

M. I. T. ANNUAL CATALOGUES AND BULLETINS

1898/99

01 OF 04

Student List.

MASSACHUSETTS
INSTITUTE OF TECHNOLOGY,
BOSTON.



ANNUAL CATALOGUE.

1898-1899.

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.

PROGRAMME, identical with the Catalogue, but not containing the Schedule of Topics, the Registers of Students and of Graduates.

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MASSACHUSETTS
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THIRTY-FOURTH
ANNUAL CATALOGUE

OF THE

Officers and Students,

WITH

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

1898-1899.

BOSTON:
ROCKWELL AND CHURCHILL PRESS.
1899.

CALENDAR FOR 1898-99.

School Year began	Wednesday, Sept. 28, 1898.
Semi-annual Examinations begin	Tuesday, Jan. 17, 1899.
Second Term begin	Tuesday, Feb. 7, 1899.
Annual Examinations begin	Tuesday, May 23, 1899.
Degrees conferred. — School Year ends	Tuesday, June 6, 1899.
First Entrance Examinations	{ Thursday, June 29, 1899, and Friday, June 30, 1899.
Examinations for Advanced Standing begin	Monday, Sept. 18, 1899.
Second Entrance Examinations ¹	{ Tuesday, Sept. 19, 1899, and Wednesday, Sept. 20, 1899.
School Year of 1899-1900 begins	Wednesday, Sept. 27, 1899.

CALENDAR FOR 1899-1900.

School Year begins	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 1900-01 begins	Wednesday, Sept. 26, 1900.

Stated Meetings of the Corporation for 1899	{ March 8, June 2, October 11, December 13.
Stated Meetings of the Executive Committee of the Corporation }	{ First and third Tuesdays of every month.

¹ See page 62.

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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 officio*s 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 in 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, mainly 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 newly erected Pierce Building, occupied by the departments of architecture, biology, geology, and by the laboratories of industrial chemistry and textile coloring; a series of workshops, on Garrison street, with a room devoted to the Lowell School of Design; and a Gymnasium and Drill-hall, 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 general exact 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 124.

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

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- RALPH R. LAWRENCE, S.B.,
Instructor in Physics.
- JOHN BORDMAN, JR., LL.B., CAPTAIN M.V.M.,
Instructor in Military Science.
- EDWARD M. BRAGG, S.B.,
Assistant in Mechanical Engineering.
- LEWIS PAUL CHAPIN, CH.E.,
Assistant in General Chemistry.
- FREDERICK L. EDMANDS, S.B.,
Assistant in Mechanical Drawing.
- MYRON L. FULLER, S.B.,
Assistant in Geology.
- GEORGE L. HOSMER,
Assistant in Civil Engineering.
- ELBRIDGE C. JACOBS, S.B.,
Assistant in Mining Engineering.
- WALTER B. RUSSELL, S.B.,
Assistant in Mechanical Engineering.
- JAMES W. SMITH, S.B.,
Assistant in Mechanical Engineering.
- PERCY G. STILES,
Assistant in Biology.
- ROBERT G. VALENTINE, A.B.,
Assistant in English.
- FRANCIS H. WATTS, S.B.,
Assistant in Civil Engineering.
- ALPHEUS G. WOODMAN, S.B.,
Assistant in Sanitary Chemistry.
- OSCAR W. PICKERING,
Assistant in General Chemistry.
- CHARLES B. BREED, S.B.,
Assistant in Civil Engineering.
- JOSEPH G. COFFIN, S.B.,
Assistant in Physics.
- WILLIAM T. HALL, S.B.,
Assistant in Analytical Chemistry.
- GEORGE M. HOLMAN, S.B., M.D.,
Assistant in Biology.

- ARELI H. JACOBY, S.B.,
Assistant in Industrial Chemistry.
- CARLETON S. KOCH, S.B.,
Assistant in Mining Engineering.
- ALICE G. LORING,
Assistant in Architecture.
- JOSEPH C. RILEY, S.B.,
Assistant in Mechanical Engineering.
- EUGENE W. RUTHERFORD, S.B.,
Assistant in Mechanical Engineering.
- LEWIS J. SEIDENSTICKER, S.B.,
Assistant in Oil and Gas Analysis.
- HARRISON W. SMITH, A.B., S.B.,
Assistant in Physics.
- MAURICE DEK. THOMPSON, JR., S.B.,
Assistant in Physics.

**INSTRUCTORS AND ASSISTANTS IN THE MECHANIC
ARTS.**

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

INSTRUCTOR IN GYMNASTICS.

- HERMAN J. BOOS.

TEACHERS AND LECTURERS FOR THE CURRENT YEAR.

- JOHN ALDEN, S.B., *on Textile Printing.*
 TRUMAN H. BARTLETT, *on Modelling.*
 LOUIS BELL, Ph.D., *on the Electrical Transmission and Utilization of Power.*
 GEORGE W. BLODGETT, S.B., *on the Application of Electricity to Railway Signalling.*
 JOHN BALCH BLOOD, S.B., *on the Design of Alternating Current Machinery.*
 HENRY CARMICHAEL, Ph.D., *on Electrolysis of Brine.*
 S. EVERETT DOANE, *on Incandescent Lamps.*
 HOWARD C. FORBES, S.B., *on Commercial Electrical Testing.*
 JOHN R. FREEMAN, S.B., *on the Hydraulics of Fire Protection, and on Fireproof Construction.*
 HOLLIS FRENCH, S.B., *on Electrical Engineering Practice and Specifications.*
 DAVID A. GREGG, *on Pen and Ink Drawing.*
 HAMMOND V. HAYES, Ph.D., *on Telephone Engineering.*
 CHARLES D. JENKINS, S.B., *on Illuminating Gas, and on Pottery and Tiles.*
 ERNEST A. LE SUEUR, S.B., *on the Industrial Applications of Electro-Chemistry.*
 ARTHUR D. LITTLE, *on Paper.*
 JAMES W. LOVELAND, S.B., *on Manufacture of Soaps.*
 SAMUEL W. MEAD, *on Architectural Design.*
 EDWARD P. NORTH, *on City Streets and Pavements.*
 ODIN B. ROBERTS, S.B., A.M., LL.B., *on the Nature and Function of Patents for Inventions.*
 A. H. SABIN, M.S., *on Paints and Painting.*
 ALBERT SAUVEUR, S.B., *on Metallography.*
 TIMOTHY W. SPRAGUE, S.B., *on Electricity in Mining.*
 FRANK G. STANTIAL, S.B., *on Sulphuric Acid.*
 JOHN STONE STONE, *on the Application of Electrical Oscillations in Telephony.*
 ELIHU THOMSON, *on Recent Developments in Applied Electricity.*
 ROSS TURNER, *on Water Color.*
 W. LYMAN UNDERWOOD, *on Industrial Biology.*
 C. HOWARD WALKER, *on the History of Ornament.*
 GEORGE C. WHIPPLE, S.B., *on the Microscopical Examination of Water Supplies.*
 C. J. H. WOODBURY, A.M., *on Electricity in its Relation to Fire Risks.*

N. B.—For additional occasional lectures on special subjects, see pages 91 to 106.

Faculty.

JAMES M. CRAFTS, *President.*

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

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 124.

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 29 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 124.

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, or mill engineering; and similarly for other courses. Inspection of the descriptions and schedules of the courses (pages 29 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 124 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.	

SECOND TERM.

COURSES I., II., III. (2), VI., X., XI., XIII.		Freehand Drawing	117
Theory of Equations ³	28	French ¹ (or German ²)	191-(201)
Analytic Geometry	27	French ¹ sight-reading	192
General Chemistry; Qualitative Analysis; Chemical Laboratory	291	United States History	220
Mechanical Drawing and Descriptive Geometry	101, 102	Military Science.	
Freehand Drawing	116	COURSE VII.	
French ¹ (or German ²)	191-(201)	Theory of Equations; Elements of Plane Analytic Geometry	28, 23
United States History	220	General Chemistry; Qualitative Analysis; Chemical Laboratory	291
Military Science.		Microscopy	710
COURSES III. (1), V., VIII., XII.		Mechanical Drawing	105
Theory of Equations	28	Freehand Drawing	116
Analytic Geometry ⁴	27	French ¹ (or German ²)	191-(201)
General Chemistry; Qualitative Analysis; Chemical Laboratory	291	United States History	220
Mechanical Drawing	104	Military Science.	
Freehand Drawing	116	COURSE IX.	
French ¹ (or German ²)	191-(201)	Theory of Equations; Elements of Plane Analytic Geometry	28, 23
United States History	220	Mechanical Drawing; Chart and Map Making	105
Military Science.		Freehand Drawing	116
COURSE IV.		United States History	220
Theory of Equations	28	Logic and Argumentative Composition	161
Analytic Geometry	27	French ¹ (or German ²)	191-(201)
Mechanical Drawing and Descriptive Geometry	101, 103	French ¹ sight-reading	192
		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 124. 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 I. and XI., Spherical Trigonometry, 29.

⁴ For V. and 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, water-works, 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.	SECOND TERM.
Surveying and Plotting 440	Surveying and Plotting 440
Topographical Drawing 442	Mechanism 520
Elements of Astronomy 443	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.
Railroad & Highway Engineering; Field-work and Drawing 452, 453	Railroad & Highway Engineering; Field-work and Drawing 452, 453
Advanced Surveying 450	Advanced Surveying 450
Stereotomy 455	Theory of Structures 460
Structural Geology 670	Stratigraphic Geology 675
Physics: Heat 370	Physical Laboratory 373
Physical Laboratory 373	Strength of Materials; Kinematics and Dynamics; Theory of Elasticity 70
General Statics; Stresses in Frames; Strength of Materials 70	German (or French) 201 (191)
German (or French) 201 (191)	Political Economy and Industrial History 245
Political Economy 245	Business Law 275
Business Law 275	

FOURTH YEAR.

FIRST TERM.	SECOND TERM.
Theory of Structures: Bridges and similar Structures 474, 476 (or 477)	Theory of Structures: Bridges and similar Structures 474, 476 (or 477)
Hydraulics 470	Thesis.
Industrial Electricity 379	
<i>Options.</i>	
1. { Sanitary and Hydraulic Eng. 472	{ Hydraulic Engineering 491 { Elements of Geodesy 497 { Bridge & Sanitary Design 478, 494 { Foundations 499 { Sanitary Science and the Public Health 750 { Steam Engineering 541 { Engineering Laboratory 480 { Railroad Engineering 465 { Railroad and Highway Design 493 { Bridge Design 478 { Building Construction 649 { Foundations 499 { Steam Engineering 541 { Engineering Laboratory 480 { Hydraulic Engineering 491 { Geodesy 467 { Differential Equations 58 { Physical Laboratory 397
1. { Bridge Design 478	
1. { Hydraulic Measurements 473	
1. { Practical Astronomy 468	
1. { Steam Engineering 541	
1. { Metallurgy of Iron 587	
2. { Railroad Engineering 403, 465	
2. { Railroad and Highway Design 493	
2. { Railroad Management 466	
2. { Bridge Design 478	
2. { Steam Engineering 541	
2. { Metallurgy of Iron 587	
3. { Bridge Design 479	
3. { Geodesy and Astronomy 467, 468	
3. { Hydraulic Measurements 473	
3. { Method of Least Squares 57	
3. { 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, and marine engineering.

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, 143
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	
Business Law 275	

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	
<i>Options.</i>	<i>Options.</i>
1. Marine Engineering 551	1. Marine Engineering 551
2. Locomotive Construction 550	2. Locomotive Construction 550
3. Mill Engineering 552	3. Mill Engineering 552

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.	SECOND TERM.
Mineralogy and Blowpipe Analysis ¹ 661,662	Blowpipe Silver Assay ¹ 580
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	<i>Options.</i>
<i>Options.</i>	1. { Surveying and Plotting 440
1. { Surveying and Plotting 440	{ Structural & Chemical Geology 668
{ Topographical Drawing 442	{ Dynamical Geology 665
{ Descriptive Geometry 110	{ Mechanism: Gear-Teeth; Machine Tools 518
2. { Principles of Mechanism 510	2. { Theoretical Chemistry 295
	{ Drawing 515

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

THIRD YEAR.	
FIRST TERM.	SECOND TERM.
Assaying 582	Quantitative Analysis (lectures and laboratory) 305
Qualitative Analysis (lectures and laboratory) 300	Physical Laboratory 375
Physics: Heat 370	Strength of Materials; Kinematics and Dynamics 75
Physical Laboratory 375	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	<i>Options.</i>
Business Law 275	1. { Mining Engineering 581
<i>Options.</i>	{ Theoretical Chemistry 295
1. { Mining Engineering 581	2. { Steam Engineering; Boilers 525
{ Historical Geology 669	{ Engineering Laboratory 530
{ Industrial Electricity 379	
{ Dynamo-Electric Measurements 380	
2. { Steam Engineering; Thermodynamics; Valve-Gears 525	
{ Drawing 526	

SUMMER COURSE IN PRACTICAL METALLURGY OR MINING (ELECTIVE).

FOURTH YEAR.	
FIRST TERM.	SECOND TERM.
Mining Engineering: Ore-Dressing 590, 591, 593	Mining Engineering: Mining and Metallurgical Machinery, 590, 591, 593
Memoirs, Laboratory Reports 595, 596	Memoirs, Laboratory Reports 595, 596
Metallurgy (non-ferrous) 588	Metallurgy (non-ferrous) 599
Metallurgy of Iron 587	Metallurgical Laboratory 592
Metallurgical Laboratory 592	Quantitative Analysis (lectures and laboratory) 319, 320
Quantitative Analysis (lectures and laboratory) 319, 320	Thesis.
Heat Measurements 398	<i>Options.</i>
Strength of Materials; Friction 86	1. { Quantitative Analysis (additional) 320
<i>Options.</i>	2. { Engineering Laboratory 553
1. Quantitative Analysis 320	
2. Hydraulics 471	

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.

Throughout this course, as well as those in engineering, extends a full course in mathematics, pure and applied, to serve as a basis for professional work.

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, examinations¹ in plane 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, solid geometry, 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 Mo- tion, Electricity (lectures)	360	Physics: Electricity, Optics (lect- ures)	360
German (or French)	200 (190)	German (or French)	200 (190)
English Literature	165	English Literature and Composi- tion	165
European History	221		

THIRD YEAR.

FIRST TERM.		SECOND TERM.	
Design	625	Gothic and Renaissance Archi- tecture	626
Ancient and Romanesque Archi- tecture	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
Business Law	275		
		<i>Options.</i>	
		1. Design	625
		2. { Structures	461
		{ 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	Sanitary Science and the Public Health	750
		Thesis	
		<i>Options.</i>	
		1. { Design	635
		{ Constructive Design	638
		{ History of Ornament	637
		{ Life Class	641
		{ Water Color	640
		{ Strength of Materials	87
		{ Color and Acoustics	391
		2. { Structures	500, 634
		{ Structural Design	501
		{ Strength of Materials	89
		1. { History of Ornament	637
		{ Life Class	641
		{ Modelling	648
		{ Pen and Ink	639
		{ Water Color	640
		{ Structures	500, 634
		2. { Laboratory Tests of Building Materials	90

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 83 to 85.

V. — CHEMISTRY.

FIRST YEAR. SEE PAGE 29.

SECOND YEAR.

FIRST TERM.	SECOND TERM.
Qualitative Analysis (lectures and laboratory) 300	Quantitative Analysis (lectures and laboratory) 305
Mineralogy and Blowpipe Analysis 661, 662	Physics: Electricity, Optics (lectures) 360
Physics: Mechanics, Wave Motion, Electricity (lectures) 360	Physical Laboratory 366
German (or French) 200 (190)	Physical Measurements (lectures) 365
English Literature 105	German (or French) 200 (190)
European History 221	English Literature and Composition 165
<i>Options.</i>	
1. Differential Calculus 33	1. Integral Calculus 38
2. { Elements of Differential and Integral Calculus 34	{ Dynamical or Chemical Geology 665, 668
	2. { General Biology 715
	{ Microscopy 710

THIRD YEAR.

FIRST TERM.	SECOND TERM.	
Quantitative Analysis (lectures and laboratory) 319, 320	Quantitative Analysis (lectures and laboratory) 319, 320	
Industrial Chemistry 312	Theoretical Chemistry 303	
Sugar Analysis 311	Organic Chemistry (brief course) 315	
Physics: Heat 370	Industrial Chemistry 312	
Physical Laboratory 373	Assaying 583	
Industrial Electricity 379	German (or French) 201 (191)	
German (or French) 201 (191)	Political Economy and Industrial History 245	
Political Economy 245	Business Law 275	
Business Law 275	<i>Options.</i>	
<i>Options.</i>		
Sanitary Chemistry 316	Structural and Chemical Geology 668	
Industrial Chemical Laboratory 314	Sanitary Chemistry 316	
	Industrial Chemical Laboratory 314	

FOURTH YEAR.

FIRST TERM.	SECOND TERM.	
Organic Chemistry (lectures) 332	Organic Chemistry (lectures) 332	
Organic Analysis 329	Gas Analysis 340	
Organic Preparations and Reactions 335	Theoretical Chemistry 318	
Molecular Weight Determinations ¹ 328	Electrical and Heat Measurements 421	
Theoretical Chemistry 313	History of Chemistry 342	
Elements of Non-Ferrous Metallurgy ¹ 589	Memoirs 344	
Metallurgy of Iron 587	Thesis.	
Testing of Oils 336	<i>Options.</i>	
<i>Options.</i>		
Proximate Technical Analysis 337	Physico-Chemical Laboratory 384	
Textile Coloring 338	Non-Ferrous Metallurgy 599	
Bacteriology; Industrial Biology 743, 740		
Historical Geology 669		
Non-Ferrous Metallurgy, Ore Dressing, and Metallurgical Laboratory 588, 592, 593, 596		

¹ Omitted by students taking 590, 592.

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 88 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.	SECOND TERM.
Physics: Mechanics, Wave Motion, Electricity (lectures) . . . 360	Physics: Electricity, Optics (lect.) 360
Acoustics 362	Physical Laboratory: Mechanics, Optics 366
Principles of Mechanism 510	Physical Measurements (lectures) 365
Differential Calculus 33	Theoretical Electricity 363
Descriptive Geometry 110	Mechanism: Gear-Teeth; Machine Tools 518
Carpentry and Metal-turning 137, 139	Drawing 515
German (or French) 200 (190)	Integral Calculus 38
English Literature 165	Carpentry and Wood-turning . . 137
European History 221	German (or French) 200 (190)
	English Literature and Composition 165

THIRD YEAR.

FIRST TERM.	SECOND TERM.
Physics: Heat (lectures) . . . 370	Physical Laboratory: Electrical Measurements 375
Physical Laboratory: Optics, Heat 375	Theoretical Electricity 377
Theoretical Electricity 377	Electrical Measuring Instruments and Methods (lectures) . . . 383
Methods of Telegraphy 378	Steam Engineering: Boilers . . . 525
Elements of Industrial Electricity 379	Engineering Laboratory 530
Steam Engineering: Valve-Gears; Thermodynamics 525	Drawing 526
Drawing 526	Strength of Materials; Kinematics and Dynamics 75
Differential Equations 45	German (or French) 201 (191)
General Statics 71	Political Economy and Industrial History 245
German (or French) 201 (191)	Business Law ¹ 275
Political Economy 245	
Business Law ¹ 275	

FOURTH YEAR.

FIRST TERM.	SECOND TERM.
Technical Applications of Electricity to Telephony, Electric Lighting, Electrical Generation of Power, Railroad Signals, etc. 400, 403	Technical Applications of Electricity; Electric Motors; Alternating Current Machines 400, 416
Methods of Dynamo Testing (lectures) 402	Transmission and Distribution of Energy 417
General Electrical Testing . . . 405	Methods of Dynamo Testing (lectures) 402
Electrical Engineering Laboratory; Testing of Dynamos, Electric Lamps, etc. 420	Principles of Dynamo Design . . 418
Electrical Measuring Instruments and Methods (lectures) 406	Telephone Engineering 419
Theory of Periodic Currents . . 404	Electrical Engineering Laboratory; Measurements of Dynamo Electric Machinery, Special Methods 420
Photometry 392	Theory of Periodic Currents . . 404
Steam Engineering 540	Discussion of the Precision of Measurements 423
Dynamics of Machines 543	Engineering Laboratory 545
Hydraulics 471	Economics of Corporations . . . 261
Engineering Laboratory 545	Thesis.
Strength of Materials; Friction . 86	
Method of Least Squares 57	

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. The study of Advanced German is advised.

¹ Alternate years.

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 microscopic 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.	SECOND TERM.
General Biology 711	General Botany 717
Qualitative Analysis (lectures and laboratory) 300	General Zoölogy 716
Mineralogy and Blowpipe Analysis 661, 662	Quantitative Analysis (lectures and laboratory) 305
Physics: Mechanics, Wave Motion, Electricity (lectures) 360	Structural and Chemical Geology 668
German (or French) 200 (190)	Dynamical Geology 665
English Literature 165	Physics: Electricity, Optics (lectures) 360
European History 221	German (or French) 200 (190)
	English Literature and Composition 165

THIRD YEAR.

FIRST TERM.	SECOND TERM.
Comparative Anatomy 720	Comparative Anatomy and Embryology 720
Anthropology 722	Cryptogamic Botany 728
Quantitative Analysis (lectures and laboratory) 319, 320	Sanitary Chemistry 316
Organic Chemistry (brief course) 302	Theoretical Chemistry 295
Historical Geology 669	Physical Laboratory 373
Physics: Heat 370	German (or French) 201 (191)
Physical Laboratory 373	Political Economy and Industrial History 245
German (or French) 201 (191)	Business Law 275
Political Economy 245	
Business Law 275	

FOURTH YEAR.

FIRST TERM.	SECOND TERM.
Comparative Physiology 735	Comparative Physiology 735
Physiological Laboratory 736	Physiological Laboratory 736
Theoretical Biology 738	Theoretical Biology 738
Microscopic Anatomy 737	Microscopic Anatomy 737
Bacteriology 743	Sanitary Science and the Public Health 750
Industrial Biology 740	Journals 739
History of the Inductive Sciences 742	Vital Statistics 268
Journals 739	Thesis.
<i>Options.</i>	<i>Options.</i>
1. Organic Chemistry 332, 333	1. { Sanitary Biology 751
2. { European Civilization and Art 228	{ Organic Chemistry 332
{ Climatology 685	2. { Sanitary Biology 751
	{ European Civilization and Art 228
	3. { Descriptive Sociology 256
	{ European Civilization and Art 228

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.	SECOND TERM.
Physics: Mechanics, Wave Motion, Electricity (lectures) . . . 360	Physics: Electricity, Optics (lectures) 360
Acoustics 362	Physical Laboratory: Mechanics, Optics 366
Qualitative Analysis (lectures and laboratory) 300	Physical Measurements (lectures) 365
Descriptive Astronomy 361	Theoretical Electricity 363
Microscopy 710	Quantitative Analysis (lectures and laboratory) 305
Differential Calculus 33	Theoretical Chemistry 303
German (or French) 200 (190)	Integral Calculus 38
English Literature 165	German (or French) 200 (190)
European History 221	English Literature and Composition 165
<i>Options.</i>	
Qualitative Analysis (additional) 300	
Determinants 35	

THIRD YEAR.	
FIRST TERM.	SECOND TERM.
Physics: Heat (lectures) 370	Physical Laboratory: Heat and Electrical Measurements 374
Physical Laboratory: Optics, Heat 374	Physico-Chemical Laboratory 384
Theoretical Electricity 377	Theoretical Electricity 377
Elements of Industrial Electricity 379	Electrical Measuring Instruments and Methods (lectures) 383
Photometry 371	Theoretical Chemistry 318
Organic Chemistry (brief course) 302	Analytical Mechanics 77
Chemistry of Solutions and Molecular Weight Determinations 313, 328	German (or French) 201 (191)
Differential Equations 45	Political Economy and Industrial History 245
German (or French) 201 (191)	Business Law ¹ 275
Political Economy 245	
Business Law ¹ 275	
<i>Options.</i>	
{ Quantitative Analysis 319, 320	Quantitative Analysis 319, 320
{ Shopwork 138, 139	{ Theory of Surfaces 49
{ General Theory of Equations 43	{ Advanced Calculus and Definite Integrals 50
{ Quaternions 47	
{ General Theory of Equations 43	

FOURTH YEAR.	
FIRST TERM.	SECOND TERM.
Electrical Testing: Heat Measurements 405, 398	Theory of Periodic Currents 404
Theory of Periodic Currents 404	or Theory of Potential 412
Electrical Measuring Instruments and Methods (lectures) 406	Optics 390
Optics 390	Electro-Chemistry 411
Kinetic Theory of Gases 394	Fourier's Series; Laplace's Coefficients 56
Energetics 393	Discussion of the Precision of Measurements 423
Physical Colloquium 395	Principles of Scientific Investigation 414
Fourier's Series; Laplace's Coefficients 56	Physical Colloquium 395
Method of Least Squares 57	Physical Research: Thesis.
History of Science 742	
<i>Options.</i>	
Organic Chemistry 333	Special Work; Chemistry or Physics 415
Analytical Mechanics 85	Analytical Mechanics 85

¹ Alternate years.

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 118 to 123.)

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 good knowledge of the applications of chemistry to the arts. 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. 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, considered from an engineering point of view.

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 page 85.)

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	
Business Law 275	
<i>Options.</i>	<i>Options.</i>
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	
Business Law 275	

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	Sanitary Science and the Public Health 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.	SECOND TERM.
Physiography 660	Structural and Chemical Geology 668
Mineralogy and Blowpipe Analysis 661, 662	Geological Field-work and Laboratory 666
General Biology 711	Dynamical Geology 665
Physics: Mechanics, Wave Motion, Electricity (lectures) 360	Zoölogy and Botany 716, 717
German (or French) 200 (190)	Physics: Electricity, Optics (lectures) 360
English Literature 165	German (or French) 200 (190)
European History 221	English Literature and Composition 165
<i>Options.</i>	
1, 2. Qualitative Analysis (lectures and laboratory) 300	1, 2. Quantitative Analysis (lectures and laboratory) 305
3. { Surveying and Plotting 440	3. Surveying and Plotting 440
{ Topographical Drawing 442	

FIELD-WORK IN MINERALOGY (ELECTIVE).

THIRD YEAR.

FIRST TERM.	SECOND TERM.
Historical Geology 669	Mineralogy 677
Geological Maps and Sections 671	Stratigraphic Palæontology 680
Structural Palæontology 672	Glacial Geology 679
Geological Fieldwork 673	Assaying 583
Anthropology 722	Physical Laboratory 373
Physics: Heat 370	German (or French) 201 (191)
Physical Laboratory 373	Political Economy and Industrial History 245
German (or French) 201 (191)	Business Law 275
Political Economy 245	
Business Law 275	
<i>Options.</i>	
1. Quantitative Analysis (lectures and laboratory) 319, 320	1. { Quantitative Analysis (lectures and laboratory) 319, 320
2. Comparative Anatomy 720	{ Theoretical Chemistry 295
3. { Advanced Surveying 450	{ Comparative Anatomy 720
{ Experimental Geology 692	2. { Freehand Drawing 120
	{ Advanced Surveying 450
	3. { Applied Geology 681
	{ Freehand Drawing 120

SUMMER COURSE IN GEOLOGY AND TOPOGRAPHY.

FOURTH YEAR.

FIRST TERM.	SECOND TERM.
Physiographic Geology 687	Economic Geology 695
Ore Deposits 691	Micro-Lithology 690
Micro-Lithology 690	Geological Field-work and Laboratory 686
Geological Field-work and Laboratory 686	Geological Memoirs 688
Geological Memoirs 688	Hydrography 696
Climatology 685	Thesis.
Stratigraphic Correlation 689	
<i>Options.</i>	
1. Mining Engineering and Metallurgy 581, 587, 589	
2. Experimental Geology 692	
3. { Mining Engineering 581	
{ Hydraulic Measurements 473	

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		
Business Law	275		

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	145, 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, by devoting a year to the study of theoretical and practical electricity, may 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 degrees Doctor of Philosophy and Doctor of Science are awarded for proficiency in graduate courses of study of at least two years' duration. The particular courses of study which candidates for these degrees wish to pursue must be submitted in writing to the Faculty, 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 1899 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 Chemistry; Biology; Physics, including Mechanics, Light, Electricity, Heat; 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 portions 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 school 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 118.

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

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

French or German (additional),	Physics,
Latin,	Chemistry,
English (additional),	Mechanical Drawing and
History (additional),	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 polyhedrons and regular polyhedrons. The application of the above to numerical examples in mensuration as follows — lateral areas and volumes of regular prisms; surfaces and volumes of rectangular parallelepipeds; 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.

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.

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 German at the entrance examination will find it advantageous for their subsequent work at the Institute to do so.

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 1899: (*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*; Coleridge's *The Rime of the Ancient Mariner*; De Quincey's *Flight of a Tartar Tribe*; Cooper's *The Last of the Mohicans*; Lowell's *The Vision of Sir Launfal*; Hawthorne's *The House of the Seven Gables*.

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

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*;

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.

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*.

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*.

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 not less than two weeks prior to the examination in each case.

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 prepara-

tion; 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. The Faculty reserves the right to require examinations 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 in addition (*a*) Advanced French. Review of Grammar, 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 (*c*) Advanced German. Translation from English into

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

German; review of Grammar; additional and more varied reading; or (*d*) Elementary French (see page 65).

Appropriate works for the advanced reading may be selected from such standard prose writers as Thierry, Guizot, Thiers, Henri Martin, Michelet, Chateaubriand, Hugo, Goethe, Schiller, Heine, Freytag. 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.

English and History.¹ — 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 class-room or laboratory work. The latter is recommended when practicable.

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.

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

Chemistry. — Applicants must present evidence of familiarity with the elements of chemistry. The amount required is somewhat less than that represented by Remsen's Briefer Course. Little importance is attached to a knowledge of the theoretical conceptions relating to the determination of atomic and molecular weights and to molecular structure; but a practical acquaintance with the composition, methods of preparation, and reactions of the common chemical substances, and a thorough understanding of the fundamental laws of chemical combination, are essential. The subject should be attempted only in schools having adequate laboratory equipment, and the laboratory work should be carried out with great care and close attention. The applicant should present for examination his original notes with any annotations which may have been made by the instructor.

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. (Fauce'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 intention 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 entrance 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.

While previous knowledge of chemistry and physics is neither required nor assumed for admission, students will find their progress greatly promoted by making themselves thoroughly familiar with the elements of these subjects, as set forth in any of the text-books ordinarily used in high schools, or, preferably, by pursuing an elementary course in chemical or physical laboratory work.¹

A knowledge of the Latin language is not required for admission; but 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

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 both Advanced Algebra and Solid Geometry 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),

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

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 29 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 29 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 elements, 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, $8 \times 10\frac{1}{2}$ 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 examinations.

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 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. In addi-

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.

tion, 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 are 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 1897-98 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 analysis 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 Sanitary Chemistry 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. In the industrial laboratory the students prepare chemical products from raw materials, and also undertake the preparation of pure chemicals. 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 dyehouse. 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 is supplemented by frequent excursions to manufacturing establishments, where the practical working of chemical industries can be examined.

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 organic laboratories have places for forty students. The laboratory of sanitary chemistry 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 thirty 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 twenty students, and is thoroughly equipped with apparatus suited to this branch of chemical analysis. There are also special laboratories provided for the instruction in proximate technical analysis, in molecular weight determinations, and in sugar analysis. Kidder Hall has a seating capacity of one hundred and eighty, and is arranged with special reference to the delivery of experimental lectures. In addition there are two lecture-rooms, seating respectively seventy-five 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 six thousand volumes and thirteen hundred pamphlets, is kept in the reading-room of the department. This library contains complete sets of most of the impor-

tant 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.

Chemical Engineering. — The special instruction in Chemical Engineering begins with an extended descriptive course of lectures giving a general view of Industrial Chemistry. Chemical questions connected with various industries are discussed and mechanical appliances described. Details of construction are reserved for a subsequent course dealing with materials, methods of transportation, evaporation and distillation, refrigeration, furnace construction, and similar topics. These topics are, so far as possible, taught by persons practically connected with the industries of which they treat. Special attention is paid to the discussion of the engineering problems of combustion, fuels, evaporation, boiler corrosion, etc., from a chemical point of view. The machinery and mechanical appliances used in manufacturing chemistry are also discussed at length from a purely engineering standpoint. Heat measurements and the economic use of fuels are considered in separate courses of lectures. A laboratory course of instruction is given in technical gas analysis, including the collection and analysis of furnace and illuminating gases, and another in the chemical and physical testing of oils. The instruction in applied chemistry of the fourth year of the course 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. Students in this course have also practice in the preparation of chemicals on a semi-industrial scale in the laboratory of industrial chemistry. Excursions are frequently made to various manufacturing establishments in Boston and vicinity.

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, optics, electricity, 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.

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 Course VIII. 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 a series of lectures of this character will be devoted to the electro-magnetic theory of light.

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. 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 $7\frac{1}{2}$ -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 such instruction and experiments as are suitable in 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. 89 (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.

During the present year an observatory has been erected in the Middlesex Fells, within easy access of Boston, which 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 2½-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. During the present year it will be further equipped with pendulum apparatus for determining the force of gravity, and with other instruments. 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, Mr. A. C. Kendall, General Ticket Agent of the New York, New Haven and Hartford Railroad, Mr. B. W. Wells, Superintendent of Streets of Boston, and Mr. C. R. Cutter, Deputy Superintendent of the same department.

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. John R. Freeman, on the Hydraulics of Fire Protection; by Mr. A. L. Webster, of New York, on the Drainage of Large Buildings; by Mr. Allan V. Gar-

ratt, on the Lombard Water Wheel Governor; and by Mr. W. W. Locke, on Garbage Disposal.

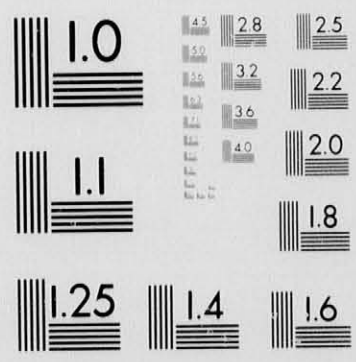
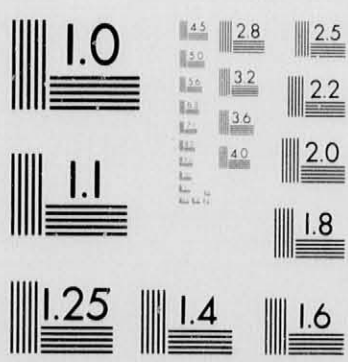
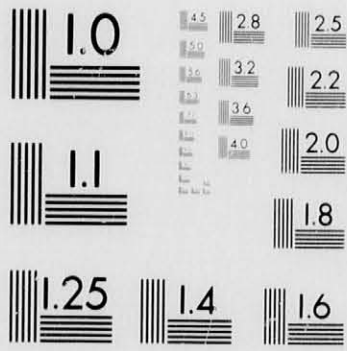
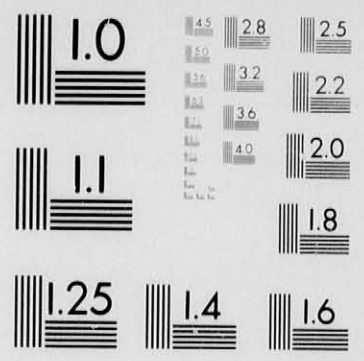
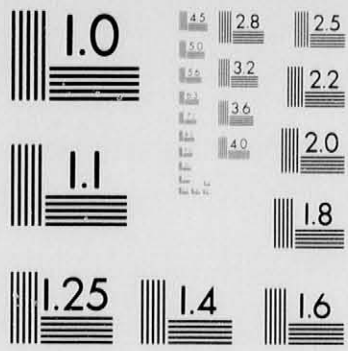
The instruments and apparatus of the department may be classified as follows: A full outfit of the instruments used in surveying and in the drawing-room; a collection of hydraulic apparatus for work in the field, comprising single and double floats of various patterns, loaded tubes, and five-current 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 large 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



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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 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 1894 and 1895 this school was held in the Adirondack Mountains; in 1896 and 1897 it was held at Machias, on the coast of Maine; in 1898 it was held at Lancaster, Mass.

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 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 classroom 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, and Mr. J. N. Gunn, on Functions of a System of Factory Organization and Methods of Distribution of Indirect Expenses. 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, mouthpieces, 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 standpipe 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 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, mouthpieces, 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 experiments 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 six thousand volumes and twenty-seven 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 twenty-four 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 fifteen hundred volumes, and receives annually thirty-seven 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 1895 the summer school of metallurgy was held in New Jersey and Pennsylvania. The leading metallurgical works of Jersey City and Newark, N. J., and those at Lebanon, Steelton, Everett, and Johnstown, Pa., were made the objects of study. Coal and iron mines were visited in Everett and Lebanon, Pa.

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.

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 nine thousand photographs, six thousand lantern slides, over eighteen hundred volumes of technical works, and the leading American and foreign periodicals. The publications of the Royal Institute of British Architects are presented by the institution, and a large number of richly illustrated and costly books have been recently 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. Messrs. W. R. Ware, R. D. Andrews, and C. H. Walker form the committee appointed this year to examine the work, make the award, and report at the next October meeting.

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. Since then schools have been 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.

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 the personal aspects of 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 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 fifteen hundred 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 for students in the department of 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 Laboratory contains collections which have been made and arranged expressly for the purpose of teaching. There is also a supply of unarranged material, and there are suitable appliances with which the students may obtain practice in working the rock and in the determination of species. Implements are

provided for geological field-work; a microscope and its accessories for the study of sections; and there is a machine for cutting, grinding, and polishing specimens, which is run by a separate dynamo and is always ready for use. In connection with the laboratory there is a good geological library, and the current publications are at hand. This equipment, and the facilities afforded for experiments and tests which may be made in the other laboratories of the Institute, furnish opportunities for much experimental work in geology. A person qualified to give direction to the work is always available for the instruction of laboratory students.

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 such facility in translation that the student may avail himself of foreign works relating to his professional department. For both purposes, a thorough and system-

atic 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. French (see conditions of admission, page 65) is continued through one year, and German through two years, for all regular students.¹ In certain courses, especially in the course in General Studies, there is advanced work in French and German. 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

¹ Students entering on German continue German for one year, then take two years of French.

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 sys-

tems 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 six thousand selected vol-

umes 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, for three hours per week, exercises in Military Science and Tactics.

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 twenty-three years of age at entrance, or if he pass 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.

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 forty-seven 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 124), 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:

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|--------------------|------------------------------|
| 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 Woods, Skinner,	V, VII, IX, XII. { All courses except V, VII, IX, and XII.	
27	Analytic Geometry	1	2	4	(5) (22) . . .	{ Lect., } { Rec. }	Wells	{ All courses except I, and XI.	
28	Elements of the Theory of Equations	1	2	1 ₁₀	(20)	Rec.	Wells	I, XI.	
29	Spherical Trigonometry	1	2	1 ₁₀	(22)	Rec.	Wells	{ All courses ⁽²⁾ except VII, IX, and XII.	
33	Differential Calculus ⁽²⁾	2	1	3	(27)	{ Lect., } { Rec. }	Runkle, Osborne.	(V.)	
34	Differential and Integral Calculus	2	1	3	(23)	{ Lect., } { Rec. }	Woods	(VIII.)	
35	Determinants	2	1	1	(22)	{ Lect., } { Rec. }	Skinner	{ All courses ⁽²⁾ except VII, IX, and XII.	
38	Integral Calculus	2	2	3	(33)	{ Lect., } { Rec. }	Runkle, Osborne.	(VIII.)	
43	General Theory of Equations	3	1	2	(28)	{ Lect., } { Rec. }	Skinner		

(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 ^a	3	(38)	{ Lect., Rec. }	Osborne	VI., VIII.	
46	Elements of Differential Equations	3	1	2 ⁵	(38)	{ Lect., Rec. }	Osborne	II., X., XIII.	
47	Quaternions	3	1	2	(45)	{ Lect., Rec. }	Bailey	(VIII.)	
49	Theory of Surfaces	3	2	2	(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.	
58	Differential Equations	4	2	3	(38)	{ Lect., Rec. }	Osborne	I-3.	
61	Elliptic 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 ⁽¹⁾ 3 ⁽¹⁾	(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 [†]	(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 [†]	(89)	Lab.	Miller	IV ² .

(¹) 10 weeks.

(²) Option 2, 5[†] 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, VI, X, XI, XIII. IV. }	
102 103	Descriptive Geometry (con- tinuation of 101)	{ 1 1	{ 2 2	{ 6 ₁₀ 12 ₁₂	(101)	{ Lect., Rec., Draw. }	Faunce	{ I, II, III, VI, X, XI, XIII. IV. }	
104	Mechanical Drawing	1	2	6	(100)	{ Lect., Draw. }	Faunce	III, V, VIII, XII.	
105	Mechanical Drawing (Chart and Map Making for IX.)	1	2	4	(100)	{ Lect., Draw. }	Faunce	VII, IX.	
110	Descriptive Geometry ⁽²⁾ (continuation of 102)	2	1	5	(102)	{ Lect., Rec., Draw. }	Faunce	{ I, II, III, 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.

SCHEDULE OF TOPICS.

SHOPWORK.									
No.	Subject.	Year.	Term.	Hours Per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge. All shopwork is under 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.	
135	Chipping and Filing	1	1, 2	3, 3 ⁶	(100) (115)	Shop	Lambirth, Smith	Special Class.	
136	Machine Tool Work	1	2	6 ⁵ , 9 ¹⁰	(104) (116) (135)	Shop	Smith	Special Class.	
137	Carpentry and Wood Turning	2	1, 2	2		Shop	Merrick	VI.	
138		3	1	4 ⁽¹⁾		Shop	Merrick	II.	
		4						(VIII.)	
								X.	
139	Metal Turning, Brass, etc.	2	1	2		Shop	Smith	VI, VIII.	
140	Foundry	2	2	2		Shop	Merrick	(H.)	
141	Pattern Work	2	2	2	(138)	Shop	Merrick	II.	
142	Forging	2	1, 2	4, 6 ⁸		Shop	Lambirth	XIII.	
143		3	2	3		Shop	Lambirth	II.	
144		4	2	6 ⁷		Shop	Smith, Lambirth	X.	
145		Chipping and Filing	4	2	6 ⁵		Shop	Smith, Lambirth	XIII.
146	Machine Tool Work	4	1	6 ⁵		Shop	Smith, Lambirth	II, XIII.	
147		4	1, 2	6 ¹⁰ , 6	(145)	Shop	Smith	II, XIII. ⁽²⁾	
148		4	2	2		Shop	Smith	X.	
149		Pipe Fitting	4	1	2		Shop	Smith	XI.

(²) Ten weeks in second term.

(¹) Course VIII., two hours.

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 (elementary) ⁽¹⁾	2	1, 2	3	. . . . .	{ Lect., Rec. }	Bernard	{ All reg. students not taking 200.
191	French (grammar and trans- lation)	1 or 3	1, 2	3	(190)	Rec.	van Daell	All reg. students.	
192	French (sight reading)	1	2	3	(191)	Rec.	Bernard	IV., IX.	
193	French (advanced)	2	1, 2	3	(191)	{ Lect., Rec. }	van Daell	IX.	
195	French Literature	3	2	2	(193)	{ Lect., Rec. }	van Daell	(IX.)	
200	German (elementary) ⁽¹⁾	2	1, 2	3	. . . . .	Rec.	van Daell	{ All reg. students not taking 190.
201	German (grammar and trans- lation)	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 (advanced)	4	1, 2	3	(201)	{ Lect., Rec. }	Dippold	Elective.	
207	Spanish ⁽²⁾	4	1, 2	2	. . . . .	{ Lect., Rec. }	Erhardt	(IX.)
208	Italian ⁽²⁾	4	1, 2	2	. . . . .	{ Lect., Rec. }	Erhardt	(IX.)

(1) Identical with entrance requirement. See page 64. (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 Civiliza- tion 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.

SCHEDULE OF TOPICS.

ECONOMICS AND STATISTICS.				POLITICAL SCIENCE.				
No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
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 In- dustrial History	{ 3 } { 4 }	1, 2	2, 1 ⁽¹⁾	(221)	{ Lect., } { Rec. }	Dewey, Ripley	{ All Courses except } { IX. and 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	1, 2	2	(240) or (245)	Lect.	Dewey	(IX.)
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	2 ₅	(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 subjects, 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 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. }	Curr.er	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 pres- ent year.	{ IX. { All courses except
275	Business Law	{ 3 4 }	1, 2	1	. . . .	Lect.	{ Not given the pres- ent year. ⁽²⁾	{ X. X.

⁽¹⁾ Alternating subject not given the present year.

⁽²⁾ Time transferred to 245.

