	XI.	1895
Harris, W. Dale	I.	1873
Harris, William L.	VII.	1888
Harrison, Burt S.	IV.	1894
*Hartwell, Ernest G. (Sept. 22,'89)	IV.	1879
Hartwell, Hiram B.	II.	1896
Harvey, Frederic H.	III.	1893
Harvey, George L.	II.	1888
*Harwood, F. W., Jr. (Oct. 18, '95)	VI.	1894
Harwood, Harry A.	I.	1892
Hasbrouck, Ross	I.	1899
Haskell, George O.	II.	1898
Haskins, Charles N.	VIII.	1897
*Haskins, William (Apr. 24, '99)	III.	1891
Haste, James H.	V.	1896
Hastings, Charles F.	III.	1888
Hastings, Harry P.	I.	1894
Hatch, Arthur E.	I.	1891
Hatch, Israel, Jr.	X.	1897
Hathaway, D. Lewis K.	II.	1886

* Deceased.

NAME.	COURSE.	CLASS.
Hathaway, Herbert E.	V.	1891
Hathaway, Savory C., Jr.	VI.	1888
Haven, George B.	II.	1894
Haven, Harry M.	II.	1895
Hawkins, Edgar M.	II.	1897
Hawkins, Laurence A.	VI.	1899
Hawley, Harvey F.	I.	1896
Hayden, Charles	IX.	1890
Hayden, George W.	VI.	1895
Hayden, Lewis A.	III.	1898
Hayden, Sophia G.	IV.	1890
Hayes, Frank	II.	1890
Hayes, Harry E.	VI.	1890
Hayward, Harrison W.	X.	1896
Hayward, Nathan	VI.	1897
Hayward, Royal H.	VI.	1897
Hazard, Schuyler	I.	1890
Hazeltine, Benjamin P.	VI.	1899
Hazeltine, James E.	VI.	1898
*Head, James H. (Aug. 18, '75)	II.	1875
Healy, Frederick E.	II.	1897
Heath, George L.	V.	1888
Heathman, Frank B.	IV.	1898
Hedge, Henry R.	IX.	1896
Hedge, William R.	IX.	1896
Heermann, Frederick M.	II.	1896
Heins, George L.	IV.	1882
Hemmings, Frederick J.	V.	1897
Henck, John B., Jr.	VIII.	1876
Henderson, Reuben S.	I.	1899
Henderson, James B.	II.	1896
Henry, Ralph C.	IV.	1896
Herman, Bernard	I.	1899
Hermanns, Frank E.	I.	1899
Hern, Joseph L.	VI.	1899
Herrick, Edward W.	II.	1888
Herrick, James A.	V.	1872
Hersam, Ernest A.	V.	1891
Hewett, Joseph	VIII.	1896
Hewitt, Henry H.	IV.	1899
Hewins, Lyman F.	XIII.	1898
Heywood, Albert S.	VI.	1892
*Heywood, Geo. H. (May 17, '98)	III.	1884
*Heywood, Lincoln C. (Dec. '94)	I.	1891
Hibbard, Henry D.	III.	1877
Hibbard, Thomas	II.	1875
Higgins, Alfred S.	IV.	1878
Higgins, Edward E.	VI.	1886
High, Carl S.	VI.	1898
Hildreth, William O.	II.	1887
Hill, William G., Jr.	V.	1897
Hill, William Reed	IV.	1894
Hilliard, John D., Jr.	VI.	1892
Hinckley, Benjamin S.	II.	1899
Hinckley, Everett H.	X.	1899
Hinckley, J. Fred	X.	1893
Hinman, Charles W.	III.	1870
Hobart, Henry M.	VI.	1889
Hobart, James C.	II.	1887
Hobbs, Franklin W.	II.	1889
Hodgdon, Frank W.	I.	1876
Hodge, James M.	III.	1872
Holbrook, Elliot	I.	1874
Holden, Amasa A.	IX.	1899
Holder, James G.	V.	1884
Holdrege, Henry A.	VI.	1895
Holliday, Alexander R.	I.	1899
*Hollingsworth, S. (June 26, '90)	II.	1876
Hollis, Frederick S.	V.	1890
Hollis, Walter M.	VI.	1896
Holman, George U. C.	VI.	1889
*Holman, Marie G. (May 5, '85)	V.	1881
Holman, Silas W.	VIII.	1876
Holmes, Francis C.	IX.	1892
Holmes, George A.	X.	1891
Holton, Edward C.	V.	1888
Homer, Eleazer B.	IV.	1885
Hongma, Aechirau	I.	1874
Hooker, Richard	IV.	1889
Hopewell, Charles F.	VI.	1894
Hopkins, Arthur T.	XI.	1897
Hopkins, Frederick L.	V.	1889
Hopkins, Heber A.	II.	1898
Hopkins, James C.	IV.	1896
Hopkins, Prescott A.	IV.	1892
Hopkins, William J.	VI.	1886
Hopton, Walter E.	II.	1891
Horn, Henry J., Jr.	I.	1888
Horton, Ralph T.	I.	1898
Horton, S. Ellsworth	II.	1890
Horton, Theodore	XI.	1894
Hosea, Raphael M.	I.	1879
Hosford, Roger F.	V.	1897
Houck, William G.	I.	1893
Howard, Arthur F.	VI.	1898
Howard, Charles P.	I.	1874
Howard, Ethan H.	VI.	1897
Howard, Frank A.	I.	1896
Howard, Lemuel Frederic	VI.	1895
Howarth, George R.	II.	1895
Howe, George E.	I.	1895
Howe, Henry M.	III.	1871
Howe, Horace J.	I.	1879
Howe, Joseph M.	I.	1896
Howes, Benjamin A.	VI.	1897
Howes, Clarence L.	II.	1873
Howes, Clifton A.	VI.	1894
Howland, Albert H.	I.	1871
Howland, Frederick H.	IX.	1893
Hoxie, Frederick J.	VI.	1892
Hoyt, William E.	I.	1868
Hubbard, Chester D.	VI.	1897

* Deceased.

NAME.	COURSE.	CLASS.
Hubbard, Winfred D.	XI.	1898
Hulse, William S.	VI.	1894
Hultman, Eugene C.	I.	1896
Humphreys, Walter	II.	1897
Hunnewell, Frederick A.	XIII.	1897
Hunt, Albert F.	I.	1894
*Hunt, Alfred E. (Apr. 26, '99)	III.	1876
Hunt, Edward M.	I.	1894
Hunt, Harry B.	II.	1897
Hunt, Harry D.	IX.	1897
Hunt, Harry H.	VI.	1889
Hunt, Samuel P.	VI., X.	1895
Huntington, George D.	I.	1898
*Huntington, W. F. (Aug. 7, '77)	I.	1875
Hurd, Benjamin	VI.	1896
Hurd, E. Laurence	II.	1895
Hürter, Charles S.	III.	1898
Huse, Frank J.	II.	1899
Hussey, Oren S.	II.	1887
Hutchings, James H.	II.	1883
Hutchins, Edward S.	II.	1889
Hutchinson, George A.	II.	1898
Hutchinson, W. Spencer	III.	1892
Huxley, Edward H.	II.	1895
Hyde, Charles G.	XI.	1896
Ilsley, John P., Jr.	II.	1897
Ingalls, Charles H.	VI.	1896
Ingalls, Harry C.	IV.	1898
Ingalls, Walter Renton	III.	1886
Ingraham, George H.	IV.	1892
Jackson, Daniel D.	V.	1893
Jackson, Frank H.	III.	1874
Jackson, Jerome P.	IV.	1899
Jacobs, Arthur L.	VI.	1892
Jacobs, Elbridge C.	III.	1897
Jacoby, Areli H.	V.	1898
Jacques, William W.	VIII.	1876
James, Frank M.	II.	1888
James, Henry P.	II., VI.	1899
James, Lawrence S.	V.	1893
James, Samuel, Jr.	III.	1876
James, Walter H.	II.	1896
Jameson, Arthur H.	V.	1893
Jameson, Minor S.	I.	1896
Janvrin, Ned H.	I.	1894
Jenkins, Charles D.	V.	1882
Jensen, Hans P.	I.	1899
Jenney, Walter	III.	1877
Jennings, Arthur L.	II.	1897
*Jewett, William P. (Jan. 4, '84)	I.	1873
Johnson, Charles H.	I.	1894
Johnson, Edward, Jr.	I.	1899
Johnson, Harry G.	V.	1899
Johnson, Herbert E.	VI.	1894
Johnson, James W.	I.	1882
Johnson, Jesse F.	X.	1892
Johnson, Lane	II.	1899
Johnson, Lewis E.	II.	1889
Johnson, Paul F.	II.	1898
Johnson, William S.	I.	1889
Johnston, William A.	II.	1892
Jones, Arthur W.	VI.	1888
Jones, Edward A.	II.	1887
Jones, Frederic A.	I.	1898
Jones, Howard K.	IV.	1896
Jones, Theodore I.	VI.	1896
Jordan, Edwin O.	VII.	1888
Jordan, Harry W.	V.	1891
Jordan, William F.	I.	1886
Kales, William R.	II.	1892
Kauffman, Milton H.	V.	1891
Kaufman, Irvin H.	II.	1898
Kebler, Julian A.	I.	1878
Keene, Arthur S.	IV.	1898
Keene, Thomas M.	I.	1891
Keene, William F.	I.	1891
Keisker, Frank H.	IV.	1897
Keith, Simeon C., Jr.	VII.	1893
*Keith, William H. (Oct. 17, '98)	VI.	1896
Kelley, William	V.	1898
Kellogg, Franklin M.	VI.	1898
Kendall, Albert L.	II.	1894
Kendall, Charles B.	V.	1887
Kendall, Francis H.	I.	1898
Kendall, Robert E.	V.	1890
Kendall, William R.	VI.	1892
Kenison, Ervin	II.	1893
Kenney, C. Belle	V.	1886
Kennicott, Harry A.	I.	1890
Kent, William A.	I.	1897
Keough, William T.	II.	1888
Keyes, Frederic Hale	II.	1893
Keys, Harry M.	VI.	1899
Kilham, Alfred C.	II.	1876
Kilham, Walter H.	IV.	1889
Killam, James W.	I.	1897
Kimball, Elwell F.	I.	1898
Kimball, Fred L. H.	III.	1899
Kimball, Herbert S.	X.	1891
Kimball, Joseph H.	XI.	1894
Kimball, Walter E.	XIII.	1898
*Kimball, William A. (Dec., '87)	II.	1873
Kimberly, Albert E.	V.	1897
King, Warren D.	VI.	1893
King, William Herbert	IX.	1894
King, William B.	VI.	1899
Kinnicutt, Leonard P.	V.	1875
Kinsman, Arthur D.	VIII.	1889
Kinsman, William A.	II.	1899
*Kirk, Joseph (July, '86)	II.	1877
Kirk, Robert H.	II.	1894
Kittredge, George W.	I.	1877

* Deceased.

NAME.	COURSE.	CLASS.
Kittredge, John W.	II.	1894
Knapp, Charles R.	IV.	1894
Knapp, Frederick B.	I.	1879
Knapp, George Frederick	V.	1884
Knapp, J. Austin	II.	1875
Knight, Franklin	I.	1890
Knight, George H.	II.	1897
Knight, Joseph H.	IX.	1896
Knowles, Morris	I.	1891
Knowlton, Willis T.	I.	1893
Koch, Armand D.	IV.	1892
Koch, Carleton S.	V.	1898
Koehler, Walter J.	V.	1881
Kotzschmar, Hermann, Jr.	II.	1895
Kunhardt, Lewis Henry	II.	1889
Kuttroff, Edwin	X.	1898
Lacount, Henry O. VI.	1895	II. 1894
Lacy, Robert	I.	1898
Lamb, Augustus C.	X.	1897
Lamb, William F.	V.	1893
Lambert, Wallace C.	I.	1893
Lamborn, Leebert L.	V.	1896
Lane, Edward P.	I.	1898
Lane, Frederic H.	II.	1879
Lane, Lucius Page	IX.	1894
Lane, William H.	VI.	1892
Lansingh, Van Rensselaer	VI.	1898
Latey, Harry N.	VI.	1893
Latham, Harry M.	II.	1893
Lauder, George B.	VI.	1889
Lawler, George S.	VI.	1897
Lawrence, Charles E.	VI.	1896
*Lawrence, J. A. M. (Jan. 18, '93)	II.	1886
Lawrence, Ralph R.	VI.	1895
Lawrence, William H.	IV.	1891
Laws, Eugene H.	V.	1896
Laws, Frank A.	VI.	1889
Lawton, Charles F.	I.	1877
Leach, Albert E.	II.	1886
Leach, William H., Jr.	II.	1897
Learned, Ernest F.	VI.	1897
LeBaron, Frederic N.	IV.	1897
Le Bosquet, Maurice	V.	1895
Lee, Elisha	I.	1892
Lee, George S.	I.	1888
Lee, Walter H.	IV.	1898
Leeming, Woodruff	IV.	1891
Leighton, Marshall O.	VII.	1896
Leiper, James G., Jr.	II.	1899
Leland, Walter S.	XIII.	1896
Leland, William E.	II.	1891
Lenfest, Bertram A.	II.	1890
Lennan, Thomas F.	V.	1899
Leonard, Frederick M.	I.	1894
Leonard, H. Ward	III.	1883
Leonard, Owen L.	V.	1898
Le Sueur, Ernest A.	VI.	1890
Lewis, Clancey M.	III.	1899
Lewis, Edwin J., Jr.	IV.	1881
Lewis, Herbert	VI.	1893
Lewis, James E.	I.	1897
Lewis, Joseph E.	II.	1899
Lewis, Marion L. (*see* Chamberlain).		
Lewis, Theodore J.	II.	1876
Lewis, Wilfred	II.	1875
Lewis, William W.	II.	1889
Libby, Dorville, Jr.	VI.	1895
Lincoln, Alfred V., Jr.	II.	1895
Lincoln, G. Russell	III.	1871
Lindsay, William B.	V.	1881
Linzee, John W., Jr.	I.	1889
Lippincott, Jesse T.	X.	1898
Litchfield, Paul W.	X.	1896
Little, Edmund C.	IV.	1898
Livermore, William D.	V.	1887
Locke, Bradford H.	III.	1872
Locke, Charles E.	III.	1896
Locke, Frank L.	I.	1886
Locke, William W.	XI.	1892
Logan, Andrew J.	I.	1895
Logan, John W.	II.	1893
Lombard, Percival H.	VI.	1898
Lonngren, John E.	II.	1896
Loomis, Allen	XIII.	1899
Loomis, Henry M.	V.	1897
Lootz, Alf C.	I.	1896
Lord, Charles E.	VI.	1898
*Lord, Frank H. (Dec. 31, '90)	II.	1885
Loring, Ernest J.	IV.	1895
Loring, Frederic R.	VII.	1879
Loring, Harrison, Jr.	II.	1889
Loring, Robert	X.	1894
Lothrop, Thomas Mark	II.	1895
Loud, Ralph W.	I.	1899
Lovejoy, Frank W.	X.	1894
Loveland, Benjamin A.	I.	1897
Loveland, James W.	V.	1888
Loveman, Lee R.	VI.	1899
Low, Albert H.	V.	1876
Low, John F.	V.	1882
Low, Wilson H.	V.	1886
Lowell, Guy	IV.	1894
Lufkin, Elgood C.	II.	1886
Lukes, Joseph B.	VI.	1892
*Lund, Amy Stantial (Feb. '88)	V.	1884
Lund, James	V.	1881
Lunt, Robert S.	X.	1897
Lyle, David A.	III.	1884
*Lyman, George W. (July, '98)	VI.	1896
Lynch, Patrick M.	I.	1894
Lynde, James P.	IX.	1886
Lyon, Joseph P.	I.	1894

* Deceased.