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. } { Lect., Lab. }	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 } { 3 }	2	2	(291)	Lect.	Whitney	{ III, ² VII, XII, ¹ . { III, ² VII, XII, ¹ . { V, XII, ^{1, 2} . { VII. { (VIII). { (VIII), X. { XI. { III, ^{1, 2} . { XI. { VII, VIII, X. { VIII. { V.	
300	Analytical Chemistry: Qualitative Analysis	2	1	{ 10 } { 6 } { 9 } { 4, 8 }	{ (190) or (200) } { (291) }	{ Lect., Lab. }	{ Talbot, Walker, } { Moore }		
302	Organic Chemistry (brief course)	{ 2 } { 3 } { 3 }	2 1 1	1	(291)	Lect.	Noyes		
303	Theoretical Chemistry: Atomic and Molecular Weights	{ 2 } { 3 }	2	2	(291)	Lect.	Noyes		
305	Analytical Chemistry: Quantitative Analysis	2 3 3	2 1 2	{ 10 } { 8 } { 6 } { 5 } { 3 } { 7, 8 }	(300)	{ Lect., Lab. }	{ Talbot, Walker, } { Moore }	{ V. { VII. { VIII, XII, ^{1, 2} . { X. { XI. { III, ^{1, 2} .	

(1) Course V., 12 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	$\left. \begin{matrix} 2 \\ 5 \end{matrix} \right\} 310$	(291)	Lect.	Thorp	V, X.
313	Theoretical Chemistry: Solutions	$\left. \begin{matrix} 3 \\ 4 \end{matrix} \right\}$	1	1	(303)	Lect.	Talbot	$\left. \begin{matrix} \text{VIII.} \\ \text{V.} \end{matrix} \right\}$
314	Industrial Chemical Labo- ratory.	3	$\left. \begin{matrix} 1 \text{ or } 2 \\ 2 \end{matrix} \right\}$	$\left. \begin{matrix} 6 \\ 5 \end{matrix} \right\}$	$\left. \begin{matrix} (395) \\ (312) \end{matrix} \right\}$	Lab.	Smith	$\left. \begin{matrix} \text{(V.)} \\ \text{X.} \end{matrix} \right\}$
315	Organic Chemistry (brief course)	3	2	1	(303)	Lect.	Norris	V.
316	Sanitary Chemistry	3	$\left. \begin{matrix} 1 \text{ or } 2 \\ 2 \end{matrix} \right\}$	6	(305)	$\left. \begin{matrix} \text{Lect.,} \\ \text{Lab.} \end{matrix} \right\}$	Mrs. Richards	$\left. \begin{matrix} \text{(V.)} \\ \text{VII.} \end{matrix} \right\}$
317	Water Analysis	3	2	2	(305)	Lab.	Mrs. Richards	XI.
318	Theoretical Chemistry: Chemical Change	$\left. \begin{matrix} 3 \\ 4 \end{matrix} \right\}$	2	$\left. \begin{matrix} 1 \\ 2 \end{matrix} \right\}$	(328)	$\left. \begin{matrix} \text{Lect.,} \\ \text{Rec.} \end{matrix} \right\}$	Noyes	$\left. \begin{matrix} \text{VIII.} \\ \text{V.} \end{matrix} \right\}$
319	Analytical Methods	$\left. \begin{matrix} 3 \\ 4 \end{matrix} \right\}$	$\left. \begin{matrix} 1 \\ 1, 2 \\ 1, 2 \\ 1, 2 \end{matrix} \right\}$	$\left. \begin{matrix} 2 \\ 2, 1 \\ 2, 1 \\ 2, 1 \end{matrix} \right\}$	(395) (191) or (201)	$\left. \begin{matrix} \text{Lect.,} \\ \text{Rec.} \end{matrix} \right\}$	Talbot, Fay	$\left. \begin{matrix} \text{VII. (VIII.), XII.} \\ \text{III.} \end{matrix} \right\}$
320	Analytical Chemistry: Quantitative Analysis	3	$\left. \begin{matrix} 1, 2 \\ 3 \end{matrix} \right\}$	$\left. \begin{matrix} 12, 13 \\ 5 \\ 6, 7 \end{matrix} \right\}$	(395) (319)	Lab.	Talbot, Fay	$\left. \begin{matrix} \text{VII.} \\ \text{V.} \\ \text{(VIII.)} \\ \text{XII.} \\ \text{III.}_1 \\ \text{III.}_2 \end{matrix} \right\}$

CHEMISTRY.								
No.	Subject.	Year.	Term.	Hours per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
328	Molecular Weight Determinations	{ 3 } { 4 }	1	1	(313)	Lab.	Talbot, Whitney	{ VIII. V.
329	Organic Analysis	4	1	6	(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	{ 3 } { 9 }	(302) (305)	Lab.	Noyes	{ (VII). { (VIII).
334	Air Analysis	4	1	2	(317)	Lab.	Mrs. Richards	XI.
335	Organic Preparations and Reactions	4	1	12	(315) (332)	Lab.	Noyes, Norris	V.
336	Testing of Oils	4	1	2	(305)	Lab.	Gill	V, X.
337	Proximate Technical Analysis	4	1	6	(320)	{ Lect., } { Lab. }	Whitney	(V.)
338	Textile Coloring	4	1	6	(314)	Lab.	Smith	(V.), (X.)
339	Applied Chemistry	4	1, 2	4, 2 ⁽¹⁾	(312)	{ Lect., } { Lab. }	Gill	X.
340	Gas Analysis	4	{ 1 } { 2 }	1	(291)	Lab.	Gill	{ X. 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 Drisko }	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, Norton }	V., VI., VIII.	
367	Physical Laboratory	2	2	2	(360)	Lab.	Goodwin . . .	IX.	
370	Physics: Heat	3	1	2 ₄	(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	2 _{7, 2}	(370)	Lab.	{ Goodwin, Derr, Norton }	{ I., II., V., ¹ VII., X., XI., XII., XIII.	
374	Physical Laboratory	3	1, 2	2 _{7, 4}	(366) (370)	Lab.	Goodwin . . .	VIII.	
375	Physical Laboratory	3	1, 2	2 _{7, 3}	{ (370) (366) (370) }	Lab.	{ Goodwin, Derr, Norton }	{ III. VI.	
377	Theoretical Electricity	3	{ 1 2 }	{ 2 ₇ 2 _{8, 1} }	(363)	{ Lect., Rec. }	Clifford . . .	VI., VIII.	

¹ First term only.

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

(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	$\left\{ \begin{array}{l} 4 \\ 5 \end{array} \right\}$	(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	$\left\{ \begin{array}{l} 5 \\ 3 \end{array} \right\}$	(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.

SCHEDULE OF TOPICS.

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	2 ₃	(57) (365)	Lect.	Clifford	VI., VIII.	

(1) Time specially arranged each year.
 (2) Students not taking all other fourth-year electrical subjects of Course V. 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. }	Barton, Robbins .	{ I, III, 1 ⁽¹⁾ , XI, XII.3 }	
442	Topographical Drawing	2	1	2	(102) (116)	Draw.	Barton, Robbins .	I, III, 1, XI, XII.3.	
443	Elements of Astronomy	2	1	1	(440)	{ Lect., Rec., Field. }	Barton	I.	
450	Surveying	3	1, 2	2	(360)(440)	{ Lect., Rec., Field, Draw. }	Barton, Sweet .	I, XI, XII.3.	
451	Surveying Instruments (six lessons)	3	2	- ⁽²⁾	(526)	{ Lect., Field. }	Barton, 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⁾ For Course XI, 10 weeks in first term, 12 in the second.

⁽³⁾ Time included in 526.

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 ¹ / ₂ 2 ¹ / ₁₀ }	(70)	{ Lect., Rec. }	Swain	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	(57) (450)	{ Lect., Rec., Field. }	Burton	I ₃ .	
468	Practical Astronomy	4	1	1	(38) (450)	Lect.	Robbins	I _{1, 3} .	
470	Theoretical Hydraulics	4	1	{ 3 2 }	{ (70) (1) (71) }	{ Lect., Rec. }	Porter	{ I, XI. II, III, 2, VI, (X), XIII. }	
471									
472	Sanitary and Hydraulic Engineering	4	1	3	(470)	{ Lect., Rec. }	Porter	I, XI.	
473	Hydraulic Measurements	4	1	3 ¹ / ₂	{ (470) or (471) for XII. (450) }	{ Field., Draw., Rec. }	Porter, Sweet . .	{ I _{1, 2, 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 } 479 }	Bridge Design	4 } 4 }	1, 2 1	6 5, 4	{ (474) (476) (477) }	Draw.	{ Swain, McKib- ben, Spofford }	{ I _{1, 2} , I _{3, XI} }
480	Engineering Laboratory	4	2	2 _s	(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 Design	4	2	{ 2 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., 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., 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., VI., XIII.	
520	Principles of Mechanism	2	2	2	(33) (110)	{ 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., 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, Pea- body, 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	{ 3 ₉ 3 ₅	(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	3½ 3	{ (86) (471) } { (540) (542) }	{ Lect., } { Rec. }	{ Lanza } { Peabody } { Schwamb }	II.2. II.1, XIII. II.3.	
551	Marine Engineering								
552	Mill Engineering								
553	Engineering Laboratory	4	2	4	(86) (525) (530)	Lab.	Miller	III.2.	
554	Technical Machinery	4	2	2	(540)	Lect.	Merrill	X.	
555	Foundations	4	2	2½	(88)	Lect.	Lanza	II.	
556	Industrial Management	4	2	2½	{ (550) (551) } { or (552) }	Lect.	Schwamb	II.	
NAVAL ARCHITECTURE.									
570	Naval Architecture	3	1, 2	2	{ (71) (75) } { (518) (525) }	Lect.	Peabody	XIII.	
571	Naval Architectural Drawing	3	1, 2	6, 5	{ (570) } { (86) (525) }	Draw.	Peabody, Swan	XIII.	
572	Naval Architecture	4	1, 2	2	{ (540) (542) } { (551) (570) }	Lect.	Peabody	XIII.	
573	Naval Architectural Drawing	4	1, 2	4, 6	{ (573) } { (572) }	Draw.	Peabody, Swan	XIII.	

MINING ENGINEERING.								
No.	Subject.	Year.	Term.	Hours Per Week.	Preparation Required.	Method of Instruction.	Instructor in Charge.	Taken by
580	Blowpipe Silver Assay . . .	2	2	2	(291)	Lab. .	Richards . . .	III., (III _a).
581	Mining Engineering . . .	3	1, 2	3	{ (360)(440) }	Lect. .	Richards, Hofman	III., { XII., 3,
582 } 583 }	Assaying by Fire	4	{ 1 2 }	4	{ (661)(665) }	Lab. .	Lodge	III. { V., XII.
587	Metallurgy of Iron	3	2	2	(662)	Lect. .	Richards . . .	{ I., 2, II., III., V., X., XI., XII., XIII.
588	Metallurgy of Non-ferrous Metals	4	1	1	(291)	Lect. .	Hofman	III., (V.)
589	Elements of Non-ferrous Metallurgy	4	1	2	(592)	Lect. .	Hofman	(V.), X., XII.,
590	Metallurgy	4	1	1	(661)	Lect. .	Hofman	III.
591	Metallography	4	1, 2	-	(593)	Lect. .	Sauveur	III.
592	Electricity in Mining	4	1, 2	8, 14	(593)	Lect. .	Sprague	III. { III., III., (V.)
592	Metallurgical Laboratory	4	{ 1, 2 1 }	{ 8, 12 8 }	{ (320)(360) } { (582)(595) }	Lab. .	{ Richards, Hof- man, Lodge . . }	{ III., III., (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, Hof- man, Lodge . . }	III.
596	Laboratory Reports	4	{ 1, 2 1 }	1	(592)	Rec. .	{ Richards, Hof- man, Lodge . . }	{ III., (V.)
599	Metallurgy of Non-ferrous Metals and General Metal- lurgy	4	2	3	(588) or (589)	Lect. .	Hofman	III., (V.), (X.)

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	2 1/2	(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	Architectura. 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	20, 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	15, 26	{ (625) (637) } { (644) }	Draw.	Despradelle . . .	IV. ₁	
636	History of Construction	4	1	1	(627) . . .	Lect.	Chandler	IV.	
637	History of Ornament	4	1, 2	1 ₁₀	{ (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, Con- tracts, 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, 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	Blowpipe 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., (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 }	2	3 ⁽¹⁾	(661) (665)	{ Lect., } { Lab. }	Crosby	{ III., VII., XII. (V.)	
669	Historical Geology	{ 3 } { 4 }	1	3	(670) (668)	{ Lect., } { Rec. }	Niles	{ III., VII., XII. (V.)	
670	Structural Geology	3	1	2	(291) (665)	{ Lect., } { Lab. }	Barton	I., XI.	
671	Geological Maps and Sec- tions	3	1	2	(666) (668) (660)	{ Field., } { Draw. }	Niles	XII.	
672	Structural Paleontology	3	1	4	(716)	Lab.	Niles	XII.	
673	Geological Field-work	3	1	4	(666) (660)	{ 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 Paleontology	3	2	4	(669) (672)	Lab.	Niles	XII.	
681	Applied Geology	3	2	8	(671)	{ Lab., { Read.	Niles, Crosby	XII, 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	(665)	{ 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 } { 4 }	1	{ 8 } { 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 } { 1 }	2 2 2 1	2	(290)	{ Lect., } { Rec., } { Lab. }	Sedgwick	{ VII. } { (V.) } { VIII. }	
{ 711 } { 712 }	General Biology	{ 2 } { 3 }	1	{ 5 } { 4 } { 27 }	(290)	{ Lect., } { Rec., } { Lab. }	Sedgwick	{ VII. } { IX, XII. }	
715	General Biology	2	2	1	(291)	{ Lect., } { Lab. }	Sedgwick	(V.)	
716	General Zoology	{ 2 } { 3 }	2	2 ⁽¹⁾	(711) or (712)	{ Lect., } { Lab. }	Weyse	{ VII., IX., XII. } { XI. }	
717	General Botany	{ 2 } { 3 }	2	1 ⁽¹⁾	(711) or (712)	{ Lect., } { Lab. }	Sedgwick	{ VII., IX., XII. } { XI. }	
720	Comparative Anatomy and Embryology	3	1, 2	8	(711)	{ Lect., } { Rec., } { Lab. }	Weyse	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.	
728	Cryptogamic Botany	3	2	5	(717)	{ Lect., Lab. }	Prescott	VII.	
735	Comparative Physiology	4	1, 2	5, 6	(720)	{ Lect., Rec., Lab. }	Hough	VII.	
736	Physiological Laboratory	4	1, 2	4, 3	(720)	{ Lect., Lab. }	Hough	VII.	
737	Microscopic Anatomy	4	1, 2	4, 3	(720)	{ Lect., Rec., Lab. }	Weyse	VII.	
738	Theoretical Biology	4	1, 2	1	(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) }	{ Lect., Rec., Lab. }	Prescott	{ (V.), VII. XI.	
750	Sanitary Science and the Public Health	4	2	1	(290)	Lect.	Sedgwick	{ I., IV., VII., IX., XI.	
751	Sanitary Biology	4	2	{ 3 4 }	(743)	{ Lect., Rec., Lab. }	Sedgwick, Holman	{ (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 1898-99.

School Year began	Wednesday, Sept. 28, 1898.
Semi-annual Examinations begin	Tuesday, Jan. 17, 1899.
Second Term begins	Tuesday, Feb. 7, 1899.
Annual Examinations begin	Tuesday, May 23, 1899.
Degrees conferred. — School Year ends	Tuesday, June 6, 1899.
First Entrance Examinations	{ Thursday, June 29, 1899, and Friday, June 30, 1899.
Examinations for Advanced Standing begin	Monday, Sept. 18, 1899.
Second Entrance Examinations ¹	{ Tuesday, Sept. 19, 1899, and Wednesday, Sept. 20, 1899.
School Year of 1899-1900 begins	Wednesday, Sept. 27, 1899.

CALENDAR FOR 1899-1900.

School Year begins	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 1900-01 begins	Wednesday, Sept. 26, 1900.

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. 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.

Scholarships. — *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. 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, 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 decree 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, Esq., 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.

Conditions governing Award of Scholarships. — Scholarships are awarded in general only to those applicants who have completed at least a year of thoroughly satisfactory work at the Institute. 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

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.

Graduate Scholarships and Fellowships. — 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.

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.

In addition to these, the following fellowships of four hundred dollars each may be held by resident graduate students, or may be awarded to graduates desiring to continue their studies abroad:

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 traveling 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 abbreviations 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 . . .	<i>Newtonville</i> . . .	Paris, France.
S.B., Massachusetts Institute of Technology. Savage Fellow.		
Chamberlain, Herbert William .	<i>Boston</i>	Studying in Italy.
B.Sc., Iowa State Agricultural College. S.M., Massachusetts Institute of Technology.		
Coolidge, William David . . .	<i>Hudson</i>	Leipsic, Germany.
S.B., Massachusetts Institute of Technology. Swett Fellow.		
Wendell, George Vincent . . .	<i>Cambridgeport</i> . . .	Berlin, Germany.
S.B., Massachusetts Institute of Technology. Ph.D., University of Leipsic.		

GRADUATE SCHOLARS.

(See page 163.)

NAME.	HOME.	RESIDENCE.
Ederly, Daniel Wilbert . . .	<i>Cambridge</i>	Cambridge.
S.B., Massachusetts Institute of Technology.		
Keough, William Thomas . . .	<i>E. Boston</i>	234 Saratoga St., E.B.
S.B., Massachusetts Institute of Technology.		
Manson, Edmund Sewall, Jr. .	<i>Dorchester</i>	7 Holiday St., D.
S.M., Massachusetts Institute of Technology.		
Stevens, Gorham Phillips . . .	<i>Cambridge</i>	Cambridge.
S.B., Massachusetts Institute of Technology.		
Winslow, Charles-Edward Amory,	<i>Boston</i>	Hotel Oxford.
S.B., Massachusetts Institute of Technology. Hemenway Scholar.		

OTHER GRADUATE STUDENTS.

NAME.	HOME.	RESIDENCE.
Adams, Herbert Henry	<i>New York, N. Y.</i> . . .	Cambridge.
B.A., Johns Hopkins University.		
Allen, Harry Vass	<i>Raleigh, N. C.</i>	Braemore Road, B.
B.S., Davidson College.		
Archibald, George Hughes . . .	<i>No. Sydney, C. B.</i> . . .	41 St. Botolph St.
B.E., King's College.		
Axon, Edward William	<i>Princeton, N. J.</i>	142 St. Botolph St.
M.A., Princeton University.		
Baldwin, Abraham Rosecrans . .	<i>Chicago, Ill.</i>	41 St. Botolph St.
A.B., Yale University.		
Bleecker, John Stearns	<i>Portsmouth, N. H.</i> . . .	6 Louisburg Sq.
S.B., Massachusetts Institute of Technology.		
Bowditch, Ingersoll	<i>Jamaica Plain</i>	Jamaica Plain.
A.B., Harvard University.		
Briggs, Zenas Marston	<i>New Bedford</i>	Cambridge.
A.B., Yale University.		
Brock, Henry Matthias	<i>Roxbury</i>	15 Woodville St., R.
A.B., Boston College.		
Butler, Laurence Smith	<i>New York, N. Y.</i>	66 Beacon St.
A.B., Harvard University.		
Chapman, James Finlay	<i>Maukato, Minn.</i>	Brookline.
S.B., Carleton College.		
Chase, Aurin Moody	<i>Syracuse, N. Y.</i>	103 Pinckney St.
B.S., Amherst College.		
Clapp, Frederick Otis	<i>Providence, R. I.</i>	199 St. Botolph St.
A.M., Brown University.		
Clarke, William Case, Jr.	<i>Wakefield, R. I.</i>	35 St. Botolph St.
B.S., R.I. College of Agriculture and Mechanic Arts.		
Coolidge, Edward Bliss, Jr. . . .	<i>Detroit, Mich.</i>	37 St. Botolph St.
B.S., University of Michigan.		
Culp, Charles Miller	<i>Raymond, Ill.</i>	34 Dartmouth St.
Ph.B., De Pauw University.		
Dike, George Phillips	<i>Auburndale</i>	Auburndale.
B.A., Williams College.		
Drew, Charles Davis	<i>W. Newton</i>	W. Newton.
A.B., Harvard University.		
Dutton, Francis Bird	<i>Auburndale</i>	Auburndaie.
A.B., Harvard University.		
Emerson, Frank Nelson	<i>Peoria, Ill.</i>	39 St. Botolph St.
A.B., Princeton University.		
Field, Leonard Hamilton, Jr. . . .	<i>Jackson, Mich.</i>	64 Rutland Sq.
A.B., Amherst College.		
Fifield, Ethel Frances	<i>Salem</i>	Salem.
A.B., Smith College.		
Ford, George Burdett	<i>Clinton</i>	89 Charles St.
A.B., Harvard University.		
Grosvenor, Asa Waters	<i>Amherst</i>	16 St. James Ave.
B.S., Amherst College.		
Hardy, Charles Ashley	<i>Auburndale.</i>	Auburndale.
A.B., Harvard University.		

NAME.	HOME.	RESIDENCE.
Hawkins, Laurence Ashley . . . E.A., Williams College.	<i>Pittsfield</i>	18 Holyoke St.
Heghinian, Garabed George . . . A.B., Central Turkey College.	<i>Marash, Turkey</i>	127 Pembroke St.
Henderson, Reuben Stewart . . . B.S., De Pauw University.	<i>Olentangy, Ohio</i>	101 Appleton St.
Hewitt, Henry Harwood A.B., University of Chicago.	<i>Chicago, Ill.</i>	39 St. Botolph St.
Hirokawa, Tomokichi B.S., New Hampshire College.	<i>Imabari, Japan</i>	879 Beacon St.
Holmes, Archibald Rettie B.E., King's College.	<i>Hantsport, N. S.</i>	17 Claremont Park.
Jackson, Jerome Paul A.B., Amherst College.	<i>Swampscott</i>	Swampscott.
Jenkins, David John M.E., Cornell University.	<i>Steelton, Pa.</i>	Navy Yard, C.
Lawrence, Amos Amory A.B., Harvard University.	<i>Boston</i>	59 Commonwealth Ave.
Lewis, Hortense Witter A.B., Vassar College.	<i>Mount Vernon, N. Y.</i>	62 Rutland Sq.
Little, James Lovell, Jr. A.B., Harvard University.	<i>Brookline</i>	Brookline.
McCrea, Almeron Wallace B.S., University of Minnesota.	<i>St. Paul, Minn.</i>	68 Rutland St.
Matteossian, Zenas Nerses A.B., Robert College.	<i>Constantinople, Turkey.</i>	50 Union Park.
Mead, George Houk B.L., Hobart College.	<i>Dayton, Ohio</i>	33 E. Concord St.
Mitchell, George Le Roy B.S., Monmouth College.	<i>Kirkwood, Ill.</i>	14 James St.
O'Hanlon, Thomas Joseph A.B., Gonzaga College.	<i>Chinook, Mont.</i>	53 E. Concord St.
O'Leary, William Henry Joseph A.M., Georgetown University.	<i>Richibucto, N. B.</i>	23 E. Concord St.
Oliver, Leslie Allen B.A., St. John's College.	<i>Annapolis, Md.</i>	89 Charles St.
Perry, Thomas Doane A.B., Doane College.	<i>Crete, Neb.</i>	8 Pearl St., C.
Phillips, Henry Alexander A.M., Harvard University.	<i>Springfield</i>	4 Chestnut St.
Price, Paul Leon Ph.B., Simpson College.	<i>Winterset, Iowa</i>	27 Falmouth St.
Rash, Frank Dillman A.B., South Kentucky College.	<i>Earlington, Ky.</i>	19 Claremont Park.
Real y Gaillard, Juan A.B., Colegio de Carreras.	<i>Santiago de Cuba</i>	398 Northampton St.
Reynolds, Albert Aden B.A., Williams College.	<i>No. Adams</i>	25 Berwick Park.
Richards, William Reuben A.M., Harvard University.	<i>Boston</i>	2 Marlborough St.
Riley, Frank Morris C.E., University of Wisconsin.	<i>Madison, Wis.</i>	101 St. Botolph St.

NAME.	HOME.	RESIDENCE.
Ripley, Philip Franklin . . . A.B., Yale University.	<i>Andover</i>	36 Newbury St.
Smith, Frederick Williamson . . A.B., Johns Hopkins University.	<i>Baltimore, Md.</i>	1 Willow St.
Stockton, Philip	<i>Boston</i>	390 Beacon St.
A.B., Harvard University.		
Trenholme, Arthur Kingsley . . B.A., McGill University.	<i>Montreal, Que.</i>	101 W. Springfield St.
Walworth, Arthur Clarence, Jr. . B.A., Yale University.	<i>Newton Centre</i>	Newton Centre.
Waters, Charles Douglass B.S., University of Vermont.	<i>Winooski, Vt.</i>	12 Dartmouth St.
Weimer, Edgar Arthur	<i>Lebanon, Pa.</i>	7 Follen St.
S.B., Massachusetts Institute of Technology.		
Whiting, Charles Frederick . . . A.B., Harvard University.	<i>Wilton, N. H.</i>	Somerville.

Adams G.O.
 Baker W.C.
 Blackmer W.D.

REGULAR STUDENTS.

CANDIDATES FOR ADVANCED DEGREES.

NAME.	HOME.	RESIDENCE.
✓ Edgerly, Daniel Wilbert . . .	Cambridge	Cambridge.
Stevens, Gorham Phillips . . .	Cambridge	Cambridge.
Winslow, Charles-Edward Amory.	Boston	Hotel Oxford.

FOURTH YEAR.

NAME.	COURSE.	HOME.	RESIDENCE.
Abbott, Lewis Benjamin . . .	IV.	Danvers	Danvers.
Adams, Herbert Henry, B.A. . .	I.	New York, N. Y.	Cambridge.
Adams, John Howard . . .	IV.	Pawtucket, R. I.	64 Rutland Sq.
✓ Adams, Walter Owen . . .	X.	Gloucester	Cambridge.
Addicks, Lawrence . . .	II., VI.	Philadelphia, Pa.	36 Newbury St.
Allen, James Walter . . .	VI.	Newtonville	Newtonville.
✓ Ayer, Harold Osgood . . .	V.	Danville, Vt.	Hyde Park.
Bailey, Thomas Wendell . . .	IV.	Boston	10 Blackwood St.
Bean, Walter Raymond . . .	XIII.	Roxbury	37 Waverly St., R.
Bennett, Raymond Franklin . .	I.	Portland, Me.	193 Warren Ave.
Bennink, Carroll Augustus . . .	IV.	Cambridgeport	Cambridgeport.
Benson, Newton Davis . . .	IV.	Providence, R. I.	179 Warren Ave.
Blackmer, Arthur Eliot . . .	I.	Plymouth	Beverly.
Blake, Francis Minot . . .	II.	Boston	426 Marlborough St.
Bleecker, John Stearns, S.B. . .	VI.	Portsmouth, N. H.	6 Louisburg Sq.
Bonns, Walter Weidenfeld . . .	IV.	Milwaukee, Wis.	125 Pembroke St.
Brown, Arthur Harrison . . .	II.	Reading	185 Huntington Ave.
Brown, Carroll Wilder . . .	I.	Rye Beach, N. H.	16 Concord Sq.
Burch, Guy Prentiss . . .	I.	Dubuque, Iowa	12 Newbury St.
✓ Burgess, Philip	XI.	Newtonville	Newtonville.
Butler, Ferdinand Almon . . .	VI.	Salem	Salem.
Caldwell, Frederick William . .	II.	Winchester	Winchester.
Campbell, Harry Andrew Bach . .	II.	London, Eng.	13 Concord Sq.
✓ Cannon, Sylvester Quayle . . .	III.	Salt Lake City, Utah,	84 St. Botolph St.
Cannon, Willard Telle . . .	II.	Salt Lake City, Utah,	84 St. Botolph St.
Case, Herbert Monroe . . .	VI.	Hartford, Conn.	23 Claremont Park.
✓ Chandler, Edna Matilda . . .	V.	Roxbury	110 Thornton St., R.
Chapman, James Finlay, S.B. . .	VI.	Mankato, Minn.	Brookline.
Churchill, David Carroil . . .	II.	Oberlin, Ohio	4 Oxford Terrace.

FOURTH YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Clapp, Frederick Otis, A.M.	I.	<i>Providence, R. I.</i>	199 St. Botolph St.
Clark, James Kenneth	II.	<i>Warren, Pa.</i>	4 Oxford Terrace.
Clausen, Rudolph Julius	IV.	<i>Davenport, Iowa</i>	38 St. Botolph St.
Cluff, Clarence Brooks	V.	<i>Haverhill</i>	Haverhill.
Congdon, John Elliott	II.	<i>Fall River</i>	130 W. Newton St.
Conklin, Herbert King	IV.	<i>Newark, N. J.</i>	185 Huntington Ave.
Copp, George Irving	II.	<i>Cambridgeport</i>	Cambridgeport.
Corse, William Malcolm	V.	<i>Medford</i>	553 Boylston St.
Curry, William Lehmer	VI.	<i>Pittsburgh, Pa.</i>	543 Mass. Ave.
Cushing, Harvey Morse	VI.	<i>Ottumwa, Iowa</i>	163 Warren Ave.
Damon, Harry Sumner	II.	<i>Bryantville</i>	132 W. Concord St.
Dixon, Charles Sumner	VI.	<i>Boston</i>	32 Lawrence St.
Dozier, Henrietta Cuttino	IV.	<i>Atlanta, Ga.</i>	706 Washington St., D.
Drew, Charles Davis, A.B.	I.	<i>W. Newton</i>	W. Newton.
Driscoll, Timothy Joseph	VI.	<i>Boston</i>	7 Hamburg St.
Eaton, Henry Charles	II.	<i>Waltham</i>	Waltham.
Ellery, James Benjamin	V.	<i>Annisquam</i>	Cambridge.
Ferguson, John Berton	I.	<i>Woburn</i>	Woburn.
Field, Leonard H., Jr., A.B.	IV.	<i>Jackson, Mich.</i>	64 Rutland Sq.
Fifield, Frederic Alonzo	II.	<i>Methuen</i>	132 W. Concord St.
Flemings, John Albert	VI.	<i>Lowell</i>	23 Claremont Park.
Flynn, William Burwell	VI.	<i>Bridgeport, Conn.</i>	549 Mass. Ave.
Foote, Arthur Burling	I.	<i>Grass Valley, Cal.</i>	19 W. Cedar St.
Fowle, Frank Fuller	VI.	<i>Brookline</i>	Brookline.
Fox, William Henry	IV.	<i>Lowell</i>	Lowell.
Gale, Gardner Manning	IV.	<i>Olean, N. Y.</i>	64 Rutland Sq.
Gillson, Charles Burton	X.	<i>Evanston, Ill.</i>	103 Mt. Vernon St.
Gilpin, Russell	II.	<i>Wilmington, Del.</i>	21 W. Cedar St.
Glover, George Curtis	IV.	<i>Melrose Highlands</i>	Melrose Highlands.
Goldthwaite, Harry Wales	II.	<i>Brighton</i>	19 Bigelow St., B.
Greer, Herbert Chester	III.	<i>New Castle, Pa.</i>	110 Newbury St.
Grosvenor, Asa Waters, B.S.	II.	<i>Amherst</i>	16 St. James Ave.
Grover, Frederick Warren	VIII.	<i>Lynn</i>	Lynn.
Hammond, Edward Hosmer	V.	<i>Newton Centre</i>	Newton Centre.
Hasbrouck, Ross	I.	<i>Poughkeepsie, N. Y.</i>	17 St. James Ave.
Hawkins, Laurence Ashley, B.A.	VI.	<i>Pittsfield</i>	13 Holyoke St.
Hazeltine, Benj. Prescott, Jr.	VI.	<i>Belfast, Me.</i>	31 Newbury St.
Henderson, Reuben Stewart, B.S.	I.	<i>Olentangy, Ohio</i>	75 Appleton St.
Herbert, Edward	VI.	<i>Broad Run, Va.</i>	694 Tremont St.
Herman, Bernard	I.	<i>Washington, D. C.</i>	167 Mass. Ave.
Hermanns, Frank Edward	I.	<i>Denver, Colo.</i>	191 Warren Ave.
Hern, Joseph Louis	VI.	<i>Dorchester</i>	34 Sydney St., D.
Hewitt, Henry Harwood, A.B.	IV.	<i>Chicago, Ill.</i>	39 St. Botolph St.
Hinckley, Benjamin Stearns	II.	<i>Woburn</i>	Woburn.
Hinckley, Everett Hale	X.	<i>Hyannis</i>	466 Mass. Ave.
Hinman, Dean	I.	<i>Taunton</i>	Taunton.

FOURTH YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Holden, Amasa Amidon . . .	IX.	<i>Boston</i>	72 W. Cedar St.
Jackson, Jerome Paul, A.B.	IV.	<i>Swampscott</i>	Swampscott.
James, Henry Philip . . .	II., VI.	<i>Kendal Green</i>	Kendal Green.
Jensen, Hans Peter	I.	<i>Tottenville, N. Y.</i>	97 W. Springfield St.
Johnson, Edward, Jr. . . .	I.	<i>Boston</i>	178 Marlborough St.
✓ Johnson, Harry George . . .	V.	<i>Auburndale</i>	Auburndale.
Johnson, Lane	II.	<i>Kansas City, Mo.</i>	240 W. Newton St.
✓ Jones, Frederick Hooper . . .	V.	<i>Cambridge</i>	Cambridge.
Keys, Harry Montifix . . .	VI.	<i>Linden, Md.</i>	32 Tremlett St., D.
✓ Kimball, Fred Louis Holt . .	III.	<i>Newton Lower Falls</i>	Newton Lower Falls.
King, William Braman . . .	VI.	<i>Dorchester</i>	11 Merlin St., D.
✓ Kingman, William Alden . . .	V.	<i>So. Framingham</i>	So. Framingham.
Kinsman, William Abbot . . .	II.	<i>Salem</i>	Salem.
Langford, Grace	VIII.	<i>Plymouth</i>	462 Mass. Ave.
Leiper, James Gerhard, Jr. . .	II.	<i>Philadelphia, Pa.</i>	132 W. Concord St.
✓ Lennan, Thomas Frank . . .	V.	<i>Belmont</i>	Belmont.
✓ Lewis, Clancey Montana . . .	III.	<i>Ketchum, Idaho</i>	Newton Highlands.
Lewis, Joseph Elliot	II.	<i>Charlemont</i>	Newton Highlands.
Loomis, Allen	XIII.	<i>Jackson, Mich.</i>	128 Huntington Ave.
Loring, Conrad	II.	<i>San Francisco, Cal.</i>	103 Mt. Vernon St.
Loud, Ralph White	I.	<i>Weymouth</i>	Brookline.
Loveman, Lee Rosenberg . . .	VI.	<i>Nashville, Tenn.</i>	17 Berwick Park.
McCrea, Almeron W., B.S. . .	IV.	<i>St. Paul, Minn.</i>	68 Rutland St.
Matheson, William Scott . . .	II.	<i>Tatamagouche, N. S.</i>	857 Columbus Ave.
✓ Milliken, Carl Spencer . . .	VII.	<i>Malden</i>	Malden.
Moore, Clarence Alfred . . .	X.	<i>Arlington</i>	Arlington.
Morgan, Carl Leon	VI.	<i>Fitchburg</i>	2 Wellington St.
✓ Mork, Harry Solomon	V.	<i>Roxbury</i>	21 Wabeno St., R.
Morse, Benjamin Eames . . .	II.	<i>Canton</i>	Canton.
Morse, Harry Leonard . . .	II., VI.	<i>W. Roxbury</i>	9WhittemoreSt.,W.R.
✓ Motch, Stanley	III.	<i>Covington, Ky.</i>	549 Mass. Ave.
Mott-Smith, Morton Churchill	VI.	<i>Boston</i>	295 Commonwealth Av.
Nathan, Albert Franklin, Jr. . .	X.	<i>Kansas City, Mo.</i>	193 W. Canton St.
✓ Newell, Lester Allan	III.	<i>Southbridge</i>	13 Intervale Park, D.
Newell, William Stark . . .	XIII.	<i>Winchester</i>	Winchester.
O'Hearn, Timothy Cyril . . .	X.	<i>No. Cambridge</i>	No. Cambridge.
O'Leary, William H. J., A.M.	VI.	<i>Richibucto, N. B.</i>	23 E. Concord St.
Packard, Edwin Augustus . . .	II.	<i>Mansfield</i>	Mansfield.
Page, Charles Barnard . . .	XIII.	<i>Dorchester</i>	259 Washington St., D.
Parker, Will Rogers	VI.	<i>Portsmouth, N. H.</i>	21 Kenilworth St., R.
Parker, William Edward . . .	I.	<i>Allston</i>	10 Reedsdale St., A.
Pennock, George Alger . . .	II.	<i>Weston</i>	Weston.
Perkins, George Hawthorne . .	II.	<i>Salem</i>	Salem.
✓ Phalen, William Clifton . . .	V.	<i>Gloucester</i>	148 Trenton St., E.B.
✓ Phelps, Earle Bernard . . .	V.	<i>New Brunswick, N. J.</i>	Somerville.
Pierce, Edward Everett . . .	XIII.	<i>Malden</i>	Malden.

FOURTH YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Pinkham, Ralph Howard . . .	I.	<i>Greenwood</i>	Greenwood.
Price, Willard Atherton . . .	I.	<i>Denver, Colo.</i>	191 Warren Ave.
Priest, George Heywood . . .	X.	<i>Waltham</i>	Waltham.
Real y Gaillard, Juan, A.B. . .	I.	<i>Santiago de Cuba</i>	398 Northampton St.
Regestein, Ernest Albrecht . .	VI.	<i>Jamaica Plain</i>	92 Wyman St., J. P.
Renshaw, Clarence	VI.	<i>Baltimore, Md.</i>	193 Warren Ave.
Richmond, Gerald Martin . . .	VI.	<i>Worcester</i>	37 St. Botolph St.
✓ Rickards, Burt Ransom . . .	V.	<i>Malden</i>	Malden.
Riddle, Herbert Hugh	IV.	<i>Boston</i>	Trinity Court.
Riddle, Lewis Wetmore	XIII.	<i>Chicago, Ill.</i>	Trinity Court.
Riker, George Hayes	X.	<i>Somerville</i>	Somerville.
Robertson, Samuel Brown . . .	I.	<i>E. Milton</i>	E. Milton.
Robinson, Thomas Pendleton . .	IV.	<i>Philadelphia, Pa.</i>	Chestnut Hill.
Samuels, Edwin Francis	II.	<i>Hyde Park</i>	Hyde Park.
Sawtelle, William Otis	VIII.	<i>Boston</i>	563 Mass. Ave.
Sawyer, Haven	II.	<i>Bangor, Me.</i>	563 Mass. Ave.
Seavey, Norman Emery	VI.	<i>Dover, N. H.</i>	Park St., R.
✓ Sherrill, Miles Standish . . .	V.	<i>Louisville, Ky.</i>	192 Dartmouth St.
Sibley, Edward Warren	II.	<i>Weston</i>	Weston.
Sites, Frederick Robert	I.	<i>Auburndale</i>	Auburndale.
✓ Skinner, Hervey Judson	V.	<i>Wakefield</i>	Wakefield.
Smith, Charles Alfred	I.	<i>No. Reading</i>	141 Pembroke St.
Smith, Godfrey Lewis	XIII.	<i>Dorchester</i>	Rosseter Pl., D.
Soule, Lawrence Clement	X.	<i>Newtonville</i>	Newtonville.
Starr, Herbert Harris	I.	<i>New London, Conn.</i>	139 Warren Ave.
Stearns, Frederic Baldwin . . .	IV.	<i>Brookline</i>	Brookline.
Stockton, Phillip, A.B. . . .	I.	<i>Boston</i>	390 Beacon St.
Stone, Jacob, Jr.	IV.	<i>Minneapolis, Minn.</i>	549 Mass. Ave.
Street, Gerald Basil	II.	<i>Highland Park, Ill.</i>	531 Mass. Ave.
Sullivan, Henry Howard	II.	<i>Brighton</i>	98 Foster St., B.
✓ Sutermeister, Edwin	V.	<i>Readville</i>	Readville.
✓ Swan, Clifford Melville	V.	<i>Brookline</i>	Brookline.
Swift, Charles Williston	II.	<i>Provincetown</i>	28 Yarmouth St.
Swift, Frank Robinson	X.	<i>Wollaston</i>	Wollaston.
Tappan, Frederic	VI.	<i>Boston</i>	242 Marlborough St.
Taylor, Denzil Hollis	I.	<i>Peterboro, N. H.</i>	131 W. Newton St.
✓ Torrey, Charles Augustine, Jr. .	V.	<i>Boston</i>	727 Boylston St.
Trask, Edgar Pierce	XIII.	<i>Peabody</i>	Peabody.
✓ Tucker, Albert William	III.	<i>Newburyport</i>	Newburyport.
✓ Tufts, John Lawrence	V.	<i>Roxbury</i>	50 Woodbine St., R.
Vining, Robert Macalister . . .	II.	<i>So. Weymouth</i>	So. Weymouth.
Waddell, Frederick Creelman . .	I.	<i>Rockport</i>	14 Hamlet St., D.
✓ Walker, Etheredge	III.	<i>Boston</i>	237 Beacon St.
Wallace, Robert Bruce	XIII.	<i>Cleveland, Ohio</i>	549 Mass. Ave.
Walls, John Abbet	VI.	<i>Lewisburg, Pa.</i>	187 Huntington Ave.
✓ Walters, Edward Philip	V.	<i>Providence, R. I.</i>	28 Leyland St., D.

FOURTH YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Walther, William John . . .	I.	Chicago, Ill. . . .	114 W. Concord St.
✓ Walton, James Henry, Jr. . .	V.	Newburyport	23 Upton St.
Watkins, Frederick Arthur . .	II.	Chicago, Ill. . . .	173 St. Botolph St.
Watrous, Charles Albert . . .	IV.	Des Moines, Iowa . . .	531 Mass. Ave.
Weimer, Edgar Arthur, S.B. . .	VI.	Lebanon, Pa.	7 Follen St.
Wells, Walter Wiley	VI.	Sackville, N. B. . . .	Waltham.
Whitaker, Lewis Rose	I.	Brighton	Parsons St., B.
White, Harry Keith	IV.	Brattleboro, Vt. . . .	64 Rutland Sq.
✓ White, William	V.	Taunton	Taunton.
Whitney, Walter Cummings . .	I.	Newton	Newton.
Ward, Edward Saxon	III.	Spokane, Wash. . . .	2 Easton St., A.
Wing, Charles Frederic, Jr. . .	VI.	New Bedford	407 Mass. Ave.
Witherell, Percy Warren . . .	VI.	Roxbury	5 Devon St., R.
Woollett, John Woodward . . .	I.	Valmont, Colo.	9 Concord Sq.

THIRD YEAR.

NAME.	COURSE.	HOME.	RESIDENCE.
✓ Adams, George Orlando . . .	V.	No. Andover	No. Andover.
Allen, Elbert Grover	II.	E. Bridgewater	E. Bridgewater.
Ashley, Harrison Everett . . .	X.	New Bedford	6 Rutland Sq.
✓ Atwood, George Desler	II.	Brooklyn, N. Y.	423 Mass. Ave.
✓ Badlam, Stephen	III.	Dorchester	15 Columbia St., D.
✓ Balcom, Reuben Wilfred . . .	V.	Framingham	12 Chestnut St.
✓ Ballantyne, Bertha Lennie . . .	VII.	Hudson	Hudson.
Becker, James Edmund	VI.	Pasadena, Cal.	118 Huntington Ave.
Barney, Morgan	XIII.	New Bedford	66 Chestnut St.
Barton, Charles Augustus, Jr. . .	VI.	Ravenswood, Ill.	8 Wellington St.
✓ Batcheller, James Hervey . . .	III.	Charlestown	34 Monument Sq., C.
✓ Bender, Lorry Dravo W. . . .	III.	Pittsburgh, Pa.	102 Chandler St.
Birks, Arthur Henry	IV.	Peoria, Ill.	15 Blagden St.
Blair, Robert Sherman	VI.	Waterbury, Conn. . . .	130 W. Newton St.
Bolster, Roy Hale	VI.	Roxbury	10 Cobden St., R.
Bowditch, Ingersoll, A.B. . . .	I.	Jamaica Plain	Jamaica Plain.
Briggs, Albert Billings	I.	Wollaston	Wollaston.
Briggs, Charles Calvin, Jr. . . .	XIII.	Pittsburgh, Pa.	543 Mass. Ave.
Brigham, Edmond Francis . . .	X.	Newton Highlands . . .	Newton Highlands.
Brooks, Paul Raymond	II.	Chicago, Ill.	25 St. Botolph St.
Brown, Clarence Clapp	VI.	Reading	Reading.
✓ Brown, John Wesley	V.	Newburyport	1069 Boylston St.
Brown, Stephen Pearson	II.	Dover, Me.	1116 Boylston St.
Buffum, Frederick Delano . . .	II.	Winchester, N. H. . . .	25 Rutland Sq.
✓ Bugbee, Edward Everett	III.	Brookline	Brookline.
Burnham, Roy Gibson	II.	Essex	Essex.
Burroughs, Karl	X.	Somerville	Somerville.
Campbell, Charles Francis F. . .	IX.	London, Eng.	13 Concord Sq.