NAME.	COURSE.	CLASS.
Lyon, Tracy	II.	1885
Lythgoe, Hermann Charles	V.	1896
McAlpine, William H.	XI.	1896
McCann, Frank G.	II.	1896
McCarthy, George H.	IX.	1897
McCaw, Wallace E.	VI.	1892
MacClure, Colbert A.	IV.	1894
McConnell, George B.	I.	1890
McConnell, Walter G.	XIII.	1898
McCormick, Edmund B.	II.	1897
McCrea, Almeron W.	IV.	1899
Macfarlane, William W.	V.	1879
McGoodwin, Henry K.	IV.	1894
McIntyre, James S.	IV.	1898
McJennett, William D.	X.	1894
McJunkin, Paul	VIII.	1898
Mackay, Angus R.	III.	1894
McKenna, Alexander G.	V.	1891
McKibben, Frank P.	I.	1894
McKim, Alexander Rice	I.	1886
*McLaughlin, G. V. (Aug. 14, '92)	V.	1888
McManus, James T. R.	I.	1895
McMillan, John P.	X.	1897
McQuesten, George E.	VI.	1893
MacRae, Hugh	III.	1885
Maguire, Thomas F. J.	VI.	1897
Mahoney, Joseph M.	VI.	1897
Mahony, Marion L.	IV.	1894
Main, Charles T.	II.	1876
Maki, Heiichiro	VI.	1893
Maltby, Margaret E.	VIII.	1891
Manahan, Elmer G.	XI.	1892
Manahan, John H.	VI.	1896
Manley, Laurence B.	I.	1892
Mann, Arthur S.	II.	1888
Mann, Bertram H.	VI.	1890
Mann, Frederick M.	IV.	1894
Manning, Harry G.	II.	1882
Mansfield, Arthur N.	VIII.	1891
Mansfield, Edward S.	VI.	1896
Mansfield, George W.	III.	1882
Mansfield, Harvey M.	III.	1883
Mansfield, R. Herbert, Jr.	VI.	1892
Manson, Edmund S., Jr.	VIII.	1897
Marble, Dwight N.	VI.	1895
March, Clement	I.	1891
Marcy, Willard A.	II.	1893
Marmon, Walter C.	II.	1895
Marquand, Philip	I.	1891
Marshall, Herman W.	VII.	1897
Marshall, William A.	X.	1898
Martin, Henry	V.	1885
Mason, Earl P.	II.	1897
Mason, Sampson D.	I.	1870
Masters, Frank B.	II.	1895
Matheson, William S.	II.	1899
Mathews, Albert P.	VII.	1892
Mathews, George E.	IV.	1898
Matthes, François E.	I.	1895
Matthes, Gerard H.	I.	1895
May, George H.	V.	1892
*May, William C. (Mar. 11, '78)	V.	1873
Mayer, Durand	VI.	1898
Mayer, Virginius A.	VI.	1894
Meade, Charles A.	I.	1894
Melluish, James G.	IX.	1896
Merrell, Charles G.	V.	1888
Merrell, Irving Seward	II.	1896
Merriam, Harry B.	I.	1886
Merriam, Henry P.	VI.	1886
*Merrick, George E. (April 3, '92)	V.	1890
Merrill, Allyne L.	II.	1885
*Merrill, Eben G. (Oct. 12, '87)	I.	1885
Merrill, Frank H.	X.	1893
Merrill, George A.	XI.	1892
Merrill, N. Frederick	V.	1870
*Merriss, George F. C. (Mar. 4, '99)	I.	1895
Merryweather, George E.	II.	1896
Meserve, Charles A.	V.	1895
Messenger, William H.	II.	1892
Metcalf, Arthur H.	II.	1879
Metcalf, Frederick	II.	1890
Metcalf, Leonard	I.	1892
*Meyer, Jos. A., Jr. (Dec. 20, '94)	IV.	1891
Mildram, Samuel H.	I.	1889
Millen, Loring R.	III.	1880
Miller, Edward F.	II.	1886
Miller, Edwin C.	II.	1879
Miller, Franklin T.	XIII.	1895
Miller, Herbert S.	VI.	1892
Miller, Lilly	V.	1892
Miller, William T.	Elective.	1880
Milliken, Carl S.	VII.	1899
Milliken, Sumner M.	I.	1898
Mills, Arthur L.	I.	1876
Minot, Charles S.	V.	1872
Mitchell, Benjamin M.	II.	1893
Mitchell, Guy E.	II.	1891
Mixter, Samuel J.	VIII.	1875
Moat, Charles P.	V.	1896
Moebs, Joseph J.	I.	1898
Mommers, Richard	V.	1898
Moody, Burdett	I.	1890
Moody, Herbert R.	V.	1892
Moore, Clarence A.	X.	1899
Moore, Frank A.	IV.	1888
Moore, Fred F.	I.	1891
Moore, Frederick Campbell	X.	1892
Moore, Frederick Clouston	II.	1891
Moore, Henry C.	II.	1888
Moore, John D. J.	II.	1895
Moore, Leslie R.	V.	1894

* Deceased.

NAME.	COURSE.	CLASS.
Moore, Stephen W.	II.	1890
Moran, George A.	V.	1897
Morey, Richard	I.	1895
Morgan, Carl L.	VI.	1899
*Morgan, Frank H. (Dec. 5, '89)	V.	1878
Mork, Harry S.	V.	1899
Morrill, Asa Hall	I.	1892
Morrill, Edward F.	VI.	1898
Morris, Charles, Jr.	VI.	1896
Morrison, Frank C.	I.	1882
Morse, Benjamin E.	II.	1899
Morse, Frank B.	I.	1873
Morse, Harry L.	II., VI.	1899
Morse, Philip S.	III.	1884
Morss, Everett	III.	1885
Morss, Henry A.	VI.	1893
Moseley, Alexander W.	II.	1891
Mosman, Philip A.	III.	1887
Mossman, William	VI.	1891
Motch, Edward R.	II.	1897
Motch, Stanley	III.	1899
Mott, William E.	I.	1889
Mower, George A.	II.	1881
Mudge, Benjamin C.	I.	1877
Muhlig, James F.	II.	1898
Mulhall, Harold T.	VI.	1897
Mulliken, Samuel P.	V.	1887
Mumford, Edgar H.	II.	1886
Munroe, James P.	III.	1882
*Myrick, Willis H. (Oct. 17, '75)	II.	1874
Nash, Luther R.	VI.	1894
Nathan, A. F., Jr.	X.	1899
Neave, Charles	VI.	1890
Neidich, Samuel A.	II.	1898
Nelson, Willard B.	VI.	1898
Nesbit, Arthur F.	VI.	1895
Nevin, Charles K. B.	IV.	1896
Newbegin, Parker C.	I.	1894
Newbury, George K.	XIII.	1898
Newell, Allan H.	II.	1890
Newell, Frederick H.	III.	1885
Newell, Herbert D.	I.	1896
Newell, John L.	X.	1895
Newell, Lester A.	III.	1899
Newell, William S.	XIII.	1899
Newhall, Charles S.	III.	1896
Newhall, Henry B., Jr.	VI.	1898
Newhouse, Henry L.	IV.	1894
Newkirk, Walter M.	II.	1892
Newman, Frank E.	IV.	1892
Nichols, Everell J.	I.	1878
Nichols, Henry W.	XII.	1893
*Nichols, William R. (July 14, '86)	V.	1869
Nickerson, Addison D.	I.	1888
Nickerson, Clarendon	X.	1898
Nickerson, William E.	V.	1876
Nims, Norman G.	IV.	1890
Noa, Frederic M.	IX.	1894
Noble, Howard A.	II.	1897
Norris, Albert P.	V.	1897
Norris, Almon E.	II.	1890
Norris, Clarence G.	I.	1890
Norris, George L.	III.	1887
Norris, Webster	III.	1881
Norton, Charles L.	VI.	1893
Norton, Francis C.	IX.	1893
Norton, Fred E.	II.	1891
Nowell, John C.	VI.	1894
Noyes, Arthur A.	V.	1886
Noyes, Harry L.	I.	1890
Noyes, Joseph K.	I.	1890
Nute, Joseph E.	I.	1885
Nutter, Charles L.	II.	1893
Ober, Arthur J.	I.	1892
O'Grady, Marcella I. (*see* Boveri).		
O'Hearn, Timothy C.	X.	1899
O'Leary, William H. J.	VI.	1899
Olin, Edwin R.	X.	1897
Ordway, Evelyn W.	V.	1881
Orr, Hugh	IV.	1897
Osgood, Edwin P.	XI.	1897
Osgood, Henry D.	XI.	1898
Otis, Hamilton	I.	1892
*Owen, E. H., Jr. (July 3, '90)	II.	1877
Owen, Fred B.	VI.	1896
Owen, George, Jr.	II.	1894
*Oxford, Geo. H. K. (May 2, '99)	VI.	1891
Oxnard, Benjamin A.	III.	1875
Packard, Alpheus A.	XIII.	1898
Packard, Edwin A.	II.	1890
Packard, George A.	III.	1890
Page, Charles B.	XIII.	1899
Page, Walter	XIII.	1898
Paine, Cecil E.	II.	1893
Paine, Charles B.	IV.	1897
Palmer, William I.	VI.	1891
Palmer, Worthington	IV.	1899
*Paraschos, N. T. (Mar. 22, '93)	I.	1892
Parce, Joseph Y., Jr.	II.	1893
Park, Charles F.	II.	1892
Park, Franklin A.	II.	1895
Parker, Edwin M.	IV.	1894
Parker, Theodore	I.	1881
Parker, Will R.	VI.	1899
Parker, William E.	I.	1899
Parker, Winthrop D.	IV.	1895
Parker, W. Thornton, Jr.	IX.	1897
Parks, Oren E.	I.	1893
Parmelee, Charles L.	I., XI.	1895
Parrish, J. Scott	II.	1892
Parsons, Archibald L.	I.	1897
*Parsons, Charles O. (Oct. 5, '94)	III.	1873

* Deceased.