THIRD YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
✓ Campbell, John	III.	<i>Pittsburgh, Pa.</i>	466 Mass. Ave.
✓ Cayvan, Llewellyn Leopold	V.	<i>So. Boston</i>	660 Sixth St., S. B.
Chaffee, Walter Crane . .	IV.	<i>Detroit, Mich.</i>	37 St. Botolph St.
Chalmers, Harry Bishop . .	X.	<i>New York, N. Y.</i>	18 Berwick Park.
Charles, Walter Nathan . .	I.	<i>Roxbury</i>	28 Glenwood St., R.
Chase, Frank David	I.	<i>Chicago, Ill.</i>	88 St. Botolph St.
Clark, Burton Stedman . .	IV.	<i>Worcester</i>	31 St. Botolph St.
✓ Clary, Robert Hodgen . .	III.	<i>Seattle, Wash.</i>	240 W. Newton St.
Clow, Percival Charles . .	IV.	<i>Orange</i>	Brockton.
Collier, William Rawson . .	VI.	<i>Atlanta, Ga.</i>	1116 Boylston St.
Conant, Franklin Norton . .	VI.	<i>Boston</i>	3 Wellington St.
✓ Conant, Harold Sargent . .	VII.	<i>Gloucester</i>	59 Pinckney St.
Conant, John Bancroft . .	VI.	<i>Boston</i>	421 Mass. Ave.
Cooke, Frederick Hosmer . .	I.	<i>Cincinnati, Ohio</i>	2 Wellington St.
Croswell, Joseph Simonds . .	II.	<i>No. Cambridge</i>	No. Cambridge.
Crowell, Louis Austin . . .	I.	<i>E. Dennis</i>	2 Wellington St.
✓ Dart, Albert Charles, Jr. .	III.	<i>Rock Island, Ill.</i>	9 St. James Ave.
Dean, Walter Clark	VI.	<i>Dallton, Pa.</i>	18 Berwick Park.
Dimock, Elwin Hibbert . .	II.	<i>Dorchester</i>	697 Washington St., D.
✓ Dorey, William Asbury . .	III.	<i>Cincinnati, Ohio</i>	27 Cumberland St.
Draper, Joseph Porter . . .	IX.	<i>Canton</i>	Canton.
✓ Durg'n, Clara Isabel . . .	V.	<i>Belmont</i>	Belmont.
Dutton, Francis Bird, A.B.	X.	<i>Auburndale</i>	Auburndale.
Edson, Warren Adams . . .	II.	<i>Dorchester</i>	11 Tremlett St., D.
✓ Elbert, Samuel Bass . . .	III.	<i>Des Moines, Iowa</i>	543 Mass. Ave.
✓ Ellis, Carleton	V.	<i>Keene, N. H.</i>	148 Warren Ave.
✓ Emery, George Webster . .	III.	<i>Somerville</i>	Somerville.
Fitch, Stanley Gay Hyde . .	X.	<i>Dorchester</i>	14 Morrill St., D.
Ford, George Burdett, A.B.	IV.	<i>Clinton</i>	89 Charles St.
✓ Fosdick, Charles Mussey . .	XI.	<i>Fitchburg</i>	2 Wellington St.
Frazer, Robert, Jr.	IX.	<i>Philadelphia, Pa.</i>	6 Louisburg Sq.
Frink, Gerald	II.	<i>Seattle, Wash.</i>	423 Mass. Ave.
Fulton, William Howard . .	VI.	<i>Chelmsford</i>	131 Pembroke St.
Gallagher, Edward Gerald . .	VI.	<i>So. Framingham</i>	So. Framingham.
Gardner, Stephen Franklin . .	II.	<i>Boston</i>	401 Charles St.
Gibbs, George Crocker, 3d . .	I.	<i>New Bedford</i>	7 Walnut St.
Gilson, Henry Robbins . . .	II.	<i>Groton</i>	Groton.
✓ Glover, Russell Henry . . .	III.	<i>Harrington, Me.</i>	89 St. Botolph St.
Goodridge, Frederic Stanley .	II.	<i>Lynn</i>	Lynn.
Grant, Harry Lamar	XIII.	<i>Covington, Ky.</i>	563 Mass. Ave.
Hall, George Anthony	IX.	<i>Boston</i>	30 Exeter St.
✓ Hall, Milton Weston	VII.	<i>Evanston, Ill.</i>	563 Mass. Ave.
Hall, Stephen Minard	VI.	<i>Waverly, N. Y.</i>	240 W. Newton St.
Hammond, Clifford Robson . .	VI.	<i>Buffalo, N. Y.</i>	1116 Boylston St.
Hammond, Edwin Walden . .	I.	<i>Asbury Park, N. J.</i>	54 Pinckney St.
Hapgood, Cyrus Howard . .	VI.	<i>Everett</i>	Everett.

REGISTER OF STUDENTS.

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THIRD YEAR (continued).

NAME.	COURSE.	HOME.	RESIDENCE.
✓ Hardy, Charles Ashley, A.B.	III.	Auburndale . . .	Auburndale.
Harp, Harry Macy . . .	I.	Nantucket . . .	Cambridgeport.
Hirokawa, Tomokichi, B.S.	VI.	Imabari, Japan . . .	879 Beacon St.
Hodsdon, Charles Wentworth	II.	Cambridgeport . . .	Cambridgeport.
✓ Holbrook, George Myron . .	V.	Cambridgeport . . .	Cambridgeport.
Hooper, Harris Greenwood	XIII.	Brooklyn, N. Y. . .	16 St. James Ave.
Hopeman, Bertram Cornelius	IV.	Rochester, N. Y. . .	19 Linden St., A.
Hopkins, Robert Milne . . .	VI.	Allston	610 Cambridge St., A.
Hopwood, Cora Stella . . .	VIII.	Worcester	Worcester.
Howe, Herbert Holmes . . .	IX.	Brookline	Brookline.
Hunt, Herman Reynolds . . .	XIII.	New Bedford	69 Pinckney St.
Hussey, James Whittlesey	XIII.	Toledo, Ohio	172 Huntington Ave.
Jennings, Levi Brown . . .	I.	Newton Lower Falls . .	Newton Lower Falls.
Johnson, Charles Chaplin . .	X.	Danversport	Danversport.
Jouett, Henry Detrick . . .	I.	Somerville	Somerville.
Kattelle, Walter Roby . . .	IV.	Auburndale	Auburndale.
Keay, Herbert Orestes . . .	II.	Kingston, N. H. . . .	11 Columbus Sq.
Keith, Leigh Shelton . . .	VI.	No. Easton	No. Easton.
✓ Kendall, Arthur Isaac . . .	VII.	Somerville	Somerville.
✓ Knight, George Washington	V.	Dorchester	38 Rosseter St., D.
Lawrence, Lewis Morse . . .	IV.	Nashua, N. H.	Waltham.
✓ Leach, Robert Howland . . .	III.	Brockton	Brockton.
Leeds, Charles Tileston . . .	IV.	Newton	Newton.
Leonard, Clifford Milton . .	I.	Chicago, Ill.	32 W. Cedar St.
✓ Lewis, Rondell	V.	Malden	Malden.
Liliencrantz, Edith	IV.	Oakland, Cal.	134 Marlborough St.
✓ Lincoln, Francis Church . . .	III.	Boston	47 St. Botolph St.
Lingley, Robert Ross	II.	Cambridge	Cambridge.
✓ Littlefield, Frank William . .	III.	Peabody	Peabody.
Littlefield, Homer	VI.	Waterliet, N. Y. . . .	Cambridge.
Luyties, Otto Gerhard . . .	II.	New York, N. Y. . . .	7 Columbus Sq.
✓ McCrudden, Francis Henry . .	V.	Boston	134 Castle St.
McGowan, Francis Xavier . . .	II.	Lawrence	Lawrence.
✓ Macintire, Benjamin Gould . .	V.	Boston	80 Worcester St.
MacPherson, Herbert Austin	XIII.	Medford	Medford.
Maxfield, Daniel Ellwood . .	II.	Amesbury	634 Warren St., R.
Mayhew, Harold Baker	I.	W. Tisbury	155 W. Canton St.
✓ Melcher, Arthur Clarke . . .	V.	Newton Centre	Newton Centre.
Merrick, Charles Van	IV.	Syracuse, N. Y. . . .	537 Mass. Ave.
Merrill, Albert Sidney	X.	Malden	Malden.
Merrill, Leslie Eaton	II.	Haverhill	Haverhill.
Miller, Lewis Arthur	I.	No. Easton	No. Easton.
Miller, Stuart Berwick	X.	Cambridgeport	Cambridgeport.
Moody, George Barrell	XIII.	Bangor, Me.	148 Warren Ave.
Morgan, Harold Loomis	VI.	Springfield	16 Claremont Park.

THIRD YEAR (*continued*).

	NAME.	COURSE.	HOME.	RESIDENCE.
✓	Morris, Henry Curtis . . .	III.	<i>Evanston, Ill.</i> . . .	34 St. Stephen St.
✓	Moulton, Walter Augustus . . .	III.	<i>Dorchester</i> . . .	10 Upland Ave., D.
	Neall, Newitt Jackson . . .	VI.	<i>Philadelphia, Pa.</i> . . .	73 Cedar St., R.
✓	North, Edward, 2d . . .	III.	<i>Brookline</i> . . .	Brookline.
	Oliver, Leslie Allen, B.A. . .	IV.	<i>Annapolis, Md.</i> . . .	89 Charles St.
	Oppenheim, Robert Emmet . . .	II.	<i>New York, N. Y.</i> . . .	38 St. Botolph St.
	Osgood, Harry Edmund . . .	II.	<i>Chicago, Ill.</i> . . .	Somerville.
	Osgood, Isaac . . .	II.	<i>W. Newton</i> . . .	W. Newton.
	Oxnard, Horace Whitcomb . . .	I.	<i>Norway, Me.</i> . . .	18 Holyoke St.
	Paul, Charles Edward . . .	II.	<i>Belfast, Me.</i> . . .	140 Chandler St.
	Peck, Arthur Stearns . . .	VIII.	<i>Wellington</i> . . .	Wellington.
	Penard, Thomas Edward . . .	VI.	<i>Paramaribo, D. G.</i> . . .	Everett.
	Perkins, John McClary, Jr. . .	VI.	<i>Arlington Heights</i> . . .	Arlington Heights.
	Perry, Thomas Doane, A.B. . .	II.	<i>Crete, Neb.</i> . . .	8 Pearl St., C.
	Pitcher, Edmund Henry . . .	II.	<i>Keene, N. H.</i> . . .	Somerville.
✓	Plummer, Howard Clark . . .	III.	<i>Milton</i> . . .	Milton.
	Porter, John Lewis . . .	XI.	<i>No. Adams</i> . . .	25 Berwick Park.
	Price, Paul Leon, Ph.B. . .	IV.	<i>Winterset, Iowa</i> . . .	27 Falmouth St.
	Priest, Russell Parker . . .	I.	<i>Malden</i> . . .	Malden.
	Rand, Nathaniel Dwight . . .	VI.	<i>Watertown</i> . . .	Watertown.
	Rand, William Proudman . . .	IV.	<i>Peabody</i> . . .	Peabody.
	Rapp, Walter Louis . . .	IV.	<i>Cincinnati, Ohio</i> . . .	549 Mass. Ave.
	Reardon, Thomas Frederick E. . .	VI.	<i>Wellesley</i> . . .	Wellesley.
	Redman, Arville . . .	I.	<i>Belfast, Me.</i> . . .	140 Chandler St.
	Reimer, Arthur Adams . . .	I.	<i>E. Orange, N. J.</i> . . .	466 Mass. Ave.
	Richardson, Chester Augustus . . .	I.	<i>Pelham, N. H.</i> . . .	484 Mass. Ave.
	Richardson, Clinton Leroy . . .	I.	<i>Winchester</i> . . .	Winchester.
✓	Ripley, Philip Franklin, A.B. . .	V.	<i>Andover</i> . . .	36 Newbury St.
✓	Roberts, Robert Parker . . .	III.	<i>Roxbury</i> . . .	42 Quincy St., R.
	Russell, George Edmond . . .	I.	<i>Woburn</i> . . .	Woburn.
✓	Sanders, Warren Willard . . .	V.	<i>W. Gardner</i> . . .	164 W. Canton St.
	Schmidt, Albert George Anton . . .	II.	<i>Chicago, Ill.</i> . . .	127 Pembroke St.
	Schneller, George Otto . . .	II.	<i>Ansonia, Conn.</i> . . .	543 Mass. Ave.
	Scott, Walter . . .	II.	<i>Lawrence</i> . . .	466 Mass. Ave.
	Searle, Lewen Firth . . .	I.	<i>Lawrence</i> . . .	484 Mass. Ave.
✓	Sears, Stanley Collamore . . .	III.	<i>Winthrop</i> . . .	549 Mass. Ave.
	Seaver, Kenneth . . .	I.	<i>Woodstock, Vt.</i> . . .	466 Mass. Ave.
	Shapley, Henry Tilton . . .	X.	<i>Leominster</i> . . .	469 Columbus Ave.
	Sherman, Charles Edwin . . .	IV.	<i>Westerly, R. I.</i> . . .	549 Mass. Ave.
	Silverman, Mortimer . . .	VI.	<i>Allegheny, Pa.</i> . . .	210 Huntington Ave.
	Simpson, Robert Coffin . . .	XIII.	<i>Chelsea</i> . . .	Chelsea.
	Smith, Lawrence Southwick . . .	II.	<i>Peabody</i> . . .	Peabody.
	Smith, Sumner Ives . . .	VI.	<i>Elkhart, Ind.</i> . . .	18 Berwick Park.
	Southworth, Frederic Willard . . .	IV.	<i>W. Stoughton</i> . . .	W. Stoughton.
	Sperry, Marcy Leavenworth . . .	II, VI.	<i>New York, N. Y.</i> . . .	6 Louisburg Sq.
	Stearns, Herbert Richardson . . .	I.	<i>Dorchester</i> . . .	108 Cushing Ave., D.

REGISTER OF STUDENTS.

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THIRD YEAR (continued).

NAME.	COURSE.	HOME.	RESIDENCE.
Steidemann, Theodore William	IV.	St. Louis, Mo.	54 Montgomery St.
✓ Stevens, Ralph	III.	Whitman	10 St. James Ave.
✓ Stevens, William Leonard	III.	Somerville	Somerville.
Stewart, Lewis	IV.	Trenton, N. J.	6 Louisburg Sq.
Stone, Willard Wilberforce	I.	Taunton	6 Clarendon St.
Stratton, Charles Haywood	IV.	Springfield	146 W. Canton St.
Suhr, Carl Frederick	II.	Chelsea	Chelsea.
Suter, Russell	I.	Cambridge	Cambridge.
✓ Thayer, Harry Martin	V.	Brockton	14 Rutland Sq.
Thurber, Clinton Draper	I.	Boston	663 Tremont St.
True, Percival Edward	X.	Andover	553 Boylston St.
Tuck, Theodore Calvin	I.	Haverhill	Haverhill.
Tudbury, Warren Chamberlain	I.	Salem	Salem.
✓ Tweedy, George Augustus	III.	Downey, Cal.	240 W. Newton St.
Vogel, Emil Frederick	I.	Roxbury	40 Hartwell St., R.
Walker, Clarence Howard	II.	Rumford, R. I.	415 Columbus Ave.
Warren, Frank Dinsmore	II.	Northboro	Northboro.
Wastcoat, Richard	I.	Taunton	Taunton.
Wedlock, William Henry	I.	Dorchester	21 Ashmont St., D.
Weeks, Irving Chambers	IX.	Dorchester	21 Ashmont St., D.
White, Arthur Burr	I.	Allston	10 Allston Heights, A.
✓ Wilson, Alice Virginia	V.	Lenoir, N. C.	19 W. Cedar St.
3 - Witherell, Frederick Whitefield	XI.	Winchester	Winchester.
Ziegler, Percy Rolfe	II.	Roxbury	1 Ellis St., R.

SECOND YEAR.

NAME.	COURSE.	HOME.	RESIDENCE.
Adams, Charles Ward	VI.	Montpelier, Vt.	543 Mass. Ave.
Albiston, Clayton	II.	New Bedford	34 Holyoke St.
Aldrich, William Truman	IV.	Providence, R. I.	Brookline.
Allen, Ernest Blake	XIII.	Winthrop	Winthrop.
Allen, George Winthrop	II.	Matfield	E. Bridgewater.
Allen, Harry Vass, B.S.	VI.	Raleigh, N. C.	Braemore Road, B.
Andrew, Robert	II.	Cincinnati, Ohio	12 Yarmouth St.
Appleton, William Cornell	IV.	Auburn, R. I.	466 Mass. Ave.
✓ Arnold, Albert Heber Bailey	III.	Roxbury	31 Waumbuck St., R.
Arsem, William Collins	V.	Malden	Malden.
✓ Auer, Charles Israel	III.	Cincinnati, Ohio	88 St. Botolph St.
Baldwin, Abraham R., A.B.	II.	Chicago, Ill.	41 St. Botolph St.
✓ Baxter, Francis Kernan	III.	Utica, N. Y.	193 W. Newton St.
Beckwith, Edward Pierrepont	V.	Cambridge	6 Louisburg Sq.
Belcher, Edward Browne	II.	Malden	Malden.
Benson, Harry Frederick	II.	Whitman	Whitman.
Bickford, Warren Ira	VI.	Washington, D. C.	549 Mass. Ave.
Blanchard, Huse Templeton	IV.	Concord, N. H.	88 Charles St.

SECOND YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Bond, Frederick Henry, Jr.	IV.	Brookline	Brookline.
Booth, Arthur Robert Gregory	V.	Lowell	Lowell.
Boyd, Frederic Roy Courtenay	VI.	Hartford, Conn. . . .	12 St. James Ave.
Boyle, John, Jr.	III.	Newburyport	Newburyport.
Boynton, Perkins	XI.	Newtonville	Newtonville.
Briggs, John Porter	I.	Plymouth	Plymouth.
Brown, Clarence Lincoln . .	IV.	Newtonville	Newtonville.
Brush, Matthew Chauncey . .	II.	Duluth, Minn. . . .	563 Mass. Ave.
Buxton, Philip Loren	X.	Worcester	134 St. Botolph St.
Cade, Charles Walker	X.	Cambridgeport	Cambridgeport.
Campau, Antoine Blackwell	IV.	Grand Rapids, Mich.	168 St. Botolph St.
Carter, George William . . .	VI.	Chicopee Centre . . .	331 Columbus Ave.
Casani, Albert Aeneas	I.	Everett	Everett.
Catlin, Joseph Priestley . . .	VI.	Gouverneur, N. Y. . .	48 Rutland Sq.
Chandler, Howard Trueman . .	II.	Mattapan	Oakridge St., M.
Chandler, Leonard Dexter . .	II.	Somerville	Somerville.
Chapman, Warren Gorton . . .	VI.	Niantic, Conn. . . .	7 Follen St.
Chubb, Chester Niles	I.	Lawrence	104 Howard Ave., R.
Church, Edwin Fayette, Jr.	XIII.	Roxbury	20 Holborn St., R.
Clapp, Frederick Gardner . . .	XII.	So. Boston	169 Boston St., S. B.
Cleveland, Ernest Elgin . . .	VI.	Somerville	Somerville.
Coburn, Frederick Ward	X.	Lowell	16 Berwick Park.
Colby, Frank Arnold	IV.	Hyde Park	Hyde Park.
Colman, Jeremiah, Jr.	X.	Arlington	Arlington.
Coole, Edward Bailey	III.	Pottstown, Pa. . . .	563 Mass. Ave.
Crittenden, Philip Lee	VI.	Geneva, Ill.	249 W. Newton St.
Culp, Charles Miller, Ph.B.	I.	Raymond, Ill.	34 Dartmouth St.
Cummins, Harle Oren	II.	Montpelier, Vt. . . .	192 Dartmouth St.
Curtis, Walter Molbray	II.	Whitman	Whitman.
Cutting, George Warren, Jr.	I.	Weston	Weston.
Daloz, Laurent Esaie	V.	Dorchester	19 Mt. Vernon St., D.
Danforth, Charles Warren . . .	X.	Tyngsboro	135 Pembroke St.
Danforth, Newman Loring . . .	II.	Buffalo, N. Y. . . .	45 Westland Ave.
Dart, Harry Edson	VI.	New London, Conn. . .	9 Concord Sq.
Davidson, Wm. Frederick	II.	New Castle, Pa. . . .	13 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.
Davis, Walter Poore	III.	Newburyport	525 Columbus Ave.
Dearden, Clinton Merrill	VIII.	Fall River	82 Huntington Ave.
Dennison, Charles Hamilton . .	X.	Chelsea	Chelsea.
Dodge, Lyman Edward	V.	Newburyport	Newburyport.
Dooley, William Henry	V.	Roxbury	571 Dudley St., R.
Dorsey, Farnum Francis	II.	Winchester	Winchester.
Dow, Willard Wellman	IX.	Malden	Malden.
Driscoll, Frank Blair	I.	Dorchester	7 Michigan Ave., D.

SECOND YEAR (continued).

NAME.	COURSE.	HOME.	RESIDENCE.
Dubois, Norman Armin . . .	V.	<i>Fall River</i>	92 Wyman St., J. P.
Dulude, Frederick Joseph . .	I.	<i>Woonsocket, R. I.</i>	522 Columbus Ave.
du Pont, Lammot . . .	I.	<i>Wilmington, Del.</i>	531 Mass. Ave.
✓ Eager, Frank Joseph . . .	III.	<i>Roxbury</i>	1 Hartford Terrace, R.
✓ Eveland, Arthur John . . .	III.	<i>Dorchester</i>	15 Nottingham St., D.
Fischer, Adolph Louis . . .	VI.	<i>Salem, Mo.</i>	499 Columbus Ave.
✓ Fleming, Edward Pickering .	III.	<i>No. Cambridge</i>	No. Cambridge.
Flint, Charles Kimball . . .	VI.	<i>Waban</i>	Waban.
Florsheim, Leonard S. . . .	I.	<i>Chicago, Ill.</i>	86 Huntington Ave.
Folsom, Harry Gilman . . .	VI.	<i>Malden</i>	Malden.
Foster, Mortimer Bristol . .	VI.	<i>Boston</i>	879 Beacon St.
Frink, Francis Guy . . .	XIII.	<i>Seattle, Wash.</i>	423 Mass. Ave.
Gallup, Anna Billings . . .	VII.	<i>Ledyard, Conn.</i>	623 Columbus Ave.
✓ Garrett, William Warren . .	III.	<i>Cambridgeport</i>	Cambridgeport.
Gleason, Ethel Augusta . . .	IX.	<i>Roxbury</i>	12 Ruthven St., R.
Gorfinkle, Emanuel . . .	VI.	<i>Chelsea</i>	Chelsea.
Gray, Greta	IV.	<i>Cincinnati, Ohio</i>	252 Harold St., R.
Gustafson, Gustaf Edward . .	I.	<i>Campello</i>	Campello.
✓ Hale, Dennis Frederick . . .	III.	<i>Lowell</i>	91 Appleton St.
Harris, Charles Hardy . . .	VI.	<i>Natick</i>	Natick.
Hayden, Arthur Gunderson . .	I.	<i>Buffalo, N. Y.</i>	466 Mass. Ave.
Haynes, Heber Newton . . .	V.	<i>Lawrence</i>	21 St. James Ave.
Healey, Harry Raymond . . .	X.	<i>Roxbury</i>	11 Wyoming St., R.
Henrich, Louis Richard . . .	IV.	<i>Buffalo, N. Y.</i>	112 Dartmouth St.
Higgins, Albert Willis . . .	X.	<i>Auburndale</i>	Auburndale.
Hodgdon, Harry Augustine . .	II.	<i>Somerville</i>	Somerville.
Hogle, Milton Ward . . .	II.	<i>Rochester, N. Y.</i>	19 Linden St., A.
Holford, William Gordon . . .	IV.	<i>Hazardville, Conn.</i>	17 Hancock St.
Holmes, Valdemar Frank . . .	V.	<i>Copenhagen, Denmark</i>	Cambridge.
Horne, Lewis Winslow . . .	XIII.	<i>Malden</i>	Malden.
Hounsfield, Lammot du Pont .	X.	<i>Anchorage, Ky.</i>	531 Mass. Ave.
Howes, Edward Townsend . . .	IV.	<i>Stamford, Conn.</i>	99 Pinckney St.
Hull, Floyd Byron	VI.	<i>Adrian, Mich.</i>	207 W. Newton St.
Hutchinson, John Albert . . .	VI.	<i>No. Evans, N. Y.</i>	9 Concord Sq.
Hyde, Austin Taber	X.	<i>Waltham</i>	Waltham.
Jewett, Arthur Crawford . . .	II.	<i>Toledo, Ohio</i>	63 Dartmouth St.
Johnson, Horace	V.	<i>Newburyport</i>	Newburyport.
Kelley, Will Ghost	VI.	<i>Burlington, Iowa</i>	8 St. Germain St.
Kennedy, Herbert Harley . . .	VI.	<i>So. Framingham</i>	So. Framingham.
Knox, King Harding	VI.	<i>Baton Rouge, La.</i>	2 Wellington St.
Koch, Harry George	IV.	<i>Milwaukee, Wis.</i>	543 Mass. Ave.
Lane, Frank George	II.	<i>Portland, Me.</i>	9 Concord Sq.
Lane, William Thomas	II.	<i>Portland, Me.</i>	9 Concord Sq.
Lawrence, Ellis Fuller	IV.	<i>Charlestown</i>	59 High St., C.
Laws, James Bradford	IX.	<i>Cincinnati, Ohio</i>	6 Louisburg Sq.
Lincoln, Charles Thayer	V.	<i>Boston</i>	47 St. Botolph St.

SECOND YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Little, Arthur	V.	<i>Newbury</i>	Newbury.
Littlefield, Robert Stanley	XIII.	<i>Somerville</i>	Somerville.
Loring, Ralph Stoodley . . .	I.	<i>Somerville</i>	Somerville.
Lunan, Thomas Mason	V.	<i>Andover</i>	544 Columbus Ave.
Lundin, Laura Marie	VIII.	<i>Cambridgeport</i>	Cambridgeport.
McAllep, James Albert	VI.	<i>Eastport, Me.</i>	48 Rutland Sq.
McDaniel, Allen Boyer	IV.	<i>Newton Centre</i>	Newton Centre.
McDonald, Harry Peake, Jr. . .	I.	<i>Louisville, Ky.</i>	39 W. Cedar St.
Mace, Charles Austin	V.	<i>Dorchester</i>	19 Ashland St., D.
MacLeod, Grace	V.	<i>Cambridge</i>	Cambridge.
Mahar, James Joseph	II.	<i>So. Boston</i>	68 L St., S. B.
✓ Marcus, Henry Charles	III.	<i>Menlo Park, Cal.</i>	314 Columbus Ave.
Marsh, George Everett, Jr. . . .	VIII.	<i>Georgetown, Colo.</i>	9 Park Lane, J. P.
Martin, Charles Everett	IV.	<i>Antrim, N. H.</i>	Wakefield.
Martin, Walter Irving	I.	<i>Chicago, Ill.</i>	32 W. Cedar St.
Millar, Leslie Walker	XIII.	<i>Boston</i>	116 W. Concord St.
Miller, Benjamin	VI.	<i>Cincinnati, Ohio</i>	150 Chandler St.
Miller, Lester Freeman	IV.	<i>Pepperell</i>	539 Mass. Ave.
Mitchell, Frank Kollock	X.	<i>Hyde Park</i>	Hyde Park.
Mitchell, George LeRoy, B.S.	VI.	<i>Kirkwood, Ill.</i>	14 James St.
Montgomery, Robert James . . .	V.	<i>Natick</i>	Natick.
Moore, Philip Wyatt	II.	<i>Brookline</i>	Brookline.
Morse, John Russell	I.	<i>Brockton</i>	136 Huntington Ave.
Murray, Ray	I.	<i>Pleasant Valley, N. Y.</i>	531 Mass. Ave.
Nims, Lester Albert	I.	<i>Keene, N. H.</i>	Malden.
Nutter, Alfred DeWitt	I.	<i>Chelsea</i>	Chelsea.
Ober, Julius Edward	V.	<i>Boston</i>	748 Tremont St.
Ordway, Daniel Leighton	V.	<i>Newton Centre</i>	Newton Centre.
Paraschos, George Theophanes . .	I.	<i>Constantinople, Turkey</i>	453 Beacon St.
Parrock, Percy Harry	II.	<i>Youngstown, Ohio</i>	549 Mass. Ave.
Pearson, Philip Coombs	V.	<i>Newburyport</i>	91 Revere St.
Pendill, Pierre Barbeau	VI.	<i>Marquette, Mich.</i>	86 Mt. Vernon St.
Perry, Oliver Hazard, Jr.	XIII.	<i>Lowell</i>	16 Berwick Park.
Persons, Ashton Clifford	V.	<i>Winsted, Conn.</i>	79 Montgomery St.
Peters, Anthony Winfred	I.	<i>W. Roxbury</i>	Gould St., W. R.
✓ Peterson, Guy Crosby	III.	<i>Duxbury</i>	128 Pembroke St.
Philbrick, Joseph Ernest	X.	<i>Roxbury</i>	1 Wabon St., R.
Pike, Jay Nelson	IV.	<i>Lake City, Minn.</i>	11 St. James Ave.
Pitts, Earl Phelps	II.	<i>Fitchburg</i>	436 Columbus Ave.
Proulx, Elzear Joseph	I.	<i>Holyoke</i>	25 Concord Sq.
Puckey, Francis Willard	IV.	<i>Wilkes-Barre, Pa.</i>	28 Yarmouth St.
Putnam, James Russell	II., VI.	<i>Allston</i>	16 Webster Ave., A.
Rasche, William Henry	XIII.	<i>Blacksburg, Va.</i>	107 Mt. Vernon St.
Read, Walter Augustine	XIII.	<i>Boston</i>	24 St. Stephen St.
Rice, Winthrop Merton	XIII.	<i>Stamford, Conn.</i>	Newton.
Robinson, Ralph Chandler	V.	<i>No. Andover Depot</i>	No. Andover Depot.

SECOND YEAR (continued).

NAME.	COURSE.	HOME.	RESIDENCE.
Ross, John Alexander, Jr.	XIII.	Hampton, N. H.	27 St. Stephen St.
Rowe, Allan Winter	X.	Gloucester	194 Huntington Ave.
✓ Sabin, Jay Horace	III.	Aurora, Ill.	12 Gloucester St.
St. Clair, Samuel Winthrop	IV.	Boston	3 St. Paul St.
Sammet, George Victor	V.	Jamaica Plain	73 Sheridan St., J. P.
Seaver, Edward, Jr.	II.	Roxbury	22 Westminster Ave., R.
✓ Sexton, Frederic Henry	III.	Billerica	Billerica.
Shivers, Clifford Hopkins	IV.	Woodbury, N. J.	466 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., A.B.	I.	Baltimore, Md.	1 Willow St.
✓ Stadler, Louis Andrew	III.	Helena, Mont.	37 St. Botolph St.
Stearns, Ralph Hamilton	XI.	Dorchester	108 Cushing Ave., D.
✓ Stockman, Orlando Sargent	III.	Newburyport	35 Houghton St., D.
Stover, Charles Clark	II.	Amesbury	36 High St., C.
Sturtevant, William Isaac	VI.	Ogden, Utah.	417 Mass. Ave.
Sucro, William George	I.	Catonsville, Md.	102 St. Botolph St.
Sulzer, Albert Fredrick	X.	Chicago, Ill.	3 Belvidere St.
Sweetser, William Jordan	II.	Cliftondale	Cliftondale.
Taft, Theodore Howard	II.	No. Cambridge	No. Cambridge.
Taylor, Warren Crosby	I., XI.	Arlington	Arlington.
Thatcher, Edward Gordon	V.	Middleboro	539 Mass. Ave.
Trenholme, Arthur K., B.A.	IV.	Montreal, Que.	101 W. Springfield St.
Trott, John Alden	II.	Dedham	Dedham.
Tufts, Charles Gilman	X.	Arlington Heights	Arlington Heights.
Vermilye, William Moorhead	X.	New Brighton, N. Y.	6 Brimmer St.
Walcott, William Wright	IX.	Natick	Natick.
Webster, Fred Bibber	XIII.	Cambridge	Cambridge.
Weil, Asher Lowenstein	II.	New York, N. Y.	167 Mass. Ave.
✓ Welch, William Wells	III.	W. Quincy	W. Quincy.
Whalan, Edward Laurence	VI.	Marlboro	Marlboro.
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.	28 Yarmouth St.
Wight, Roger Willard	XIII.	Natick	Natick.
Wilcox, Frank Patten	I.	Boston	40 Norway St.
✓ Wilder, Lowell Bosworth	III.	Newton Highlands	Newton Highlands.
Wildes, Waldo Gilman	I.	Melrose Highlands	Melrose Highlands.
Willard, Charles Franklin	II.	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.

SECOND YEAR (*continued*).

NAME.	COURSE.	HOME.	RESIDENCE.
Wood, Howard Irving . . .	V.	<i>Rockville, Conn.</i>	21 Cortes St.
Woodsome, James Chadbourne VI.	VI.	<i>So. Boston</i>	120 Cushing Ave., D.

FIRST YEAR.

NAME.	HOME.	RESIDENCE.
Ackerman, Alexander Seymour	<i>Newburyport</i>	Newburyport.
Adams, Isaac Rayne	<i>Annisquam</i>	Cambridge.
Allbright, Henry Glover, Jr. . . .	<i>Dorchester</i>	24 Virginia St., D.
Allen, Carlton Brigham	<i>Somerville</i>	Somerville.
Allen, Clarence Mason	<i>Barre</i>	Waltham.
Allen, Frank David	<i>Gloucester</i>	37 St. Botolph St.
Allyn, Alfred Warren	<i>Lawrence</i>	357 Mass. Ave.
Ames, Henry Allison	<i>Lowell</i>	Lowell.
Annett, Cecil Bancroft	<i>E. Jaffrey, N. H.</i>	2 Yarmouth St.
Appleton, Allen Lansing	<i>Springfield</i>	29 St. Botolph St.
Avery, Francis Deane	<i>Buckland</i>	69 Dartmouth St.
Baker, Edward Sherman	<i>Dedham</i>	Dedham.
Baker, James McFarlan	<i>Brooklyn, N. Y.</i>	124 Chandler St.
Ballard, Joseph William	<i>Griswoldville</i>	69 Dartmouth St.
Bartlett, Homer Eugene	<i>No. Adams</i>	Winthrop.
Bassett, William Manning	<i>Boston</i>	65 St. Botolph St.
Bates, John Ross	<i>Hyde Park</i>	Hyde Park.
Bauchelle, John Fletcher	<i>New York, N. Y.</i>	23 Hemenway St.
Beale, Forrest Wilbur	<i>Newburyport</i>	Newburyport.
Beckler, Edith Arthur	<i>So. Boston</i>	590 E. Seventh St., S.B.
Belcher, Donald Minor	<i>Winchester</i>	Winchester.
Besse, Harold Augustus	<i>Newburyport</i>	Newburyport.
Best, Edna May Williston	<i>Roxbury</i>	14 Danube St., R.
Blaisdell, Robert Van Bergen	<i>St. Louis, Mo.</i>	Cambridge.
Bloodgett, George Raymond	<i>W. Newton</i>	W. Newton.
Boardman, Charles	<i>Boston</i>	388 Marlborough St.
Boardman, Charles Henry, Jr. . . .	<i>Lynn</i>	Lynn.
Bonnemort, Charles Judson	<i>Walnut Hill</i>	Dedham.
Borden, Norman Easton	<i>Salem</i>	Salem.
Bosworth, Harold Otis	<i>Denver, Colo.</i>	21 St. Botolph St.
Bradley, Francis	<i>Brookline</i>	Brookline.
Bragg, Charles Leroy	<i>Cambridge</i>	Cambridge.
Brainerd, Erastus LeRoy	<i>Portland, Conn.</i>	7 Follen St.
Brewer, Charles Duncan	<i>Duluth, Minn.</i>	7 Follen St.
Briggs, Archibald Henry	<i>Atlantic</i>	Atlantic.
Bright, George, Jr. . . .	<i>Pottsville, Pa.</i>	543 Mass. Ave.
Brown, James Hugh	<i>Boston</i>	6 Staniford St.
Brown, Robert Vaughan	<i>Roxbury</i>	94 Bird St., R.
Brown, William Nathaniel	<i>Gloucester</i>	13 Appleton St.
Burdick, Herbert Clemens	<i>Cambridge</i>	Cambridge.

FIRST YEAR (*continued*).

NAME.	HOME.	RESIDENCE.
Burnham, Edward, Jr.	Chicago, Ill.	23 Cumberland St.
Burr, Charles Henry	W. Newton	W. Newton.
Butler, Arthur Frank	Lowell	Lowell.
Capen, Bernard Winslow	Stoughton	Stoughton.
Cates, Louis Shattuck	Newton Centre	Newton Centre.
Chalifoux, Paul Ernest	Lowell	531 Mass. Ave.
Chapin, Henry Morton	New London, Conn.	9 Concord Sq.
Church, Albert Thomas	Oakland, Cal.	76 Chestnut St.
Clapp, Arthur Channing	So. Boston	179 Boston St., S. B.
Clapp, Clifford Blake	So. Boston	169 Boston St., S. B.
Coburn, Lawrence Gardiner	Malden	Malden.
Colgan, James Arthur Herbert	Springfield, N. B.	16 Joy St.
Collier, Arthur Luke	Chelsea	Chelsea.
Comins, Waldo Hunter	Glen Ridge, N. J.	88 Charles St.
Cook, Walter Lorrain	Chicago, Ill.	543 Mass. Ave.
Crane, Earl Benham	Spokane, Wash.	113 Falmouth St.
Cross, George Irving	So. Boston	73 Dorchester St., S. B.
Crowell, Allan Webb	New Bedford	23 Holyoke St.
Culver, Lora Robinson	Boston	Westland Ave.
Currey, Harold Young	Evanston, Ill.	23 Cumberland St.
Cutter, Edward Henry	Chicago, Ill.	33 St. Botolph St.
Davies, John Charles	Portland, Oreg.	66 Rutland Sq.
Driscoll, James	Roxbury	71 Centre St., R.
Dunham, Milton Cornelius	Brockton	Brockton.
Durbin, Joseph Wilber	Burlington, N. J.	112 Dartmouth St.
Durgin, William Andrew	Rochester, N. Y.	Chelsea.
Dutton, Albert Ira	So. Framingham	So Framingham.
Eagar, George Everett Traver	London, Eng.	Trinity Court.
Eames, Jesse Jennings	So. Framingham	So. Framingham.
Edgecombe, William Hendrik	Waltham	Waltham.
Egan, John Myers	Savannah, Ga.	543 Mass. Ave.
Ehle, Archibald Hyde	Faribault, Minn.	422 Mass. Ave.
Elliot, Bernard Gifford	Newtonville	Newtonville.
Everett, Harold Arthur	Boston	3 Oxford Terrace.
Ewart, Charles Wallace	Spokane, Wash.	113 Falmouth St.
Farmer, Walter Havens	Hartford, Conn.	83 Pinckney St.
Ferrin, Henry Abbott	Lowell	Lowell.
Field, David Dudley	Westchester, N. Y.	205 Huntington Ave.
Finneran, Thomas Alphonsus	Boston	28 Fisher Ave., R.
Fish, Harold Coburn	Hyde Park	Hyde Park.
Fitch, Charles Henry	Boston	40 Hancock St.
Fitch, Walter Spencer	Rockville, Conn.	23 Hemenway St.
Fitzgerald, John Mark	Cambridgeport	Cambridgeport.
Fleck, Charles Everest	Austin, Minn.	172 W. Brookline St
Fletcher, Harold Hervey	Brookline	Brookline.
Foote, Thomas Witherbee	Chicago, Ill.	23 Cumberland St.

FIRST YEAR (*continued*).

NAME.	HOME.	RESIDENCE.
Forbes, Eugene Duncan	<i>Allston</i>	40 Pomeroy St., A.
Foster, Sol Sharp	<i>Louisville, Ky.</i>	84 Huntington Ave.
Foster, Thomas	<i>Louisville, Ky.</i>	84 Huntington Ave.
Fowle, Leonard Munn	<i>Boston</i>	166 St. Botolph St.
Fowler, Frederick Newton, Jr.	<i>Springfield</i>	99 Warren Ave.
Fowler, Theodore Victor, Jr.	<i>Buffalo, N. Y.</i>	38 St. Botolph St.
Franklin, Duncan Rogers	<i>Brighton</i>	153 Foster St., B.
Franklin, Ralph Stowell	<i>Melrose</i>	Melrose.
French, George Henry	<i>Pittsfield</i>	68 Rutland Sq.
Friend, Alfred William	<i>Manchester</i>	457 Mass. Ave.
Frost, Richard Lincoln	<i>Waltham</i>	Waltham.
Fruit, John Clyde	<i>La Crosse, Wis.</i>	175 Mass. Ave.
Galaher, Francis Brisbane	<i>Lawrence</i>	Lawrence.
Gannett, Farley	<i>Washington, D. C.</i>	548 Mass. Ave.
Gardner, Charles Francis	<i>Brockton</i>	Brockton.
Gardner, Stephen Ayrault, Jr.	<i>New London, Conn.</i>	141 Warren Ave.
Gates, Thayer Prescott	<i>Lowell</i>	1116 Boylston St.
Geilfuss, Carl	<i>San Francisco, Cal.</i>	46 Cortes St.
George, William Leigh	<i>Roxbury</i>	Norfolk House, R.
Gifford, Ralph Percy	<i>Lynn</i>	Lynn.
Goldenberg, Maurice	<i>E. Boston</i>	391 Meridian St., E. B.
Goodwin, Charles Carroll	<i>Rochester, N. Y.</i>	264 Newbury St.
Grant, Kenneth Crothers	<i>Newport, R. I.</i>	289 Columbus Ave.
Greeley, William Roger	<i>Lexington</i>	Lexington.
Green, Henry Lincoln	<i>Brookline</i>	Brookline.
Hadcock, Edward Webster	<i>Roxbury</i>	2702 Washington St., R.
Hall, Arthur Parker	<i>Charlestown</i>	3 Cordis St., C.
Hamblet, Abel Martin	<i>Salem</i>	Salem.
Hammond, Lester Clark	<i>Kingston</i>	Kingston.
Hansen, August Ernst	<i>Viersen, Germany</i>	Waltham.
Hansen, Paul	<i>Washington, D. C.</i>	548 Mass. Ave.
Harkness, Arthur Fuller	<i>Walpole</i>	Walpole.
Harris, Wilson Park	<i>Brooklyn, N. Y.</i>	116 Mt. Vernon St.
Haskell, Albert Adams	<i>Essex</i>	Essex.
Haworth, Lloyd Bachelder	<i>Lowell</i>	Lowell.
Henne, Ernst	<i>Chicago, Ill.</i>	78 Huntington Ave.
Hering, Ardo	<i>New York, N. Y.</i>	14 Morrill St., D.
Hervey, Elmer Merrill	<i>Dorchester</i>	8 Humphreys Sq., D.
Hickey, Charles Hendee	<i>Mattapan</i>	36 Evans St., M.
Hill, Beulah Chapin	<i>Dorchester</i>	107 King St., D.
Hollis, Charles Bertram	<i>Natick</i>	Natick.
Hooker, Henry Keene	<i>Wellesley Hills</i>	Wellesley Hills.
Horr, John Winslow	<i>Brookline</i>	Brookline.
House, Herbert Bissell	<i>So. Manchester, Conn.</i>	23 Hemenway St.
Hovey, Chandler	<i>Brookline</i>	Brookline.
Hunt, Howard Nelson	<i>Newton</i>	Newton.

FIRST YEAR (*continued*).

NAME.	HOME.	RESIDENCE.
Hunter, Frederick Huston	<i>So. Natick</i>	So. Natick.
Jackson, Arthur Adams	<i>Brockton</i>	Brockton.
Jones, John Larrabee	<i>Deering, Me.</i>	25 Warren Ave.
Judson, Howard Campbell	<i>Holyoke</i>	60 W. Rutland Sq.
Kaufman, Lewis Rogers	<i>Louisville, Ky.</i>	Cambridge.
Kellogg, Charles Wetmore, Jr. . . .	<i>Brookline</i>	Brookline.
Kennedy, Ronald	<i>Hilo, H. I.</i>	116 Boylston St.
Kimball, Edwin Elliot	<i>Salt Lake City, Utah</i>	17 Yarmouth St.
Kimball, Ralph Elmore	<i>Lynn</i>	Lynn.
Kingsbury, Noah Jackson	<i>Braintree</i>	Braintree.
Knight, Elliot Walker	<i>Allston</i>	45 No. Beacon St., A.
Knights, Charles Fox	<i>Melrose</i>	Melrose.
Larrabee, Harold Davis	<i>Bennington, Vt.</i>	457 Mass. Ave.
Latshaw, William Herbert Morse	<i>Pueblo, Colo.</i>	30 Yarmouth St.
Leonard, John Kelley	<i>Allston</i>	3 Webster Ave., A.
Lewis, William Remsen	<i>Newport, R. I.</i>	Cambridge.
Littlefield, Arthur Stevens	<i>Winchester</i>	Winchester.
Lloyd, George Hamilton	<i>Arlington</i>	Arlington.
Locke, George Ellis	<i>Winchester</i>	Winchester.
Lockett, Kenneth	<i>Chicago, Ill.</i>	Newtonville.
Lombard, Albert Eaton	<i>Kansas City, Mo.</i>	563 Mass. Ave.
Long, Harry Pollard	<i>Sharon</i>	Sharon.
Lowe, Russell Bryant	<i>Fitchburg</i>	19 W. Cedar St.
McCarthy, Charles Emmet	<i>Haverhill</i>	Cambridge.
McDonnell, Thomas Francis	<i>Buffalo, N. Y.</i>	Quincy.
McKechnie, Benjamin Edward	<i>Dorchester</i>	66 Bird St., D.
McNaughton, Ernest Boyd	<i>Cambridge</i>	Cambridge.
Magrane, Patrick Henry	<i>Lynn</i>	Lynn.
Manley, Henry, Jr. . . .	<i>W. Roxbury</i>	Mt. Vernon St., W.R.
Manning, Chauncey Percival	<i>Marlboro</i>	Lynn.
Mansfield, William Burns	<i>Boston</i>	26 Cumberland St.
Marshall, Harry Hale	<i>So. Framingham</i>	So. Framingham.
Mason, Frank Henet	<i>E. Lexington</i>	E. Lexington.
Mather, George Everett	<i>W. Brattleboro, Vt.</i>	130 Dartmouth St.
Matteossian, Zenas Nerses, A.B. . . .	<i>Constantinople, Turkey</i>	50 Union Park.
May, Herbert Schaw	<i>Jamaica Plain</i>	28 Alveston St., J.P.
Mayo, Robert, Jr. . . .	<i>Philadelphia, Pa.</i>	151 Warren Ave.
Mendenhall, Byard William	<i>Springville, Utah</i>	289 Columbus Ave.
Miller, Fred Oren	<i>Madisonville, Ohio.</i>	95 Boylston St.
Miller, Theodore Gazlay	<i>Sandusky, Ohio.</i>	4 Oxford Terrace.
Mixer, Charles Galloupe	<i>Boston</i>	180 Marlborough St.
Mixer, William Jason	<i>Boston</i>	180 Marlborough St.
Moltedo, Henry Peter	<i>Boston</i>	193 South St.
Montgomery, Frank Park	<i>Brunswick, Me.</i>	49 Lawrence St.
More, Arthur Smith	<i>Springfield</i>	86 Huntington Ave.
Morrill, Robie Walter	<i>Salisbury</i>	603 Tremont St.

FIRST YEAR (*continued*).

NAME.	HOME.	RESIDENCE.
Morse, Willard Vaughan	<i>Monterey, Mexico</i>	470 Mass. Ave.
Mullaly, Felix	<i>Dorchester</i>	6 Ashmont St., D.
Nagel, Mortimer Livingston	<i>Buffalo, N. Y.</i>	38 St. Botolph St.
Nagle, Francis Aloysius	<i>Roxbury</i>	31 Howland St., R.
Nash, Arthur Edgar	<i>Newton Highlands</i>	Newton Highlands.
Nelson, Arthur Thomas	<i>E. Boston</i>	208 Princeton St., E.B.
Nelson, Edwin Eugene	<i>Lowell</i>	129 Dartmouth St.
Newhall, Ernest Leon	<i>Salem</i>	Salem.
Nichols, Arthur Richardson	<i>Monson</i>	15 Gordon St., A.
Nickerson, Arthur Henry	<i>Newburyport</i>	Newton Highlands.
Obear, George Barrows	<i>Lynn</i>	Lynn.
O'Connell, George Paul	<i>Holyoke</i>	6 Yarmouth St.
Odell, John Ripley	<i>Detroit, Mich.</i>	37 St. Botolph St.
Page, Newell Caldwell	<i>Newburyport</i>	Newburyport.
Parker, Ethelbert	<i>Cambridge</i>	Cambridge.
Pember, Walter Purton Ross	<i>Needham</i>	Needham.
Pendergast, Roland Ball	<i>Chicago, Ill.</i>	175 Mass. Ave. *
Philbrick, Burton Garfield	<i>Newburyport</i>	Newburyport.
Philbrick, Joseph	<i>Newburyport</i>	Newburyport.
Phinney, Herbert	<i>Monument Beach</i>	406 Mass. Ave.
Place, Clyde Richmond	<i>Mt. Upton, N. Y.</i>	23 Worcester Sq.
Pollard, Edson Thompson	<i>Rutland, Vt.</i>	65 Crawford St., R.
Pond, Harry Bradford	<i>Unionville, Conn.</i>	25 Concord Sq.
Poole, Frederick Arthur	<i>Chicago, Ill.</i>	41 Union Park.
Pope, Robert Anderson	<i>Newburyport</i>	Newburyport.
Proctor, Redfield, Jr.	<i>Proctor, Vt.</i>	Brookline.
Randall, Fred Chesley	<i>Woodfords, Me.</i>	19 Cortes St.
Rathbun, Eleanor Packer	<i>Boston</i>	449 Mass. Ave.
Raymond, Herbert Emmons	<i>Cambridge</i>	Cambridge.
Reed, Franklin Holmes	<i>Canton</i>	Canton.
Reynolds, Irving Wood	<i>Brockton</i>	46 Cortes St.
Rice, George Walter	<i>Quincy</i>	Quincy.
Robbins, Frank Ambrose, Jr.	<i>Pittsfield</i>	68 W. Rutland Sq.
Robinson, John Albert	<i>Canton</i>	Canton.
Roehr, Otto Louis	<i>Brooklyn, N. Y.</i>	553 Mass. Ave.
Rogers, Gardner	<i>Brookline</i>	601 Boylston St.
Rogers, George Dennison	<i>Gloucester</i>	30 Holyoke St.
Sawyer, Charles Adrian, Jr.	<i>Chicago, Ill.</i>	62 Waverley St.
Saylor, Henry Hodgman	<i>Pottstown, Pa.</i>	11 Irvington St.
Schwartz, Aaron	<i>Boston</i>	10 Wall St.
Seabury, George Tilley	<i>Newport, R. I.</i>	449 Mass. Ave.
Sears, Walton Harvey	<i>Arlington</i>	Arlington.
Setz, Carl Frederick	<i>Bonne Terre, Mo.</i>	21 St. James Ave.
Shedd, Charles Levi	<i>Portsmouth, N. H.</i>	Somerville.
Sherman, Frederic Lyman	<i>W. Springfield</i>	56 Clarendon St.
Sherman, Herbert Leslie	<i>Cambridge</i>	Cambridge.

FIRST YEAR (*continued*).

NAME.	HOME.	RESIDENCE.
Simpson, Walter Henry	<i>E. Boston</i>	118 White St., E. B.
Smith, Charles Alfred	<i>Oconto, Wis.</i>	22 St. Botolph St.
Smith, Francis Fay Hill	<i>Jamaica Plain</i>	Glen Road, J. P.
Smith, Horace Millikin	<i>Hamilton, Ohio</i>	195 W. Brookline St.
Smith, James Woodberry	<i>Lexington</i>	Lexington.
Smith, Philip Reeder	<i>Milwaukee, Wis.</i>	543 Mass. Ave.
Southwick, George Scudder	<i>Rome, N. Y.</i>	31 Mass. Ave.
Sprague, Nathaniel, Jr.	<i>Lanesville</i>	30 Holyoke St.
Stanley, Lyman Roberts	<i>Boston</i>	289 Newbury St.
Starr, Clarence Douglass	<i>New London, Conn.</i>	139 Warren Ave.
Steever, Jerome Elwell	<i>Chicago, Ill.</i>	41 Union Park Pl.
Stillings, Henry Erskine	<i>Boston</i>	58 Pinckney St.
Stimson, Henry Stanton Bogue	<i>Pittsford, Vt.</i>	7 Follen St.
Stow, Kent Tillinghast	<i>Buffalo, N. Y.</i>	Hotel Berkeley.
Strand, Harry Lancaster	<i>Keene, N. H.</i>	Cambridge.
Strong, Homer David	<i>Winsted, Conn.</i>	Brookline.
Sturtevant, Edwin Whitman	<i>Chicago, Ill.</i>	33 St. Botolph St.
Swan, Arthur Eugene	<i>Roxbury</i>	25 Wabon St., R.
Taylor, Grant Sterne	<i>Newport, R. I.</i>	449 Mass. Ave.
Taylor, James Loockermann, Jr. . . .	<i>London, Eng.</i>	Brookline.
Teague, Walter Owen	<i>Lowell</i>	Lowell.
Thurston, Ralph Emery	<i>Fall River</i>	13 Concord Sq.
Titcomb, Roland Elbert	<i>Rowley</i>	Rowley.
Tolman, Charles Prescott	<i>Dorchester</i>	755 Washington St., D.
Towne, Willis Harvey	<i>W. Gardner</i>	89 Surrey St., B.
Townsend, Gilbert	<i>Newton</i>	Newton.
Trowbridge, Henry Otis	<i>Newton</i>	Newton.
Turner, Everett Pendleton	<i>Arlington</i>	Arlington.
Turner, Howard Chubbuck	<i>Arlington</i>	Arlington.
Turner, John Byce	<i>St. Louis, Mo.</i>	417 Mass. Ave.
Usher, Samuel, 2d	<i>No. Cambridge</i>	No. Cambridge.
Vatter, Wilbur Lewis	<i>Lawrence</i>	472 Norfolk St., D.
Vaughan, Louis Edgar	<i>Worcester</i>	134 St. Botolph St.
Vietor, Maxwell	<i>Boston</i>	Trinity Court.
Voss, Allen Bernard	<i>Gloucester</i>	31 Warren Ave.
Wadleigh, John Winthrop	<i>Lexington</i>	Lexington.
Wales, Royal Linfield	<i>Haverhill</i>	Groveland.
Walker, Murray John	<i>Danversport</i>	Danversport.
Waterman, Irvile Dennett	<i>So. Weymouth</i>	So. Weymouth.
Waterman, William, Jr. . . .	<i>Chicago, Ill.</i>	30 St. Germain St.
Wellman, Walter Jesse	<i>E. Jaffrey, N. H.</i>	2 Yarmouth St.
Wells, Chester Harold	<i>Lawrence</i>	Lawrence.
Wemyss, Duncan	<i>Somerville</i>	Somerville.
Westcott, Henry Wilmarth	<i>Hopedale</i>	285 Columbus Ave.
Wetherbee, George Meserve	<i>W. Newton</i>	W. Newton.
Wetmore, Wade Lyndon	<i>Essex</i>	Essex.

FIRST YEAR (*continued*).

NAME.	HOME.	RESIDENCE.
Whipple, Allen Dewey	<i>Boston</i>	264 Newbury St.
Whitney, Philip Richardson	<i>Newton</i>	Newton.
Whitney, Robert Fletcher	<i>Winchester</i>	Winchester.
Whittet, Rufus Mason	<i>Lowell</i>	129 Dartmouth St.
Williams, Elizabeth Langdon	<i>Chelsea</i>	Chelsea.
Williams, Irving	<i>Providence, R. I.</i>	9 Concord Sq.
Williams, Robert Seaton	<i>Jackson, Mich.</i>	19 Follen St.
Williston, William High	<i>Somerville</i>	Somerville.
Winchester, Henry Thornton	<i>Dorchester</i>	512 Washington St., D.
Winslow, William James	<i>New Bedford</i>	23 Holyoke St.
Wood, Austin Clarence	<i>Dorchester</i>	3 Shawmut Park, D.
Wright, Charles Lawrence	<i>Lynn</i>	Lynn.

SPECIAL STUDENTS.

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

App. 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.
Elect. Eng. . . Electrical Engineering.	Phys. . . . Physics.
Eng. . . . English.	Pol. Sci. . . Political Science.
Geol. . . . Geology.	San. Eng. . . Sanitary Engineering.
	Shop. . . . Shopwork.

NAME.	HOME.	RESIDENCE.
Abeel, David Gustavus	<i>Catskill, N. Y.</i>	11 Irvington St.
App. Mech., Civ. Eng., Geol., Mech. Eng., Min. Eng., Phys.		
Albin, Henry Allison	<i>Concord, N. H.</i>	434 Mass. Ave.
Chem., Draw., Eng., Lang., Math., Mech. Eng., Phys., Shop.		
Allen, Lucy Mabel	<i>Lynn</i>	Lynn.
Chem.		
Anderson, Charles Louis Bates	<i>Newburyport</i>	Newburyport.
App. Mech., Civ. Eng., Geol., Lang., Phys., Pol. Sci.		
Angus, William Jackson	<i>Chicago, Ill.</i>	103 Mt. Vernon St.
App. Mech., Civ. Eng., Geol., Math., Phys., Pol. Sci.		
Archibald, George Hughes, B.E. . . .	<i>No. Sidney, C. B.</i>	41 St. Botolph St.
App. Mech., Civ. Eng., Draw., Lang., Phys., Pol. Sci.		
Archibald, Warren Martin	<i>Medford</i>	Medford.
Civ. Eng., Mech. Eng., Phys.		
Ashley, George Francis	<i>Somerville</i>	Somerville.
App. Mech., Arch., Draw., Lang., Phys., Pol. Sci.		
Axson, Edward William, M.A. . . .	<i>Princeton, N. J.</i>	142 St. Botolph St.
Chem.		
Ayers, Frederic Chesley	<i>Roxbury</i>	11 Forest St., R.
App. Mech., Math., Mech. Eng., Phys., Pol. Sci., Shop.		
Backus, LeRoy Manson	<i>Seattle, Wash.</i>	196 Dartmouth St. *
Biol., Eng., Hist., Lang., Pol. Sci.		
Bailey, Robert William	<i>New York, N. Y.</i>	25 St. Botolph St.
App. Mech., Math., Mech. Eng., Nav. Arch., Phys.		
Baker, Philip Stone	<i>San Francisco, Cal.</i>	103 Mt. Vernon St.
App. Mech., Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.		
Baldwin, Robert Southwick	<i>Dorchester</i>	318 Columbia Road., D.
Chem., Draw., Eng., Math.		
Barry, Charles Gardner	<i>Melrose</i>	Melrose.
Civ. Eng., Geol., Lang., Math., Phys.		
Bartlett, Jane Howard	<i>W. Bridgewater</i>	10 St. James Ave.
Chem., Lang., Phys., Pol. Sci.		

NAME.	HOME.	RESIDENCE.
Bass, Frederic Herbert	<i>Hyde Park</i>	Hyde Park.
Chem., Draw., Hist., Geol., Lang., Math., Phys., Pol. Sci.		
Bates, Sarah Loveland	<i>Newton</i>	Newton.
Chem., Draw., Eng., Lang., Math.		
Beder, Harold Waldemar	<i>New York, N. Y.</i>	145 W. Newton St.
Arch., Draw., Hist., Phys.		
Beekman, John Van Derveer, Jr. . . .	<i>Plainfield, N. J.</i>	Cambridge.
App. Mech., Arch., Draw., Lang., Phys., Pol. Sci.		
Belknap, George Henry	<i>Dorchester</i>	13 Milton Ave., D.
Lang., Shop.		
Bender, Margaret Wilkinson	<i>Pittsburgh, Pa.</i>	102 Chandler St.
Draw., Lang., Math.		
Bergstrom, George Edwin	<i>Neenah, Wis.</i>	85 Newbury St.
App. Mech., Arch., Draw., Hist., Lang.		
Betts, Ira Benedict, Jr.	<i>New York, N. Y.</i>	302 Columbus Ave.
Arch., Draw.		
Bigelow, Lyman Herbert	<i>Charlestown</i>	376 Main St., C.
Chem., Civ. Eng., Eng., Lang., Math., Phys.		
Bilyea, Carl Thompson	<i>Watertown, N. Y.</i>	543 Mass. Ave.
Arch., Chem., Draw., Eng., Hist., Lang., Math.		
Bittinger, Charles	<i>Washington, D. C.</i>	195 W. Brookline St.
Chem., Draw., Math.		
Blake, Kenneth Mallon	<i>Newton</i>	Newton.
App. Mech., Mech. Eng., Phys., Shop.		
Boland, Mary A.	<i>Boston</i>	117 W. Newton St.
Biol., Geol.		
Bollmann, William, Jr.	<i>New York, N. Y.</i>	102 Chestnut St.
Chem., Draw., Eng., Lang., Math.		
Bourneuf, Ambrose Francis	<i>Haverhill</i>	Haverhill.
Arch., Draw., Math.		
Brickley, William Joseph	<i>Charlestown</i>	68 Tremont St., C.
App. Mech., Math., Mech. Eng., Phys., Pol. Sci., Shop.		
Briggs, Zenas Marston, A.B.	<i>New Bedford</i>	Cambridge.
App. Mech., Civ. Eng., Draw., Geol., Hist., Math.		
Brigham, Theodore William	<i>New York, N. Y.</i>	Watertown.
App. Mech., Math., Mech. Eng., Nav. Arch., Phys., Pol. Sci.		
Brock, Henry Matthias, A.B.	<i>Roxbury</i>	15 Woodville St., R.
Chem., Math., Phys.		
Brodie, Matthew	<i>Buffalo, N. Y.</i>	36 Dartmouth St.
Chem., Draw., Eng., Lang., Math.		
Bronson, John Stanard	<i>Nashville, Tenn.</i>	563 Mass. Ave.
Biol., Eng., Hist., Lang., Phys., Pol. Sci.		
Brown, Charles Hoyt	<i>Wellsville, N. Y.</i>	59 Rutland Sq.
App. Mech., Chem., Mech. Eng., Phys., Pol. Sci., Shop.		
Brown, George Winslow	<i>Brookline</i>	Brookline.
Chem.		
Brown, John	<i>Fall River</i>	157 W. Canton St.
App. Mech., Civ. Eng., Geol., Lang., Phys., Pol. Sci.		
Brownell, John Randolph	<i>Geneva, Ill.</i>	17 Yarmouth St.
App. Mech., Civ. Eng., Geol., Lang., Phys., Pol. Sci.		
Bucklin, Milton Pollard	<i>Providence, R. I.</i>	80 Montgomery St.
Chem., Draw., Lang., Phys., Shop.		

REGISTER OF STUDENTS.

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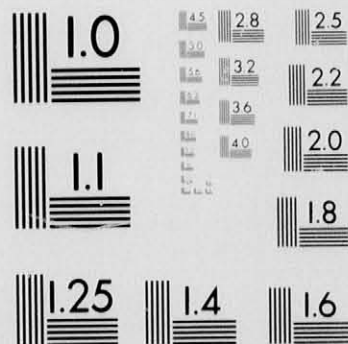
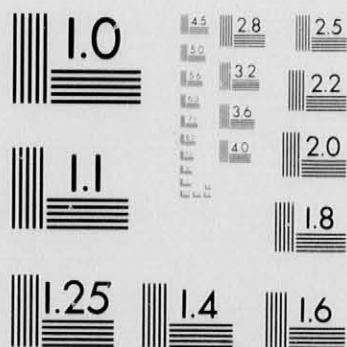
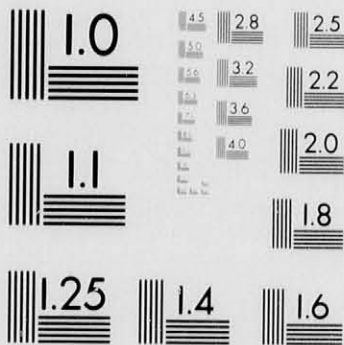
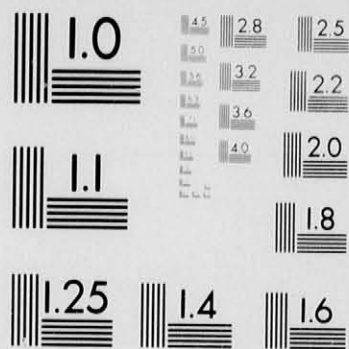
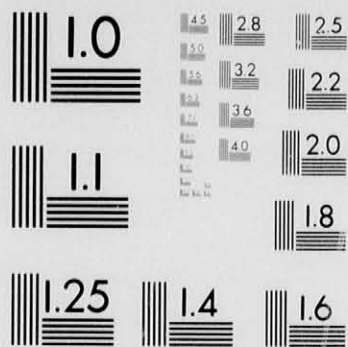
NAME.	HOME.	RESIDENCE.
Burdick, Edwin Parks	Cambridge	Cambridge.
App. Mech., Civ. Eng., Geol., Lang., Math., Phys., Pol. Sci.		
Burns, James Dennis, Jr.	Salem	Salem.
Civ. Eng., Geol., Lang., Phys., Pol. Sci.		
Burr, Roger Ames	Chestnut Hill	Chestnut Hill.
Chem., Draw., Lang., Math., Shop.		
Butler, Lawrence Smith, A.B.	New York, N. Y.	66 Beacon St.
Arch., Draw., Math.		
Butler, Walter Harold	Boston	231 W. Newton St.
App. Mech., Math., Mech. Eng., Phys.		
Butters, Charles Milton	Somerville	Somerville.
Civ. Eng., Draw., Eng., Lang., Math.		
Buys, Arthur Francis	Brooklyn, N. Y.	195 W. Brookline St.
Arch., Draw., Math., Phys.		
3 ✓ Cade, Marion Louise	Cambridgeport	Cambridgeport.
Biol., Phys.		
Cady, Francis Elmore	Chicago, Ill.	17 Yarmouth St.
App. Mech., Elect. Eng., Math., Mech. Eng., Phys., Pol. Sci.		
3 ✓ Cady, Frank Lippitt	Providence, R. I.	Providence, R. I.
Biol., Chem., Lang., Pol. Sci.		
Carr, James Henry	Salem	Salem.
Chem., Draw., Eng., Hist., Lang., Math.		
Cavanagh, Arthur Joseph	Braintree	Braintree.
Chem., Draw., Eng., Lang., Math.		
Chapman, Eben Lord	Franklin Falls, N. H.	157 W. Canton St.
App. Mech., Civ. Eng., Geol., Hist., Lang., Phys., Pol. Sci.		
Chapman, Harlen Monroe	Turner's Falls	163 Warren Ave.
Chem., Draw., Eng., Geol., Lang.		
Chase, Aurin Moody, B.S.	Syracuse, N. Y.	103 Pinckney St.
App. Mech., Draw., Mech. Eng., Phys., Shop.		
Chick, Randall Barrett	Springvale, Me.	Malden.
Draw., Math., Shop.		
Childs, Arthur Ramsey	Lee	Somerville.
Arch., Draw., Lang., Math.		
Churchman, Albert Lawrence	Wilmington, Del.	37 St. Botolph St.
Draw., Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.		
Clafin, Fred Winslow	Hopkinton	Hopkinton.
Civ. Eng., Draw., Eng., Hist., Lang., Math., Phys.		
Clapp, James Ford	So. Boston	18 Atlantic St., S. B.
App. Mech., Arch., Draw., Hist.		
Clark, Benjamin Franklin, Jr.	Conway, N. H.	118 Huntington Ave.
Chem., Draw., Eng., Hist., Lang., Math., Mech. Eng., Phys., Shop.		
Clark, George Adams	E. Boston	72 Marginal St., E. B.
Civ. Eng., Draw., Eng., Hist., Lang., Math., Phys.		
Clark, Reuben Bacon	Washington, D. C.	6 Louisburg Sq.
Chem., Eng., Lang., Math., Shop.		
Clarke, William Case, Jr., B.S.	Wakefield, R. I.	35 St. Botolph St.
Civ. Eng., Eng., Hist., Lang., Math., Phys., Pol. Sci.		
Comey, Charles Henry	Dorchester	3 Herbert St., D.
App. Mech., Lang., Math., Mech. Eng., Phys., Shop.		
Constantine, Arthur McGregor	Newburyport	Newburyport.
Biol., Eng., Hist., Lang., Pol. Sci.		

NAME.	HOME.	RESIDENCE.
Coolidge, Edward Bliss, Jr., B.S.	<i>Detroit, Mich.</i>	37 St. Botolph St.
App. Mech., Elect. Eng., Math., Mech. Eng., Phys.		
Corbett, Charles Walter, Jr.	<i>Boston</i>	6 Rutland Sq.
App. Mech., Elect. Eng., Math., Mech. Eng., Phys.		
Corliss, Cyrus	<i>Randolph</i>	Randolph.
App. Mech., Chem., Elect. Eng., Lang., Math., Mech. Eng., Phys., Pol. Sci.		
Cowell, David Holbrook	<i>Dorchester</i>	21 Monadnock St., D.
Chem., Eng., Lang., Math.		
Cowing, George Arthur	<i>Wyoming, Ohio</i>	59 Pinckney St.
Chem., Eng., Hist., Lang., Math.		
Cox, Allen Howard	<i>Holyoke</i>	83 Myrtle St.
Arch., Draw.		
Cross, Charles Robert, Jr.	<i>Brookline</i>	Brookline.
Eng., Lang., Math., Phys.		
Cross, Frederick Cushing	<i>Fitchburg</i>	531 Mass. Ave.
Biol., Eng., Hist., Lang., Phys., Pol. Sci.		
Crowell, Esther Louise	<i>Brattleboro, Vt.</i>	Malden.
Biol.		
Crowninshield, Katharine Bradlee	<i>Boston</i>	164 Marlborough St.
Eng.		
Cummings, Prescott Hunt	<i>Cuylerville, N. Y.</i>	140 Savin Hill Ave., D.
Draw., Lang., Math., Mech. Eng., Shop.		
Curtis, Charles Warren	<i>Lowell</i>	Lowell.
Chem., Eng., Lang.		
Curtiss, John Lee	<i>Fishkill Landing, N. Y.</i>	45 Westland Ave.
Draw., Eng., Hist., Lang., Math., Mech. Eng., Phys., Shop.		
Cushing, Matthew Marble	<i>Fitchburg</i>	Trinity Court.
Chem., Eng., Lang.		
Dakin, John Leander, Jr.	<i>Roxbury</i>	44 Evergreen St., R.
Draw., Shop.		
Dart, Cyrus Victor	<i>Rock Island, Ill.</i>	9 St. James Ave.
Civ. Eng., Geol., Lang., Phys., Pol. Sci.		
Davis, Oliver Marcy	<i>Evanston, Ill.</i>	466 Mass. Ave.
Mech. Eng., Phys.		
Davis, Wilbur Ward	<i>Malden</i>	Malden.
App. Mech., Civ. Eng., Geol., Hist., Lang., Phys.		
Delano, Paul Holmes	<i>Kingston</i>	76 Pinckney St.
Civ. Eng., Phys.		
Denny, Lucy Agatha	<i>Weedsport, N. Y.</i>	Belmont.
Chem.		
Derby, Richard Baker	<i>Concord</i>	531 Mass. Ave.
Arch., Draw., Eng., Hist., Lang.		
Derby, Robert Mason	<i>Boston</i>	352 Beacon St.
Civ. Eng., Draw., Eng., Hist., Math., Phys., Pol. Sci.		
Dexter, Katharine	<i>Boston</i>	2 Raleigh St.
Biol., Chem.		
Dickson, Paul Richard Beresford	<i>Cambridge</i>	Cambridge.
Chem., Draw., Math.		
Dike, George Phillips, B.A.	<i>Auburndale</i>	Auburndale.
App. Mech., Chem., Lang., Mech. Eng., Phys., Shop.		
Dow, Richard Ernest	<i>Melrose</i>	Melrose.
Chem., Eng., Geol., Hist., Lang., Math., Phys.		

REGISTER OF STUDENTS.

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NAME.	HOME.	RESIDENCE.
Dunbar, Howard Reginald	<i>Canton</i>	Canton.
App. Mech., Hist., Math., Mech. Eng., Phys., Pol. Sci., Shop.		
Dunklee, Ivah	<i>Boston</i>	122 Huntington Ave. Eng.
Dunwoody, Preston Yarnall	<i>Minneapolis, Minn.</i>	531 Mass. Ave. Arch., Draw., Eng., Math., Phys.
Emerson, Frank	<i>Lowell</i>	Lowell. Civ. Eng., Geol., Lang., Phys., Pol. Sci.
Emerson, Frank Nelson, A.B.	<i>Peoria, Ill.</i>	39 St. Botolph St. App. Mech., Arch., Draw., Lang.
Emerson, George Dana	<i>Denver, Colo.</i>	354 Columbus Ave. App. Mech., Elect. Eng., Lang., Math., Mech. Eng., Phys.
Evans, Joseph Dean	<i>Lowell</i>	1128 Boylston St. Chem., Civ. Eng., Draw., Eng., Hist., Math., Phys.
Everett, Frederic Elwin	<i>Elkins, N. H.</i>	Somerville. Civ. Eng., Draw., Geol., Phys., Pol. Sci.
✓ Farnum, Dwight	<i>Brookline</i>	Brookline. App. Mech., Chem., Min. Eng., Phys.
✓ Fifield, Ethel Frances, A.B.	<i>Salem</i>	Salem. App. Mech., Arch., Biol., Draw., Eng., Lang.
Fisher, Dana Hollis	<i>Norwood</i>	Norwood. Chem., Draw., Math.
Fisk, George Farnsworth	<i>Hyde Park</i>	Hyde Park. Chem., Phys., Shop.
Fitz, Emma Jenny	<i>Boston</i>	270 Commonwealth Ave. Hist.
Flagg, Edith Augusta	<i>Acton</i>	553 Broadway, S. B. Phys.
Flanders, Herbert Merritt	<i>Malden</i>	Malden. Civ. Eng., Geol., Lang., Math., Phys., Pol. Sci.
Foljambe, Eugene Stillman	<i>Denver, Colo.</i>	110 Huntington Ave. Eng., Hist., Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.
2 ✓ Foster, Floyd J	<i>New York, N. Y.</i>	2 Wellington St. Chem., Civ. Eng., Geol., Math., Phys.
Foster, Howard Williston	<i>E. Providence, R. I.</i>	466 Mass. Ave. Chem., Draw., Lang., Math.
Frazier, Loron Darling, Jr.	<i>Somerville</i>	Somerville. Draw.
2 Freeman, Frederic William	<i>W. Newton</i>	W. Newton. Civ. Eng., Eng., Lang., Math., Phys.
3 ✓ French, Philip Roland	<i>Roxbury</i>	36 Magnolia St., R. Chem.
3 ✓ Gage, Frank De Meritte	<i>Bradford</i>	183 Huntington Ave. App. Mech., Biol., Chem., Civ. Eng., Geol., Lang., Phys., Pol. Sci.
3 ✓ Garvin, Joseph Aloysius	<i>Memphis, Tenn.</i>	522 Columbus Ave. Arch., Chem., Eng., Hist., Lang., Phys.
Gaskill, Charles Sutter	<i>Mount Holly, N. J.</i>	20 St. Botolph St. App. Mech., Math., Mech. Eng., Phys., Pol. Sci., Shop.
Gatzenmeier, Alfred Robert Carl	<i>Newport, R. I.</i>	289 Columbus Ave. Draw., Shop.
Gauss, Carl Frederich	<i>Cambridge</i>	Cambridge. Biol., Eng., Hist., Lang., Phys., Pol. Sci.



M. I. T. ANNUAL CATALOGUES AND BULLETINS

1898/99

03 OF 04

NAME.	HOME.	RESIDENCE.
Gerber, Elmer Louis	<i>Dayton, Ohio</i>	155 Worcester St. Arch.
Gilmore, John Byers	<i>Clinton</i>	30 Appleton St. Civ. Eng., Draw., Eng.
Gladding, John Thomas Fiske	<i>Providence, R. I.</i>	179 Warren Ave. App. Mech., Chem., Geol., Mech. Eng., Phys.
Gonzalez, Alberto Primitivo	<i>Monterey, Mexico</i>	11 St. James Ave. Geol., Lang., Min. Eng., Phys., Pol. Sci.
Gowell, Louis Nelson	<i>Weston</i>	Weston. App. Mech., Arch., Draw., Leng., Phys., Pol. Sci.
Graff, Sheldon Dermitt	<i>Edgewood Park, Pa.</i>	719 Boylston St. Eng., Hist., Lang., Math., Phys., Pol. Sci.
Graves, Harold Symmes	<i>Medford</i>	Medford. Arch., Draw., Math.
Graves, Henrietta Louisa	<i>Waltham</i>	Waltham. Geol.
Greene, Bertram Wm. Batchelder,	<i>Paris, France</i>	6 Louisburg Sq. Eng.
Griffin, Arthur Eugene	<i>Winthrop</i>	Winthrop. Draw., Eng., Hist., Math., Mech. Eng., Phys.
Griffin, Frederic	<i>Melrose Highlands</i>	Melrose Highlands. Chem., Draw., Eng., Lang., Math.
Haines, William Morris	<i>Linwood, Md.</i>	499 Columbus Ave. Draw., Eng., Lang., Math., Phys., Shop.
Hamilton, Arthur Little	<i>Fond du Lac, Wis.</i>	85 Newbury St. Chem., Min. Eng., Phys., Pol. Sci.
Hamlen, Harry Howard	<i>Augusta, Me.</i>	18 Holyoke St. Elect. Eng., Lang., Math., Mech. Eng., Phys.
Hanson, Harry Christian	<i>Roxbury</i>	72 Munroe St., R. Draw., Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.
Harahan, James Thomas, Jr.	<i>Chicago, Ill.</i>	1116 Boylston St. App. Mech., Lang., Math., Phys., Pol. Sci.
Harris, George Lourie	<i>Hopedale</i>	406 Shawmut Ave. Chem., Draw., Eng., Hist., Math.
Harrison, Alfred William	<i>Minneapolis, Minn.</i>	132 W. Concord St. Chem., Lang., Min. Eng.
Harrison, Richard Carter	<i>Braintree</i>	Braintree. Biol., Chem., Lang., Min. Eng.
Haselton, Barton	<i>Rome, N. Y.</i>	1116 Boylston St. Chem., Draw., Lang., Math., Mech. Eng., Phys., Pol. Sci.
Hayden, David Homer	<i>Boston</i>	539 Mass. Ave. Arch., Draw., Hist.
Hazlewood, Sumner	<i>Lynn</i>	Lynn. Chem., Civ. Eng., Draw., Hist., Lang., Phys., Shop.
Heckle, George Rogers	<i>Roxbury</i>	55 Moreland St., R. App. Mech., Chem., Geol., Min. Eng., Phys., Pol. Sci.
Heghinian, Garabed George, A.B., <i>Marash, Turkey</i>		127 Pembroke St. App. Mech., Biol., Chem., Civ. Eng., Phys., San. Eng., Shop.
Heinritz, Walter John	<i>Clinton</i>	30 Appleton St. Chem., Draw., Eng., Hist., Lang., Math., Mech. Eng., Phys., Shop.
Henrich, Edward George	<i>Buffalo, N. Y.</i>	112 Dartmouth St. Arch., Draw., Hist., Lang.

REGISTER OF STUDENTS.

195

	NAME.	HOME.	RESIDENCE.
4 ✓	Hildreth, Edward Theodore . . . Chem.	<i>Los Angeles, Cal.</i> . . .	Brookline.
	Hilken, Paul Gerhard Ludiger . . . Hist., Lang., Math., Mech. Eng., Phys., Shop.	<i>Baltimore, Md.</i> . . .	89 St. Botolph St.
	Hills, Harold Fellows . . . Chem., Draw., Math.	<i>Lowell</i>	Lowell.
	Hinman, Walter Hibbard . . . App. Mech., Chem., Lang., Mech. Eng., Phys.	<i>Roslindale</i>	29 Albano St., Ros.
2	Hirt, Jules Hector Eng., Geol., Lang., Math., Phys.	<i>Brookline</i>	Brookline.
	Hobbs, Edith Morrill Hist.	<i>Roxbury</i>	102 Thornton St., R.
	Hogue, Chester James App. Mech., Arch., Draw., Hist., Phys.	<i>Portland, Oreg.</i>	64 W. Rutland Sq.
	Holliday, Alexander Rieman . . . Civ. Eng., Lang., Phys.	<i>Indianapolis, Ind.</i>	543 Mass. Ave.
	Holmes, Archibald Rettie, B.E. . . App. Mech., Civ. Eng., San. Eng.	<i>Hantsport, N. S.</i>	17 Claremont Park.
	Holt, Mary Abbot Biol.	<i>Everett</i>	Everett.
	Hooper, Fanny Biol., Chem.	<i>Boston</i>	49 Beacon St.
	Horsey, Burton Tuttle Chem., Draw., Eng., Hist., Math., Mech. Eng., Phys., Shop.	<i>Utica, N. Y.</i>	103 Mt. Vernon St.
	Horstman, William Henry Arch., Draw., Lang., Math.	<i>St. Louis, Mo.</i>	54 Montgomery St.
	Horton, Frank Nelson App. Mech., Math., Mech. Eng., Shop.	<i>Southbridge</i>	13 Intervale Park, D.
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3 ✓	Hubbard, William Henry Chem., Lang., Phys.	<i>Charleston, S. C.</i>	Cambridge.
	Hudson, Henry Norman Draw., Eng., Hist., Math., Mech. Eng.	<i>Cambridge</i>	Cambridge.
	Huff, Montgomery Gerrans Chem., Draw., Eng., Lang., Math.	<i>Buffalo, N. Y.</i>	89 Mt. Vernon St.
	Hunt, Harry Leigh Draw., Lang., Math., Mech. Eng., Phys., Pol. Sci.	<i>Willimantic, Conn.</i>	37 Moreland St., R.
	Huse, Frank James App. Mech., Mech. Eng., Shop.	<i>Evanston, Ill.</i>	118 Huntington Ave.
	Ingalls, Frederick Du Bois App. Mech., Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.	<i>Kingston, N. Y.</i>	466 Mass. Ave.
	Isaacs, Irving Cornelius Arch., Chem., Draw., Eng., Lang., Math.	<i>Chicago, Ill.</i>	4 St. Botolph St.
	Isham, Alonzo Keyt Draw. Eng., Hist., Lang., Math., Mech. Eng., Phys., Shop.	<i>Cincinnati, Ohio</i>	16 Union Park.
3 ✓	Jackson, George Otis Chem., Draw., Lang., Min. Eng., Pol. Sci.	<i>Lexington</i>	Lexington.
	Jeffords, Alexander Hay Brand . . . Chem., Draw., Eng., Lang., Phys., Shop.	<i>Philadelphia, Pa.</i>	21 W. Cedar St.
	Jenkins, David John, M.E. Elect. Eng., Phys.	<i>Stellton, Pa.</i>	Navy Yard, C.

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Johnson, Carl Francis	<i>Boston</i>	67 Westland Ave.
Draw., Hist., Lang., Math., Mech. Eng., Phys.		
Johnson, Daniel Stewart	<i>Short Hills, N. J.</i>	12 Newbury St.
App. Mech., Chem., Geol., Min. Eng., Phys., Pol. Sci.		
Kelley, Wingate	<i>Haverhill</i>	Haverhill.
Chem., Civ. Eng., Draw., Eng., Hist., Lang., Math., Phys.		
Kennard, William Oliver	<i>Everett</i>	Everett.
Eng., Lang., Shop.		
Keough, William Thomas, S.B. . . .	<i>E. Boston</i>	234 Saratoga St., E.B.
Nav. Arch.		
Laine, William Brewster	<i>Atlanta, Ga.</i>	113 Pembroke St.
Arch., Draw., Hist., Math.		
Lange, Theodore Ferdinand	<i>Springfield</i>	99 Warren Ave.
Chem., Civ. Eng., Draw., Eng., Math., Phys.		
Larrabee, John Heber	<i>Melrose</i>	Melrose
Civ. Eng., Math., Mech. Eng., Phys.		
Lathrop, Fred Haskins	<i>Charlestown</i>	15 Oak St., C.
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Lawrence, Amos Amory, A.B. . . .	<i>Boston</i>	59 Commonwealth Ave.
Arch.		
Leary, Charles Arthur	<i>Waltham</i>	Waltham.
Lang., Mech. Eng., Phys., Pol. Sci., Shop.		
Leonard, Louis Roussy	<i>Dorchester</i>	913 Dorchester Ave., D.
Arch., Draw., Hist.		
Lewis, Hortense Witter, A.B. . . .	<i>Mount Vernon, N. Y.</i>	62 Rutland Sq.
Chem.		
Little, James Lowell, Jr., A.B. . . .	<i>Brookline</i>	Brookline.
Arch., Draw.		
Lohbiller, Harry John	<i>Jamaica Plain</i>	21 Cranston St., J. P.
App. Mech., Eng., Lang., Math., Mech. Eng., Phys.		
Long, John William	<i>Charlestown</i>	71 Moulton St., C.
Draw., Eng., Hist., Lang., Math., Mech. Eng., Phys., Shop.		
Low, David	<i>Gloucester</i>	37 St. Botolph St.
Chem., Draw., Eng., Lang., Math.		
McClenahan, Walter	<i>Port Deposit, Md.</i>	127 Newbury St.
Chem., Geol.		
McGann, John Frederick	<i>Somerville</i>	Somerville.
Chem., Civ. Eng., Eng., Lang., Math., Phys.		
McInnes, Angus Archie	<i>Dorchester</i>	23 Salcomb St., D.
Civ. Eng., Draw., Eng., Math., Phys.		
McIntosh, James William	<i>Jamaica Plain</i>	50 Sheridan St., J. P.
Draw., Math., Mech. Eng., Phys., Shop.		
McIntyre, Frederick William	<i>Chelsea</i>	Chelsea.
Chem., Draw., Eng., Hist., Lang., Math., Mech. Eng., Phys., Shop.		
McMaster, Herbert Milton	<i>Portland, Oreg.</i>	202 Huntington Ave.
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McMaster, Jennie Kirby	<i>Pittsburgh, Pa.</i>	11 Concord Sq.
Arch., Draw., Hist., Math.		
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Civ. Eng., Draw., Eng., Hist., Lang., Math., Phys.		

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	Draw., Eng., Lang., Mech. Eng., Phys., Shop.		
2	Madero, Alfonso	<i>Parras-Coahuila, Mexico</i>	9 Newbury St.
2	Chem., Civ. Eng., Geol., Hist., Lang., Phys.		
	Madero, Emilio	<i>Parras-Coahuila, Mexico</i>	9 Newbury St.
	Civ. Eng., Geol., Lang., Math., Phys.		
3	Madero, Salvador Silvestre	<i>Parras-Coahuila, Mexico</i>	9 Newbury St.
	App. Mech., Chem., Lang., Min. Eng., Phys., Pol. Sci.		
	Madgeburg, Frederick William	<i>Ashland, Pa.</i>	32 Union Park.
	Arch., Draw., Lang., Phys.		
4	Magee, Guy, Jr.	<i>Chicago, Ill.</i>	1116 Boylston St.
	Biol., Chem., Phys., Shop.		
	Mague, Francis Joseph	<i>W. Newton</i>	W. Newton.
	App. Mech., Civ. Eng., Draw., Geol., Lang., Phys., Pol. Sci.		
	Manley, Sumner Marshall	<i>Brockton</i>	14 Rutland Sq.
	App. Mech., Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.		
	Manson, Edmund Sewall, Jr., S.M.	<i>Dorchester</i>	7 Holiday St., D.
	Elect. Eng., Lang., Phys.		
	Mara, Susan Louise	<i>Boston</i>	93 Pembroke St.
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	Maxson, Harry Wescote	<i>Westerly, R. I.</i>	12 Newbury St.
	Arch., Draw., Eng., Hist., Lang., Math., Phys.		
	Mead, George Houk, B.L. . . .	<i>Dayton, Ohio</i>	33 E. Concord St.
	App. Mech., Chem., Draw., Math., Mech. Eng., Phys.		
	Merrick, Frederic Ickes	<i>New Brighton, Pa.</i>	543 Mass. Ave.
	App. Mech., Arch., Draw., Lang., Phys., Pol. Sci.		
	Messenger, Harry Carleton	<i>E. Providence, R. I.</i>	64 Whiting St., R.
	Chem., Eng., Lang., Math.		
	Möller, Albert Voltaire	<i>Galveston, Tex.</i>	563 Mass. Ave.
	App. Mech., Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.		
	Monaghan, James Francis	<i>Lowell</i>	91 Appleton St.
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	Morris, William Longfellow	<i>Washington, D. C.</i>	694 Tremont St.
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	Niles, William Avery	<i>New Haven, Conn.</i>	314 Columbus Ave.
	Chem., Draw., Eng., Lang., Shop.		
3	Noyes, Harriette Niles	<i>Mattoon, Ill.</i>	464 Centre St., J.P.
	Biol., Chem.		
	Nutter, Harry Godfrey	<i>Chelsea</i>	Chelsea.
	Chem., Draw., Math., Mech. Eng., Phys., Shop.		
	O'Connor, Ellen Maria	<i>Charlestown</i>	88 Elm St., C.
	Biol.		
	O'Hanlon, Thomas Joseph, A.B.	<i>Chinook, Mont.</i>	53 E. Concord St.
	Lang., Math.		
2	Olivares, Guillermo	<i>Monterey, Mexico</i>	11 St. James Ave.
	Chem., Draw. Lang. Math.		