NAME.	COURSE.	CLASS.
Patch, Maurice B.	III.	1872
Patch, Walter W.	I.	1894
Patten, William F.	VI.	1895
Patterson, George W., Jr.	VI.	1887
Pauly, Karl A.	VI.	1896
Peabody, Cecil H.	II.	1877
Pearson, Edwin R.	VI.	1888
Pease, Charles H.	II.	1898
Peavey, LeRoy D.	I.	1898
Pechin, John Shelley	II.	1897
Peirce, Vernon M.	I.	1897
PenDell, Charles W.	VI.	1898
Pennell, Walter O.	VI.	1896
Pennock, George A.	II.	1899
Perkins, Frank Edson	IV.	1892
Perkins, George H.	II.	1899
Perkins, Herbert B.	I.	1874
Perley, Clarence W.	VII.	1896
Perley, William M.	V.	1898
Perry, Frank B.	II.	1898
Perry, John C.	II.	1892
*Peters, Quintard (Aug. 2, '94)	IX.	1887
Peterson, Charles A.	VI.	1888
Pettee, Charles L. W.	V.	1897
Peyton, William R.	II.	1890
Phalen, William C.	V.	1899
Phelan, Joseph W.	V.	1894
Phelps, Earle B.	V.	1899
Philbrick, Shirley S.	II.	1898
Phillipps, George	III.	1873
Phillips, Harry M.	II.	1893
Phillips, Henry A.	IV.	1873
Phillips, Henry M.	VI.	1892
Phipps, David W.	Phil.	1876
Pickering, William H.	VIII.	1879
Pickernell, Frank A.	VI.	1885
Pickert, Leo W.	V.	1893
Pierce, Arthur G.	VI.	1892
Pierce, Arthur W.	VI.	1892
Pierce, Edward E.	XIII.	1899
Pierce, Edward L.	II.	1886
Pierce, Herbert F.	I.	1888
Pierce, Richard H.	VI.	1885
Pike, Clayton W.	VI.	1889
Pike, Otto S.	II.	1897
*Pike, William A. (Oct., '95)	I.	1871
Pillsbury, Joel H.	I.	1896
Pingree, Edwin D.	II.	1896
Pinkham, Ralph H.	I.	1899
Piper, Walter E.	V.	1894
Plimpton, Arthur L.	I.	1877
Plimpton, Thomas D.	II.	1875
Poland, William B.	I.	1890
Pollock, Clarence D.	I.	1894
Pond, Frank H.	II.	1874
Pool, George B.	VI.	1888
Pope, Macy S.	I.	1892
Porter, Arthur F.	V.	1898
Potter, William C.	III.	1897
Power, Charles W.	VI.	1889
Powers, Walter C.	X.	1895
Pratt, Dana M.	I.	1892
Pratt, George H.	V.	1871
Pratt, Gilbert H.	V.	1897
Pratt, Robert W., Jr.	I.	1898
Pratt, William H.	VI.	1894
Prentiss, Frederick H.	II.	1878
Prentiss, Wm. A.	Sci. and Lit.	1875
Prescott, Charles O.	V.	1884
Prescott, Samuel C.	V.	1894
Pressey, Henry A.	I.	1896
Price, Raymond Beach	X.	1894
Price, Willard A.	I.	1899
Prichard, Charles F.	II.	1876
Priest, Benson B.	I.	1898
Priest, George H.	X.	1899
Proctor, Richard W.	V.	1894
Puffer, William L.	III.	1884
Pugh, Achilles H., Jr.	X.	1897
Pulsifer, Louis W.	IV.	1894
Purinton, Arthur J.	II.	1884
Putnam, John L.	VI.	1896
Putnam, William E., Jr.	IV.	1898
Quevedo, Narciso T.	II.	1894
Raeder, Henry	I.	1876
Ramsey, Allan	VII.	1891
Randall, Newbert M.	III.	1885
Ranlett, Arthur G.	III.	1892
Ranno, Fred W.	I.	1889
Rawson, Harry D.	IV.	1896
Ray, John Stites	II.	1888
Raymond, Edward B.	VI.	1890
Raynolds, James W.	III.	1896
Read, Carleton A.	II.	1891
Real y Gaillard, Juan	I.	1899
Reed, James H., Jr.	VI.	1893
Reed, Samuel G.	II.	1894
Reed, Walter W.	VI.	1895
Reed, William E.	VI.	1897
Regestein, Ernest A.	VI.	1899
Renshaw, Clarence	VI.	1899
Resor, William S.	VI.	1893
Reynolds, Albert A.	V.	1899
*Reynolds, George F. (Jan. 9, '91)	II.	1886
Reynolds, Howard S.	VI.	1894
Reynolds, Robert D.	II.	1894
Rhodes, Frederick L.	VI.	1892
Rhodes, William S.	XII.	1897
Rice, Calvin W.	VI.	1890
Rice, Carrie (*see* Clark).		
Rice, Henry L.	X.	1893
Rich, Charles L.	I.	1876

* Deceased.

NAME.	COURSE.	CLASS.
Rich, William J.	III.	1884
Richards, Charles Russell	II.	1885
Richards, Ellen H.	V.	1873
Richards, Franklin B.	III.	1884
Richards, Frederick L.	X.	1895
Richards, Louis J.	XI.	1897
Richards, Robert H.	III.	1868
Richards, Thomas G.	II.	1894
Richardson, Charles F.	II.	1886
Richardson, Daniel A.	II.	1896
Richardson, Edward B.	VI.	1898
Richardson, Frank D.	II.	1893
Richardson, George L.	I.	1889
Richardson, Herbert A.	V.	1887
Richardson, William C.	II.	1891
Richmond, Gerald M.	VI.	1899
Richmond, Harold A.	II.	1893
Richmond, Henry P.	IV.	1898
Richmond, Knight C.	II.	1890
Ricker, Charles W.	VI.	1891
Rickey, Walter J.	II.	1895
Riddle, Herbert H.	IV.	1899
Riddle, Lewis W.	XIII.	1899
Riggs, George F.	I.	1879
Riker, George H.	X.	1899
Riley, Joseph C.	II.	1898
Ripley, Henry F.	II.	1894
Ripley, Henry L.	I.	1873
*Ripley, William T. (Aug. 26, '93)	II.	1882
Ripley, William Z.	I.	1890
Ritchie, Edward W.	IV.	1898
Ritchie, James	I.	1878
Robb, Russell	VI.	1888
Robbins, Arthur G.	I.	1886
Robbins, Franklin H.	II.	1894
Roberts, Edwin H.	II.	1896
Roberts, Harold B.	II.	1890
Roberts, Odin B.	II.	1888
Roberts, Thomas M.	VI.	1898
Roberts, William J.	I.	1891
Robertson, Andrew R.	II.	1892
Robertson, Samuel B.	I.	1899
Robinson, C. Snelling	III.	1884
Robinson, Dwight P.	VI.	1892
Robinson, Edward	II.	1890
Robinson, Elmer H.	VI.	1897
Robinson, Theodore W.	III.	1884
*Robinson, Thos. W. (Nov. 3, '80)	III.	1876
Rockwell, George A.	X.	1895
Rockwell, J. Arnold, Jr.	VII.	1896
Rogers, Allen H.	III.	1890
Rogers, Arthur S.	VI.	1894
Rogers, Minnie H.	IX.	1890
Rogerson, John R.	I.	1897
Rollins, Edward W.	III.	1871
Rollins, James W., Jr.	I.	1878
Rooke, Warren A.	IV.	1897
Root, William Lacy	X.	1896
Roots, Willard H.	IX.	1891
Rose, Frederick H.	II.	1891
Rosewater, William M.	II.	1892
Ross, Henry F.	III.	1882
Ross, John H.	Sci. and Lit.	1882
Rotch, A. Lawrence	II.	1884
Rounds, George W.	VI.	1889
Rourke, Louis K.	I.	1895
Rowell, George F.	I.	1892
Royce, James C.	II.	1897
Ruckgaber, A.	VI.	1896
Ruggles, Horace F.	II.	1892
Russ, Ernest F.	IX.	1898
*Russel, Richard L. (July 31, '94)	I.	1889
Russell, A. LeBaron	IX.	1896
Russell, Benjamin F. W.	IV.	1898
Russell, L. Kimball	V.	1886
Russell, Walter B.	II.	1897
Rust, Harold N.	VI.	1895
Rutherford, Eugene W.	II.	1898
Rutherford, Norman F.	VI.	1896
Ryder, Josiah Peterson	V.	1884
Sabine, Annie W. (*see* Siebert).		
Sackett, Ward M.	VI.	1892
Sadtler, Samuel S.	V.	1895
Safford, Frederick H.	VI.	1888
Sage, Henry Judson	VI.	1892
Sager, Lawrence K.	VI.	1896
Sager, Oscar F.	II.	1892
Samuels, Edwin F.	II.	1890
Sanborn, Clifford B.	IX.	1895
Sanborn, Frank E.	II.	1889
Sanderson, Nathan H.	I.	1896
Sargent, Albert F., Jr.	I.	1892
Sargent, Francis T.	II.	1875
Sargent, Homer E., Jr.	VI.	1898
Sargent, Welland F.	I.	1875
*Saunders, Robert T. (Sept. 15, '96)	I.	1892
Sauveur, Albert	III.	1889
Savage, S. Anthony	II.	1894
Sawin, Charles D.	Sci. and Lit.	1878
Sawin, Luther R.	V.	1897
Sawtelle, Harry F.	I.	1898
Sawtelle, William O.	VIII.	1899
Sawyer, Albert H.	IX.	1894
Sawyer, Alfred H.	II.	1888
Sawyer, Charles A.	Sci. and Lit.	1876
Sawyer, Haven	II.	1899
Sax, Moritz	IV.	1896
Sayer, Frederick L.	II.	1888
Sayward, William H., Jr.	VII.	1894
Schaller, Frederick F.	VI.	1896
Schiertz, Ferdinand Alfred	III.	1894
Schmidt, Louis	V.	1890