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Patch, James Alfred	<i>Stoneham</i>	Stoneham. App. Mech., Chem., Mech. Eng.
Patch, Nathaniel Knight Bailey .	<i>Buffalo, N. Y.</i>	29 St. Botolph St. Chem., Draw., Eng., Hist., Lang., Math., Shop.
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Peters, William Chute	<i>Newburyport</i>	Newburyport. Biol., Chem.
Phillips, Henry Alexander, A.M.	<i>Springfield</i>	4 Chestnut St. Arch., Draw.
Pickersgill, William Copeland .	<i>E. Providence, R. I.</i>	466 Mass. Ave. App. Mech., Civ. Eng., Geol., Lang., Phys., Pol. Sci.
Pigeon, William Gardner	<i>E. Boston</i>	139 Trenton St., E. B. App. Mech., Arch., Draw., Lang., Phys., Pol. Sci.
Pigman, George Wood, Jr.	<i>Norfolk, Va.</i>	22 St. James Ave. Chem., Lang., Mech. Eng., Phys., Shop.
Plumb, Ralph	<i>Buffalo, N. Y.</i>	6 Louisburg Sq. Chem., Eng., Hist., Lang., Math., Phys.
Plummer, Laura Susanna	<i>E. Boston</i>	110 Princeton St., E. B. Biol.
Pope, Harold Linder	<i>Boston</i>	378 Commonwealth Ave. Draw., Shop.
Potter, Philip Arthur	<i>Springfield</i>	37 St. Botolph St. Math., Mech. Eng., Phys., Pol. Sci., Shop.
Pray, Dudley Malcolm	<i>So. Boston</i>	508 Broadway, S. B. Biol., Chem., Math., Phys.
Putnam, Harry Ames	<i>Chichestown</i>	24 Soley St., C. Chem., Eng., Hist., Lang.
Raife, Claude Byron	<i>Wilkes-Barre, Pa.</i>	28 Yarmouth St. Arch., Draw., Eng., Hist.
3 Rash, Frank Dillman, A.B.	<i>Earlington, Ky.</i>	19 Claremont Park. Chem., Civ. Eng., Lang., Math., Min. Eng., Phys.
3 Rathbun, Frank DeGraff	<i>Southampton</i>	449 Mass. Ave. Chem., Geol., Lang., Math., Min. Eng., Phys., Pol. Sci.
24 Reynolds, Albert Aden, B.A. . . .	<i>No. Adams</i>	25 Berwick Park. Chem., Math., Phys.
Rice, William Paul	<i>Chicago, Ill.</i>	110 Huntington Ave. Chem., Eng., Geol., Lang.
Richardson, William Reuben, A.M.	<i>Boston</i>	2 Marlborough St. Shop.
Richardson, James Herbert	<i>Newtonville</i>	110 Huntington Ave. App. Mech., Civ. Eng., Phys., San. Eng., Shop.
Richmond, Miles Standish	<i>Brookline</i>	Brookline. Arch. Draw., Hist., Pol. Sci.
Riley, Frank Morris, C.E.	<i>Madison, Wis.</i>	101 St. Botolph St. App. Mech., Arch., Draw., Phys.
Ritchie, Andrew Eliot	<i>Brookline</i>	Brookline. Chem., Draw., Eng., Lang., Math., Mech. Eng., Phys., Shop.

NAME.	HOME.	RESIDENCE.
Robson, Edward Riggs	<i>Wellesley Hills</i>	Wellesley Hills.
Biol., Hist., Lang., Phys., Pol. Sci.		
Root, Ralph	<i>E. Orange, N. J.</i>	549 Mass. Ave.
Chem., Min. Eng.		
Rossmassler, Carl	<i>Philadelphia, Pa.</i>	8 Lindsay St., D.
Eng., Hist., Lang., Math., Phys., Pol. Sci., Shop.		
Russell, Edward Francis	<i>Lowell</i>	Lowell.
App. Mech., Draw., Lang., Math., Mech. Eng., Phys., Pol. Sci.		
Saunders, William Colegrove	<i>Jamaica Plain</i>	67 Peter Parley St., J.P.
App. Mech., Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.		
Sawyer, Arthur Harold	<i>Arlington</i>	Arlington.
Chem., Draw., Math.		
Schmitt, Charles August	<i>Chelsea</i>	Chelsea.
Chem.		
Scully, John Timothy, Jr.	<i>Cambridge</i>	Cambridge.
Civ. Eng., Draw., Eng., Hist., Lang., Math., Phys.		
Shaw, Brackley Azel	<i>Brighton</i>	Englewood Ave., B.
Biol., Eng., Lang., Pol. Sci.		
Shepard, Ralph Lunt	<i>Newburyport</i>	Newburyport.
Arch., Draw., Eng., Hist., Lang., Math., Phys.		
Smith, Frank Arthur	<i>Newburyport</i>	26 Rosedale St., D.
Chem., Eng., Hist., Lang., Math., Phys.		
Smith, Lillie Collamore	<i>Newtonville</i>	Newtonville.
Biol., Chem.		
Smith, Montfort Hill	<i>Falmouth</i>	103 Mt. Vernon St.
Arch., Draw., Eng., Hist., Lang.		
Smith, William Henry *	<i>Altoona, Pa.</i>	367 Northampton St.
Eng., Lang., Math., Mech. Eng., Phys., Pol. Sci., Shop.		
Smithwick, Harold	<i>Newcastle, Me.</i>	156 Mt. Vernon St.
App. Mech., Math., Mech. Eng., Nav. Arch., Phys.		
Snow, Frederic Welles	<i>Lynn</i>	Lynn.
App. Mech., Chem., Min. Eng., Phys.		
Sohier, Louis Amory	<i>Concord</i>	Concord.
App. Mech., Math., Mech. Eng., Phys., Shop.		
Spear, George Morton	<i>Lowell</i>	Lowell.
Chem., Eng., Hist., Lang., Math., Mech. Eng., Phys., Shop.		
Stebbins, Roland Williams	<i>Springfield</i>	6 Louisburg Sq.
App. Mech., Lang., Mech. Eng., Phys., Shop.		
Stetson, Albert Winthrop	<i>Brookline</i>	Brookline.
Chem., Draw., Lang., Math.		
Stetson, James Alexander	<i>New Bedford</i>	2 Wellington St.
App. Mech., Civ. Eng., Phys.		
Stewart, Edmund Thomas	<i>Boston</i>	287 Columbus Ave.
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Stone, Mary Gray	<i>Boston</i>	18 Chestnut St.
Chem.		
Stone, Solon Jones, Jr.	<i>Boston</i>	24 Tyler St.
Chem., Civ. Eng., Eng., Lang., Math., Phys.		
Storer, Harry Winthrop March	<i>Dorchester</i>	13 Winter St., D.
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* Died, Dec. 18.

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Thanisch, Otto Conrad . . .	<i>Jamaica Plain</i> . . .	3395 Washington St., J P.
App. Mech., Lang., Math., Mech. Eng., Phys., Pol. Sci.		
Thurlow, Leon Rhodes . . .	<i>Boston</i> . . .	1128 Boylston St.
Chem., Civ. Eng., Draw., Eng., Hist., Lang., Math.		
Tiffany, George Stanton . . .	<i>Washington, D. C.</i> . . .	6 Louisburg Sq.
Arch., Draw., Lang., Phys., Pol. Sci.		
Towne, Lillian May . . .	<i>Brighton</i> . . .	89 Surrey St., B.
Biol.		
Townley, Fredrick Lawrence . . .	<i>Wyoming, Ohio</i> . . .	30 Holyoke St.
Draw., Eng., Lang., Phys.		
Tucker, Fred Irving . . .	<i>Boston</i> . . .	544 Newbury St.
App. Mech., Draw., Hist., Lang., Math., Mech. Eng., Phys.		
Tuell, Arthur Gifford . . .	<i>New Bedford</i> . . .	6 Rutland Sq.
Chem., Draw., Math., Shop.		
Turner, Lawrie Humphrey . . .	<i>Medford</i> . . .	Medford.
Biol., Geol., Phys.		
Walker, Frank Ray . . .	<i>Pittsfield</i> . . .	68 W. Rutland Sq.
Arch., Draw., Eng.		
Walker, Harry Leslie . . .	<i>Oak Park, Ill.</i> . . .	537 Mass. Ave.
App. Mech., Arch., Draw., Phys., Pol. Sci.		
Walworth, Arthur Clarence, Jr., B.A.	<i>Newton Centre</i> . . .	Newton Centre.
App. Mech., Elect. Eng., Lang., Math., Mech. Eng., Phys., Shop.		
Waters, Charles Douglass, B.S.	<i>Winooski, Vt.</i> . . .	12 Dartmouth St.
Chem.		
Weld, Lydia Gould . . .	<i>Falmouth</i> . . .	Jamaica Plain.
Draw., Math.		
Wentworth, John Frank . . .	<i>Rochester, N. H.</i> . . .	323 Columbus Ave.
App. Mech., Lang., Math., Mech. Eng., Nav. Arch., Phys., Pol. Sci.		
Werner, Carl . . .	<i>Mattapan</i> . . .	145 W. Newton St.
Arch., Draw., Hist.		
Werner, Frank Albert . . .	<i>Akron, Ohio</i> . . .	1116 Boylston St.
App. Mech., Lang., Math., Mech. Eng., Nav. Arch., Phys.		
Wesson, Leonard . . .	<i>Roxbury</i> . . .	21 Rockville Park, R.
App. Mech., Math., Mech. Eng., Phys., Pol. Sci., Shop.		
Whiting, Charles Frederick, A.B.	<i>Wilton, N. H.</i> . . .	Somerville.
Chem., Phys.		
Whiton, Harry Augustus . . .	<i>Bloomfield, Conn.</i> . . .	25 Concord Sq.
Arch., Chem., Draw., Eng., Hist., Lang., Math., Phys.		
Wilder, Fred Blaisdell . . .	<i>Boston</i> . . .	118 Huntington Ave.
Geol., Lang., Math., Min. Eng., Phys.		
Williams, Dora . . .	<i>Brookline</i> . . .	93 Tyler St.
Biol.		
Wilson, George Truman . . .	<i>Columbia Falls, Me.</i> . . .	9 Concord Sq.
Chem., Draw., Eng., Hist., Lang., Math., Mech. Eng., Phys., Shop.		
Winslow, George Carlos, Jr. . . .	<i>Boston</i> . . .	170 Huntington Ave.
App. Mech., Chem., Lang., Min. Eng., Phys.		
Wood, Leonard Percy . . .	<i>Brooklyn, N. Y.</i> . . .	7 Turner St.
Civ. Eng., Draw., Eng., Hist., Lang., Math., Phys.		
Wood, Willard Lyman, Jr. . . .	<i>Upton</i> . . .	123 W. Canton St.
App. Mech., Elect. Eng., Lang., Math., Mech. Eng., Phys.		

NAME.	HOME.	RESIDENCE.
Woodbury, George Haines . . . Geol., Shop.	<i>San Francisco, Cal.</i>	E. Cambridge.
Woodhull, Charles Richard . . . Civ. Eng., Draw., Eng., Lang., Math., Phys.	<i>Monroe, N. Y.</i>	1116 Boylston St.
Woodward, Allen Harvey . . . App. Mech., Chem., Geol., Lang., Math., Min. Eng., Phys., Pol. Sci.	<i>Birmingham, Ala.</i>	34 W. Cedar St.
Worden, Edwin Sheldon . . . Chem., Draw., Eng., Hist., Mech. Eng., Phys.	<i>Newton</i>	Newton.
Wyzanski, Isaac App. Mech., Math., Mech. Eng., Nav. Arch., Phys., Pol. Sci.	<i>Dorchester</i>	12 Wolcott St., D.
Young, Ross Redsecker . . . Draw., Eng., Lang., Shop.	<i>Middletown, Pa.</i>	351 Columbus Ave.

SUMMARY.

GRADUATE STUDENTS	68	REGULAR STUDENTS, 2d year . . .	204
REGULAR STUDENTS, 4th year . . .	181	“ “ 1st year	282
“ “ 3d year	189	SPECIAL STUDENTS	308
Total			1,232
Deduct names counted twice			61
			<hr/> 1,171

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III. SUPPLEMENTARY COURSE IN COMPOSITION. Twelve lectures by Professor Arlo Bates.

IV. PHYSIOLOGY AND HYGIENE OF THE CIRCULATION. Twelve lectures by Assistant Professor Theodore Hough.

V. MECHANISM AND GEARING. Twelve lectures by Assistant Professor A. L. Merrill.

VI. GENERAL CHEMISTRY OF THE NON-METALLIC ELEMENTS. Twelve lectures by Associate Professor T. E. Pope.

VII. THE DEVELOPMENT OF PROSE FICTION IN FRANCE, from the Time of Mlle. de Scudéry (17th Century). Twelve lectures (in French) by Professor A. N. van Daell.

VIII. TRIGONOMETRY AND LOGARITHMS. Twelve lectures by Assistant Professor J. J. Skinner.

IX. DIFFERENTIAL CALCULUS. Twelve lectures by Professor H. W. Tyler.

X. ELECTRICAL TESTING. Twelve laboratory exercises by Assistant Professor F. A. Laws.

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XII. NAVIGATION AND NAUTICAL ASTRONOMY. Twelve lectures by Professor Alfred E. Burton.

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XIV. INTEGRAL CALCULUS.¹ Twelve lectures by Assistant Professor F. H. Bailey.

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XVIII. THE COMPUTATION OF EARTHWORK. Twelve lectures by Professor C. F. Allen.

¹ Continuation of Course IX.

XIX. THE GENERAL CHEMISTRY OF THE METALLIC ELEMENTS. Illustrated by Experiments. Twelve lectures by Assistant Professor F. L. Bardwell.

XX. LIGHT. Twelve lectures, with experimental illustrations, by Assistant Professor H. E. Clifford.

XXI. THE CHEMISTRY OF THE ESSENTIAL OILS, RESINS, AND WAXES. Twelve lectures by Assistant Professor A. H. Gill.

Lowell School of Practical Design.

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 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 woollen goods.

Course of Study. — Students are taught the art of making patterns for prints, gingham, delaines, silks, laces, paperhangings, 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 Harriet J. Ford.

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.

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.
Alger, John Herbert	<i>Reading</i>	Reading.
Batchelder, Barton Pike	<i>Manchester, N. H.</i>	306 Lowell St.
Baxter, Clara Virginia	<i>Dorchester</i>	100 Melville Ave., D.
Bell, Laura May	<i>Roxbury</i>	2842 Washington St., R.
Bott, Royal Prescott	<i>Roxbury</i>	2 Glenwood Pl., R.
Chamberlin, Fannie Louise	<i>Newton Centre</i>	Newton Centre.
Clafin, Florence	<i>Jamaica Plain</i>	55 Burroughs St., J. P.
Conant, Mabel Porter	<i>Shirley</i>	Shirley.
Curtis, Edgar Franklin	<i>Salem</i>	Salem.
Damon, Ethel Charles	<i>Reading</i>	Reading.
Davis, Grace Hammond	<i>Littleton, N. H.</i>	45 Julian St., R.
Fernald, Blanche Soper	<i>Worcester</i>	Worcester.
Fisk, Florence	<i>Brattleboro, Vt.</i>	126 Chestnut Ave., J. P.
Fuller, Aurelia Wyncoop	<i>Arlington</i>	Arlington.
Godfrey, Beatrice Raymond	<i>Jamaica Plain</i>	20 Forbes St., J. P.
Green, Richard Goodbourn	<i>Roxbury</i>	11 Mills St., R.
Gunther, Albert George	<i>Roslindale</i>	432 Beech St., Ros.
Harmon, May Flanders	<i>Wilmington</i>	Wilmington.
Hasey, Alice Woodward	<i>Dorchester</i>	2 Dyer St., D.
Hawes, William Howard	<i>Natick</i>	Natick.
Hay, Annie Matilda	<i>Chelsea</i>	Chelsea.
Heselton, William Brooks	<i>Reading</i>	Reading.*
Howard, Clara Antoinette	<i>Somerville</i>	Somerville.
Jordan, Carlotta May	<i>Boston</i>	1A Berwick Park.
Kelheur, Warren Ruperd	<i>Hyde Park</i>	Hyde Park.
Kelly, Bertha Angela	<i>Boston</i>	76 Camden St.
Kidger, Lottie Henson	<i>Everett</i>	Everett.
Long, Georgena Lauretta	<i>Dorchester</i>	130 Rosseter St., D.
Loud, Charles Arthur	<i>Westhampton</i>	Watertown.
Lyon, Lawrence Andrew	<i>Malden</i>	Malden.
Perkins, George Horace	<i>Utica, N. Y.</i>	20 Dartmouth St.
Pope, Lillie Warner	<i>Newton Centre</i>	Newton Centre.
Ronan, Cecilia Gertrude	<i>Revere</i>	Revere.
Russell, Elizabeth Eulalie	<i>Boston</i>	174 W. Canton St.

NAME.	HOME.	RESIDENCE.
Sanford, Arthur Eugene . . .	<i>Dorchester</i> . . .	41 Corbet St., D.
Sargent, Ethel Marion . . .	<i>Roxbury</i> . . .	6 Waverley St., R.
Thuresson, Maude May . . .	<i>So. Boston</i> . . .	98 G St., S. B.
Tileston, Millie Houghton . . .	<i>Dorchester</i> . . .	Tileston Pl., D.
Tripp, Herbert Lyman . . .	<i>Middleboro</i> . . .	Middleboro.
Wood, Beulah Locke . . .	<i>Roslindale</i> . . .	Eldredge St., Ros.
Wright, Lena Julia . . .	<i>Boston</i> . . .	65 Appleton St.
Wright, Myra Jeannette . . .	<i>Boston</i> . . .	65 Appleton St.
Wright, Nellie Elizabeth . . .	<i>Allston</i> . . .	1 Wadsworth St., A.

Alumni Association.

The Alumni Association of the Institute holds its annual meeting in Boston in December or January; 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 1899 are:

President: EDWIN C. MILLER, '79.

Vice-President: CHARLES T. MAIN, '76.

Secretary: A. H. GILL, '84, Massachusetts Institute of Technology.

Executive Committee: THE PRESIDENT, VICE-PRESIDENT, AND SECRETARY; FREDERIC H. FAY, '93; J. P. B. FISKE, '89.

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: DANA P. BARTLETT, '86.

Treasurer: EDWIN C. MILLER, '79.

Chairman of House Committee: PERCIVAL W. POPE.

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: B. R. T. COLLINS, '88.

Vice-President: R. H. PIERCE, '85.

Secretary and Treasurer: E. MCK. HAGAR, '93, 554 The Rookery, Chicago, Ill.

Executive Committee: THE PRESIDENT, VICE-PRESIDENT, SECRETARY, AND TREASURER; H. H. CUTLER, '81; J. L. SHORTALL, '87; SOLOMON STURGES, '87; L. A. FERGUSON, '88.

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

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; FRANK A. PICKERNELL, '85; EDWARD R. FRENCH, '92; 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: FRANK E. ALDEN, '79.

Vice-President: F. S. VIELÉ, '91.

Secretary and Treasurer: HENRY D. SHUTE, '92, Pittsburgh, Pa.

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

Executive Committee: MAURICE B. PATCH, '72; ELGOOD C. LUFKIN, '86; HENRY A. BOYD, '79; DARRAGH DE LANCEY, '99; CHARLES W. RICKER, '91, *Secretary-Treasurer*, 702 Ellicott Sq., Buffalo, N. Y.

Annual Meeting third Saturday in September.

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:

- | | |
|--|---|
| <ul style="list-style-type: none"> I. Civil Engineering. II. Mechanical Engineering. III. Mining Engineering and Metallurgy. IV. Architecture. V. Chemistry. VI. Electrical Engineering. | <ul style="list-style-type: none"> 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 . . . Westboro, Mass.	III.	Civil Engineer; Assistant Engineer, Metropolitan Water Board.
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 265 Third St., East Cambridge, Mass.	II.	Constructing Engineer, with The Geo. F. Blake Manufacturing Co.
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.	In Business.

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 . . . Fitchburg, Mass.	I.	Consulting Engineer.
HOWARD A. CARSON . . . 20 Beacon St., Boston.	I.	Chief Engineer, Boston Transit Commission.
J. RAYNER EDMANDS . . . 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 . . . 31 Commercial 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 . . . Dresdner Bank, 39 Pragerstr., Dresden, Germany.	III.	Studying abroad.
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 . . . 39 Court St., Boston.	III.	Stock Raising.
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. (Harv.) . 688 Boylston St., Boston.	V.	Professor of Histology and Human Embry- ology, 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. . . . 79 Bloomfield St., Dorchester, Mass.	I.	Chief Engineer, Boston & Albany R. R.
RICHARD H. SOULE, A.B. . . . Philadelphia, Pa.	II.	With the Baldwin Locomotive Works.

1872. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CLARENCE S. WARD, LL.B.(B.U.) III. 27 School St., Boston.	I.	Lawyer.

1873.

AMORY AUSTIN, A.B.	V.	
4 Redwood St., Newport, R. I.		
GEORGE W. BLODGETT	I.	Electrical Engineer, Boston & Albany Central St., Auburndale, Mass. R. R.; Consulting Electrician.
WILLIAM E. BROTHERTON . . .	V.	With Burckhardt & Co. Cincinnati, Ohio.
SAMUEL M. FELTON	I.	President and Receiver, Cincinnati, New Odd Fellows Temple, Orleans, & Texas Pacific Ry.; Receiver, Seventh & Elm Sts., Columbus, Sandusky, & Hocking R. R.; Cincinnati, Ohio. Receiver, Kentucky & Indiana Bridge Co.
FREDERICK L. FISHER	I.	In Insurance Business (35 Kilby St., Bos- ton, and Medway, Mass.).
FREDERICK GUILD, JR. Sci. and Lit. Hingham, Mass.		
W. DALE HARRIS	I.	Managing Director Pontiac Pacific Ry.; 237 MacLaren St., President, Montreal Island Belt Line Ry. Ottawa, Ont.
CLAR. L. HOWES, A.B., M.D. II.		Physician. Hanover, Mass.
FRANK B. MORSE	I.	Negociacion de Minos de Oro; El Riscate 7 Calle de los Flores, y Anexas; El Parian E. de Oaxaca. Mexico, Mexico.
GEORGE PHILLIPPS	III.	
Green Harbor, Mass.		
HENRY A. PHILLIPS	IV.	Architect. 120 Tremont St., Boston.
ELLEN H. RICHARDS, A.M. V.		Instructor in Sanitary Chemistry, Mass. Boston, Mass. Institute of Technology.
HENRY L. RIPLEY	I.	Captain, Third Cavalry, U. S. A. Fort Ethan Allen, Vt.
ROBERT A. SHALER	I.	President of Shailer & Schniglaui Co., En- 610 Western Union Bldg., gineers and Contractors. Chicago, Ill.
C. EDWARD STAFFORD	III.	Manager, Open Hearth and Plate Mill, South Chicago, Ill. Illinois Steel Co.
SAMUEL E. TINKHAM	I.	Assistant Engineer, Engineering Depart- ment, City of Boston; Secretary, Boston City Hall, Boston. Society of Civil Engineers.
FRANK W. VERY	V.	Engaged in Scientific Research. 507 Morris Ave., Providence, R. I.

1873. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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.	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 676 Broadway, 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 P.O. Box 563, Princeton, Ind.	I.	Superintendent, Louisville, Evansville, & St. Louis R. R.; President, Pittsburgh & Mansfield R. R. (Pittsburgh, Pa.).
AECHIRAU HONGMA 2 Kabutocho Nihonbashiku, Tokio, Japan.	I.	President, Sobu Railroad Co.; Consulting Engineer, Ho Hokkaido Coal Mine and Ry. Co., Ho kuyetsu Ry. Co., and 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 P. O. Box 240, Pasadena, Cal.	I.	Instructor in Higher Mathematics and Mechanical Drawing, Throop Polytechnic Institute.
FRANK H. POND 721 Olive St., St. Louis, Mo.	II.	Mechanical Engineer; 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 76 Worth St., New York, N. Y.	I.	Agent for the Nashawannuck Manufacturing Co.
JAMES L. ARNOTT. Manchester, N. H.	Sci. and Lit.	
AMOS J. BOYDEN 413 Walnut St., Philadelphia, Pa.	IV.	Architect.
MOSES D. BURNET Webb City, Mo.	III.	Superintendent "Eastern Coal & 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, H. I.	I.	Chief Assistant in charge of Office of Hawaiian Government Survey.
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 29 Pemberton Sq., 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.) Worcester, Mass.	V.	Professor of Chemistry, Worcester Polytechnic Institute.
J. AUSTIN KNAPP Brockton, Mass.	II.	Manufacturer.
WILFRED LEWIS 5901 Drexel Road, Philadelphia, Pa.	II.	Assistant Engineer, with William Sellers & Co.
SAMUEL J. MIXTER, M.D. 180 Marlborough St., Boston.	VIII.	Physician.
BENJAMIN A. OXNARD Adeline, La.	III.	Sugar Planter.
THOMAS D. PLIMPTON Walpole, Mass.	II.	In Business.
WILLIAM A. PRENTISS, Sci. and Lit. Holyoke, Mass.		Of the Firm of George W. Prentiss & Co., Manufacturers of Wire.

1875. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FRANCIS T. SARGENT . . . 1123 Broadway, New York, N. Y.	II.	Granite Quarrying and Contracting.
WELLAND F. SARGENT . . . 224 Franklin St., Boston.	I.	Manager, Atlantic Refrigerating Co. (Springfield, Mass.).
WILLIAM H. SHOCKLEY . . . Bridgewater, Mass.	III.	Travelling.
JAMES B. STANWOOD . . . Reading Road, Cincinnati, Ohio.	II.	Director, Cincinnati Technical School; of Firm of Houston, Stanwood, & Gamble, Engine Builders.
H. L. J. WARREN Address not known.	III.	
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, Michi- gan Agricultural College; Consulting En- tomologist, 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 En- gineering.
HARRY T. BUTTOLPH 1725 Amherst St., Buffalo, N. Y.	I.	Assistant Chief Engineer, Bureau of Engi- neers.
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 Eco- nomic Geology, Mass. Institute of Tech- nology.
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.

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. . . . 74 Washington St., Flushing, N. Y.	VIII.	Engineer in charge of Survey and Location, 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).
SUMNER HOLLINGSWORTH . . 60 India St., Boston.	II.	President, Hollingsworth & Whitney Co.
SILAS W. HOLMAN Boston, Mass.	VIII.	Professor of Physics, Emeritus, Mass. Institute of Technology.
ALFRED E. HUNT 4916 Wallingford St., Pittsburgh, Pa.	III.	President, The Pittsburgh Reduction Co.; Vice-Chairman and Treasurer, The Pittsburgh Testing Laboratory (Limited). Captain of Artillery, Penn. Vol., Commanding Light Battery "B."
WILLIAM W. JACQUES, Ph.D. 42 Eldridge St., Newton, Mass.	VIII.	
SAMUEL JAMES, JR.	III.	Superintendent, Pennsylvania Smelting Co. Sandy, Utah.
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.	Of the Firm of Paddock, Hodge & Co., Grain Merchants.
WILLIAM E. NICKERSON . . . 56 Pearl St., Boston.	V.	Chemical and Mechanical Expert.
DAVID W. PHIPPS 1607 First Ave., Seattle, Wash.	Phil.	In Business.
CHARLES F. PRICHARD . . . 90 Exchange St., Lynn, Mass.	II.	General Superintendent, Lynn Gas & 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.

1876. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
THEODORE E. SCHWARZ 4 Bank Block, Denver, Colo.	III.	Mining Engineer.
JULIUS H. SUSMANN	III.	Mining Engineer for Canadian Pacific Ry. Montreal, Que.
WALTER D. TOWNSEND	III.	Of the Firm of Townsend & Co. Chemulpo, Korea.
CHARLES N. WAITE	V.	With American Viscose Co. 203 Broadway, New York, N. Y.
HENRY M. WAITT	I.	Bridge Engineer, with Chicago, Burlington, & Quincy R. R. Chicago, Ill.
HENRY B. WOOD	I.	Chief Engineer, Mass. Topographical Sur- vey Commission. Room 138, State House, Boston.

1877.

JOHN ALDEN	V.	Chemist, Pacific Mills. Lawrence, Mass.
CHARLES S. BACHELDER	V.	Chemist, Western Beet Sugar Co. Watsonville, Cal.
GEORGE BARTOL	III.	General Manager, The Otis Steel Co. (Lim- ited). Cleveland, Ohio.
J. WILLIAMS BEAL	IV.	Architect. 55 Kilby St., Boston.
WILLIAM H. BEECHING	II.	Cork Manufacturer. 19 John St., Boston.
G. WALTER CAPEN	IV.	Architect. 85 Water St., Boston.
HENRY H. CARTER	I.	Consulting Engineer. 95 Milk St., Boston.
WILLIAM E. CHAMBERLIN	IV.	Architect. 27 Clinton St., Cambridgeport, Mass.
LINUS FAUNCE	II.	Associate Professor of Drawing, Mass. In- stitute of Technology. Boston, Mass.
CHARLES H. FISHER	II.	Ponkapog P. O., Canton, Mass.
MARTIN GAY	I.	Assistant Engineer, Department of Bridges, New York City. 280 Broadway, New York, N. Y.
JOSEPH P. GRAY	I.	Vice-President, Boston Manufacturers' Mut- ual Fire Insurance Co. 31 Milk St., Boston.
EDMUND GROVER	I.	Civil Engineer and Landscape Gardener. 851 Tremont Bldg., Boston.
RICHARD A. HALE	I.	Principal Assistant Engineer, Essex Water Power Co. Lawrence, Mass.
JOHN E. HARDMAN	III.	Consulting Mining Engineer. Room 3, Windsor Hotel, Montreal, Que.

1877. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HENRY D. HIBBARD . . . 19 Sycamore Ave., Plainfield, N. J.	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.
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. (Cam- bridge St., Charlestown, Mass.).
CECIL H. PEADODY Boston, Mass.	II.	Professor of Marine Engineering and Naval Architecture, Mass. Institute of Tech- nology.
ARTHUR L. PLIMPTON 101 Milk St., Boston.	I.	Civil Engineer, 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 701 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.

1878.— *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JAMES RITCHIE 625 Hickox Bldg., Cleveland, Ohio.	I.	Civil and Consulting Engineer.
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.
PETER SCHWAMB	II.	Professor of Mechanism, Mass. Institute of Technology.
FREDERIC P. SPALDING Boston, Mass.	I.	Assistant Engineer, Engineering Depart- ment, City of Boston.
ISAAC M. STORY 238 Summer St., Somerville, Mass.	I.	Assistant Engineer, New York, New Haven, and Hartford R.R.
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 Man- agers of Massachusetts.
SAMUEL T. BRALEY 41 Park St., Rutland, Vt.	II.	Head Draughtsman, Foreman of Pattern Department, and Mechanical Superintend- ent of Shops, Howe Scale Co.
JOHN W. CABOT Capital Hotel, Johnstown, Pa.	III.	Assistant Superintendent of Blast Furnaces, Cambria Iron Co.
HARRY H. CAMPBELL Steelton, Pa.	III.	Superintendent, Pennsylvania Steel Co.
FREDERICK S. COFFIN 152 Congress St., Boston.	III.	Of the Firm of Stoddard, Haserick, Rich- ards, & 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 Draughtsman.
RAPHAEL M. HOSEA 817 Boston Bldg., Denver, Colo.	I.	Chief Engineer, The Colorado Fuel and Iron Co.

1879. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HORACE J. HOWE Forest Hills, Boston.	I.	Assistant Engineer, New York, New Haven, and Hartford R.R.
FREDERICK B. KNAPP Duxbury, Mass.	I.	Principal, Powder Point School.
FREDERIC H. LANE 49 Leonard St., New York, N. Y.	II.	With the Allen-Lang Co., Commission Merchants.
FREDERIC R. LORING Pottstown, Pa.	VII.	Teacher, Pottstown High School.
WILLIAM W. MACFARLANE 613 E. Fourteenth St., Chester, Pa.	V.	Superintendent, Sharpless Dyewood Ex- tract Co.
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 Eggleston, 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 Cleveland, Ohio.	II.	General Master Car Builder, Lake Shore & Michigan Southern Ry.

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 Mining Exchange Bldg., Denver, Colo.	I.	Mining Engineer and United States Deputy Mineral Surveyor.
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.
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1881. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JOHN H. ALLEN Elizabeth, N. J.	III.	Manager, Mountain Copper Co. (Limited).
AMOS BINNEY, A.B. 53 State St., Boston.	V.	Real Estate Agent.
DAVID S. BISSELL Pittsburgh, Pa.	III.	President, Duquesne Forge Co., Iron and Steel Forgings; also of Chase & Bissell, Chemists (Versailles, Pa.) .
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 4 Peter Parley St., Jamaica Plain, Mass.	III.	
BENJAMIN G. COLLINS Edgartown, Mass.	II.	Surveyor.
HARRY H. CUTLER 76 W. Jackson Boulevard, Chicago, Ill.	II.	General Manager, The Cutler-Hamme 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 26 Gardner St., Chelsea, Mass.	III.	
WALTER J. KOEHLER Broken Hill, N. S. W., Australia.	V.	
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, Cochran Chemical Co.
GEORGE A. MOWER 75 Queen Victoria St., London, England.	II.	General Manager, Sturtevant Engineering Co.
WEBSTER NORRIS 53 Franklin Ave., Brooklyn, N. Y.	III.	Assistant Superintendent, The Gutta Percha and Rubber Manufacturing Co.
EVELYN W. ORDWAY New Orleans, La.	V.	Professor of Chemistry, Newcomb College, Tulane University.

1881. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
THEODORE PARKER 65 City Hall, Boston, Mass.	I.	Engineering Department, City of Boston.
NATHANIEL W. SHED	V.	Assistant Professor of Metallurgy, State State College, Pa.
WILLIAM R. SNEAD 318 W. Chestnut St., Louisville, Ky.	IV.	General Manager, The Snead & Co. Iron Works.
HAROLD E. STEARNS	II.	Superintendent and Treasurer, Dominion Montreal, Que.
EDWARD R. WARREN 319 No. Webber St., Colorado Springs, Colo.	VII.	Civil Engineer.
CHARLES M. WILKES	IV.	Sanitary Engineer.
ARTHUR WINSLOW	III.	General Manager, United States and British 306 Lyceum Bldg., Columbia Mining Co. Kansas City, Mo.

1882.

CLARA P. AMES	V.	Teacher, Mary A. Burnham Classical Northampton, Mass.
THOMAS B. CARSON	II.	Secretary, Bettendorf Metal Wheel Co. 709 Perry St., Davenport, Iowa. (Davenport, Iowa, and Springfield, Ohio).
CARRIE RICE CLARK	V.	P. O. Box 1609, Denver, Colo.
EDWARD F. ELY, A.B.	IV.	Architect, of Firm of Hoppin & Ely. 32 Westminster St., Providence, R. I.
GEORGE FAUNCE, A.B.	III.	Superintendent, Pennsylvania Lead Co. Carnegie, Pa.
CHARLES A. FRENCH, M.D.	III.	Optician. 47 Winter St., Boston.
HOWARD V. FROST, Ph.D.	V.	Chemist, Anglo-American Provision Co., Transit House, and Fowler Brothers, Limited. Union Stock Yards, Chicago, Ill.
EDW. G. GARDINER, Ph.D.	VII.	131 Mt. Vernon St., Boston.
FRANCIS P. HALL	V.	Stock Raising. Emporia, Kans.
GEORGE L. HEINS	IV.	Architect, of Firm of Heins & La Farge. Temple Court, New York, N. Y.
CHARLES D. JENKINS	V.	State Inspector of Gas and Gas Meters. 32 Hawley St., Boston.
JAMES W. JOHNSON	I.	City Engineer. Riverside, Cal.

1882. — Continued.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JOHN F. LOW 51 Portland St., Boston.	V.	Treasurer, The Low Art Tile Co.
HARRY G. MANNING 119 Summer St., Fitchburg, Mass.	II.	Mechanical Engineer, Simonds Manufacturing Co.
GEORGE W. MANSFIELD . . . Melrose Highlands, Mass.	III.	
FRANK C. MORRISON Address unknown.	I.	
JAMES P. MUNROE 179 Devonshire St., Boston.	III.	Treasurer of the Munroe Felt and Paper Co., Manufacturers of Paper.
HENRY F. ROSS 178 Devonshire St., Boston.	III.	With The Boston Thread and Twine Co.
JOHN H. ROSS 178 Devonshire St., Boston.	Sci. and Lit.	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 . . . 11 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 of Accounts, Trustee the Watauga Association.
FRANK E. DAVIS Worcester, Mass.	II.	With Washburn & Moen Manufacturing 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. (77 Oliver St., Boston).
WILLIAM B. FULLER 57 Lumber District, Albany, N. Y.	I.	Resident Engineer, with Allen Hazen; Consulting Engineer (220 Broadway, New York, N. Y.).
HORACE B. GALE Natick, Mass.	II.	Consulting Mechanical and Electrical En- gineer.
GEORGE H. GUSTIN Elizabeth, N. J.	III.	With Bowker Fertilizer Co.

1893. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FREDERIC O. HARRIMAN . . . Jaltipan, Mexico.	I.	Civil Engineer and Contractor; Land Agent.
JAMES H. HUTCHINGS . . . 1672 Washington 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.	Superintendent, Somerset Fibre Co.
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, Pa.	III.	Assistant Superintendent, 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 11½ Railroad St., Cortland, N. Y.	V.	Technical Chemist.

1894.

CHARLES B. APPLETON . . . Aspinwall Ave., 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 Spokane, Wash.	III.	Lawyer.
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. Chicago, Ill.	I.	Engineer, Track and Electric Department, West Chicago Street Ry.
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.

1884. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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 Lorain, Ohio.	III.	With Lorain Steel Co.; Superintendent The Lorain Street Ry. Co.
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, Capt. 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 Arkansas Valley Smelting Works.
CHARLES O. PRESCOTT . . . Milton, Mass.	V.	Teacher of German and Natural Science, Milton Academy.
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.; Assistant Treasurer, New London Gas & Electric Co.; Vice-President, Monarch Mfg. Co.
WILLIAM J. RICH, LL.B. . . 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.	Assistant General Superintendent, Colorado Fuel and Iron Co.
THEODORE W. ROBINSON . . Pueblo, Colo.	III.	General Superintendent, Colorado Fuel and Iron 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. . . . 47 Terrace Ave., 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 Newton Centre, Mass.	V.	
HARRY W. TYLER, Ph.D. . . Boston, Mass.	V.	Professor of Mathematics and Secretary, Mass. Institute of Technology.

1884. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
NAHUM WARD 49 An der Alster, Hamburg, Germany.	V.	Student.
WILLIAM M. WHITNEY Winchendon, Mass.	II.	With Baxter D. Whitney, Manufacturer of Wood-working Machinery.
FRANCIS C. WILLIAMS, JR. Sheridan, Wyo.	I.	U. S. Deputy Mineral Surveyor.

1885.

CHARLES R. ALLEN New Bedford, Mass.	V.	Science Teacher, New Bedford High School.
DAVID BAKER 5748 Kimbark Ave., Chicago, Ill.	III.	Superintendent of Furnaces, South Works, Illinois Steel Co.
EDWARD R. BENTON, Ph.D. 27 Doane St., Boston.	IV.	Architect.
MARCELLA O. BOVERT 8 Pleischerglasisstr, Würzburg, Bavaria.	IX.	
HEYWOOD COCHRAN 421 Park Ave., Johnstown, Pa.	II.	With The Johnson 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 Cusihuiriac, Chic, Chihuahua, Mexico.	III.	Superintendent, Helena Mining Co.
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 Metropolitan Opera House Bldg., St. Paul, Minn.	II.	Master Mechanic, 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.
ALYNE L. MERRILL Boston, Mass.	II.	Assistant Professor of Mechanism, Mass. Institute of Technology.
EVERETT MORSS 79 Cornhill, Boston.	III.	With Morss & Whyte; Vice-President, Sim- plex Electrical Co.

1885.— *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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.
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 . . . Broad & Chestnut Sts., Philadelphia, Pa.	II.	Engineer, Batcheller Pneumatic Tube Co.
WILLIAM L. BRAINERD 227 Broadway, Paducah, Ky.	IV.	Architect.
JOHN K. BURGESS 87 Milk St., Boston.	II.	Engineer.
CHARLES L. BURLINGHAM . . . 207 So. Canal St., Chicago, Ill.	III.	With McDermid Manufacturing Co.
WM. H. CHADBOURN, JR. Newbern, N. C.	III.	United States Assistant Engineer, River and Harbor Improvements.
WILLIAM L. CHURCH 140 Essex St., Boston.	VI.	
HARRY E. CLIFFORD Boston, Mass.	VI.	Assistant Professor of Theoretical Physics, Mass. Institute of Technology.

1886.— *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
LOUIS R. COBB 101 Milk St., Boston.	I.	Assistant Engineer Elevated Lines, Boston Elevated Ry. Co.
LOUIS F. CUTTER 91 Church St., 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.	Division Superintendent, Philadelphia & Reading Ry. Co.
JAMES C. DUFF 284 Pearl St., New York, N. Y.	V.	Technical Editor and Chief Chemist, "The National Provisioner."
GEORGE W. FARMER 2417 Burr St., Fort Madison, Iowa.	II.	Roundhouse Foreman, Atchison, Topeka, & Santa Fé Ry.
FRED E. FOSS, A.M. State College, Pa.	I.	Professor of Civil Engineering, Pennsylvania State College.
ALEXANDER S. GARFIELD 10 Rue de Londres, Paris, France.	II.	Consulting Engineer, Compagnie d'Electricité Thomson-Houston de la Méditerranée; Compagnie française pour l'exploitation des procédés Thomson-Houston.
D. LEWIS K. HATHAWAY East Cambridge, Mass.	II.	With The George F. Blake Manufacturing Co.
EDWARD E. HIGGINS 26 Cortlandt St., New York, N. Y.	VI.	Editor "Street Railway Journal."
WILLIAM J. HOPKINS Philadelphia, Pa.	VI.	Professor of Physics, Drexel Institute.
WALTER RENTON INGALLS 817 Postal Telegraph Bldg., New York, N. Y.	III.	Mining Engineer and Metallurgist.
WILLIAM F. JORDAN Rochester, N. Y.	I.	Assistant Engineer, Buffalo, Rochester, & Pittsburgh R. R.
C. BELLE KENNEY Wollaston, Mass.	V.	Teacher of Science, Quincy Mansion School.
ALBERT E. LEACH 501 State House, Boston.	II.	Analyst of Food and Drugs, Mass. State Board of Health.
FRANK L. LOCKE Malden, Mass.	I.	Assistant Superintendent, Boston Rubber Shoe Co.
WILSON H. LOW South Omaha, Neb.	V.	Manager and Chemist, Soap and Glycerine Departments, Cudahy Packing Co.
ELGOOD C. LUFKIN Snow and Roesser Aves., Buffalo, N. Y.	II.	Manager, The Snow Steam Pump Works.
JAMES P. LYNDE Address not known.	IX.	

1886. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ALEX. RICE MCKIM, A.M. 106 E. Twenty-third St., New York, N. Y.	I.	Consulting Architectural Engineer.
HARRY B. MERRIAM 713 Wabash Ave., Kansas City, Mo.	I.	Roadmaster, Kansas City, Fort Scott, & Memphis R. R.
HENRY P. MERRIAM 120 Liberty St., New York, N. Y.	VI.	Engineer, Sims-Dudley Defence Co.
EDWARD F. MILLER Boston, Mass.	II.	Assistant Professor of Steam Engineering, Mass. Institute of Technology.
EDGAR H. MUMFORD Elizabeth, N. J.	II.	Secretary and Treasurer, The Tabor Manu- facturing Co.
ARTHUR A. NOYES, S.M., Ph.D. V. Boston, Mass.	V.	Associate Professor of Organic Chemistry, Mass. Institute of Technology.
EDWARD L. PIERCE Syracuse, N. Y.	II.	With Solvay Process Co.
CHARLES F. RICHARDSON . . 53 Devonshire St., Boston.	II.	Lawyer, Patent Business.
ARTHUR G. ROBBINS Boston, Mass.	I.	Assistant Professor of Highway Engi- neering, Mass. Institute of Technol- ogy.
L. KIMBALL RUSSELL Boston, Mass.	V.	Instructor in General Chemistry, Mass. Institute of Technology.
J. FRANK SEAVEY 1 Merrill Ave., Roslindale, Mass.	II.	Representing The Webb Granite and Con- struction Co., of Worcester, Mass.
WILLIAM E. SHEPARD Schenectady, N. Y.	VI.	With General Electric Co.
JAMES E. SIMPSON 163 Haverhill St., Lawrence, Mass.	III.	With J. R. Simpson & Co.
THEODORE STEBBINS Schenectady, N. Y.	VI.	Engineer, Committee on Local Companies, General Electric Co.
AUGUSTUS B. STOUGHTON . . 419 Chestnut St., Philadelphia, Pa.	II.	Attorney-at-law, Patent Business.
WILLIAM M. TAYLOR 740 W. Washington Ave., Indianapolis, Ind.	II.	President, Chandler & Taylor Co.
CHARLES D. TURNBULL 114 Bedford St., Boston.	II.	Manager of an Estate.
DAVID VAN ALSTINE Cloverport, Ky.	II.	Master Mechanic, Louisville, Henderson, & St. Louis Ry.