*Deceased.

NAME.	COURSE.	CLASS.
Schmitz, Frank C.	I.	1895
Schoentgen, Edward P.	IV.	1895
Schroeder, Ernest H.	IV.	1898
Schuttler, Carl	II.	1897
Schwamb, Peter	II.	1878
Schwartz, David	V.	1897
Schwarz, Franz H.	II.	1887
Schwarz, Theodore E.	III.	1876
Scofield, Donald C.	IV.	1896
Scott, Henry F.	II.	1898
Scott, Robert W.	II.	1883
Scott, Walter O.	V.	1894
Scovel, John C., Jr.	II.	1896
Scudder, Heyward	V.	1898
Sears, Henry D.	VI.	1887
Sears, Henry K.	IX.	1896
Sears, Joseph H.	V.	1898
Sears, Mortimer A.	III.	1896
Sears, Walter H.	I.	1868
Seavey, John Frank	II.	1886
Seavey, Norman E.	VI.	1899
Seidensticker, Lewis J.	V.	1898
Selfridge, Russell	IX.	1892
Sellew, William H.	II.	1897
Shailer, Robert A.	I.	1873
Shattuck, A. Forrest	V.	1891
Shaw, Albion W.	VI.	1898
Shaw, Edward S.	I.	1874
Shaw, Walter K.	II.	1888
Shed, Nathaniel W.	V.	1881
Shedd, Albert R.	II.	1898
Shepard, Edward V.	I.	1889
Shepard, Frank E.	II.	1887
Shepard, George F., Jr.	IV.	1896
Shepard, Walter	I.	1872
Shepard, William E.	VI.	1888
Shepherd, Frank C.	XI.	1892
Sheppard, Robert K.	X.	1895
Sheridan, Richard G. B.	XIII.	1895
Sherman, Adelaide (*see* Blackmer).		
Sherman, Charles W.	I.	1890
Sherman, Edward C.	I.	1898
Sherman, George W.	X.	1894
Sherman, Henry A.	III.	1897
Sherman, John Carleton	VI.	1895
Sherman, LeRoy K.	I.	1892
Sherrill, Miles S.	V.	1899
Shockley, William H.	III.	1875
Shuman, Jesse W.	VI.	1897
Shurtleff, Arthur A.	II.	1894
Shute, Harry D.	VI.	1892
Sibley, Edward W.	II.	1899
Siebert, Annie W. S.	VIII.	1888
Silsbee, Francis H.	II.	1874
Simmons, Alfred L.	I.	1895
Simonds, Frederic P.	IV.	1894
Simpson, Edmund T.	V.	1890
Simpson, James E.	III.	1886
Sites, Frederick R.	I.	1899
Sjöström, Ivar L.	I.	1888
Skinner, Charles J.	I.	1898
Skinner, Fenwick F.	I.	1893
Skinner, Hervey J.	V.	1899
Skinner, Theodore H.	IV.	1892
Slater, Howard C.	II.	1890
Sloan, Alfred Pritchard, Jr.	VI.	1895
*Small, Nathaniel C. (July 14, '80)	V.	1880
Smalley, Frank N.	V.	1896
Smetters, Samuel T.	I.	1896
Smith, A. Blakeley	IX.	1893
Smith, Arthur C.	V.	1892
Smith, Charles Alfred	I.	1899
*Smith, Charles Aug. (Feb. 4, '84)	I.	1868
Smith, Charles H.	II.	1898
Smith, Charles P.	II.	1887
Smith, Clarence W.	V.	1888
Smith, Edward M.	II.	1888
Smith, Fred Haskell	X.	1896
Smith, Frederick D.	I.	1893
Smith, George A.	V.	1883
Smith, Harrison W.	II.	1897
Smith, Harry E.	V.	1887
Smith, Herbert E.	IV.	1896
Smith, Horace T.	V.	1898
Smith, Howard E.	XI.	1896
Smith, James W.	XIII.	1897
Smith, J. Waldo	I.	1887
Smith, Oren B., Jr.	III.	1897
Smith, Percy M.	II.	1897
*Smith, Walter W. (July 30, '96)	II.	1871
Smith, William Franklin	II.	1897
Smith, William G.	I.	1898
Smith, William Lincoln	VI.	1890
Smyser, Albert E.	II.	1896
Smyser, Frederic W.	II.	1896
Smyser, James S.	II.	1896
Snead, William R.	IV.	1881
Snelling, Grenville T.	IV.	1882
Snow, Walter B.	II.	1882
Snow, William G.	II.	1889
Snyder, Frederick T.	VI.	1891
Soley, William A.	III.	1894
Solomon, John I.	VI.	1893
Sonnemann, George A.	III.	1890
Soule, Lawrence C.	X.	1899
Soule, Richard H.	II.	1872
Southard, Francis M.	VI.	1894
Souther, Henry	III.	1887
Southworth, Harry C.	III.	1877
Southworth, Martin O.	VI.	1890
Spalding, Frederic P.	I.	1878
Spaulding, Frank A.	I.	1898

* Deceased.

NAME.	COURSE.	CLASS.
Spaulding, Henry P.	VI.	1892
Spaulding, Hollon C.	II.	1887
Spear, Walter E.	XI.	1897
Speer, J. Ramsey	II.	1893
Spencer, Theodore	VI.	1891
Sperry, Austin	II.	1894
Spiess, Arthur D.	IV.	1897
Spofford, Charles M.	I.	1893
Spooner, George H.	VI.	1891
Sprague, Timothy W.	III.	1887
Spring, Russell C.	IV.	1897
Stafford, C. Edward	III.	1873
*Stantial, Amy M. (*see* Lund).		
Stantial, Frank G.	V.	1879
Stantial, Otis T.	III.	1885
Stanwood, James B.	II.	1875
*Stanwood, James H. (May 24, '96)	I.	1887
Staples, William D.	VI.	1898
Starbuck, George F.	II.	1897
Starr, Herbert H.	I.	1899
Stearns, Frederick B.	IV.	1899
Stearns, Harold E.	II.	1881
Stearns, Walter M.	VI.	1896
Stearns, William S.	I.	1879
Stebbins, Alfred, Jr.	III.	1884
Stebbins, Charles B.	XIII.	1897
Stebbins, Theodore	VI.	1886
Steffens, William F.	I.	1898
Steiner, Klaus J.	III.	1897
Stetson, Frank O.	V.	1888
Stevens, Gorham P.	IV.	1898
Stevens, Harold C.	I.	1896
Stevens, John Conyngham	XI.	1894
Stevens, Walter F.	II.	1895
Stevens, William W.	IV.	1898
*Stewart, Charles E. (Oct. 7, '77)	I.	1877
Stickney, Delia	V.	1889
Stickney, Joseph W.	VI.	1896
Stiles, Percy G.	VII.	1897
Stimpson, Thomas F.	III.	1877
Stix, Solomon H.	IV.	1891
Stockton, Philip	I.	1899
Stoddard, Arthur B.	V.	1891
Stoddard, Henry F.	II.	1887
Stone, Charles A.	VI.	1888
Stone, Charles F.	III.	1871
Stone, Charles H.	V.	1896
Stone, Esther	IV.	1896
*Stone, G. Goodwin (Mar. 4, '93)	III.	1889
Stone, Jacob, Jr.	IV.	1899
Stone, Joseph	I.	1868
Storrow, Samuel	I.	1890
Story, Isaac M.	I.	1878
Stose, George W.	I.	1893
Stoughton, Augustus B.	II.	1886
Stoughton, Bradley	III.	1896
Stoughton, Grace Van Everen.	V.	1896
Stowe, Lovell B.	VI.	1893
Street, Gerald B.	II.	1899
Streng, Lewis S.	VI.	1898
Strickland, William R.	I.	1898
Studley, Fred B.	VI.	1893
Sturges, Benton	IX.	1890
Sturgis, Elliot T.	III.	1884
Sturm, Meyer J.	IV.	1896
Sturtevant, Edward	IX.	1898
Sturtevant, Thomas J.	VI.	1890
Sully, John M.	III.	1888
Sumner, George W.	VI.	1896
Susmann, Julius H.	III.	1876
Sutermeister, Edwin	V.	1899
Sutliff, Walter H.	IV.	1899
Sutter, Frederick C.	VI.	1893
Swain, George F.	I.	1877
Swallow, Ellen H. (*see* Richards).		
Swan, Clifford M.	V.	1899
Swan, James	II.	1891
Swanton, Frederick W.	VI.	1890
Swanton, Henry A.	II.	1894
Swanton, Walter I.	I.	1893
Sweet, Kilburn S.	I.	1893
Sweetland, Ralph	II.	1889
*Sweetser, Arthur W. (Apr. 10, '78)	I.	1874
Sweetser, Ralph H.	III.	1892
Swift, Charles W.	II.	1899
Swift, Frank R.	X.	1899
Swift, William E.	I.	1895
Swope, Gerard	VI.	1895
Sykes, Henry H.	VI.	1891
Taber, George Aymar	I.	1894
Taft, Charles Chester	X.	1895
Taft, Harrison S.	XIII.	1897 II. 1896
Taintor, Charles Wilson	VI.	1893
Taintor, Giles	VI.	1887
Talbot, Henry P.	V.	1885
Talbot, Marion	IX.	1888
Tallant, George P.	IX.	1892
Tallmadge, Thomas E.	IV.	1898
*Taney, Edmund L. (May 1, '90)	I.	1878
Tappan, Frederick	VI.	1899
Tappan, Lewis Hooper	II.	1896
Taylor, Charles M.	II.	1893
Taylor, Denzil H.	I.	1899
Taylor, Edward M.	II.	1898
Taylor, George	II.	1894
*Taylor, Harry B. (June 8, '97)	V.	1891
Taylor, John	VI.	1897
Taylor, Mark E.	II.	1898
Taylor, Robert R.	IV.	1892
*Taylor, William B. (June 29, '99)	II.	1896
Taylor, William M.	II.	1886
Tenney, Albert B.	II.	1894

*Deceased.

NAME.	COURSE.	CLASS.
Tenney, Frank	III.	1883
Tenney, Winthrop P.	VI.	1893
Thalheimer, William C.	I.	1892
Thanisch, Frank A.	III.	1896
Thayer, Horace R.	I.	1898
Thomas, Alfred C.	VI.	1893
Thomas, Edward G.	II.	1887
Thomas, James W.	II.	1895
Thomas, Percy H.	VI.	1893
Thomas, William H., Jr.	V.	1896
Thompson, Albert W.	II.	1896
Thompson, Frederick	I.	1887
Thompson, Herbert A.	VIII.	1891
Thompson, Maurice De K., Jr.	VIII.	1898
Thompson, Sanford E.	I.	1889
Thompson, Walter S.	I.	1887
Thomson, Lucy D.	IV.	1896
Thomson, Mary J.	V.	1898
Thomson, Samuel F.	I.	1896
Thorndike, Sturgis H.	I.	1895
Thorp, Frank H.	V.	1889
Thropp, Joseph E., Jr.	III.	1894
Thurber, William B.	IX.	1889
Tidd, Arthur W.	I.	1894
Tidd, Winthrop L.	II.	1893
Tietig, Rudolph	IV.	1898
Tilden, Bryant P.	III.	1868
Tilley, John	VI.	1896
Tillinghast, Charles F.	II.	1895
Tillinghast, Theodore F.	I.	1870
Tinkham, Edgar L.	VI.	1897
Tinkham, Samuel E.	I.	1873
Tolman, James P.	III.	1868
Tomfohrde, John F.	II.	1893
Tompkins, Charles H.	III.	1883
Tone, Jay E.	X.	1897
Torossian, Toros H.	I.	1894
Torrey, Charles A., Jr.	V.	1899
Towne, John H.	IX.	1890
Towne, Linwood O.	III.	1878
Towne, Walter I.	VI.	1888
Townsend, Walter D.	III.	1876
Tozier, Henry H.	V.	1896
Trask, Edgar P.	XIII.	1899
Treat, George W.	I.	1898
Tripp, Charles A.	VI.	1893
Trout, Charles E.	I.	1896
*Trowbridge, A., Jr. (Dec. 5, '78)	II.	1871
Trowbridge, Walter B.	II.	1892
Truesdell, Arthur E.	VI.	1889
Trumbull, Morris K.	I.	1897
Tucker, Albert W.	III.	1899
Tucker, Atherton H.	IV.	1898
Tucker, Charles W.	V.	1896
Tucker, Edward A.	I.	1895
Tucker, Frank S.	II.	1898
Tucker, Greenleaf R.	V.	1887
*Tucker, H. Judson (Aug. 17, '96)	VI.	1887
Tucker, Hugh M.	II.	1895
Tucker, Ross F.	IV.	1892
Tucker, William A.	III.	1893
Tufts, John L.	V.	1899
Turnbull, Charles D.	II.	1889
Turner, Edmund K.	I.	1870
Twombly, Alexander H.	II.	1887
Twombly, Fred H.	IX.	1898
Tyler, Alice Brown	V.	1884
Tyler, Clifford M.	II.	1891
Tyler, Harry W.	V.	1884
Tyler, Lucius S.	VI.	1897
Ulmer, George F.	V.	1898
Underhill, Arthur P.	VI.	1896
Underhill, William W.	II.	1889
Underwood, George R.	V.	1883
Usher, Susannah	VII.	1898
Vaillant, George W.	III.	1892
Van Alstine, David	II.	1886
Van Everen, Grace A. (*see* Stoughton).		
Vanier, George P.	III.	1885
Varney, Theodore	VI.	1894
Verges, Luis F.	I.	1891
Very, Frank W.	V.	1873
Videto, Theodore Ernest	IV.	1897
Vielé, Francis S.	VI.	1891
Vielé, Maurice A.	II.	1886
Vinal, Ralph S.	IV.	1897
Vining, John F.	IV.	1892
Vining, Louis B.	VI.	1893
Vining, Robert M.	II.	1899
von Holst, Hermann V.	IV.	1896
Voorhees, Gardner T.	II.	1890
Vorce, Clarence B.	I.	1888
Vose, Ralph	VI.	1887
Waddell, Frederick C.	I.	1899
Wadleigh, George R.	II.	1897
Wadsworth, Augustus B.	VII.	1893
Wadsworth, George R.	I.	1898
Wait, Henry H.	VI.	1891
Waite, Charles N.	V.	1876
Waite, Loren G.	VI.	1895
Waitt, Arthur M.	II.	1879
Waitt, Henry M.	I.	1876
Waldron, Samuel Payson	I.	1893
Wales, Thomas C., Jr.	VI.	1892
Walker, Charles R.	V.	1893
Walker, Elton D.	I.	1890
Walker, Etheredge	III.	1899
Walker, Francis	IX.	1892
Walker, George L.	I.	1893
Walker, Robert T.	IV.	1890
Wall, William G.	VI.	1896
Wallace, Charles F.	VI.	1892

* Deceased.