1886. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
MAURICE A. VIELÉ, B.S. . . . Katonah, N. Y.	II.	Assistant Engineer, Croton Aqueduct Commission.
C. MORRIS WILDER Neave Bldg., Cincinnati, Ohio.	VI.	Manufacturers' Agent.
ELWOOD J. WILSON Room 202, 27 Williams St., New York, N. Y.	III.	Eastern Agent, Le Roi Mining and Smelting Co.
CHARLES H. WOODBURY . . . 192 Boylston St., Boston.	II.	Artist.
VERNOR F. WORCESTER . . . Rutland, Vt.	II.	Draughtsman, Howe Scale Co.
FRED R. YOUNG 220 Devonshire St., Boston.	III.	Jobber and Importer.

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GEORGE A. ARMINGTON . . . 980 Hamilton St., Cleveland, Ohio.	II.	Mechanical Engineer, Cleveland Punch and Shear Works Co.
SIDNEY R. BARTLETT, D.M.D. . . . Box 637, Colorado Springs, Colo.	VII.	Manager, Garfield Consolidated Mines, Cripple Creek.
CHARLES A. BARTON Cleveland, Ohio.	II.	With Walker & Co.
WILLIAM B. BLAKE Fourteenth and Main Sts., Louisville, Ky.	I.	Engineer, Maintenance of Way, Louisville Division, Pennsylvania Lines West of Pittsburgh; Engineer, Louisville Bridge Co.
WALTER C. BRACE. Ouray, Colo.	III.	Metallurgist and Mining Engineer.
DWIGHT BRAINERD 103 St. François Xavier, Montreal, Que.	IX.	Treasurer, Hamilton Powder Co.
HENRY B. BRAINERD 103 St. François Xavier, Montreal, Que.	IX.	Treasurer, Dominion Cartridge Co. (Limited).
HENRY F. BRYANT Brookline, Mass.	I.	Of Firm of French & Bryant, Civil Engineers.
FRANK GELETT BURGESS . . . 80 Washington Sq., New York, N. Y.	I.	Author and Editor.
JULIAN A. CAMERON Forge Village, Mass.	II.	Of Abbot & Co., Worsted Manufacturers.
FRANK D. CARNEY Hollmannstr. 32. Berlin, Germany.	III.	With Ludwig Loewe & Co.

1887. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WINTHROP COLE	II.	With the Superintending Constructor, U. S. N., at Newport News, Va.
HENRY J. CONANT	II.	Manager, Boston Office, Westinghouse, Church, Kerr, & Co., Engineers (Incorporated).
HELEN COOLEY, M.D.	V.	Physician, Assistant Surgeon, N. Y. Ophthalmic Hospital.
110 W. Eighty-fourth St., New York, N. Y.		
RALPH E. CURTIS	II.	Assistant to Constructing Engineer, Edison Electric Illuminating Co. of New York.
53 Duane St., New York, N. Y.		
WILLIAM C. CUSHING, M.A.	I.	Engineer of Maintenance of Way, Pittsburgh Division, Pennsylvania Lines West of Pittsburgh.
2 Carson St., Pittsburgh, Pa.		
SARAH L. DAY, A.M.	V.	
280 Newbury St., Boston.		
WALTER C. FISH	VI.	Manager, Lynn Works, General Electric Co.
King's Beach Terrace, Lynn, Mass.		
JOHN M. FOX	VI.	Electrical Engineer and Contractor.
66 Union St., Portland, Me.		
JOSEPH B. GAY	IV.	Of Firm of Gay & Proctor, Architects.
12 Pearl St., Boston.		
WALTER H. GLEASON	V.	In Real Estate and Mortgage Business.
Room 916, 60 State St., Boston.		
WILLIAM S. HADAWAY, JR.	VIII.	Consulting and Constructing Electric and Heating Engineer.
107 Liberty St., New York, N. Y.		
WILLIAM O. HILDRETH	II.	Mechanical Engineer, Stanley Manufacturing Co.
Lawrence, Mass.		
JAMES C. HOBART	II.	Secretary and Manager, Triumph Electric Co. and Triumph Ice Machine Co.
610 Baymiller St., Cincinnati, Ohio.		
OREN S. HUSSEY	II.	Of Firm of Gregg & Son, Manufacturers of Doors, Windows, Blinds, etc.
Nashua, N. H.		
EDWARD A. JONES	II.	With E. D. Jones & Sons' Co., Architects and Manufacturers of Paper Machinery.
Pittsfield, Mass.		
CHARLES B. KENDALL	V.	Superintendent, Passaic Print Works.
Passaic, N. J.		
WILLIAM D. LIVERMORE	V.	Chemist, Washington Mills.
Lawrence, Mass.		
PHILIP A. MOSMAN	III.	With Colorado Smelting Co.
Pueblo, Colo.		
SAMUEL P. MULLIKEN, Ph.D.	V.	Instructor in Organic Chemistry, Mass. Institute of Technology.
Newburyport, Mass.		

1887. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
GEORGE L. NORRIS Burnham, Pa.	III.	Chemist, Standard Steel Works.
GEO. W. PATTERSON, JR., M.A. . . . 814 So. University Ave., Ann Arbor, Mich.	VI.	Junior Professor of Physics, University of Michigan.
HERBERT A. RICHARDSON P. O. Box 373, Lowell, Mass.	V.	Lecturer.
FRANZ H. SCHWARZ 4 Pearl St., Lawrence, Mass.	II.	Mechanical Engineer, Pacific Mills.
HENRY D. SEARS 7 Arch St., Boston.	VI.	With C. S. Knowles, Electric Railway and Lighting Supplies.
FRANK E. SHEPARD 924 Washington Ave., Denver, Colo.	II.	Vice-President and Superintendent, Denver Engineering Works.
CHARLES P. SMITH 433 Ella St., Wilkensburg, Pa.	II.	Draughtsman, Westinghouse Electric and Manufacturing Co.
HARRY E. SMITH Milwaukee, Wis.	V.	Chemist, Chicago, Milwaukee, & St. Paul R. R.
J. WALDO SMITH 109 Washington St., Paterson, N. J.	I.	Engineer and Superintendent, Passaic Water Co.
HENRY SOUTHER Hartford, Conn.	III.	Chief of Department of Tests, Pope Manufacturing Co.
HOLLON C. SPAULDING 79 Pearl St., Boston.	II.	Contracting Engineer, Siemens & Halske Electric Co., and H. W. Johns Manufacturing Co.
TIMOTHY W. SPRAGUE 4 State St., Boston, and 99 Cedar St., New York, N. Y.	III.	Consulting Engineer, Mining Installations and Power Transmission.
HENRY F. STODDARD Beverly, N. J.	II.	Superintendent, Penn Cordage Works.
GILES TAINTOR 125 Milk St., Boston.	VI.	Superintendent, Right of Way Department, New England Telephone and Telegraph Co.
EDWARD G. THOMAS 4 State St., Boston.	II.	Mechanical Engineer.
FREDERICK THOMPSON 1322 New York Ave., Washington, D. C.	I.	Civil Engineer, U. S. Navy.
WALTER S. THOMPSON Cleveland, Ohio.	I.	Assistant Engineer, New York, Chicago, & St. Louis R. R.
GREENLEAF R. TUCKER Boston, Mass.	V.	Professor of Chemistry, Boston Dental College; Chemist, Boston City Hospital.
ALEXANDER H. TWOMBLY Yarmouthville, Me.	II.	Superintendent, Forest Paper Co. (S. D. Warren & Co., Proprietors).

1887. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
RALPH VOSE Hyde Park, Mass.	VI.	Electrician.
WALTER G. WHITMORE 44 Broad St., New York, N. Y.	VI.	Local Engineer, New York Office, General Electric Co.
GRANGER WHITNEY South Chicago, Ill.	III.	With Illinois Steel Co.
WILLIAM A. WHITNEY Sunapee, N. H.	I.	Manager, Emerson Paper Co.
HERBERT A. WILCOX Aspen, Colo.	III.	Mining Engineer.
SIDNEY WILLIAMS Dunmore, Pa.	I.	Comptroller, Pennsylvania Coal Co., and Erie & Wyoming Valley R. R.

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HENRY D. BATES 13 Exchange St., Boston.	IV.	Managing Editor, "The Architectural Review."
HENRY FORBES BIGELOW 3 Hamilton Pl., Boston.	IV.	Architect.
HERBERT S. BIRD 65 Ninth St., Brooklyn, N. Y.	V.	Chemist, New York Tartar Co.
WINSLOW BLANCHARD 303 Congress St., Boston.	II.	Treasurer, Blanchard Machine Co.
ARTHUR T. BRADLEE 78 Chauncy St., Boston.	II.	With Harding, Whitman, & Co.
BENJAMIN G. BUTTOLPH 819 Banigan Bldg., Providence, R. I.	II.	Engineer, State, Enterprise, and American Mutual Fire Insurance Cos.
ELBRIDGE S. CARLETON 44 Front St., Worcester, Mass.	IV.	Architect, of Firm of Cutting, Carlton, & Cutting.
DAVID A. CENTER, A.B. 417 Madison Ave., New York, N. Y.	VI.	Principal, Woodbridge School.
STEPHEN CHILDS West Newton, Mass.	I.	Deputy Street Commissioner; Superintendent of Sewer Division, City of Newton.
GEORGE E. CLAFLIN 146 Westminster St., Providence, R. I.	VI.	Electrical Engineer.
SYLVANUS H. COBB 118 Summit St., Hyde Park, Mass.	VI.	Engineer (Chicago, Ill.).
RUSSELL H. COLBY 15 So. May St., Aurora, Ill.	V.	Superintendent, Chicago & Aurora Smelting and Refining Co.
FRED B. COLE 53 State St., Boston.	II.	With Dean & Main, Mill and Mechanical Engineers.
BERTRAND R. T. COLLINS 1 W. Harrison St., Chicago, Ill.	II.	Engineer of Tests, Chicago Edison Co. (Harrison St. Power House).

1888. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
EDWARD COLLINS, JR. . . . Patent Office, Washington, D. C.	VI.	Examiner.
ARTHUR J. CONNER 24 India Sq., Boston.	V.	Dealer in Physicians' Supplies.
RICHARD DEVENS 70 Kilby St., Boston.	II.	Engineer, Weber Railway Joint Manufacturing Co.
EDGAR F. DUTTON 1294 Centre St., Newton Cent., Mass.	VI.	With General Electric Co., at the Newport News Shipbuilding and Dry Dock Co. (Newport News, Va.).
HENRY F. EASTMAN 327 E. Merrimack St., Lowell, Mass.	II.	Draughtsman, Fifield Tool Co.
RICHARD EPPES, JR. . . . City Point, Va.	II.	Manager, Appomattox Plantations.
LOUIS A. FERGUSON 139 Adams St., Chicago, Ill.	VI.	General Superintendent, Chicago Edison Co.; General Superintendent, Commonwealth Electric Co.
BERTRAM P. FLINT 91 Liberty St., New York, N. Y.	II.	With The George F. Blake Manufacturing Co.
THEODORE A. FOQUE Minneapolis, Minn.	II.	Assistant Mechanical Superintendent, Minneapolis, St. Paul, & Sault Ste. Marie R. R.
STEJIRO FUKUZAWA 2 Second St., Mita, Tokio, Japan.	I.	With the "Jiji Shimpo."
J. EDWARD FULLER, JR. . . . 452 Main St., Worcester, Mass.	IV.	General Contractor.
WILLIAM H. GERRISH Washington, D. C.	II.	Mechanical Draughtsman, Ordnance Department, U. S. A.
HAROLD G. GROSS 806 H St., Eureka, Cal.	VII.	Physician.
GEORGE W. HAMBLET 506 Lowell St., Lawrence, Mass.	II.	
WILLIAM L. HARRIS Gerard Lake Ranch, Towner, N. Dak.	VII.	Cattle Raising.
GEORGE L. HARVEY 115 Monroe St., Chicago, Ill.	II.	Architect and Mechanical Engineer.
CHARLES F. HASTINGS 647 Trenton Ave., Sta. D, Pittsburgh, Pa.	III.	With Open Hearth Department, Black Diamond Steel Works.
SAVORY C. HATHAWAY, JR. . . . 251 Hawthorn St., New Bedford, Mass.	VI.	
GEORGE L. HEATH South Lake Linden, Mich.	V.	Chemist, Calumet & Hecla Smelting Works.

1888. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
EDWARD W. HERRICK . . . 77 Houston St., New York, N. Y.	II.	Consulting Engineer, with Baker, Smith, & Co.
EDWARD C. HOLTON . . . 100 Canal St., Cleveland, Ohio.	V.	Chemist, Sherwin-Williams Co.
HENRY J. HORN, JR. . . .	I.	Superintendent, Montana Division, Northern Pacific Ry.
FRANK M. JAMES	II.	
149 No. Broadway, Haverhill, Mass.		
ARTHUR WINSLOW JONES . .	VI.	Representing General Electric Co. in Aus- tralia.
P. O. Box 3507, Boston.		
EDWIN O. JORDAN, Ph.D. .	VII.	Assistant Professor of Bacteriology, Uni- versity of Chicago.
Chicago, Ill.		
WILLIAM T. KEOUGH . . .	II.	Consulting Engineer.
234 Saratoga St., East Boston.		
GEORGE S. LEE	I.	Of Firm of Blake, Scott, & Lee, Wholesale Fruit & Produce.
57 Chatham St., Boston.		
JAMES W. LOVELAND . . .	V.	Superintendent, Curtis Davis & Co., Soap Manufacturers.
184 Broadway, Cambridgeport, Mass.		
ARTHUR S. MANN	II.	
805 Cable Bldg., New York, N. Y.		
CHARLES G. MERRELL . . .	V.	Vice-President and Superintendent, The W. S. Merrell Chemical Co.
P. O. Box 786, Cincinnati, Ohio.		
FRANK A. MOORE	IV.	Architect.
123 E. Twenty-third St., New York, N. Y.		
HENRY C. MOORE	II.	Assistant Engineer, Tubular Dispatch Co.
104 Tribune Bldg., New York, N. Y.		
ADDISON D. NICKERSON . .	I.	Engineer to Sewer Commissioners.
Hyde Park, Mass.		
EDWIN R. PEARSON . . .	VI.	Engineer, Alternating Current Department, General Electric Co.
Schenectady, N. Y.		
CHARLES A. PETERSON, A.B.	VI.	
Cambridge, Mass.		
HERBERT F. PIERCE . . .	I.	Assistant Engineer, City Engineer's Office, City of Newton.
West Newton, Mass.		
GEORGE B. POOL	VI.	Book-keeper, Pool Bros.
20 So. Market St., Boston.		
JOHN STITES RAY	II.	With El Paso Blue Print Co.
228 E. Pike's Peak Ave., Colorado Springs, Colo.		

1888. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
RUSSELL ROBB. 4 Post-Office Sq., Boston.	VI.	With Stone & Webster, Electrical Experts and Engineers.
ODIN B. ROBERTS, A.M., LL.B.II. 95 Milk St., Boston.	II.	Lawyer.
FRED. H. SAFFORD, A.M., Ph.D.VI. 22 Sacramento Pl., Cambridge, Mass.	VI.	Instructor in Mathematics, Harvard University.
ALFRED H. SAWYER 34 Oliver St., Boston.	II.	General Agent, B. F. Sturtevant Co. (Jamaica Plain, Mass.).
FREDERICK L. SAVER 91 Liberty St., New York, N. Y.	II.	With The George F. Blake Manufacturing Co.
WALTER K. SHAW 70 Kilby St., Boston.	II.	Of Firm of E. A. Shaw & Co., Cotton Brokers.
ANNIE WARE SABINE SIEBERT, A.M. 1332 Highland St., Columbus, Ohio.	VIII.	
IVAR L. SJÖSTRÖM Central Bldg., Lawrence, Mass.	I.	Civil Engineer.
CLARENCE W. SMITH, A.B. 120 Milk St., Boston.	V.	Patent Boiler Setting.
EDWARD M. SMITH Union Station, Boston, Mass.	II.	Assistant Engineer, Boston & Maine R. R.
FRANK O. STETSON 1802 R St., Washington, D. C.	V.	Clerk, U. S. Weather Bureau.
CHARLES A. STONE. 4 Post-Office Sq., Boston.	VI.	Electrical Expert and Engineer, of Firm of Stone & Webster.
JOHN M. SULLY Chickamauga, Ga.	III.	Chief Engineer in charge of Mines, Chickamauga Coal and Coke Co.; Superintendent, Chattanooga & Durham R. R.
MARION TALBOT, A.M. Chicago, Ill.	IX.	Dean of Women and Associate Professor of Sanitary Science, University of Chicago.
WALTER I. TOWNE 125 Milk St., Boston.	VI.	Assistant Electrical Engineer, New England Telephone and Telegraph Co.
CLARENCE B. VORCE 80 Pearl St., Hartford, Conn.	I.	Civil and Consulting Engineer.
A. SYDNEY WARREN Buffalo, N. Y.	III.	With Buffalo Smelting Works.
EDWIN S. WEBSTER 4 Post-Office Sq., Boston.	VI.	Electrical Expert and Engineer, of Firm of Stone & Webster.
CHARLES L. WEIL Agricultural College, Mich.	II.	Professor of Mechanical Engineering, Michigan State Agricultural College.
ARTHUR S. WILLIAMS 41 Hyde St., Newton Highlands, Mass.	VI.	

1888. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JOHN E. YOUNG 109 First St., Portland, Oreg.	I.	Of Garratt & Young, Manufacturers' Agents.

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GEORGE M. BASFORD 140 Nassau St., New York, N. Y.	II.	Editor, "American Engineer."
EDWARD J. BEACH 1183 Locust St., Dubuque, Iowa.	V.	Soap Manufacturer, of Firm of James Beach & Sons.
ARTHUR B. BELLOWS 116 Water St., Pittsburgh, Pa.	II.	General Manager and Member of the Firm, Pittsburgh Testing Laboratory, Limited.
WILLARD G. BIXBY 194 Hester St., New York, N. Y.	II.	Treasurer, S. M. Bixby & Co., Manufacturers of Shoe Blackings.
ZENAS W. BLISS P. O. Box 1545, Providence, R. I.	II.	In Real Estate Business.
CHARLES N. BORDEN Fall River, Mass.	II.	With Richard Borden Manufacturing Co.
FREDERICK W. BRADLEY 206 Equitable Bldg., Boston.	VI.	In Business, Lubricating Oils.
FREDERICK H. BRAINERD Kansas City, Mo.	III.	With Swift & Co.
LUTHER W. BRIDGES 95 Union Ave., So. Framingham, Mass.	II	
J. NORMAN BULKLEY P. O. Box 1082, Johannesburg, South African Republic.	VI.	Engineer, United Engineering Co. (Lim- ited).
FRANK H. CILLEY Care H. E. Cilley, 118 South St., Boston.	I.	
FRED CRABTREE McKeesport, Pa.	V.	Chemist, Monongahela Furnaces.
CHARLES H. CROMWELL Baltimore, Md.	II.	Of Cromwell Bros., Brick Manufacturers.
ROLAND N. CUTTER City Hall, Boston.	I.	In Engineering Department, City of Boston.
FRANK L. DAME Tacoma, Wash.	VI.	General Superintendent, Tacoma Railways Co.
WILLIAM S. DAVENPORT Sternwartenstr. 75, Leipsic, Germany.	V.	Student, University of Leipsic.
ARTHUR L. DAVIS Essex Junction, Vt.	II.	

1889.—Continued.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CHARLES B. DODGE 257 Washington St., Boston.	IX.	In Real Estate Business.
NATHAN DURFEE 78 Bedford St., Fall River, Mass.	II.	Broker. (Cotton and Cloth.)
HARRISON G. DYAR, Ph.D. Washington, D. C.	V.	In U. S. National Museum.
J. PARKER B. FISKE 164 Devonshire St., Boston.	VI.	Of Fiske, Homes, & Co., Architectural Clay Products and Building Materials.
ALFRED W. FRENCH Gold St., Brooklyn, N. Y.	I.	Assistant Superintendent, Atlantic Works of The National Lead Co.
EDWARD V. FRENCH 31 Milk St., Boston.	II.	Inspector, Associated Factory Mutual Fire Insurance Cos.
HOLLIS FRENCH 3 Hamilton Pl., Boston.	VI.	Consulting Engineer.
EARL W. GANNETT 504 Brown Bldg., Omaha, Neb.	VI.	In Business, Real Estate and Farm Loans.
JAMES P. GILBERT Warren, Ohio.	V.	General Superintendent, New York & Ohio Co., Manufacturers of Incandescent Lamps, etc.
BENJAMIN W. GUPPY Union Station, Boston.	I.	Assistant Bridge Engineer, Boston & Maine R. R.
HENRY M. HOBART 83 Cannon St., E.C., London, England.	VI.	With British Thomson-Houston Co. (Lim- ited).
FRANKLIN W. HOBBS 78 Chauncy St., Boston.	II.	Assistant Treasurer, Arlington Mills.
GEORGE U. G. HOLMAN Oak Lane, Station 24, Philadelphia, Pa.	VI.	Secretary, Treasurer, and Manager, Chel- tenham Electric Light, Heat, and Power Co.
RICHARD HOOKER 89 Vandergrift Bldg., Pittsburgh, Pa.	IV.	With Alden & Harlow, Architects.
FREDERICK L. HOPKINS Providence, R. I.	V.	Night Editor, "Providence Journal."
HARRY H. HUNT Room 808, 60 State St., Boston.	VI.	Electrical Engineer.
EDWARD S. HUTCHINS Bath, Me.	II.	Chief Draughtsman, Engineering Depart- ment, Bath Iron Works.
LEWIS E. JOHNSON Steelton, Pa.	II.	Engineer, Bridge and Construction Depart- ment, Pennsylvania Steel Co.
WILLIAM S. JOHNSON State House, Boston.	I.	Assistant Engineer, Mass. State Board of Health.
WALTER H. KILHAM 120 Tremont St., Boston.	IV.	Architect.

1889. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ARTHUR D. KINSMAN . . . Ipswich, Mass.	VIII.	Farming.
L. HENRY KUNHARDT . . . 31 Milk St., Boston.	II.	Superintendent of Plan Department and Chief Clerk of Inspection Department, Associated Factory Mutual Fire Insurance Cos.
GEORGE B. LAUDER . . . Concord, N. H.	VI.	Receiver of Concord Land and Water Power Co.
FRANK A. LAWS Boston, Mass.	VI.	Assistant Professor of Electrical Measurement, Mass. Institute of Technology.
WILLIAM W. LEWIS 20 Beacon St., Boston.	II.	Assistant Engineer, Boston Transit Commission.
JOHN W. LINZEE, JR., A.B. 206 Mass. Ave., Boston.	I.	Assistant, Boston Elevated Railway Co.
HARRISON LORING, JR. . . . 43 India St., Boston.	II.	Of Firm of R. S. Brine & Co., Truckmen.
SAMUEL H. MILDRAH 125 Milk St., Boston.	I.	With American Bell Telephone Co.
WILLIAM E. MOTT Ithaca, N. Y.	I.	Instructor in Civil Engineering, Cornell University.
CLAYTON W. PIKE 711 Reading Terminal Bldg., Philadelphia, Pa.	VI.	Electrical Engineer, The Falkenau Engineering Co. (Limited).
CHARLES W. POWER Pittsfield, Mass.	VI.	With D. M. Collins & Co., Berkshire Knitting Mills.
FRED W. RANNO P. O. Box 646, Bedford, Ind.	I.	Assistant Engineer, Southern Indiana Ry.
GEORGE L. RICHARDSON . . . San Rafael, Cal.	I.	City Engineer and County Surveyor.
GEORGE W. ROUNDS Roslindale, Mass.	VI.	Superintendent, West Roxbury & Roslindale Street Ry. Co.
FRANK E. SANBORN Columbus, Ohio.	II.	Director, Department of Industrial Arts, Ohio State University.
ALBERT SAUVEUR 446 Tremont St., Boston.	III.	Metallurgist and Chemist; Manager, Boston Testing Laboratories.
EDWARD V. SHEPARD Washington, D. C.	I.	Chief Clerk, U. S. Patent Office.
WILLIAM G. SNOW 31 Union St., Boston.	II.	With Walker & Pratt Manufacturing Co., Heating, Ventilating, and Cooking Apparatus.
DELIA STICKNEY 10 Cleveland St., Cambridge, Mass.	V.	Instructor in Chemistry, Cambridge English High School.
RALPH SWEETLAND 55 Kilby St., Boston.	II.	With New England Insurance Exchange.

1889. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SANFORD E. THOMPSON . . . 63 Hartford St., Newton Highlands, Mass.	I.	Civil Engineer.
FRANK H. THORP, Ph.D. . . . Boston, Mass.	V.	Instructor in Industrial Chemistry, Mass. Institute of Technology.
WILLIAM B. THURBER, S.M. . . . Dorchester, Mass.	IX.	With Walter Baker & Co. (Limited).
ARTHUR E. TRUESDELL 209 Market St., Newark, N. J.	VI.	With People's Light and Power Co.
WILLIAM W. UNDERHILL 43 Milk St., Boston.	II.	With Fuller & Warren Warming and Ventilating Co.
CHARLES H. WARNER 11 Broadway, New York, N. Y.	VI.	Consulting and Supervising Electrical En- gineer.
GEORGE C. WHIPPLE Flatbush Ave. & Eastern Parkway, Brooklyn, N. Y.	I.	Biologis and Director, Mt. Prospect Labo- ratory, Brooklyn Water Department.
JASPER WHITING 1059 The Rookery, Chicago, Ill.	III.	Manager, Cement and Brick Department, Illinois Steel Co.
FRANK P. WHITNEY 125 Milk St., Boston.	VI.	With New England Telephone and Tele- graph Co.
ROBERT C. WILLIAMS Ely, Minn.	III.	Engineer, Chandler Iron Co.; also of Williams Brothers, Fruit Growers, Fla.
ARTHUR L. WILLISTON Brooklyn, N. Y.	II.	Director of Department of Science and Technology, Pratt Institute.
VICTOR WINDETT South Chicago, Ill.	II.	With Illinois Steel Co., South Works.
CAROLINE A. WOODMAN, A.M. Lewiston, Me.	VII.	Librarian, Bates College.
WALTER G. WUICHEL 418 W. First St., Dayton, Ohio.	II.	Superintendent, A. A. Simonds & Son, Manufacturers of Knives.

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ARTHUR H. ADAMS 46 Avenue de Breteuil, Paris, France.	II.	With Société de Matériel Téléphonique.
CHARLES H. ALDEN, JR. 1024 Tremont Bldg., Boston.	IV.	Architect.
FRANK W. ATWOOD 98 Commercial St., Boston.	V.	Agent for the Heller & Merz Co., Ameri- can Ultramarine and Globe Aniline Works.
ARTHUR W. AYER Burlington, Vt.	II.	Professor of Mechanical Engineering, Uni- versity of Vermont.
CYRUS C. BABB Washington, D. C.	I.	Assistant Hydrographer, U. S. Geological Survey.

1890.— *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JOSEPH BLACK BAKER . . . 125 Milk St., Boston.	VI.	With American Telephone and Telegraph Co.
HIRAM E. BALDWIN . . . 221 Crawford Road, Cleveland, Ohio.	I.	
SPAULDING BARTLETT . . . Webster, Mass.	V.	Assistant Superintendent, Slater Woollen Co.
JOHN L. BATCHELDER, JR. . . 22 Dorchester Ave., South Boston.	VII.	Of Firm of Batchelder Bros., Coal Merchants.
CHARLES B. BEASOM . . . 31 Milk St., Boston, Mass.	II.	Inspector, Associated Factory Mutual Fire Insurance Cos.
ELIZABETH E. BICKFORD, Ph.D. . . Poughkeepsie, N. Y.	VII.	Associate Professor of Biology, Vassar College.
ADELAIDE SHERMAN BLACKMER . . . 16 Wolcott St., Dorchester, Mass.		
JOHN BALCH BLOOD . . . Equitable Bldg., Boston.	VI.	Of the Firm of Blood & Hale, Consulting and Designing Engineers.
AUSTIN D. BOSS Willimantic, Conn.	II.	
CHARLOTTE A. BRAGG . . . Wellesley, Mass.	V.	Associate Professor of Chemistry, Wellesley College.
EDWARD F. BRAGG . . . 285 Devonshire St., Boston.	II.	President and General Manager, Automatic Rubber Mixer Co.
ERNEST H. BROWNELL, A.B. . . . 107 Westminster St., Providence, R. I.	I.	Civil Engineer.
EDWARD C. BURNHAM, A.B. . . . Providence, R. I.	II.	Associate Professor of Mechanical Engineering, Brown University.
GARY N. CALKINS, Ph.D. . . . New York, N. Y.	IX.	Instructor in Biology, Columbia University; Instructor in Zoölogy, Barnard College.
MORTEN CARLISLE 828-830 W. Sixth St., Cincinnati, Ohio.	VI.	Of Carlisle & Finch Co., Electrical Search Lights and Electrical Apparatus.
CHESTER V. CARLTON . . . Rimouski, Que.	I.	Superintendent, Rimouski Lumber Co.
JAMES A. CARNEY Beardstown, Ill.	V.	Master Mechanic, St. Louis Division, Chicago, Burlington, & Quincy R. R.
GEORGE D. CHAPMAN . . . Fitchburg, Mass.	II.	Mechanical Engineer, Fitchburg Machine Works.
FRANK L. CHASE 1065 Story Ave., Louisville, Ky.	I.	President, The Bell & Coggshall Co.; Bridge Engineer, The Baltimore & Ohio Southwestern Ry.
JAMES CLARK, JR. 313 W. Main St., Louisville, Ky.	VI.	Of Firm of James Clark, Jr., & Co., Electrical Supplies and Manufacturers.

1890. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WILLIAM H. COLLINS . . . Providence, R. I.	V.	With Silver Spring Bleaching and Dyeing Co.
WALTER F. COOK 23 Avon St., Boston.	IX.	With T. D. Cook & Co.
JOHN G. CRANE Seventeenth St. & Ave. C., New York, N. Y.	I.	With Department of Street Cleaning, New York City.
DARRAGH DE LANCEY Rochester, N. Y.	II.	Manager, Kodak Park Works, Eastman Kodak Co.
ALEXANDER J. DELANO 125 Milk St., Boston.	I.	In Engineering Department, American Bell Telephone Co.
JOHN O. DEWOLF 29 Hampshire St., Cambridgeport, Mass.	II.	Assistant Superintendent, Boston Woven Hose and Rubber Co.
FREDERICK H. DODGE 11 Produce Exchange Bldg., Toledo, Ohio.	II.	Of Firm of Merrill, Dodge, & Jackson, General Insurance.
FRANCIS W. DUNBAR 218 LaSalle St., Chicago, Ill.	VI.	Electrical Engineer.
PIERRE S. DU PONT Wilmington, Del.	V.	With E. du Pont, De Nemours, & Co.
EDWIN F. DWELLEY 59 Exchange St., Lynn.	I.	Of Firm of Harris & Dwelley, Civil Engineers.
ELWOOD A. EMERY, B.L. . . . Grinnell, Iowa.	IV.	Director of Vocal Culture, Iowa College.
WILLIAM H. FENN 222 Whiton St., Jersey City, N. J.	I.	Chief Engineer, Hay Foundry and Iron Works (Newark, N. J.).
WILLIAM P. FLINT 4516 Forbes St., Pittsburgh, Pa.	II.	Gas Engine Expert, Westinghouse Machine Co.
SAMUEL D. FLOOD 229 So. Water St., Chicago, Ill.	II.	Vice-President, A. H. Barber & Co., Manufacturers of Ice and Refrigerating Machinery.
GEORGE W. FULLER E. Court & Martin St., Cincinnati, Ohio.	V.	Chief Chemist and Bacteriologist, Commissioners of Water Works.
GEORGE L. GILMORE Lexington, Mass.	II.	With K. M. Gilmore & Co., Middlesex Bleach, Dye, and Print Works (Somerville, Mass.).
JOHN W. GLIDDEN De Kalb, Ill.	II.	Superintendent, De Kalb Electric Co.
HARRY M. GOODWIN, Ph.D. . . Boston, Mass.	VIII.	Assistant Professor of Physics, Mass. Institute of Technology.
FRANK M. GREENLAW Worcester, Mass.	VI.	Teacher, Classical High School.
GEORGE E. HALE Williams Bay, Wis.	VIII.	Director, Yerkes Observatory of the University of Chicago.

1890.—*Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JOHN R. HALL Cheyenne, Wy.	VI.	Electrical Engineer.
PHILIP M. HAMMETT, A.B. Boston, Mass.	II.	Master Mechanic, Boston Shop, Boston & Maine R.R.
CHARLES HAYDEN 87 Milk St., Boston.	IX.	Of Firm of Hayden, Stone, & Co., Bankers.
SOPHIA G. HAYDEN Shirley St., Winthrop Beach, Mass.	IV.	
FRANK HAYES Lamborn Ave. & No. Third St., West Superior, Wis.	II.	Lessee and Manager, Superior Iron Works.
HARRY E. HAYES, A.B. 22 Thames St., New York, N. Y.	VI.	With American Telephone and Telegraph Co.
SCHUYLER HAZARD Third and Smith Sts., Cincinnati, Ohio.	I.	Principal Assistant Engineer, Cleveland, Cincinnati, Chicago, & St. Louis Ry.
FREDERICK S. HOLLIS, Ph.D. 3 Mt. Vernon St., Boston.	V.	With Metropolitan Water Works.
S. ELLSWORTH HORTON Windsor Locks, Conn.	II.	Superintendent, The E. Horton & Son Co., Manufacturers of Horton Chucks.
FRANCIS H. KENDALL Court House, East Cambridge, Mass.	I.	Engineer for Middlesex County Commissioners; Member of Board of Water Commissioners, Belmont, Mass.
HARRY A. KENNICOTT Minneapolis, Minn.	I.	Draughtsman, with Gillette-Herzog Manufacturing Co.
FRANKLIN KNIGHT Colorado City, Colo.	I.	Rector, Church of the Good Shepherd.
BERTRAM A. LENFEST Waltham, Mass.	II.	Principal, Manual Training High School.
ERNEST A. LE SUEUR Rumford Falls, Me.	VI.	General Manager, The Electro-Chemical Co.
GEORGE B. MCCONNELL 516 Warren St., Roxbury, Mass.	I.	With Kayukuk Mining Co. (Alaska).
BERTRAM H. MANN Boston Terminal Co., Boston.	VI.	With The Union Switch and Signal Co.
FREDERICK METCALF 111 Elm St., Cleveland, Ohio.	II.	Treasurer, The Chase Machine Co.
BURDETT MOODY Lead, S. Dak.	I.	Engineer, Homestake and Associate Mining Companies.
STEPHEN W. MOORE 1723 Wood Ave., Colorado Springs, Colo.	II.	Dealer in Bicycles and Supplies.

1890. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CHARLES NEAVE, A.M.	VI.	Of Firm of Fish, Richardson, & Storow, 80 Broadway, New York, N.Y.
ALLAN H. NEWELL.	II.	Farming Tule Land. Wakefield Landing, Roberts Island, Stockton, Cal.
NORMAN G. NIMS	IV.	Draughtsman, with Andrews, Jaques, & 8 Beacon St., Boston. Rantoul, Architects.
ALMON E. NORRIS	II.	Consulting Engineer, Rawson & Merrison 29 Main St., Cambridgeport, Mass. Manufacturing Co.
CLARENCE G. NORRIS	I.	Assistant Engineer, Board of Sewer Com- Hyde Park, Mass. missioners.
HARRY L. NOYES	I.	Mechanical Engineer, Union Carbide Co. Niagara Falls, N. Y.
JOSEPH K. NOYES	I.	Of the Firm of Joseph P. Noyes & Co., 13 Ferry St., Binghamton, N. Y. Manufacturers of Combs and Buttons.
GEORGE A. PACKARD	III.	Manager, "St. John Group;" Consulting Virginia City, Mont. Metallurgist, Cyanide Process.
WILLIAM R. PEYTON	II.	Treasurer, William Listman Milling Co. Superior, Wis.
WILLIAM B. POLAND	I.	First Lieutenant and Battalion Adjutant, Camp J. S. Poland, 158th Indiana Vol. Infantry. Knoxville, Tenn.
EDWARD B. RAYMOND	VI.	Electrical Engineer, General Electric Co. Schenectady, N. Y.
CALVIN W. RICE	VI.	Electrician, Kings County Electric Light P. O. Box 774, Brooklyn, N. Y. and Power Co.
KNIGHT C. RICHMOND, B.P.	II.	Mechanical Engineer, Crompton Co. Crompton, R. I.
WILLIAM Z. RIPLEY, Ph.D.	I.	Assistant Professor of Sociology and Eco- Boston, Mass. nomics, Mass. Institute of Technology; Lecturer on Anthropology, Columbia University.
HAROLD B. ROBERTS	II.	Superintendent, Fibre Improvement Co. Business St. and Glenwood Ave., Hyde Park, Mass.
EDWARD ROBINSON	II.	Professor of Drawing and Machine Design, Potsdam, N. Y. Clarkson School of Technology.
ALLEN H. ROGERS	III.	Superintendent, Santa Fé Mines. Apartado 114, Matchuala, S. L. P., Mexico.
MINNIE H. ROGERS	IX.	Private Tutor. Trinity Court, Boston.
LOUIS SCHMIDT	V.	Chief Chemist, Ohio Dairy and Food Com- 215 E. Fourth St., mission. Cincinnati, Ohio.

1890. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CHARLES W. SHERMAN . . . 3 Mt. Vernon St., Boston.	I.	Assistant Engineer, Sudbury Department, Metropolitan Water Works.
EDMUND T. SIMPSON . . . 84 Middle St., Lowell, Mass.	V.	With Simpson & Rowland.
HOWARD C. SLATER . . . P.O. Box 423, Milwaukee, Wis.	II.	Superintendent, Gas Works.
WILLIAM LINCOLN SMITH . . . Boston, Mass.	VI.	Instructor in Electrical Engineering, Mass. Institute of Technology.
GEORGE A. SONNEMANN . . . 17-18 Jamieson Block, Spokane, Wash.	III.	Consulting Mining Engineer; Lessee, Cum- berland Gold Mine (Silver City, Idaho).
MARTIN O. SOUTHWORTH . . . 220 W. Merrill St., Indianapolis, Ind.	VI.	Electrical Engineer, Commercial Electric Co.
SAMUEL STORROW, A.B. . . . Wapiti, Colo.	I.	Manager, The Wapiti Mining Co.
BENTON STURGES 108 Dearborn St., Chicago, Ill.	IX.	In Real Estate and Mortgage Business.
THOMAS J. STURTEVANT . . . Harrison Square, Mass.	VI.	With Sturtevant Mill Co.
FREDERICK W. SWANTON . . . 1 Regent St., Roxbury, Mass.	VI.	
JOHN HENRY TOWNE 9 Murray St., New York, N. Y.	IX.	With The Yale & Towne Manufacturing Co.
ELTON D. WALKER 12 Gillespie St., Schenectady, N. Y.	I.	Assistant Professor of Civil Engineering, Union College.
ROBERT T. WALKER Tremont Bldg., Boston.	IV.	Draughtsman, with A. W. Longfellow, Jr., Architect.
FRANKLIN W. WHITE, M.D., . . . 416 Marlborough St., Boston.	VII.	Physician.
WILLIS R. WHITNEY, Ph.D. . . . Boston, Mass.	V.	Instructor in Theoretical Chemistry and Proxi- mate Technical Analysis, Mass. Institute of Technology.
ARTHUR R. WILSON 9 Macdonough Bldg., Oakland, Cal.	I.	Of Firm of Easton & Wilson, Engineers and Contractors.
ANDREW W. WOODMAN 272 Franklin St., Boston.	I.	Civil Engineer, with Harrington, Robinson, & Co.

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CHARLES W. AIKEN 79 Milk St., Boston.	II.	Consulting Engineer.
ROBERT S. BALL 16 Norton Bldg., Louisville, Ky.	II.	Consulting Engineer.

1891. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JOEL GRAY BARRI R. 321, 170 Summer St., Boston.	I.	Chief Engineer, North American Sewage Disposal Co.
WILLIAM H. BASSETT 236 Maxfield St., New Bedford, Mass.	V.	Teacher of Chemistry, Swain Free School; Chemist, Pope's Island Manufacturing Corporation.
ADELAIDE BIRD Chambersburgh, Pa.	VII.	Teacher of Biology, Wilson College.
JOHN H. BIRKS Philips Sq., Montreal, Que.	II.	Of Firm of Henry Birks & Sons.
ETHEL B. BLACKWELL, M.D. 139 W. Sixty-fourth St., New York, N. Y.	VII.	
FREDERICK C. BLANCHARD 303 Congress St., Boston.	II.	Secretary, Blanchard Machine Co.
THOMAS V. BOLAN, A.B. Schenectady, N. Y.	VI.	Supervising Engineer, Construction Department, General Electric Co.
HENRY G. BRADLEE 4 Post-Office Sq., Boston.	VI.	With Stone & Webster, Electrical Experts and Engineers.
HARRY C. BRADLEY Boston, Mass.	I.	Instructor in Mechanical Drawing and Descriptive Geometry, Mass. Institute of Technology.
WALLACE H. BRAINERD 1407 W. Eighty-seventh St., Chicago, Ill.	VI.	With Swift & Co., Union Stock Yards.
HORACE L. BRAND 32 Cedar St., Chicago, Ill.	II.	Secretary and Treasurer, The Brandsville Fruit Farm Co.
DIXIE LEE BRYANT Greensboro, N. C.	XII.	Teacher of Geology and Biology, State Normal and Industrial College.
WILLIAM P. BRYANT 55 Kilby St., Boston.	X.	With Inspection Department, Boston Board of Fire Underwriters.
GEORGE W. BRYDEN Second St., East Everett, Mass.	II.	Foreman, Architectural Iron Shop, New England Structural Co.
FRANK H. BURTON 40 Bassett St., Providence, R. I.	II.	Chief Draughtsman, Armington & Sims Co.
GEORGE A. CAMPBELL, A.M. 42 Farnsworth St., South Boston.	I.	With American Bell Telephone Co.
BARNARD CAPEN, JR. 104 Milk St., Boston.	VI.	With New England Telephone and Telegraph Co.
ANNE E. CARPENTER 357 Pennsylvania St., Buffalo, N. Y.	V.	
HUGH B. CLEMENT, Ph.B. 31 E. Seventeenth St., New York, N. Y.	IV.	Draughtsman, with Cady, Berg, & See, Architects.

1891. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ALBERT L. CLOUGH . . . 181 Walnut St., Manchester, N. H.	VI.	General Manager, Brodie Electric Co.
FRED A. COLE	II.	Superintendent of Construction and Power, Eastman Kodak Co.
HARRISON I. COLE East Boston, Mass.	II.	Draughtsman, The Atlantic Works.
REUBEN B. COLLINS 20 Weld Hill St., Forest Hills, Jamaica Plain, Mass.	I.	With Engineering Department, New York, New Haven & Hartford R. R.
ROGER W. CONANT 439 Albany St., Boston.	VI.	Electrical Engineer, Boston Elevated Ry. Co.
EDWARD CUNNINGHAM 70 Kilby St., Boston.	X.	With Samuel Cabot. Manufacturing Chemist.
HERBERT C. DAGGETT 66 Broadway, Lowell, Mass.	I.	Assistant Engineer, Office of Locks and Canals.
HOWARD A. DILL, B.S. Richmond, Ind.	I.	Assistant Treasurer, Richmond City Water Works.
EDWARD W. DONN, JR. 911 G St., N. W., Washington, D. C.	IV.	Architect.
LEWIS A. DUNHAM Leadville, Colo.	I.	With Arkansas Valley Smelting Co.
PAUL W. ENGLAND Eleventh and Filbert Sts., Philadelphia, Pa.	VI.	With Bell Telephone Co. of Philadelphia.
HORACE H. ENSWORTH Hartford, Conn.	VI.	Of Firm of L. L. Ensworth & Son, Iron and Steel.
GEORGE W. FAVOR 339 Fifth Ave., Pittsburgh, Pa.	III.	Manager, Sullivan Machinery Co.
HENRY A. FISKE 93 Water St., Boston.	X.	Inspector, Underwriters' Bureau of New England.
HOWARD C. FORBES 4 State St., Boston.	X.	Consulting Engineer.
LESTER G. FRENCH 9 Murray St., New York, N. Y.	II.	Editor, "Machinery."
FREDERICK W. FÜGER Governor's Island, New York, N. Y.	II.	First Lieutenant, 13th U. S. Infantry.
CHARLES GARRISON 93 Federal St., Boston.	VI.	Treasurer and Manager, Shawmut Fuse Wire Co.; Treasurer, John P. Cushing Co., Theatrical Illumination.
MEDOREM W. GREER Dawson, N. W. T.	VI.	Prospecting.

1891. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
EOGAR L. HAMILTON . . . 236 Randolph St., Chicago, Ill.	III.	President, American Roll Wrapping Paper Co.
CHARLES F. HAMMOND . . . 1015 Hammond Bldg., Detroit, Mich.	I.	In Business.
WILLIAM HASKINS 25 Linden St., Waltham, Mass.	III.	Treasurer, Waltham Lumber Co.
ARTHUR E. HATCH 19 High St., Boston.	I.	Manager, Bay State Dredging Co.
HERBERT E. HATHAWAY . . . Providence, R. I.	V.	With Silver Spring Bleaching and Dyeing Co.
ERNEST A. HERSAM Berkeley, Cal.	V.	Assistant Professor of Metallurgy, University of California.
GEORGE A. HOLMES 95 Milk St., Boston.	X.	With Consolidated Fastener Co.
WALTER E. HOPTON 167 Summit Ave., Jersey City, N. J.	II.	Mechanical Engineer, Colgate & Co.
HARRY W. JORDAN Syracuse, N. Y.	V.	With Solvay Process Co.
MILTON H. KAUFFMAN Ayr, Scotland.	V.	Manager, Thomas Hyland & Co., Starch Works.
THOMAS M. KEENE 4 Mt. Vernon St., Boston.	I.	Resident Engineer, Mass. Highway Commission.
WILLIAM FAITOUTE KEENE, 84 Cross St., Central Falls, R. I.	I.	City Engineer.
HERBERT S. KIMBALL 7 Exchange Pl., Boston.	X.	Of Firm of Hall & Kimball, Architects and Mill Engineers.
MORRIS KNOWLES City Hall, Pittsburgh, Pa.	I.	Resident Engineer, Filtration Commission.
WILLIAM H. LAWRENCE Boston, Mass.	IV.	Assistant Professor of Architecture, Massachusetts Institute of Technology.
WOODRUFF LEEMING 111 Fifth Ave., New York, N. Y.	IV.	Architect.
WILLIAM E. LELAND Fulton Bldg., New York, N. Y.	II.	With A. R. Wolff, Consulting Engineer.
ALEXANDER G. MCKENNA Demmler, Pa.	V.	Chemist, Sterling Steel Works.
MARGARET E. MALTBY, Ph.D. Bismarckstr. 23 I, Charlottenburg, Germany.	VIII.	Student.
ARTHUR N. MANSFIELD 22 Thames St., New York, N. Y.	VIII.	With American Telephone and Telegraph Co.
CLEMENT MARCH 5 Bowling Green Bldg., Broadway, New York, N. Y.	I.	With American Graphophone Co.

1891. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
PHILIP MARQUAND, A.B. . . . 13 Exchange St., Boston.	I.	Of Marquand & Stearns, Agents, Edge Moor Bridge Works.
GUY EDWARD MITCHELL . . . Union Station 7 C, Boston.	II.	Chief Draughtsman, Motive Power Department, Boston & Maine R. R.
FRED F. MOORE 40 Lincoln St., South Framingham, Mass.	I.	Draughtsman, Metropolitan Water Board.
FREDERICK CLOUSTON MOORE, II. Auburn, N. Y.	II.	Assistant General Superintendent, D. M. Osborne & Co., Manufacturers of Harvesting Machinery.
ALEXANDER W. MOSELEY . . . Boston, Mass.	II.	Instructor in Mechanical Engineering, Mass. Institute of Technology.
WILLIAM MOSSMAN Mattapan, Mass.	VI.	Assistant Superintendent, Mattapan Mills, The Tileston & Hollingsworth Co.
FRED E. NORTON P. O. Box 810, Johannesburg, South African Republic.	II.	Mechanical Engineer, for Sherriff, Swingley, & Co. (Limited).
GEORGE H. K. OXFORD 24 Cottage St., Cambridge, Mass.	VI.	
WILLIAM I. PALMER 103 Medford St., Charlestown, Mass.	VI.	With Palmer, Parker, & Co., Mahogany, Hardwood Lumber, and Veneers.
ALLAN RAMSEY Cincinnati, Ohio.	VII.	Interne, Cincinnati Hospital.
CARLETON A. READ Boston, Mass.	II.	Instructor in Mechanical Engineering, Mass. Institute of Technology.
WILLIAM C. RICHARDSON . . . P. O. Box 5282, Boston.	II.	Travelling.
CHARLES W. RICKER 702 Ellicott Sq., Buffalo, N. Y.	VI.	Electrical Engineer.
WILLIAM J. ROBERTS, A.M. Pullman, Wash.	I.	Assistant Professor of Mathematics and Civil Engineering, Washington Agricultural College.
WILLARD H. ROOTS Waterville, Wash.	IX.	Missionary of the Episcopal Church.
FREDERICK H. ROSE 31 Central Viaduct, Cleveland, Ohio.	II.	Of Cleveland Chocolate and Cocoa Co.
A. FORREST SHATTUCK Detroit, Mich.	V.	Chief Chemist, The Solvay Process Co.
FREDERICK T. SNYDER Peterborough, Ont.	VI.	Metallurgic Engineer, with The Wm. Hamilton Mfg. Co. (Limited).
THEODORE SPENCER Filbert & Eleventh Sts., Philadelphia, Pa.	VI.	With The Bell Telephone Co. of Philadelphia.

1891. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
GEORGE H. SPOONER 55 Kilby St., Boston.	VI.	Electrical Inspector, Boston Board of Fire Underwriters.
SOLOMON H. STIX 1241 State St., Chicago, Ill.	IV.	Of the Firm of Friedlander, Brady, & Co., Manufacturers of Knitted Goods.
ARTHUR B. STODDARD . . . Hegewisch, Ill.	V.	With Chappell Chemical Co.
JAMES SWAN 2804 West Ave., Newport News, Va.	II.	In charge of Estimating Department, Newport News Shipbuilding and Dry Dock Co.
HENRY H. SYKES, Ph.B. . . Tenth & Olive Sts., St. Louis, Mo.	VI.	Chief Engineer, Bell Telephone Co. of Missouri.
HERBERT A. THOMPSON . . 705 So. Wright St., Champaign, Ill.	VIII.	Apparatus Maker.
CLIFFORD M. TYLER Providence, R. I.	II.	With Lymansville Co.
LUIS F. VERGES 37 Central St., Boston.	I.	In Business.
FRANCIS S. VIELÉ, A.B. . . Westinghouse Bldg., Pittsburgh, Pa.	VI.	With Standard Underground Cable Co.
HENRY H. WAIT 227 So. Clinton St., Chicago, Ill.	VI.	With Western Electric Co.
GEORGE M. WARNER 1097 Dean St., Brooklyn, N. Y.	VI.	Superintendent and Electrician, Excelsior Electric Co.
LEONARD C. WASON 7 Exchange Pl., Boston.	VI.	President, Aberthaw Construction Co., Concrete Engineers and Contractors.
HENRY T. WEED Court & Livingston Sts., Brooklyn, N. Y.	V.	Teacher of Physics and Chemistry, Manual Training High School.
WILLIAM H. WESTON Melrose, Guysborough Co., N. S.	III.	Superintendent, Crows Nest Mining Co.
CHARLES P. WETHERBEE . . Bath, Me.	II.	Ship Draughtsman, Bath Iron Works.
SALMON W. WILDER, JR. . . 402 Tremont Bldg., Boston.	X.	With William Russell & Son.
FRED A. WILSON Nahant, Mass.	II.	With J. T. Wilson, Building Contractor.
C. HANCOCK WOOD 25 Davis Ave., Brookline, Mass.	II.	

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CHARLES A. BEAL Harrison, N. J.	VI.	With General Electric Co. Incandescent Lamp Works.
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1892. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ALICE H. BECKLER Philadelphia, Pa.	VII.	Assistant in Biology, Philadelphia Normal Thirteenth & Spring Garden Sts., School.
CHARLES H. BIGELOW 439 Albany St., Boston.	VI.	Inspecting Engineer, Boston Elevated Ry. Co. (Boston).
PHILLIPS PAYSON BOURNE East Cambridge, Mass.	II.	With The George F. Blake Manufacturing Co.
STEPHEN BOWEN South Boston, Mass.	II.	With Whittier Machine Co.
BERTHA MILLARD BROWN Hyannis, Mass.	VII.	Instructor in Biology, State Normal School.
PHILIP M. BURBANK 132 Church St., Waltham, Mass.	VI.	First Assistant in Office of City Engineer.
CHARLES M. BURNHAM 36 Beach St., Waltham, Mass.	VI.	With American Waltham Watch Co.
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 Uni- versity.
HUBER D. CARD 807 Main St., Willimantic, Conn.	XII.	City Civil Engineer, Putnam and Willi- mantic.
RAUL DE R. CARVALHO Amparoda Barra Mansa, Rio de Janeiro, Brazil.	IX.	Coffee Planter.
DOUGLAS A. CATER, M.D. New York, N. Y.	II.	Physician, Post-Graduate Hospital.
CHARLES H. CHASE Tufts College, Mass.	VI.	Instructor in Shopwork, Tufts College.
RICHARD D. CHASE 15 Monroe Pl., Brooklyn, N. Y.	XI.	With Allen Hazen, Consulting Engineer (New York).
ALBERT K. CHURCH McKeesport, Pa.	V.	With National Tube Works Co.
LEWIS P. CODY 9 So. Division St., Grand Rapids, Mich.	VI.	President and Treasurer, Grand Rapids Electric Co.
CHARLES P. COGSWELL, JR. Buzzards Bay, Mass.	I.	With Roadway Department, New York, New Haven, & Hartford R. R.
JOHN M. COLBY, JR. Second St., Everett, Mass.	II.	With New England Structural Co.
JOSHUA CRANE, JR., A.B. Tremont Bldg., Boston.	VI.	Electrical Expert and Consulting Engineer.

1892. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JOHN A. CURTIN Tremont Bldg., Boston.	I.	Attorney-at-law.
GEORGE E. DADMUN, A.B. 99 Cedar St., New York, N. Y.	II.	With Claim Department, Fidelity Casualty and Insurance Co.
GORHAM DANA 93 Water St., Boston.	I.	Inspector, The Underwriters' Bureau of New England.
HARTLEY DENNETT 95 Devonshire Bldg., Boston.	IV.	Architect.
LOUIS DERR, M.A. Boston, Mass.	VI.	Instructor in Physics, Mass. Institute of Technology.
MARGARET E. DODD 58 Townsend St., Roxbury, Mass.	VII.	Teacher of Sciences, Woodward Institute (Quincy, Mass.).
WALTER B. DOUGLASS East Everett, Mass.	I.	Chief Engineer and General Manager, New England Structural Co.
HENRY C. DRESSER Charlotte, N. C.	II.	Superintendent, Louise Mills.
BARRON P. DU BOIS Care Navy Pay Office, San Francisco, Cal.	VI.	Passed Assistant Paymaster, U. S. S. "Ben- nington,"
GEORGE F. ELDRIDGE Bullitt Bldg., Philadelphia, Pa.	V.	With C. R. Baird & Co., Pig Iron.
SUMNER B. ELY Allegheny, Pa.	II.	Assistant to Mechanical Engineer, Schoen Pressed Steel Co.
LOGAN FELAND Owensboro, Ky.	IV.	Captain, 3d Kentucky Volunteer Regiment.
HENRY A. FISKE	VI.	(See Class of 1891.)
HOWARD C. FORBES	VI.	(See Class of 1891.)
GAYLE T. FORBUSH 30 Kilby St., Boston.	X.	Special Agent, German American Insur- ance Co.
FREDERICK L. FRANCIS Fitchburg, Mass.	IV.	With H. M. Francis, Architect.
ALLEN FRENCH Concord, Mass.	IX.	Student.
EDWARD R. FRENCH 26 Cortlandt St., New York, N. Y.	VI.	Electrical Engineer, American Electric Heating Corporation (New York Office).
CHARLES E. FULLER Boston, Mass.	II.	Instructor in Mechanical Engineering, Mass. Institute of Technology.
EDWARD P. GILL P. O. Box 626, Baltimore, Md.	IV.	In Lumber Business.
HOWARD GILMORE 48 Sawyer Ave., Dorchester, Mass.	II.	Manufacturer of Incandescent Lamps and Electrical Specialties, Gilmore Electric Co.

1892. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
GEORGE H. GOODELL . . . Susquehanna, Pa.	II.	Mechanical Engineer, Erie R. R. Co.
WILLIAM P. GRAY 1022 W. Cary St., Richmond, Va.	VI.	Clerk.
WILLIAM W. GREEN City Hall, Chicago, Ill.	I.	Assistant Engineer, Sewer Department, City of Chicago.
CHARLES B. GRIMES Chicago, Ill.	V.	Superintendent, Western Factory, The Carter's Ink Co.
EDWARD C. HALL, JR. . . . Mine Centre, Ont., and Rainy Lake, Minn.	II.	Superintendent, Golden Crown Mining Co.
HARRY A. HARWOOD 386 Washington St., Boston.	I.	With Harwood Brothers.
ALBERT S. HEYWOOD Atlanta, Ga.	VI.	Engineer, General Electric Co.
JOHN D. HILLIARD, JR. . . . 231 Liberty St., Schenectady, N. Y.	VI.	With General Electric Co.
FRANCIS C. HOLMES North Plymouth, Mass.	IX.	With Plymouth Cordage Co.
PRESCOTT A. HOPKINS, S.M. Philadelphia, Pa.	IV.	Assistant Professor of Architecture, Drexel Institute.
FREDERICK J. HOXIE Phenix, R. I.	VI.	President Hoxie Bros. Co.
W. SPENCER HUTCHINSON . . 44 Morton St., Mattapan, Mass.	III.	Mining Engineer.
GEORGE H. INGRAHAM 528 Tremont Bldg., Boston.	IV.	Architect.
ARTHUR L. JACOBS Old Court House, Boston.	VI.	Deputy Inspector, Wire Department, City of Boston.
JESSE F. JOHNSON Montreal, Que.	X.	With Hamilton Powder Co.
WILLIAM A. JOHNSTON Boston, Mass.	II.	Instructor in Mechanical Engineering, Mass. Institute of Technology.
WILLIAM R. KALES Cleveland, Ohio.	II.	Mechanical Engineer, Brown Hoisting and Conveying Machine Co.
WILLIAM R. KENDALL 307 Delaware St., Kansas City, Mo.	VI.	Vice-President, William W. Kendall Boot and Shoe Co.
ARMAND D. KOCH 30 Rue St. Sulpice, Paris, France.	IV.	Student, École des Beaux-Arts.

1892. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WILLIAM H. LANE 81 Willoughby St., Brooklyn, N. Y.	VI.	Engineer, New York & New Jersey Telephone Co.
ELISHA LEE	I.	In office of Assistant Engineer, Sunbury Division, Philadelphia & Erie R. R.
WILLIAM W. LOCKE South Framingham, Mass.	XI.	Sanitary Inspector, Metropolitan Water Board.
JOSEPH B. LUKES 213 Fourteenth St., Washington, D. C.	VI.	Electrical Engineer, U. S. Electric Lighting Co.
JOSEPH P. LYON N. Y. Central Station, Rochester, N. Y.	I.	Inspector of Bridges, Western Division, New York Central & Hudson River R. R.
WALLACE E. McCAW Macon, Ga.	VI.	President, McCaw Manufacturing Co.
ELMER G. MANAHAN 3 Mt. Vernon St., Boston.	XI.	Assistant, Metropolitan Water Board.
LAURENCE B. MANLEY 116 Mt. Vernon St., West Roxbury, Mass.	I.	Civil Engineer.
R. HERBERT MANSFIELD, JR. Westfield, N. J.	VI.	President, Iron Clad Resistance Co.
ALBERT P. MATHEWS Boston, Mass.	VII.	Assistant in Physiology, Harvard Medical School.
GEORGE H. MAY 346 Broadway, New York, N. Y.	V.	Works Manager, The American Pegamoid Co.
GEORGE A. MERRILL Boston, Mass.	XI.	With Massachusetts Highway Commission.
WILLIAM H. MESSENGER One hundred and seventy-seventh St. and Third Ave., New York, N. Y.	II.	With Department of Highways, New York City.
LEONARD METCALF Concord, Mass.	I.	Civil Engineer (89 State St., Boston).
HERBERT S. MILLER 1025 E. Jersey St., Elizabeth, N. J.	VI.	Secretary and Electrical Engineer, Diehl Manufacturing Co.
LILLY MILLER Medford, Mass.	V.	With Massachusetts State Board of Health.
HERBERT R. MOODY Winsted, Conn.	V.	Instructor in Science, Gilbert School.
FREDERICK CAMPBELL MOORE 95 Pearl St., Hartford, Conn.	X.	Insurance Inspector, Factory Insurance Association.
ASA HALL MORRILL Franklin, Mass.	I.	Assistant Roadmaster, Midland Division, New York, New Haven, & Hartford R. R.
WALTER M. NEWKIRK 36 Moffat Block, Detroit, Mich.	II.	Engineer, with Smith & Conant, Consulting Mechanical and Electrical Engineers.

1892.— *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FRANK E. NEWMAN 925 Chestnut St., Philadelphia, Pa.	IV.	With Frank Miles Day & Bro., Architects.
ARTHUR J. OBER	I.	U. S. Inspector. Jamestown, R. I.
HAMILTON OTIS	I.	Rancher. Cazadero, Sonoma Co., Cal.
CHARLES F. PARK	II.	Instructor in Mechanical Engineering, Boston, Mass. Mass. Institute of Technology.
J. SCOTT PARRISH	II.	Acting Treasurer, Richmond Cedar Works ; Richmond, Va. Secretary, Gulf Red Cedar Co.
FRANK EDSON PERKINS	IV.	Assistant Professor in charge of the courses Equitable Building, in Architectural Design, University of 120 Broadway, New York, N. Y. Pennsylvania (Philadelphia, Pa.).
JOHN C. PERRY	II.	With Clinton Wire Cloth Co. Clinton, Mass.
HENRY M. PHILLIPS	VI.	With New Jersey Zinc Co. Franklin Furnace, N. J.
ARTHUR G. PIERCE	VI.	Superintendent of Stations, Edison Electric 3 Head Pl., Boston. Illuminating Co., of Boston.
ARTHUR W. PIERCE	VI.	In charge of Electric Plant for the Goodell P. O. Box 168, Bennington, N. H. Co. (Antrim, N. H.).
MACY S. POPE	I.	Inspector, Factory Mutual Fire Insurance 31 Milk St., Boston. Cos.
DANA M. PRATT	I.	With French & Bryant, Civil Engineers. Brookline, Mass.
ARTHUR G. RANLETT	III.	Superintendent, Abbie Gold Mine. Brownsville, Yuba Co., Cal.
FREDERICK L. RHODES	VI.	With American Bell Telephone Co. 42 Farnsworth St., South Boston.
ANDREW R. ROBERTSON	II.	With Messrs. Watson, Laidlaw, & Co., 8 Park Circus Pl., Engineers. Glasgow, Scotland.
DWIGHT P. ROBINSON, A.B. . . .	VI.	Manager, Edison Electric Illuminating Co. 15 South St., Baltimore, Md.
WILLIAM M. ROSEWATER	II.	Mechanical Engineer, with The Pittsburgh 703 Perry-Payne Bldg., and Conneaut Dock Co. Cleveland, Ohio.
GEORGE F. ROWELL	I.	On Editorial Staff, "The Engineering 75 Hicks St., Brooklyn, N. Y. Record."
HORACE F. RUGGLES	II.	Contracting Engineer. 35 Broad St., Boston.
WARD M. SACKETT, C.E.	VI.	Meadville, Pa.

1892. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HENRY JUDSON SAGE, B.A. Westinghouse Bldg., Pittsburgh, Pa.	VI.	General Manager, The Opalite Tile Co.
OSCAR F. SAGER	II.	Teacher of Manual Training, Brockton High School.
ALBERT F. SARGENT 425 Main St., Malden, Mass.	I.	Civil Engineer, Surveyor, and Conveyancer.
RUSSELL SELFRIDGE 137 W. Fifty-seventh St., New York, N. Y.	IX.	
FRANK C. SHEPHERD Portsmouth, N. H.	XI.	Department of Yards and Docks, Portsmouth Navy Yard.
LE ROY K. SHERMAN Lockport, Ill.	I.	Assistant Engineer, Sanitary District of Chicago.
HARRY D. SHUTE Pittsburgh, Pa.	VI.	With Westinghouse Electric and Manufacturing Co.
THEODORE H. SKINNER 528 Tremont Building, Boston.	IV.	Architect.
ARTHUR C. SMITH Waltham, Mass.	V.	With W. E. Bright.
HENRY P. SPAULDING Care of Baring Bros., 8 Bishopsgate St., within, London, E. C., England.	VI.	Travelling.
RALPH H. SWEETSER Everett, Pa.	III.	Superintendent, Everett Furnace.
GEORGE P. TALLANT 2626 Steiner St., San Francisco, Cal.	IX.	
ROBERT R. TAYLOR Tuskegee, Ala.	IV.	Teacher, Tuskegee Normal and Industrial School.
WILLIAM C. THALHEIMER Everett, Mass.	I.	Assistant Engineer, New England Structural Co.
WALTER B. TROWBRIDGE 54 Lincoln St., Boston.	II.	Treasurer and General Manager, Eppler Welt Machine Co.
ROSS F. TUCKER 156 Fifth Ave., New York, N. Y.	IV.	Manager, Manhattan Concrete Co.
GEORGE W. VAILLANT 13 Exchange St., Boston.	III.	With Fulton Foundry Co. of Cleveland, Ohio.
JOHN F. VINING 101 Milk St., Boston.	IV.	Architect, with Boston Elevated Ry. Co.
THOMAS C. WALES, JR. 42 Farnsworth St., South Boston.	VI.	With American Bell Telephone Co.

1892. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FRANCIS WALKER, Ph.D. . . 815 No. Tejon St., Colorado Springs, Colo.	IX.	Professor of Political and Social Science, Colorado College.
CHARLES F. WALLACE . . . 4 Post-Office Sq., Boston.	VI.	With Stone & Webster, Electrical Experts and Engineers.
MURRAY WARNER Care James R. Warner & Co., St. John, N. B.	II.	Assistant Engineer, U. S. N.; Inspector of Ordnance.
JOSEPH A. WARREN Cumberland Mills, Me.	XI.	With S. D. Warren & Co.
CHARLES C. WATERMAN . . 153 Cedar St., New York, N. Y.	VI.	Assistant Electrician, American Telephone and Telegraph Co.
RICHARD WATERMAN, JR. . . The Auditorium, Chicago, Ill.	IX.	With Department of Education, U. S. Com- mission, Paris Exposition of 1900.
HENRY S. WEBB, M.S. . . . South Bethlehem, Pa.	VI.	In Department of Electrical Engineering, Lehigh University.
EDWARD C. WELLS 3 Wells Bldg., Quincy, Ill.	II.	Of the Firm of Wells & Adams, Farm Loans.
GEORGE V. WENDELL, Ph.D. VIII. Bismarckstr., 23 I, Charlottenburg, Germany.		Student.
FRANK T. WESTCOTT, B.P. . . North Attleboro, Mass.	I.	Civil Engineer.
ARTHUR M. WORTHINGTON, M.D. VII. 113 Park St., West Roxbury, Mass.		Physician.

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FREDERIC B. ABBOTT . . . 445 Union St., Lynn, Mass.	VI.	Manufacturer of Ladies' Fine Shoes.
ORTON W. ALBEE Newark, N. J.	III.	With Benjamin, Atha & Illingworth Co.
HERBERT W. ALDEN Park & Laurel Sts., Hartford, Conn.	II.	Assistant Mechanical Engineer, Motor Car- riage Department, Pope Manufacturing Co.
CHARLES V. ALLEN 311 Linden Ave., Pittsburgh, Pa.	VI.	With Westinghouse Electric and Manufact- uring Co.
JOHN G. ANTHONY 700 Third Ave., N., Great Falls, Mont.	III.	Assistant Chemist, Boston & Montana Copper and Silver Mining Co.
FRANK S. BADGER 66 Broadway, Lowell, Mass.	I.	With Proprietors of the Locks and Canals on Merrimack River.
FREDERIC W. BAKER	II.	Assistant Engineer, U. S. S. "Monterey." Manila, Philippine Islands.

1893. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
MINARD T. BARBOUR . . . 126 Fiftieth St., Chicago, Ill.	II.	With Crane Elevator Co. (219 So. Jefferson St.).
WILLIAM T. BARNES . . . 89 State St., Boston.	I.	With Leonard Metcalf, Civil Engineer.
ROY H. BEATTIE 37 No. Quarry St., Fall River, Mass.	I.	Contractor.
ALBERT F. BEMIS 89 State St., Boston.	I.	Secretary, Bemis Brother Bag Co.; President, Home Cotton Mills Co.
MAURICE B. BISCOE 9 Park St., Boston.	IV.	Of Firm of Smith & Biscoe, Architects.
EDMUND E. BLAKE 204 So. Tryon St., Charlotte, N. C.	II.	With Charlotte Machine Co.
GROSVENOR TARBELL BLOOD, . VI. 125 Milk St., Boston.		With American Bell Telephone Co.
SAMUEL N. BRAMAN U. S. Navy Yard, Charlestown, Mass.	II.	With Department of Steam Engineering.
JOHN CLIFFORD BROWN . . VI. 218 Middle St., Portland, Me.		In Military Service.
ERNEST C. BRYANT, B.S. . . I. Middlebury, Vt.		Professor of Physics and Mathematics, Middlebury College.
LEONARD B. BUCHANAN . . VI. 161 High St., Boston.		With Stone & Webster, Electrical Experts and Engineers.
CHARLES E. BUCHHOLZ . . . I. Union Station, Albany, N. Y.		Assistant Engineer, Middle Division, New York Central & Hudson River R. R.
ARTHUR A. BUCK VI. Washington, D. C.		Third Assistant Examiner, U. S. Patent Office.
JOHN R. BURKE I. 131 State House, Boston.		With Board of Harbor and Land Commissioners of Massachusetts.
DENNIS E. CALLAHAN . . . VI. 710 Albany St., Boston.		Superintendent, Third District, Distribution Division, Boston Water Department.
EDWARD B. CARNEY II. Lowell, Mass.		With City Engineer.
WILLIAM W. CARTER X. Dedham, Mass.		Electrical and Chemical Engineer; Senior Partner and Manager, Greendale Chemical and Electric Lighting Co.
HARRY L. CLAPP X. Washington, D. C.		Assistant Examiner, U. S. Patent Office.
WILFRED A. CLAPP I. 24 Salcombe St., Dorchester, Mass.		With Metropolitan Water Board (Clinton, Mass.).
JOHN S. CODMAN, A.B. . . VI. 31 Milk St., Boston.		Of Firm of R. S. Hale & J. S. Codman, Engineers.

1893.—*Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CHARLES NOURSE COOK . . . Providence, R. I.	X.	With Silver Spring Bleaching and Dyeing Co. (Travelling abroad).
NATHANIEL R. CRAIGHILL. 30 Tremont St., Boston.	II.	Draughtsman.
WILLIAM W. CROSBY . . . Lowell, Mass.	II.	Principal, and Professor of Mechanics, Lowell Textile School.
COURTLAND R. DARROW . . East Greenbush, N. Y.	I.	Resident Engineer, Kinderbrook & Hudson R. R.
ALBERT G. DAVIS	VI.	In charge of Patent Department, General Electric Co.
CARLETON E. DAVIS 95 Milk St., Boston.	I.	With George S. Rice & George E. Evans, Civil and Hydraulic Engineers.
HERBERT N. DAWES 451 Atlantic Ave., Boston.	II.	With S. C. Nightingale & Childs, Magnesia Pipe and Boiler Covering and Road Building Machinery.
GEORGE K. DEARBORN . . . 416 Seventh Ave., Pittsburgh, Pa.	IX.	With American Telephone and Telegraph Co.
CHARLES D. DEMOND Boston, Mass.	III.	Assistant to Professor Richards, Mass. Institute of Technology.
EDWARD D. DENSMORE . . . 7 Exchange Pl., Boston.	VI.	Of the Firm of Densmore & Le Clear, Engineers.
FREDERICK N. DILLON . . . Fitchburg, Mass.	V.	With D. M. Dillon, Steam Boiler Works.
LAURENCE B. DIXON 242 So. Jefferson St., Chicago, Ill.	VI.	With Western Electric Co.
SAMUEL D. DODGE 3 Mt. Vernon St., Boston.	I.	With Massachusetts Metropolitan Water Board.
PETER F. DOLAN Old Court House, Boston.	VI.	Electrical Engineer, Wire Department, City of Boston.
THEODORE T. DÖRMAN . . . Washington, D. C.	X.	Assistant Examiner, U. S. Patent Office.
JAMES A. EMERY 146 Franklin St., Boston.	I.	Of Firm of Emery & Crump, Street Railway Engineers.
WILLIAM ESTY, M.A. 905 California Ave., Urbana, Ill.	VI.	Associate Professor of Electrical Engineering, University of Illinois.
ARTHUR FARWELL Care Parr's Bank, Limited, 9 St. Martins Pl., London, England.	VI.	Musician.
FREDERIC H. FAY, S.M. . . . 60 City Hall, Boston.	I.	With Engineering Department, City of Boston.
FRED B. FORBES 502 State House, Boston.	V.	First Assistant Chemist, Laboratory of Massachusetts State Board of Health.

1893. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ARTHUR E. FOWLE Aurora, Ill.	X.	Chemical Engineer, with Jobbins & Van Ruymbeke.
WALTER L. FRISBIE Address not known.	II.	
WILLIAM BURT GAMBLE 1029 Majestic Bldg., Detroit, Mich.	IX.	Secretary, Cement Creek Gold Mining Co. (Operating Sampson Mine, San Juan Co., Colo.).
WALLACE K. GAYLORD 146 Terrace Drive, Pasadena, Cal.	V.	Instructor in Chemistry, Throop Polytechnic Institute.
HOWARD GILMORE	VI.	(See Class of 1892.)
MARVINE GORHAM 250 Elmwood Ave., Buffalo, N. Y.	II.	With Union Car Co.
FREDERICK W. HADLEY Arlington Heights, Mass.	VI.	With Westinghouse, Church, Kerr, & Co. Boston.
EDWARD M. HAGAR, M.M.E. . . . 556 The Rookery, Chicago, Ill.	II.	Of Firm of Edward M. Hagar & Co., Engines and Machinery.
GEORGE T. HANCHETT 123 Liberty St., New York, N. Y.	VI.	Electrical and Mechanical Engineer.
FREDERIC H. HARVEY Galt, Cal.	III.	Mining Engineer and Metallurgist, Managing the Estate of the late O. Harvey, M. D.
J. FRED. HINCKLEY 82 Washington St., New York, N. Y.	X.	Chemist for B. T. Babbitt & Co., Soap Manufacturers.
WILLIAM G. HOUCK 42 Delaware Ave., Buffalo, N. Y.	I.	Structural Engineer, Bureau of Buildings, Department of Public Works.
FREDERICK H. HOWLAND 1417 G St., N. W., Washington, D. C.	IX.	Washington Correspondent, "Providence Journal."
DANIEL D. JACKSON Flatbush Ave. & Eastern Park- way, Brooklyn, N. Y.	V.	Chemist, Department of City Works, Division of Water Supply.
LAWRENCE S. JAMES 32 Hawley St., Boston.	V.	Assistant State Inspector of Illuminating Gas and Gas Meters.
ARTHUR H. JAMESON South Chicago, Ill.	V.	Chemist, Cleveland Linseed and Oil Co.
SIMEON C. KEITH, JR. . . . 8 No. Market St., Boston.	VII.	Of the Firm of O. Douglass Butter Culture Co.; Bacteriologist for H. P. Hood & Sons, Milk Contractors.
ERVIN KENISON Boston, Mass.	II.	Instructor in Mechanical Drawing and Descriptive Geometry, Mass. Institute of Technology.

1893. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FREDERIC HALE KEYES . . . Boston, Mass.	II.	Instructor in Mechanical Engineering, Mass. Institute of Technology.
WARREN D. KING 240 Lowell St., Peabody, Mass.	VI.	In Electrical Construction.
WILLIS T. KNOWLTON 60 Cedar St., Malden, Mass.	I.	Civil Engineer, with McClintock & Woodfall (15 Court Sq., Boston).
WILLIAM F. LAMB 130 State St., Boston.	VI.	In Wholesale Lumber Business.
WALLACE C. LAMBERT 53 State St., Boston.	I.	With J. R. Worcester, Consulting Engineer.
HARRY N. LATEY 195 Broadway, New York, N.Y.	VI.	
HARRY M. LATHAM 42 Farnsworth St., South Boston.	II.	In Mechanical Department, American Bell Telephone Co.
HERBERT LEWIS, M.A. Washington, D. C.	VI.	Assistant Examiner, U. S. Patent Office.
JOHN W. LOGAN Bala, Pa.	II.	Assistant Engineer, Ice Machine Department, Pennsylvania Iron Works Co. (Philadelphia).
GEORGE E. MCQUESTEN 27 Kilby St., Boston.	VI.	In Business.
HEIICHIRO MAKI 488 Shirokane Sankocho, Shiba, Tokyo, Japan.	VI.	Consulting Electrical Engineer, Westinghouse Electric and Manufacturing Co. (Pittsburgh, Pa.); Hōshyu Traction Co. (Beppu Bungo, Japan); Seoul Traction Co. (Seoul, Korea); Hokkaidō Colliery Ry. Co. (Hokkaidō, Japan).
WILLARD A. MARCY 1173 Chestnut St., Newton Upper Falls, Mass.	II.	With Saco & Pettee Machine Shops.
FRANK H. MERRILL 633 East First St., Los Angeles, Cal.	X.	Superintendent, Los Angeles Soap Co.
BENJAMIN M. MITCHELL 30 Commissioner St., Johannesburg, South African Republic.	II.	Mechanical Engineer, Manhattan Rubber Co.; Resident Director, New York Lubricating Oil Co.
HENRY A. MORSS 79 Cornhill, Boston.	VI.	With Morss & Whyte, Wire Workers.
HENRY W. NICHOLS Chicago, Ill.	XII.	Assistant Curator of Geology, Field Columbian Museum.
CHARLES L. NORTON Boston, Mass.	VI.	Instructor in Heat Measurement, Mass. Institute of Technology.

1893. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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.
OREN E. PARKS 82 No. Elm St., Westfield, Mass.	I.	Town Engineer.
HARRY M. PHILLIPS 133 William St., New York, N.Y.	II.	Manufacturing Specialties.
LEO W. PICKERT Granite St., South Boston.	V.	Chemist, American Sugar Refining Co.
JAMES H. REED, JR. 124 Pearl St., Boston.	VI.	With National Sewing Machine Co.
WILLIAM S. RESOR 436 E. Third St., Cincinnati, Ohio.	VI.	Inspector, American Telephone and Telegraph Co.
HARRY 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 Boston, Mass.	I.	In City Engineer's Office, City of Boston.
A. BLAKELEY SMITH 24 Davis St., Providence, R.I.	IX.	With Albert W. Smith, Dealer in Foreign and Domestic 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 Bryan-Marsh Company, Manufacturers of Incandescent Lamps.
J. RAMSEY SPEER Pittsburgh, Pa.	II.	Manager, Blast Furnace Department, Shoenberger Steel Co.
CHARLES M. SPOFFORD Boston, Mass.	I.	Instructor in Civil Engineering, Mass. Institute of Technology.
GEORGE W. STOSE Washington, D.C.	II.	Editor of Geologic Maps, U. S. Geological Survey.
LOVELL BAKER STOWE 332 Main St., Springfield, Mass.	VI.	With New England Telephone and Telegraph Co.

1893. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FRED B. STUDLEY	VI.	
North Duxbury, Mass.		
FREDERICK C. SUTTER . . .	VI.	Of Pittsburgh Transformer Co.
Pittsburgh, Pa.		
WALTER I. SWANTON . . .	I.	Bridge Inspector, Boston & Albany R. R.
Kneeland St., Boston.		Co.
KILBURN S. SWEET	I.	Instructor in Civil Engineering, Mass. In-
Boston, Mass.		stitute of Technology.
CHARLES WILSON TAINTOR .	VI.	Manager, New England Telephone & Tele-
9 Pickering Bldg.,		graph Co.
Manchester, N. H.		
CHARLES M. TAYLOR	II.	
Weymouth Heights, Mass.		
WINTHROP P. TENNEY . . .	VI.	With Field & Cowles.
85 Water St., Boston.		
ALFRED C. THOMAS	VI.	With The New York & New Jersey Tele-
81 Willoughby St.,		phone Co.
Brooklyn, N. Y.		
PERCY H. THOMAS	VI.	With Engineer's Department, Westing-
East Pittsburgh, Pa.		house Electric and Manufacturing Co.
WINTHROP L. TIDD	II.	Assistant to City Engineer.
City Hall, Taunton, Mass.		
JOHN F. TOMFOHRDE	II.	Counsellor-at-law.
24 Mt. Vernon St.,		
Charlestown, Mass.		
CHARLES A. TRIPP	VI.	Engineer, Bemis Bro. Bag Co.
Room 35, 89 State St., Boston.		
WILLIAM A. TUCKER	III.	With Calumet & Hecla Mining Co.
Lake Linden, Mich.		
LOUIS B. VINING	VI.	With Gamewell Fire Alarm Telegraph Co.
534 Columbus Ave., Boston.		(Newton Upper Falls, Mass.).
A. B. WADSWORTH, M.D. . .	VII.	Physician.
St. Luke's Hospital,		
Cathedral Heights,		
New York, N. Y.		
SAMUEL PAYSON WALDRON .	I.	With Keystone Bridge Works, The Carnegie
Pittsburgh, Pa.		Steel Co. (Limited).
CHARLES R. WALKER	V.	Chemist, Eastman Kodak Co.
39 Lake View Park,		
Rochester, N. Y.		
GEORGE L. WALKER, B.S. . .	I.	Manager, Building and Sanitary Inspection
874 Broadway, New York, N. Y.		Co.
FREDERIC A. WALLACE . . .	II.	Chief Engineer, Pacific Mills.
Lawrence, Mass.		

1893. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ROBERT N. WALLIS	IX.	Treasurer, Fitchburg & Leominster Street Ry.
Fitchburg, Mass.		
HARRY C. WATERMAN . . .	IV.	Draughtsman, with J. Williams Beal, Architect.
55 Kilby St., Boston.		
S. EDGAR WHITAKER, A.M.	VI.	Electrical Contractor.
23 Prichard St., Fitchburg, Mass.		
PARKER H. WILDER	VI.	Manager, Cincinnati Gas Saving Co.
215 W. Fourth St., Cincinnati, Ohio.		
JONATHAN E. WOODBRIDGE	VI.	Editor, "Electrical World."
9 Murray St., New York, N.Y.		
HENRY T. WOODS	II.	Wholesale Coal Dealer.
32 Kilby St., Boston.		
GEORGE M. YORKE	VI.	With American Telephone and Telegraph Co.
125 Milk St., Boston.		

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CHARLES G. ABBOT, S.M.	VIII.	Aid, Acting in charge, Astrophysical Observatory, Smithsonian Institution.
Washington, D. C.		
RALEIGH B. ADAMS	X.	With Boston Belting Co.
2 Gleason St., Dorchester, Mass.		
GEORGE H. ANDERSON . . .	X.	Chemist, Missouri Furnace Co. ("B" St. Louis, Mo.).
176 High St., Newburyport, Mass.		
EDMUND LATHROP ANDREWS	VI.	With American Telephone and Telegraph Co.
105 Quincy St., Chicago, Ill.		
FRED C. BAKER	II.	Draughtsman, The Dickson Manufacturing Co. (Pennsylvania Ave. Works).
Pennsylvania Ave., Scranton, Pa.		
GEORGE E. BARSTOW	II.	Designer for E. E. Winkley & Co., Mechanical Engineers.
416 Union St., Lynn, Mass.		
HOWARD R. BARTON	VI.	With American Telephone and Telegraph Co.
22 Thames St., New York, N.Y.		
HARRY R. BATES	V.	Chemist and Assistant to General Manager, Bradley Fertilizer Co.
North Weymouth, Mass.		
WALTER V. BATSON	VI.	With Hollis French & Allen Hubbard, Consulting Engineers.
3 Hamilton Pl., Boston.		
CHARLES BURR BEACH	X.	Chemical Engineer, J. Beach & Sons, Soap Manufacturers.
1183 Locust St., Dubuque, Iowa.		
IRVING EVERETT BEACH . . .	V.	Of Beach Soap Co.
Lawrence, Mass.		

1894. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
NORWIN S. BEAN 23 Prospect St., Manchester, N.H.	VI.	With Second National Bank.
VALLETTE L. BENEDICT 722 Union St., Schenectady, N.Y.	VI.	With General Electric Co.
HEREFORD BERRY Liberty & Church Sts., New York, N. Y.	VI.	With The Eureka Tempered Copper Works.
GROSVENOR T. BLOOD, S.B.	II.	(See Class of 1893.)
SARAH HALL BONESTEEL 10 Concord Ave., Cambridge, Mass.	VIII.	Teacher, The Cambridge School for Girls.
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. (141 Broadway).
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.	With Pope Manufacturing Co., Motor Carriage Department.
NATHAN C. W. CHAPMAN 225 Pine St., Providence, R. I.	II.	Draughtsman, Brown & Sharpe Manufacturing Co.
HAROLD M. CHASE Wilmington, N. C.	X.	In charge of Dyeing Department, 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 Room 211, Produce Exchange, New York, N. Y.	X.	Chemist, W. J. Wilcox Lard and Refining Co. (Guttenberg, N. J.).
PRESCOTT H. COOLIDGE 118 E. Kiowa St., Colorado Springs, Colo.	I.	With Colorado Telephone Co.
HENRY F. COPELAND Hudson & Duane Sts., New York, N. Y.	I.	With Export Department, J. S. Barron & Co.

1894. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
NATHANIEL R. CRAIGHILL, S. B.	VI.	(See Class of 1893.)
HORACE A. CRARY Sheffield, Warren Co., Pa.	I.	General Superintendent, Horton, Crary, & Co.
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 Bridgeport, Conn.	X.	Chemist, in charge of Glycerine Plant, Fairchild & Shelton.
NATHAN B. DAY, A. B. 280 Newbury St., Boston.	II.	With Standard Rope and Twine Co.
HARRIET GALLUP DELANCEY 63 So. Washington St., Rochester, N. Y.	V.	
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.	With Metropolitan Water Board.
FREDERICK E. FOWLE, JR. 1925 Fourth St., N. W., Washington, D. C.	VIII.	Assistant, Astrophysical Observatory, Smithsonian Institution.
HARRY W. GARDNER Boston, Mass.	IV.	Instructor in Architecture, Mass. Institute of Technology.
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.	Electrician, Hudson River Telephone Co.

1894.— *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
BURT S. HARRISON	IV.	Travelling Engineer, Western Branch of 16 So. Canal St., Chicago, Ill. B. F. Sturtevant Co.
HARRY P. HASTINGS	I.	In Business. South Framingham, Mass.
GEORGE B. HAVEN	II.	Instructor in Mechanical Engineering, Boston, Mass. Mass. Institute of Technology.
WILLIAM REED HILL	IV.	With John Scott & Co., Architects. 67 Moffat Block, Detroit, Mich.
CHARLES F. HOPEWELL	VI.	City Electrician, City of Cambridge. City Hall, Cambridge, Mass.
THEODORE HORTON	XI.	With Metropolitan Sewerage Commission. 1 Mt. Vernon St., Boston.
CLIFTON A. HOWES	VI.	Inspector, Boston Board of Fire Under- writers. 55 Kilby St., Boston.
WILLIAM S. HULSE	VI.	Electrical Engineer for Union Electricitäts- gesellschaft of Berlin. Buenos Ayres, Argentine Republic.
ALBERT F. HUNT	I.	Attorney and Counsellor-at-law. 220 Broadway, New York, N.Y.
EDWARD M. HUNT	I.	Secretary of Commission of Public Works, City of Portland, Me.
NED H. JANVRIN	I.	With Pennsylvania Steel Co. Harrisburg, Pa.
CHARLES H. JOHNSON	I.	Inspector Concord Sewerage System. Room 41, 85 Water St., Boston.
HERBERT E. JOHNSON	VI.	Manager, Oberlin Telephone Co. 11 So. Main St., Oberlin, Ohio.
ALBERT L. KENDALL	II.	Surveyor and Draughtsman, Associated Fac- tory Mutual Fire Insurance Cos. 31 Milk St., Boston.
JOSEPH H. KIMBALL	XI.	In Office of City Engineer, City of Newton. West Newton, Mass.
WILLIAM HERBERT KING . . .	IX.	Secretary to Judge of Supreme Appellate Court. 18 E. Fortieth St., New York, N.Y.
ROBERT H. KIRK	II.	With American Hoist and Derrick Co. 650 Summit Ave., St. Paul, Minn.
JOHN W. KITTREDGE	II.	Civil and Mining Engineer, U. S. Deputy Mineral Surveyor. Eldora, Colo.
CHARLES R. KNAPP	IV.	With Louisville Bridge and Iron Co. 1709 First St., Louisville, Ky.
HENRY O. LACOUNT	II.	Assistant Electrical Inspector, Associated Factory Mutual Fire Insurance Cos. 31 Milk St., Boston.
LUCIUS PAGE LANE, A.M. . . .	IX.	Assistant, Statistical Department, Boston Public Library. Boston, Mass.