NAME.	COURSE.	CLASS.
Wallace, Frederic A.	II.	1893
Wallace, Robert B.	XIII.	1899
Wallis, Robert N.	IX.	1893
Walls, John A.	VI.	1899
Walters, Edward P.	V.	1899
Walther, William J.	I.	1899
Walton, Evelyn M. (*see* Ordway).		
Walton, James H., Jr.	V.	1899
Walworth, Joseph E.	V.	1895
Ward, Clarence S.	III.	1872
Ward, Nahum	V.	1884
*Ware, Robert C. (June 25, '83). Phil. 1876.	Sci. and Lit.	1874
Warner, Charles H.	VI.	1889
Warner, George M.	VI.	1891
Warner, Murray	II.	1892
Warren, A. Sydney	III.	1888
Warren, Edward R.	VII.	1881
Warren, Henry E.	VI.	1894
Warren, H. L. J.	III.	1875
Warren, John E.	II.	1898
Warren, Joseph A.	XI.	1892
*Washburn, Thurlow (Oct. 12, '99)	III.	1897
Wason, Leonard C.	VI.	1891
Wason, Rigby	VI.	1894
Wason, Robert S.	V.	1896
Waterman, Charles C.	VI.	1892
Waterman, Harry C.	IV.	1893
Waterman, Henry A.	II.	1896
Waterman, Richard, Jr.	IX.	1892
Waterson, Karl W.	VI.	1898
Watkins, Frederick A.	II.	1899
Watkins, Willard H.	V.	1895
Watrous, Charles A.	IV.	1899
Watts, Francis H.	I.	1897
Wayne, Jacob Lloyd	VI.	1896
Webb, Henry S.	VI.	1892
Webster, Edwin S.	VI.	1888
Webster, William R.	III.	1875
Weed, Henry T.	V.	1891
Weeks, Isaiah S. P.	I.	1871
Weil, Charles L.	II.	1888
Weimer, Edgar A.	II.	1898
Wells, Albert J.	II.	1896
Wells, Edward C.	II.	1892
Wells, Walter W.	VI.	1899
Wells, Webster	I.	1873
Wendell, George V.	VIII.	1892
Wentworth, Charles A.	I.	1896
Wessel, John F.	VI.	1898
Wesson, David	V.	1883
Wesson, Paul B.	II.	1898
Westcott, Frank T.	I.	1892
Westcott, William R.	VI.	1894
Weston, David B.	V.	1895
Weston, William H.	III.	1891
Wetherbee, Charles P.	II.	1891
Weymouth, Thomas R.	VI.	1897
Wheeler, Ralph N.	I.	1895
Wheeler, Robert C.	I.	1894
Whipple, George C.	I.	1889
Whitaker, Channing	II.	1869
Whitaker, Lewis R.	I.	1899
Whitaker, S. Edgar	VI.	1893
*White, A. C. (Dec. 27, '93)	VIII.	1882
White, Annie E. (*see* Carpenter).		
White, Franklin W.	VII.	1890
White, Harry K.	IV.	1899
White, William	V.	1899
Whiting, Jasper	III.	1889
Whitmore, Walter G.	VI.	1887
Whitney, Frank P.	VI.	1889
Whitney, Granger	III.	1887
Whitney, Lambert N.	VI.	1896
Whitney, William A.	I.	1887
Whitney, William M.	II.	1884
Whitney, Willis R.	V.	1890
Whiton, David T.	II.	1897
Whitten, Roscoe B.	IV.	1898
Whitten, William H., Jr.	VIII.	1896
Whittier, Randal I.	1873 V.	1871
Wiard, Edward S.	III.	1899
*Wiggin, Frank E. (Dec. 21, '90)	I.	1877
Wiggin, Thomas H.	I.	1895
Wilcox, Herbert A.	III.	1887
Wilder, Clifton W.	II.	1898
Wilder, C. Morris	VI.	1880
Wilder, Parker H.	VI.	1893
Wilder, Ralph E.	I.	1898
Wilder, Salmon W., Jr.	X.	1891
Wilder, Stephen H.	Sci. and Lit.	1874
Wilkes, Charles M.	IV.	1881
Willard, Daniel W.	II.	1870
Williams, Arthur S.	VI.	1888
Williams, Charles G.	I.	1895
Williams, Emile F.	I.	1878
Williams, Francis C., Jr.	I.	1884
Williams, Francis H.	V.	1873
Williams, Robert C.	III.	1889
Williams, Roger J.	IX.	1895
Williams, Sidney	I.	1887
Williams, Walter S.	X.	1895
Willis, John H.	IV.	1896
Williston, Arthur L.	II.	1889
Wilson, Arthur R.	I.	1890
Wilson, Elwood J.	III.	1886
Wilson, Fred A.	II.	1891
Windett, Victor	II.	1889
Wing, Charles F., Jr.	VI.	1899
Wing, David L.	IX.	1898
Winkley, William H.	XIII.	1895
Winslow, Arthur	III.	1881

* Deceased.

NAME.	COURSE.	CLASS.
Winslow, Charles-Edward A.	VII.	1898
Witherell, Percy W.	VI.	1899
Wolfe, John J. C.	II.	1895
*Wood, Charles (Nov. 28, '95)	I.	1886
Wood, Charles Hancock	II.	1891
Wood, Florence A. (*see* Ewing).		
Wood, Frederick W.	III.	1877
Wood, Henry B.	I.	1876
Wood, Kenneth F.	II.	1894
Wood, Louis F.	V.	1873
Wood, Willard L., Jr.	VI.	1899
Wood, Willett A.	VI.	1896
Wood, William R.	XIII.	1897
Wood, Winthrop B.	I.	1898
Woodbridge, Jonathan E.	VI.	1893
Woodbury, Charles H.	II.	1886
Woodman, Alpheus G.	V.	1897
Woodman, Andrew W.	I.	1890
Woodman, Caroline A.	VII.	1889
Woodman, George M.	I.	1897
Woods, Henry T.	II.	1893
*Woodward, A. E. (Sept., '91)	III.	1888
Woodwell, Julian E.	II.	1896
Woodworth, Edward Harold	V.	1897
Woodyatt, Ernest	IV.	1897
Woollett, John W.	I.	1899
Woolworth, James G.	V.	1878
Worcester, Vernor F.	II.	1886
Worthington, Arthur M.	VII.	1892
Worthington, Erastus, Jr.	I.	1885
Wrightington, C. Nelson	II.	1894
Wrinkle, Laurence F. J.	III.	1870
Wuichet, Walter G.	II.	1889
Yoder, Luther K.	II.	1895
Yoerg, Henry	II.	1895
Yorke, George M.	VI.	1893
Young, Conrad H.	II.	1896
Young, Fred R.	III.	1886
Young, John E.	I.	1888
Zapf, Alfred E.	IV.	1895
Zimmermann, Walter G.	II.	1898

* Deceased.

Titles of Theses

OF SUCCESSFUL CANDIDATES FOR GRADUATION, JUNE, 1899.

Candidates for the Degree of Master of Science.

DANIEL WILBERT EDGERLY, S. B.

An Investigation of New Methods for Determining the Atomic Weight of Tellurium.

GORHAM PHILLIPS STEVENS, S. B.

An Investigation of the Stresses of a Steel-framed Dome and a Design for the Framework.

CHARLES-EDWARD AMORY WINSLOW, S. B.

Experimental and Statistical Studies on the Influence of Cold upon the Bacillus of Typhoid Fever and its Dissemination, with Special Reference to Ice Supply and the Public Health.

Candidates for the Degree of Bachelor of Science.

LEWIS BENJAMIN ABBOTT.

A Design for a City Church.

HERBERT HENRY ADAMS, B. A.

A Study of Modern Developments in Air Brake Practice.

JOHN HOWARD ADAMS.

A Design for a Post Office.

WALTER OWEN ADAMS.

An Investigation upon a Modification of Huebl's Method for Iodine Numbers.

LAWRENCE ADDICKS.

1. A Determination of the Distribution of Steam in a Water-Gas Plant. (*With H. P. James.*)
2. Tests of a Rotary Converter. (*With H. P. James.*)

JAMES WALTER ALLEN.

Stray Power Variations of Direct Current Motors. (*With G. D. Emerson.*)

HAROLD OSGOOD AYER.

An Investigation on the Colored Oxidation Products of Methylene-diorcine.

THOMAS WENDELL BAILEY.

A Design for a Public Library for a Town of the Size of Brookline.

BERTHA LENNIE BALLANTYNE.

The Effects of Changes in External Temperature on Capillary Blood Pressure in the Skin.

WALTER RAYMOND BEAN.

A Design for a Lake Freight Steamer. (*With R. B. Wallace.*)

RAYMOND FRANKLIN BENNETT.

An Experimental Investigation of the Efficiency of Tackles. (*With (A. B. Foote.*)

CARROLL AUGUSTUS BENNINK.

A Design for a State House.

NEWTON DAVIS BENSON.

The Structural Design of a Railroad Terminal Station.

GEORGE EDWIN BERGSTROM.

A Design for an Athenæum for a City.

ARTHUR ELIOT BLACKMER.

An Investigation of the Water Supply of Beverly, Mass., with Reference to the Efficiency of Fire Protection. (*With W. A. Price.*)

FRANCIS MINOT BLAKE.

An Investigation of the "True Line of Resistance" in a Masonry Arch. (*With W. A. Kinsman.*)

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An Investigation of the Variation of the Coefficient of Friction between Leather Belting and Cast Iron, at Different Speeds of Slip. (*With H. Sawyer.*)

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A Design for a Market for the Residence Section of a City.

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An Investigation concerning Explosive Mixtures.

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A Plan for the Abolition of Grade Crossings on the Boston and Maine Railroad at Arlington, Mass. (*With J. B. Ferguson.*)

PHILIP BURGESS.

A Study of the Sewerage Systems of South Framingham, Mass., and Natick, Mass. (*With B. Herman.*)

FREDERICK WILLIAM CALDWELL.

An Investigation of the Initial Stresses in Steel Shafting Due to Forging.

HARRY ANDREW BACH CAMPBELL.

Tests on a 12-Wheel Compound Freight Locomotive of the Boston and Albany Railroad. (*With B. S. Hinckley.*)

SYLVESTER QUALE CANNON.

The Treatment of a Low-grade Gold-bearing Silver Ore.

WILLARD TELLE CANNON.

Coefficients of Discharge of Nozzles. (*With F. A. Watkins.*)

HERBERT MONROE CASE.

A Method for Measuring the Angular Variations in Speed of Fly wheels and Armatures. (*With J. A. Flemings.*)

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An Experimental Determination of the Speed Variation of a Gas Engine. (*With J. K. Clark.*)

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A Design for a Thrown-Silk Mill.

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A Design for a City Hall for a City of One Hundred Thousand Inhabitants.

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The Decomposition of Diazobenzene Sulphate with Phenol in Hot Solution.

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An Investigation of the Mordey Alternator. (*With W. B. Flynn.*)

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The Design and Construction of Three-Phase and Phasing Transformers to Illustrate Polyphase Distribution. (*With E. A. Regestein.*)

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A Study of "Slip" and "Creep" of Leather Belting. (*With F. A. Fifield.*)

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A Design for a Small Palace for Receptions and Balls.

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A Plan for the Abolition of the Grade Crossings on the Boston and Albany Railroad at Newton Centre and Newton Highlands, Mass. (*With F. R. Sites.*)

HENRY CHARLES EATON.
The Density of the Steam Injector Jet. (*With A. W. Grosvenor.*)

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An Investigation of Some Derivatives of the Fatty Amines.

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An Investigation of Parallel Operation and Synchronizing of Two Similar One-Horse Power Rotary Converters.

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A Design for a City House.

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A Study of Lead-Tellurium Alloys.

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Tests on an Air Condenser and Steam Heater. (*With B. E. Morse.*)

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Smelting an Oxide Copper Ore and a Pyritic Concentrate.

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The Density of the Steam Injector Jet. (*With H. C. Eaton.*)

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Electrolytic Rectification of an Alternating Current. (*With B. P. Hazeltine.*)

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The Effect of Mercerisation on Different Kinds of Cotton, and of Dyeing Aniline Blacks on Unmercerised and Mercerised Cotton. (*With T. C. O'Hearn.*)

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A Study of the Instantaneous Candle Power of an Alternating Current Arc by the Stroboscopic Method. (*With W. L. Wood, Jr.*)

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Tests on an Air Condenser and Steam Heater. (*With H. W. Goldthwaite.*)

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1. Some Efficiency Tests on a 20-Horse Power Diesel Motor.
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The Decomposition of Silver Sulphide in Copper and in Iron Pans.

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Experiments in Hardening and Tempering Steel. (*With R. M. Vining.*)

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Some Fly-wheel Calculations.

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A Plan for the Abolition of the Grade Crossings on the Boston and Albany Railroad at Newton Centre and Newton Highlands, Mass. (*With C. D. Drew.*)

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The Action of Formaldehyde on Diazo-Compounds.

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An Investigation of Methods of Sewage Disposal for the Town of Reading, Mass. (*With D. H. Taylor.*)

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A Design of One Support of a Cable Way.

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A Design for a Fifty-Ton Radial Block-Setting Crane.

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Installation and Test of a Thirty-six Inch Impulse Water-wheel. (*With Lane Johnson.*)

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A Study of Some Compounds of Tellurium.

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A Design for a State Exposition Building.

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An Investigation on the Dissociation of Sulphuric Acid and its Salts.

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Tests on Cast Iron T-Beams.

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The Velocity of Solution of Solid Substances in Liquid Solutions.

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Experiments in Hardening and Tempering Steel. (*With E. F. Samuels.*)

GARDNER TUFFTS VOORHEES.
An Absorption Refrigerating Machine.

FREDERICK CREELMAN WADDELL.
A Design for a Railroad Bridge of 300 Feet Span.

ETHEREDGE WALKER.
The Precipitation of Gold, Silver, and Copper from Cyanide Solutions by Means of Zinc. (*With J. H. Walton, Jr.*)

ROBERT BRUCE WALLACE.
A Design for a Lake Freight Steamer. (*With W. R. Bean.*)

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Coefficients of Discharge of Nozzles. (*With W. T. Cannon.*)

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A Comparison of Various Photometers. (*With J. F. Chapman.*)

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An Investigation of the Carrying Capacity of Copper Wires in Iron Conduits when carrying Alternating Currents.

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An Investigation of a Three Phase Induction Motor.

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A Design for a Railroad Bridge with an Intermediate Horizontal Chord.

Candidates Awarded the Degree of Bachelor of Science During the Year 1898–99.

TIMOTHY JOSEPH DRISCOLL.

An Investigation of the Positive Crater of an Arc Lamp as an Absolute Standard of Light and a Comparative Test of Two Hefner Alternate Amyl Acetate Lamps.

WILLIAM BRAMAN KING.

An Alternating Current Curve Tracer.

WILLIAM MARSHALL PERLEY.

Best Conditions for Smelting Antimony Skimmings.

ALBERT WILLIAM TUCKER.

Experiments on a Refractory Gold Ore.

EDWARD SAXON WIARD.

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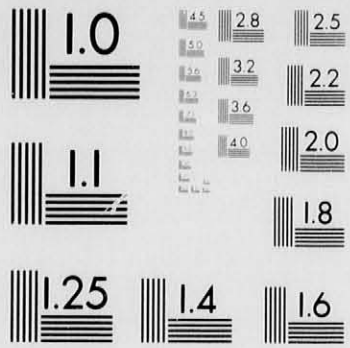
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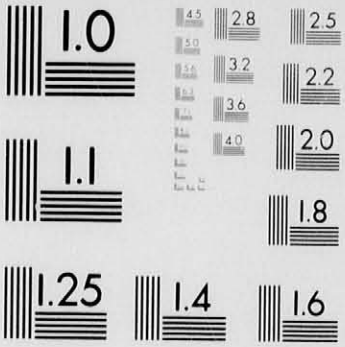
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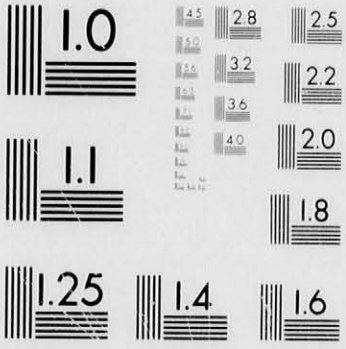
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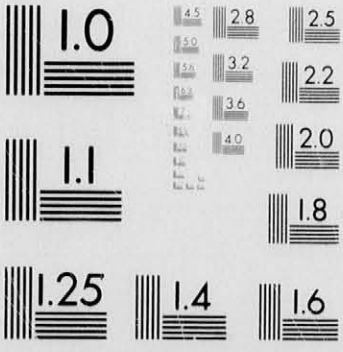
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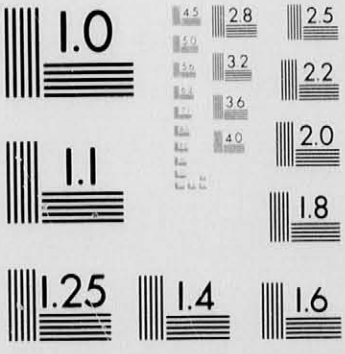
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