1894. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FREDERICK M. LEONARD . . . The Orleans, Albion, N.Y.	I.	With D. A. Tompkins Co., Contractors and Engineers.
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.	With Eastman Kodak Co.
GUY LOWELL, A.B 4 Rue de Lille, Paris, France.	IV.	Student, École des Beaux-Arts.
PATRICK M. LYNCH 69 Dwight St., Holyoke, Mass.	I.	Civil Engineer.
COLBERT A. MACCLURE 701½ Ferguson Bldg., Pittsburgh, Pa.	IV.	In charge of Pittsburgh Office, Peabody & Stearns, Architects.
HENRY K. MCGOODWIN, B.S. 319 Main St., Bowling Green, Ky.	IV.	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, Final Disposition, Street Cleaning Department, New York City.
LESLIE R. MOORE Kaiserstr, 7, Heidelberg, Germany.	V.	Student, University of Heidelberg.
LUTHER R. NASH 4 Post-Office Sq., Boston.	VI.	With Stone & Webster, Electrical Experts and Engineers.
PARKER C. NEWBIGIN Patten, Me.	I.	Superintendent, Patten & Sherman R. R.
HENRY L. NEWHOUSE 4630 Prairie Ave., Chicago, Ill.	IV.	Architect.
FREDERIC M. NOA P. O. Box 383, Geneva, N. Y.	IX.	Teacher of Languages.
JOHN C. NOWELL Eleventh & Filbert Sts., Philadelphia, Pa.	VI.	Superintendent of Maintenance, The Bell Telephone Co., of Philadelphia.

1894. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
GEORGE OWEN, JR. 93 Benefit St., Providence, R. I.	II.	Assistant Inspector of Ordnance, U. S. A.
EDWIN M. PARKER West Acton, Mass.	IV.	In Business.
WALTER W. PATCH 3 Mt. Vernon St., Boston.	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 Peoria, Ill.	X.	Superintendent, Rubber Department, Peoria Rubber and Manufacturing Co.
RICHARD W. PROCTOR Cincinnati, Ohio.	V.	Assistant Superintendent, William S. Mer- rell Chemical Co.
LOUIS W. PULSIFER, A.B. 16 E. Twenty-third St., New York, N. Y.	IV.	Draughtsman, with Lord, Hewlett, & Hull, Architects.
NARCISO T. QUEVEDO, B.S. 18 Calle Oriente N° 9 Guatemala, Guatemala.	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 Huron Ave., Cambridge, Mass.	II.	With Boston Woven Hose and Rubber Co.; Treasurer, Colonial Rubber Co.
HENRY F. RIPLEY 39 Franklin St., Boston.	II.	In Business.
FRANKLIN H. ROBBINS 13 Waterhouse St., Cambridge, Mass.	II.	Transitman, Boston Water Board (3 Mt. Vernon St., Boston).
ARTHUR S. ROGERS Eighteenth & Douglas Sts., Omaha, Neb.	VI.	With American Telephone and Telegraph Co.

1894. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
S. ANTHONY SAVAGE . . . 44 Franklin Ave., Chelsea, Mass.	II.	Assistant Superintending Engineer, U. S. Light-house Board.
ALBERT H. SAWYER . . . 19 Pearl St., Boston.	IX.	With Industrial Development Co.
WILLIAM H. SAYWARD, JR. 69 Monadnock St., Dorchester, Mass.	VII.	Student, Harvard Medical School (Boston).
FERDINAND ALFRED SCHIERTZ 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.
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.	Superintendent for J. Soley, Building Mover and Contractor.
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 350 Franklin St., Elizabeth, N. J.	II.	Draughtsman, Crescent Ship Yard.
GEORGE AYMAR TABER . . . 220 Broadway, New York, N. Y.	I.	With R. H. Hood Co., Engineers and Contractors.
GEORGE TAYLOR Walnut St., Brookline, Mass.	II.	
ALBERT B. TENNEY 35 Fremont Ave., Everett, Mass.	II.	Assistant Secretary and Manager, The 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 West Boylston, Mass.	I.	In Reservoir Department, Metropolitan Water Works.
TOROS H. TOROSSIAN, B.A. Rustchuk, Bulgaria.	I.	Civil Engineer.
THEODORE VARNY 157 La Salle St., Chicago, Ill.	VI.	Electrical Inspector, National Board of Fire Underwriters.

1894. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HENRY E. WARREN Saginaw, Mich.	VI.	Engineer, Saginaw Valley Traction Co.
RIGBY WASON 8 Sussex Gardens, Hyde Park, London, W., England.	VI.	Student-at-law, Middle Temple.
WILLIAM R. WESTCOTT, A.B. 42 Farnsworth St., South Boston.	VI.	With American Bell Telephone Co.
ROBERT C. WHEELER 734 Fifteenth St., N. W., Washington, D. C.	I.	With Nicaragua 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 Manufactur- ing 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 Tele- graph Co.
CHARLES M. ADAMS 59 Waverley St., Roxbury, Mass.	VI.	With Metropolitan Water Board (3 Mt. Ver- non St., Boston).
EDWIN CLEMENT ALDEN 416 Seventh Ave., Pittsburgh, Pa.	VI.	With American Telephone and Telegraph Co.
AZEL AMES 24 Yale Ave., Wakefield, Mass.	I.	Captain, First Regiment, U. S. Volunteer Engineers.
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 West Newton, Mass.	I.	With H. D. Woods, City Engineer, City of Newton.
EDMUND D. BARRY Philadelphia, Pa.	XIII.	Draughtsman, with William Cramp & Sons.
ETHEL BARTHOLOMEW, B.L. Chariton, Iowa.	IV.	
FRANCIS W. BELKNAP 473 Central Park, W., New York, N. Y.	I.	With Surveyor, Department of Taxes and Assessments, City of New York.
CHARLES W. BERRY 6 Centre St., Somerville, Mass.	VI.	

1895. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
S. LAWRENCE BIGELOW, Ph.D. Ann Arbor, Mich.	V.	Instructor of Physical Chemistry, University of Michigan.
GEORGE L. BIXBY, S.M. Foxboro', Mass.	X.	
WALTER D. BLISS Call Bldg., San Francisco, Cal.	IV.	Of Firm of Bliss & Faville, Architects.
PERLEY H. BLODGETT McKeesport, Pa.	V.	With National Tube Works Co.
JOHN BOEDEKER Care Treasury Department, Washington, D. C.	VI.	Cadet, U. S. S. "Chase," Revenue Cutter Service.
EDGAR A. BOESEKE Santa Barbara, Cal.	II.	With Edwards & Co.
THOMAS B. BOOTH 25 Huntington St., Hartford, Conn.	VI.	With Motor-Carriage Department, Pope Manufacturing Co.
FRANK A. BOURNE, S.M. 18 Huntington Ave., Boston.	IV.	Architectural Draughtsman, with F. L. & J. C. Olmsted, Brookline, Mass.
JESSE H. BOURNE Greensboro, N. C.	II.	In charge of Mechanical Department, Agricultural and Mechanical College.
WALLACE C. BRACKETT Room 1001, 101 Milk St., Boston.	XI.	With Chief Engineer, Elevated Lines, Boston Elevated Ry. Co.
ALLEN P. BROWN Chattanooga, Tenn.	IX.	Instructor, Chattanooga Normal University.
ARTHUR L. CANFIELD Hyde Park, Mass.	II.	With Boston Blower Co.
H. W. CHAMBERLAIN, B.Sc., S.M. Alfred Lemon & Co., Agents. 49 Piazza di Spagna, Rome, Italy.	IV.	Student.
WALTER S. CHASE 52 W. Eagle St., East 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.).
ARTHUR HENRY CLARK P.O. Box M., Riverside, Cal.	VI.	Fruit Raising.
CARL H. CLARK Boston, Mass.	XIII.	Instructor in Naval Architecture, Mass. Institute of Technology.
SCHUYLER S. CLARK American House, Bethlehem, Pa.	VIII.	Instructor in Physics, Lehigh University.

1895. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ARTHUR S. COBURN . . . 49 Oak St., Lowell, Mass.	III.	Machinist, U.S S. "Southery."
LUTHER CONANT, JR. . . . 17 Beaver St., New York, N.Y.	IX.	Wall Street Editor, "Journal of Commerce and Commercial Bulletin."
CHARLES P. COOKE Victor, Colo.	VI.	With Colorado Electric Power Co.
J. WILLIAMSON COOKE . . . 3 Head Pl., Boston.	VI.	Testing Engineer, with Edison Electric Il- luminating Co.
JOHN WINFIELD COOKE . . . Victor, Colo.	VI.	With The Colorado Electric Power Co.
FREDERIC E. COX Ninth & Locust Sts., St. Louis, Mo.	IV.	Draughtsman, with Wm. B. Ittner, Super- vising Architect of Board of Education.
WALTER N. CRAFTS, A. B. . . Sharon, Pa.	III.	Superintendent of Sharon Plant of Ameri- can Steel Casting Co.
HENRY M. CRANE 42 Farnsworth St., South Boston.	II.	With American Bell Telephone 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.
ARTHUR D. DEAN 837 State St., Springfield, Mass.	VI.	First Assistant, Springfield High School of Mechanic Arts.
GEORGE DEFREN, S.M. . . . 7 Thomas Park, South Boston.	V.	New England Representative, Kraus-Merkel Malting Co.
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.
JUDSON C. DIGKERMAN . . . 10 Minot St., Woburn, Mass.	X.	Chemical Engineer, Merrimac Chemical Co. (South Wilmington, Mass.).
BENJAMIN C. DONHAM King City, Cal.	I.	Surveyor and Assistant Irrigation Engineer, Spreckels Sugar Co.
JOHN THOMPSON DORRANCE, Ph.D. V. 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 Boston, Mass.	VIII.	Instructor in Physics, Mass. Institute of Technology.

1895. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ALBERT DUNBAR 17 Central St., Boston.	V.	Superintendent of Construction, The C. H. Eglee Construction Co.
ROLFE M. ELLIS McKeesport, Pa.	V.	With National Tube Works Co.
WALTER H. ELLIS Main St., Woonsocket, R. I.	I.	Of John W. Ellis & Son, Civil Engineers.
CHARLES F. EVELETH 239 Causeway St., Boston.	VI.	With Braman, Dow & Co.
ROBERT D. FARQUHAR, A.B. 3 Rue Soufflot, Paris, France.	IV.	Student, École des Beaux-Arts.
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 Atwood Morrison Co.
CHARLES M. GAY, JR., A.B. 3 Rue Soufflot, Paris, France.	IV.	Student, École des Beaux-Arts.
PERLEY F. GILBERT Musgrove Block, Andover, Mass.	IV.	Architect.
WATSON E. GOODYEAR Naugatuck, Conn.	VI.	Electrician for The Bright Co.
FRANCIS C. GREEN 63 Fifth Ave., New York, N. Y.	XI.	With Weir Filter Co.
JOHN H. GREGORY 57 Lumber District, Albany, N. Y.	I.	With Allen Hazen, Consulting Engineer (St. Paul Bldg., New York).
WILLIAM T. HALL Boston, Mass.	V.	Assistant in Chemistry, Mass. Institute of Technology.
FREDERICK A. HANNAH Boston, Mass.	II.	Instructor in Mechanical Engineering, Mass. Institute of Technology.
FREDERICK W. HARRIS 42 Prospect St., Clinton, Mass.	XI.	With Metropolitan Water Board, Reservoir Department.
HARRY M. HAVEN Somerville, Mass.	II.	With Quincy Market Cold Storage Co. (Boston).
GEORGE W. HAYDEN 125 Milk St., Boston.	VI.	With New England Telephone and Telegraph Co.
HENRY A. HOLDREGE 203 Washington St., Chicago, Ill.	VI.	With Chicago Telephone Co.

1895. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
L. FREDERIC HOWARD . . . 373 Washington St., Boston.	VI.	Superintendent, with U. S. Light-house Department, 1st and 2d Districts.
GEORGE R. HOWARTH . . . 925 Green St., Philadelphia, Pa.	II.	Draughtsman, Baldwin Locomotive Works.
GEORGE E. HOWE 20 Wesley Park, Somerville, Mass.	I.	With Metropolitan Water Board (3 Mt. Vernon St., Boston).
SAMUEL P. HUNT 7600 Frankstown Ave., Pittsburgh, Pa.	VI., X.	Inspector, American Telephone and Telegraph Co.
E. LAURENCE HURD 8 Butler St., Dorchester, Mass.	II.	With L. Burge, Hayes, & Co., Insurance.
EDWARD H. HUXLEY 29 Hampshire St., Cambridgeport, Mass.	II.	With Boston Woven Hose and Rubber Co.
HERMANN KOTZSCHMAR, JR. Boston, Mass.	II.	Assistant Engineer, U. S. Steamer "Manning."
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.
ALFRED V. LINCOLN, JR. Boston, Mass.	II.	Clerk, Winthrop National Bank.
ANDREW J. LOGAN 27 Davis St., Bangor, Me.	I.	Roadmaster, Eastern Division Maine Central R. R.
ERNEST J. LORING 53 State St., Boston.	IV.	Draughtsman, with Loring & Phipps, Architects.
THOMAS MARK LOTHROP South Framingham, Mass.	II.	Manager, New England Telephone and Telegraph Co.
JAMES T. R. McMANUS Kuskonook, B. C.	I.	With Canadian Pacific Ry. Survey.
DWIGHT N. MARBLE, A.B. 416 Seventh Ave., Pittsburgh, Pa.	VI.	With American Telephone and Telegraph Co.
WALTER C. MARMON Indianapolis, Ind.	II.	Secretary and Treasurer, Nordyke & Marmion Co.
FRANK B. MASTERS Belvidere St., Boston.	II.	Instructor in Drawing, Mechanic Arts High School.
FRANÇOIS E. MATTHES Washington, D. C.	I.	Assistant Topographer, U. S. Geological Survey.
CERARD H. MATTHES Washington, D. C.	I.	Assistant Hydrographer, U. S. Geological Survey.

1895. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
GEORGE F. C. MERRISS . . . Denison, Tex.	I	Draughtsman, U. S. Geological Survey.
CHARLES A. MESERVE . . . 87 Linden St., Allston, Mass.	V.	
FRANKLIN T. MILLER . . . 146 Franklin St., Boston.	XIII.	Secretary, The F. W. Dodge Co.
JOHN D. J. MOORE . . . 120 Broadway, New York, N. Y.	II.	Sales Agent, Westinghouse Electric and Manufacturing Co.
RICHARD MOREY . . . 716 New York Life Bldg., Kansas City, Mo.	I.	Engineer and Manager, Gilsonite Roofing and Paving Co. (St. Louis).
ARTHUR F. NESBIT, A.B. . . Durham, N. H.	VI.	Instructor in Physics and Electrical Engineering, New Hampshire College.
JOHN L. NEWELL . . . 139 Milk St., Boston.	X.	With Page, Newell, & Co., Iron and Steel Merchants.
FRANKLIN A. PARK . . . Winchendon, Mass.	II.	With Baxter D. Whitney, Manufacturer of Wood-working Machinery.
WINTHROP D. PARKER . . . 7 Exchange Pl., Boston.	IV.	Draughtsman, with John Lyman Faxon, Architect.
CHARLES L. PARMELEE . . . Works, Cincinnati, Ohio.	I., XI.	First Assistant Engineer to Chief Chemist and Bacteriologist.
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 . . . 68 Ames Bldg., Boston.	VI.	With United Electric Securities Co.
FREDERICK L. RICHARDS . . . 127 Summer St., Somerville, Mass.	X.	
WALTER J. RICKEY . . . Schenectady, N. Y.	II.	With General Electric Co.
GEORGE A. ROCKWELL . . . The Warren, Roxbury, Mass.	X.	Student, Boston University Law School.
LOUIS K. ROURKE . . . Abington, Mass.	I.	Supervisor, Panama R.R. (Colon, Colombia).
HAROLD N. RUST . . . 19 No. Franklin St., Wilkes-Barre, Pa.	VI.	Electrical Contractor and Dealer in Electrical Supplies.
SAMUEL S. SADTLER . . . 336 W. Franklin St., Germantown, Philadelphia, Pa.	V.	Chemist, U. S. Appraisers' Office.
CLIFFORD B. SANBORN . . . 24 Farwell Pl., Cambridge, Mass.	IX.	Student, Harvard University Law School.

1895. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
FRANK C. SCHMITZ	I.	Assistant Engineer, Pennsylvania Lines west of Pittsburgh, Pa.
EDWARD P. SCHOENTGEN	IV.	With Eames & Young, Architects. Eighth & Locust Sts., St. Louis, Mo.
ROBERT K. SHEPPARD	X.	With Washburn & Moen Manufacturing Co. 94 Grove St., Worcester, Mass.
RICHARD G. B. SHERIDAN	XIII.	With The Brown Hoisting and Conveying Machine Co. Cleveland, Ohio.
JOHN CARLETON SHERMAN	VI.	Assistant Editor, "Youth's Companion." Boston, Mass.
ALFRED L. SIMMONS	I.	In Office of Engineer, Eastern District, New York, New Haven, & Hartford R.R. 180 Sumner St., Boston.
ALFRED PRITCHARD SLOAN, JR.	VI.	Secretary, The W. M. Wood Co. 11 Broadway, New York, N. Y.
WALTER F. STEVENS	II.	With Freeman Wight (25 Hayward Pl., Boston). Newton Highlands, Mass.
WILLIAM E. SWIFT	I.	In Engineering Department, Metropolitan Water Board. 3 Mt. Vernon St., Boston.
GERARD SWOPE	VI.	Electrical Engineer. 242 So. Jefferson St., Chicago, Ill.
C. CHESTER TAFT	X.	With the E. H. Godshalk Co. 2300 Hamilton St. Philadelphia, Pa.
JAMES W. THOMAS	II.	With Wyoming Shovel Works. Wyoming, Pa.
STURGIS H. THORNDIKE, A.B.	I.	With City Engineer, City of Boston. 60 City Hall, Boston.
CHARLES F. TILLINGHAST	II.	Captain. First R. I. U. S. Volunteer In- fantry, Commanding Co. A. 260 Angell St., Providence, R. I.
EDWARD A. TUCKER	I.	Draughtsman, with Norcross Bros. 10 E. Worcester St., Worcester, Mass.
HUGH M. TUCKER	II.	With Ernest Flagg, Construction Depart- ment. 214 E. Pike's Peak Ave., Colorado Springs, Colo.
LOREN G. WAITE	VI.	With General Electric Co. (Schenectady, N. Y.). 105 Beltran St., Malden, Mass.
JOSEPH E. WALWORTH, PH.D.	V.	Instructor in Chemistry, Williams College (Williamstown, Mass.). Lawrence, Mass.
WILLARD H. WATKINS	V.	Chemist, Harway Dyewood and Extract Co. 189 Water St., New York, N. Y.
DAVID B. WESTON	V.	Chemist, Crystal Springs Manufacturing Co. Watertown, Mass.

1895.— *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
RALPH N. WHEELER Municipal Bldg., Brooklyn, N. Y.	I.	Assistant Engineer, Department of Water Supply.
THOMAS H. WIGGIN 154 Mountain Ave., Malden, Mass.	I.	With Metropolitan Water Board (Boston).
CHARLES G. WILLIAMS 55 E. Main St., Norwalk, Ohio.	I.	Travelling.
ROGER J. WILLIAMS Canton, Mass.	IX.	With Draper Brothers' Co.
WALTER S. WILLIAMS 78 Zeigler St., Roxbury, Mass.	X.	With S. Homer Woodbridge Co. (4 Post Office Sq., Boston).
WILLIAM H. WINKLEY 58 Kilby St., Boston.	XIII.	Special Agent, Hartford Fire Insurance Co.
JOHN J. C. WOLFE 716 Chamber of Commerce Bldg., Chicago, Ill.	II.	With W. H. Colvin, Real Estate and Loans.
LUTHER K. YODER Clybourn & 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. ZAPP 43 Summer St., Boston.	IV.	Lucical Engineer, Luminous Prism Co.

1896.

BUTLER AMES U. S. Bunting Co., Lowell, Mass.	II.	Agent of Wamesit Power Co.
WILLIAM P. ANDERSON Mountain City, Elko Co., Nev.	III.	Manager, Nelson Mining Co.
WILLIAM M. ANDREW 213 Liberty St., Schenectady, N. Y.	VI.	With General Electric Co.
GEORGE F. ASHTON 39 Church St., Salem, Mass.	II.	Of Firm of Metcalf & Ashton, Civil Engineers.
ERNEST C. ATKINS 1325 Marquette Bldg., Chicago, Ill.	II.	With Lamson Consolidated Store Service Co.
THOMAS W. BAILEY 20 Beacon St., Boston.	I.	With Boston Transit Commission.
REUBEN E. BAKENHUS Washington, D. C.	I.	On Corps of Examiners, U. S. Civil Service Commission.
E. ARTHUR BALDWIN Schenectady, N. Y.	VI.	With Railway Engineering Department, General Electric Co.

1896. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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 Galloway, Ala.	III.	Mining Engineer, Galloway Coal Co.
GEORGE S. BOWES New England Bldg., Cleveland, Ohio.	II.	With The Wellman Seaver Engineering Co.
AUGUSTUS J. BOWIE, JR., A. B. II., VI. Sixth & H Sts., Sacramento, Cal.	VI.	Assistant Electrician, Sacramento Electric Gas and Railway Co.
E. RAYMOND BRACKETT 47 Jackson St., Lawrence, Mass.	V.	Chemist, International Paper Co.
EDWARD M. BRAGG Boston, Mass.	XIII.	Assistant in Mechanical Engineering, Mass. Institute of Technology.
LEWIS B. BREED 1215 Wood St., Wilkinsburg, Pa.	VI.	With Westinghouse Electric and Manufacturing Co.
JOHN F. BROOKS 47 Main St., North Hanover, Mass.	II.	In Business.
HARRY W. BROWN 9 Washington St., Winchester, Mass.	VI.	With Meter Department, General Electric Co.
HARRY P. BROWNE 519 Binz Bldg., Houston, Tex.	VI.	Agency in Engineering.
RUSSELL S. BUCHER Harrisonburg, Va.	IV.	Of Wm. M. Bucher & Son, Architects and Builders.
GEORGE K. BURGESS 9 Rue Blainville, Paris, France.	VIII.	Student.
JOHN G. CALHOUN Lynn, Mass.	VI.	Assistant Engineer, Experimental Department, General Electric Co.
LEWIS T. CANNON Care W. T. Cannon, Mass. Inst. Tech., Boston.	IV.	Travelling abroad.
MARION L. CHAMBERLAIN Lake St., Waltham, Mass.	IV.	
HELEN CHAMBERLIN 530 Atlantic Ave., Boston.	IV.	Designer and Draughtsman, Library Bureau.
HAROLD M. CHASE	V.	(See Class of 1894.)
WINTHROP H. CHENERY, A. M., IV. Belmont, Mass.	IV.	Graduate Student, Harvard University.

1896.— *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JOSEPH W. CLARY	XIII.	Assistant Draughtsman, with Superintending Constructor, U. S. N.
Newport News, Va.		
ALBERT E. CLUETT, A.B.	VI.	With Cluett, Coon & Co.
River St., Troy, N. Y.		
JOHN L. COLEY	II.	
Westport, Conn.		
WILLARD H. COLMAN	II.	Student.
3 Massachusetts Ave., Buffalo, N. Y.		
FRANCIS M. CONANT	X.	Chemist, Mathieson Alkali Works, Castner Electrolytic Plant.
University Club, Niagara Falls, N. Y.		
WILLIAM D. COOLIDGE	VI.	Student, University of Leipsic.
Leipsic, Germany.		
WINTHROP COOLIDGE	III.	Chemist, Chicago Copper Refining Co.
4752 Kimbark Ave., Chicago, Ill.		
EDWIN CLAASSEN CRAMER	IV.	Draughtsman, with Crans & Barkhausen.
725 Marshall St., Milwaukee, Wis.		
HENRY M. CRANE	VI.	(See Class of 1895.)
STEPHEN D. CRANE	VI.	In Superintendent's Office, New York & New Jersey Telephone Co.
14 Erie St., Jersey City, N. J.		
CALVIN IRA CROCKER	I.	With Street Department, City of Boston.
Room 51, City Hall, Boston.		
RALPH W. CROSBY	XIII.	Assistant Draughtsman, with Superintending Constructor U. S. N.
Newport News, Va.		
HENRY CUMMINGS, JR.	IV.	With Norcross Bros.
1143 Tremont Bldg., Boston.		
NATHAN H. DANIELS, JR.	VI.	Salesman, Sleeper Machine Co.
35 Congress St., Boston.		
FRANKLIN H. DAVIS	III.	Assistant to the Inspector of Ordnance, U. S. A.
P. O. Box 1606, Philadelphia, Pa.		
ROBERT A. DAVIS	VI.	With Engineering Department, New England Telephone and Telegraph Co.
104 Milk St., Boston.		
HAROLD W. DE LONG	XIII.	With Fore River Engine Co.
Weymouth, Mass.		
LEONARD D. P. DICKINSON	VI.	Instructor in Electrical Engineering, University of Maine.
Orono, Me.		
WILLIAM T. DORRANCE, A.B.	I.	With Boston Terminal Co.
180 Summer St., Boston.		
JAMES M. DRISCOLL	I.	Rodman, Dam and Aqueduct Department, Metropolitan Water Works.
Northborough, Mass.		
JOSEPH DRISCOLL	I.	With Street Laying-Out Department, "Sewerage Works."
Room 25, Old Court House, Boston, Mass.		

1896. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ALPHONSUS L. DRUM	VI.	General Manager, Middleboro Gas and Electric Plant. Middleboro, Mass.
FREDERICK E. FIELD	XI.	Assistant in City Engineer's Office, Water Department. City Hall, Boston.
ELIZABETH F. FISHER	XII.	Instructor in Geology and Mineralogy, Wellesley College. Wellesley, Mass.
HARRY G. FISK	IX.	Treasurer, Fisk Rubber Co. Chicopee Falls, Mass.
FREDERICK E. FORSTER	X.	With Acushnet Mills Corporation. 256 Union St., New Bedford, Mass.
GEORGE FRESCH, JR.	IV.	Draughtsman. Address unknown.
MYRON L. FULLER	XII.	Assistant in Geology, Mass. Institute of Technology. Boston, Mass.
ROBERT L. FULLER	IV.	Draughtsman, with Fuller, Delano, & Frost, Architects. 452 Main St., Worcester, Mass.
STEPHEN DEM. GAGE	V.	Biologist, Mass. State Board of Health, Lawrence Experiment Station. Lawrence, Mass.
HENRY GARDNER	II.	Draughtsman, Boston & Maine R. R. Co. (Boston Shops). 24 Chestnut St., Salem, Mass.
ABRAM GARFIELD, A.B.	IV.	Of Firm of Meade & Garfield, Architects. 1005 Garfield Bldg., Cleveland, Ohio.
LEONARD H. GOODHUE	V.	Chemist, Boston Rubber Shoe Co. Fells, Mass.
EDWARD B. GORDON, JR.	II.	174 Lewis St., Lynn, Mass.
AMADEUS W. GRABAU, M.S.	XII.	Fellow in Paleontology, Harvard University. 70 College House, Cambridge, Mass.
ANDREW H. GREEN, A.B.	I.	President, Green's Dredging Co. 178 So. Water St., Chicago, Ill.
NATHAN C. GROVER, B.C.E.	I.	Professor of Civil Engineering, University of Maine. Orono, Me.
HENRY G. GRUSH	VI.	With Construction Department, New England Telephone and Telegraph Company. 42 Farnsworth St., South Boston.
FRANK E. GUPTILL	VI.	Manager, Oxford Division, New England Telephone and Telegraph Co. 61 Essex St., Boston.
WALTER ATWOOD HALL	VI.	With General Electric Co. 62 Park St., Lynn, Mass.
JOHN S. HALLARAN	I.	1203 Madison St., Toledo, Ohio.
CHARLES W. HAPGOOD	V.	With Learnard & Bird, Oil Works. 17 Abattoir St., Brighton, Mass.

1896. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ROBERT S. HARDY P.O. Box 40, Tomahawk, Wis.	VI.	With Bradley Co.
GEORGE E. HARKNESS 73 Charles River Ave., Boston.	I.	With Boston Transit Commission (on New Charlestown Bridge).
JOSEPH HARRINGTON Guachinango, Estado de Jolisco, Mexico.	II.	Superintendent, El Rojo Mining Co.
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 Commis- sion (11 Mt. Vernon St., Boston).
HARRISON W. HAYWARD 79 Milton Ave., Hyde Park, Mass.	X.	
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.	Draughtsman, Associated Factory Mutual Fire Insurance Cos.
JAMES B. HENDERSON Hampshire St., Cambridgeport, Mass.	II.	With Boston Woven Hose and Rubber Co.
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 Manufact- urers.
WALTER M. HOLLIS 73 Newhall St., Lynn, Mass.	VI.	With Engineering Department, General Electric Co.
JAMES C. HOPKINS 3 Hamilton Pl., Boston.	IV.	Draughtsman, with Winslow & Wetherell, Architects.
FRANK A. HOWARD 26 Cortlandt St., New York, N. Y.	I.	With Engineering Department, Erie R. R.
JOSEPH M. HOWE Galveston, Tex.	I.	Instrument Man, Gulf, Colorado, & Santa Fé Ry. Co.
EUGENE C. HULTMAN 205 Broadway, Cambridgeport, Mass.	I.	Assistant Chief Engineer, Street Railway Department, Barbour Stockwell Co.
BENJAMIN HURD Equitable Bldg., Boston, Mass.	VI.	Engineer, with Blood & Hale, Designing and Consulting Engineers.
CHARLES GILMAN HYDE 140 State House, Boston.	XI.	With Engineering Department, Mass. State Board of Health.
CHARLES H. INGALLS 516 Atlantic Ave., Boston.	VI.	With Inspection Department, Edison Elec- tric Illuminating Co.

1896. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WALTER H. JAMES	II.	Draughtsman, Waltham Bleachery and Waltham, Mass.
MINOR S. JAMESON	I.	Transitman, New York, New Haven, & Hartford R. R.
HOWARD K. JONES	IV.	Draughtsman, with Alden & Harlow, Architects.
THEODORE I. JONES	VI.	With American Telephone and Telegraph Co.
JOSEPH H. KNIGHT	IX.	Student, Harvard University Law School.
LEE BERT L. LAMBORN, B.S.	V.	Chemist, Curtis Davis & Co., Soap Makers & Glycerine Refiners (Cambridgeport, Mass.).
CHARLES E. LAWRENCE, M.A.	VI.	With Engineering Department, New York & New Jersey Telephone Co.
EUGENE H. LAWS	V.	Chemist, West Indies Chemical Works.
MARSHALL C. LEIGHTON	VII.	Agent, Montclair Board of Health.
WALTER S. LELAND	XIII.	With U. S. Naval Constructor, Union Iron Works.
PAUL W. LITCHFIELD	X.	With New York Belting & Packing Co.
CHARLES E. LOCKE	III.	Assistant to Professor Richards, Mass. Institute of Technology.
JOHN E. LONNGREN	II.	With Engineering Department, Illinois Steel Co.
ALF C. LOOTZ	I.	Draughtsman, U. S. Navy Yard, (Charlestown, Mass.).
HERMANN CHARLES LYTHGOE	V.	Assistant Analyst of Food and Drugs, Mass. State Board of Health.
WILLIAM H. MCALPINE	XI.	With Metropolitan Water Board.
FRANK G. MCCANN	II.	Draughtsman for Evans, Almirall, & Co., Heating and Ventilation Engineers and Contractors.
JOHN H. MANAHAN	VI.	With Sargent & Lundy, Mechanical and Electrical Engineers.
EDWARD S. MANSFIELD	VI.	With Edison Electric Illuminating Co.

1896. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JAMES G. MELLUISH Court House, McLean Co., 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	V.	With Hub Rubber Co.
70 Middle St., Portsmouth, N. H.		
CHARLES MORRIS, JR.	VI.	Assistant Paymaster U. S. S. "Hist."
Care Navy Department, Washington, D. C.		
CHARLES K. B. NEVIN	IV.	With Francis R. Allen and J. McArthur Vance, Architects.
220 Devonshire St., Boston.		
HERBERT D. NEWELL	I.	Draughtsman, U. S. Engineer's Office.
Boston, Mass.		
CHARLES S. NEWHALL	III.	With Anglo-Mexican Mining Co. (Limited).
San Jose de Gracia Sinaloa, Mexico.		
FRED B. OWEN	VI.	Electrician, Narragansett Electric Lighting Co.
17 Bassett St., Providence, R. I.		
KARL A. PAULY	VI.	Inspector, New England Telephone and Telegraph Co.
7 Chardon St., Boston.		
WALTER O. PENNELL	VI.	With Bell Telephone Co. of Philadelphia.
Eleventh & Filbert Sts., Philadelphia, Pa.		
CLARENCE W. PERLEY	VII.	Librarian of Engineering Library, Mass. Institute of Technology.
Boston, Mass.		
JOEL H. PILLSBURY	I.	With Mass. Highway Commission.
4 Mt. Vernon St., Boston.		
EDWIN D. PINGREE	II.	Draughtsman, Associated Factory Mutual Insurance Cos.
812 Banigan Bldg., Providence, R. I.		
HARRY A. PRESSEY, B.S.	I.	Assistant Hydrographer, U. S. Geological Survey.
14 Third St., N. E., Washington, D. C.		
JOHN L. PUTNAM	VI.	With American Telephone and Telegraph Co.
105 Quincy St., Chicago, Ill.		
HARRY D. RAWSON	IV.	Architect.
723 Fourth St., Des Moines, Iowa.		
JAMES W. RAYNOLDS	III.	Address not known.
DANIEL A. RICHARDSON	II.	Graduate Student, Harvard University.
14 Craigie St., Cambridge, Mass.		

1896. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
EDWIN H. ROBERTS Perry Park, Colo.	II.	Plaster Manufacturer.
J. ARNOLD ROCKWELL, JR. . . 47 E. Newton St., Boston.	VII.	Student, Boston University Medical School.
WILLIAM LACY ROOT 11 Church St., Pittsfield.	X	Instructor in Public Schools.
A. RUCKGABER Amber Club, East End, Pittsburgh, Pa.	VI.	Apprentice, Westinghouse Electric and Manufacturing Co.
A. LE BARON RUSSELL 28 State St., Boston.	IX.	Note Broker.
NORMAN F. RUTHERFORD . . . E. One-hundred-thirty-eighth St., New York, N. Y.	VI.	With The De La Vergne Refrigeration Ma- chine Co.
LAWRENCE K. SAGER 116 School St., Somerville, Mass.	VI.	Instructor in Electrical Engineering, Ameri- can School of Correspondence.
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.
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 Fred W. Wolf Co., Manufacturers of the Linde Ice Machines.
HENRY K. SEARS 156A Tremont St., Boston.	IX.	With American School of Correspondence.
MORTIMER A. SEARS Winchester, Mass.	III.	Teacher.
GEORGE F. SHEPARD, JR. . . . 111 Fifth Ave., New York, N. Y.	IV.	Draughtsman, with Brite & Bacon, Architects.
FRANK N. SMALLEY Care Major W. O. Owen, Manila, Philippine Islands.	V.	In Hospital Corps, U. S. A.
SAMUEL T. SMETTERS, Ph.B. . . 50 Wabensia Ave., Chicago, Ill.	I.	Civil Engineer, with Illinois Steel Co., North Works.
F. HASKELL SMITH Hartford, Conn.	X.	In charge of Experimental Department, Hartford Rubber Works Co.
HERBERT E. SMITH, S.M. . . . Tremont Temple, Boston.	IV.	Sanitary Architect.
HOWARD EVERETT SMITH Framingham, Mass.	XI.	With Boston Transit Commission (20 Bea- con St., Boston).

1896. — *Continued.*

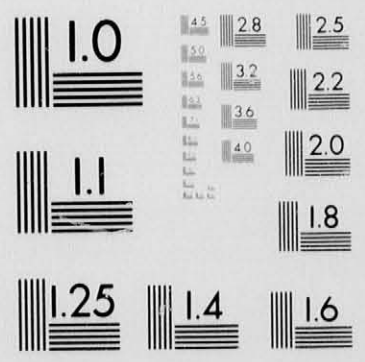
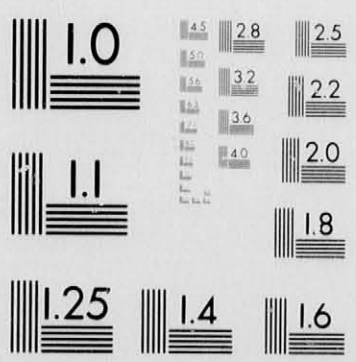
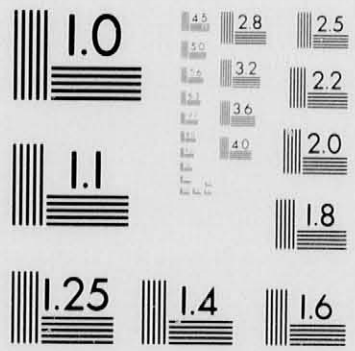
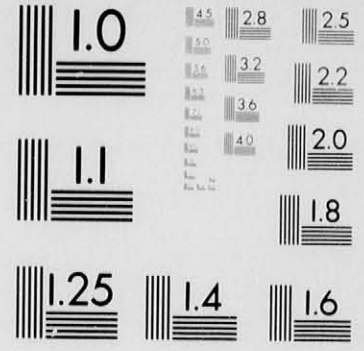
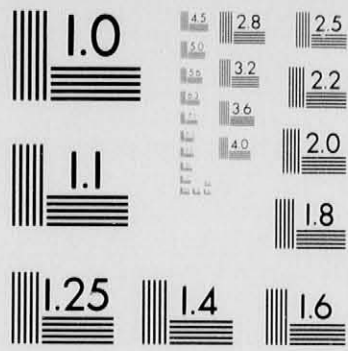
NAME AND ADDRESS.	COURSE.	OCCUPATION.
ALBERT E. SMYSER, S.M. 910 Highland Ave., Chester, Pa.	II.	With American Steel Casting Co. (Thurlow, Pa.).
FREDERIC W. SMYSER 1738 M St., Lincoln, Neb.	II.	With Motive Power Department, Burlington & Missouri River R. R. in Nebraska.
JAMES S. SMYSER Schenectady, N. Y.	II.	With Testing Department, 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. Chicago, Ill.	III.	With Illinois Steel Co., South Works.
MEYER J. STURM 603 Stock Exchange Bldg., Chicago, Ill.	IV.	Lucical Engineer and Architect with Luminous Prism Co.
GEORGE W. SUMNER Washington, D. C.	VI.	Assistant Examiner, U. S. Patent Office.
HARRISON S. TAFT, B.P. Chicago, Ill.	II.	With Chicago Shipbuilding Co.
LEWIS HOOPER TAPPAN Meshanticut, R. I.	II.	In Business.
WILLIAM B. TAYLOR P. O. Box 2558, Boston.	II.	Inspector of Purchasing Department, Mexican Central Ry. Co. (Limited).
FRANK A. THANISCH Lima, Peru.	III.	Mining Engineer with W. R. Grace & Co.
WILLIAM H. THOMAS, JR. Magog, Que.	V.	Chemist, Dominion Cotton Mills Co., Magog Print Works Branch.
AUBERT 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 15 Dey St., New York, N. Y.	VI.	With Engineering Department, New York Telephone Co.
HENRY H. TOZIER 502 State House, Boston.	V.	Analyst for Mass. State Board of Health, Water Laboratory.

1896. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CHARLES E. TROUT 145 W. Newton St., Boston.	I.	Transitman, Stony Brook Improvement.
CHARLES W. TUCKER 945 No. Third St., Philadelphia, Pa.	V.	Chemist, Breck Bros., Glazed Kid Manufacturers.
ARTHUR P. UNDERHILL 38 Westminster St., Springfield, Mass.	VI.	Commercial Traveller, with The Elektron Manufacturing Co.
GRACE A. VAN EVEREN 841 Jefferson Ave., Brooklyn, N. Y.	V.	Instructor in Science, Erasmus Hall.
HERMANN V. VON HOLST, A.B. 1780 Old Colony Bldg., Chicago, Ill.	IV.	Draughtsman, with Shepley, Rutan, & Coolidge, Architects.
WILLIAM G. WALL 18 E. Cary St., Richmond, Va.	VI.	Manager, Electrical Department, 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.
J. LLOYD WAYNE 15 Dey St., New York, N. Y.	VI.	With Engineering Department, New York Telephone Co.
ALBERT J. WELLS 205 York St., Quincy, Ill.	II.	With Smith-Hill Elevator Co.
CHARLES A. WENTWORTH Fitchburg, 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., S.M. Roswell, N. Mex.	VIII.	Teacher of Science and Mathematics, New Mexico Military Institute.
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 Washington, D.C.	II.	Electrical Draughtsman, Superintendent's office, Treasury Department.
CONRAD H. YOUNG 18 Housatonic Ave., Bridgeport, Conn.	II.	Superintendent, The W. M. Wood Co., Engineers and Builders of Ice Machinery.

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JOHN T. ALDEN 104 Milk St., Boston.	II.	With New England Telephone and Telegraph Co.
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1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WILLIAM H. ALLEN, JR. 67 Chauncy St., Boston.	. XIII.	
ROBERT ANDERSON, Ph.B. 2459 Grandin Road, Cincinnati, Ohio.	. VI.	Inspector and Night Foreman, The Bullock Electric Manufacturing Co. (Broadway and Hunt St.).
THOMAS C. ATWOOD 362 Cross St., Malden, Mass.	. . . . I.	With Metropolitan Water Board (Boston).
CHARLES F. BALDWIN Jefferson St., Chicago, Ill.	. . . . VI.	With Western Electric Co.
HENRY W. BALLOU 63 Princeton Ave., Providence, R. I.	. . . . I.	With Samuel M. Gray, Consulting Engineer.
WILFRED BANCROFT 1600 Hamilton St., Philadelphia, Pa.	. . . . II.	With Wm. Sellers & Co. (Incorporated).
EDGAR L. BARKHOUSE 39 Front St., Schenectady, N. Y.	. . . . VI.	With General Electric Co.
WARREN H. BARNES 114 Main St., Springfield, Mass.	. . . . I.	With Road Department, Boston & Maine R. R.
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. 116 Thirty-fourth St., Newport News, Va.	. . . . XIII.	Assistant Draughtsman, in Office of U. S. Naval Constructor.
PERCY E. BLOOD 101 Milk St., Boston.	. . . . I.	With Engineering Department, Boston Elevated Ry. Co.
HUGH BORLAND 30 Tremont St., Boston.	. . . . I.	In Sewer Division, Street Department, City of Boston.
EDGAR C. BOWEN, JR. 710 Dayton Ave., St. Paul, Minn.	. . . . II.	With Northern Pacific Ry. Co.
RALPH A. BOWEN 122 Pearl St., New York, N. Y.	. . . . V.	With A. Klipstein & Co., Manufacturers and Importers.
JOHN BOYD 72 Marshall St., North Adams, Mass.	. . . . V.	With Arnold Print Works.
CHARLES W. BRADLEE 32 Union St., Boston.	. . . . IX.	With Magee Furnace Co.
EDWIN A. BRAINERD 85 Water St., Boston.	. . . . I.	Civil Engineer, with Sumner Hollingsworth.
CHARLES T. BRAMHALL Plymouth, Mass.	. . . . II.	Mechanical Engineer, Planters' Compress Co.

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CHARLES B. BREED Boston, Mass.	I.	Assistant in Civil Engineering, Mass. Institute of Technology.
E. PERCY BROWN North Brookfield, Queens Co., N. S.	III.	Assayer and Chemist, Brookfield Mining Co.
JAMES M. BROWN 343 No. Main St., Mansfield, Ohio.	II.	In Engineering Department, Aultman & Taylor Machinery Co.
WARREN D. BROWN, A.B. . . 103 E. Thirty-ninth St., New York, N. Y.	VI.	Corporal, Co. A, First Regiment, U. S. Volunteers.
HOWARD H. BURDICK . . . Plainfield, N. J.	II.	With Campbell Printing Press and Manufacturing Co.
FRED E. BUSBY 100 Westford St., Lowell, Mass.	V.	Chemist, Lowell Bleachery and Dye Works.
WALTER M. BUSH 32 Broadway, New York, N. Y.	II.	Inspector for R. W. Hildreth & Co., Civil and Inspecting Engineers.
JOHN E. CARTY 30 Tremont St., Boston.	I.	Draughtsman, Sewer Division, Street Department, City of Boston.
CHARLES BEVAN CLARK, A.B. Rochester, N. Y.	I.	In Maintenance Department, Buffalo, Rochester, & Pittsburgh Ry. Co.
HENRY A. CLARK Lee, Mass.	II.	With Clark & Spencer Machine Works.
EZRA A. COLEMAN 193 W. Newton St., Boston.	VI.	Inspector of Underground Cables, Edison Electric Illuminating Co.
JOHN A. COLLINS, JR., S.M. . Lawrence, Mass.	X.	Assistant Superintendent, Atlantic Cotton Mills.
LUZERNE S. COWLES Villa des Gytises, Champel Chemin Venel, Geneva, Switzerland.	I.	Student.
ALLEN S. CROCKER 620 Atlantic Ave., Boston.	II.	With L. S. Fletcher Co., Electrical and Mechanical Engineers.
CHARLES R. CURRIER 382 Lamartine St., Jamaica Plain, Mass.	II.	With Reese Manufacturing Co. (Back River, Rip Raps P. O., Va.).
ARTHUR V. CURTISXIII. Washington, D. C.		Draughtsman, Bureau of Construction and Repair, Navy Yard.
WILLIAM H. CUTLERIV. 806 The Temple, Chicago, Ill.		With Frost & Granger, Architects.
*JERE R. DANIELLXIII. 31 State St., Boston.		Naval Architect, with B. B. Crowninshield.
HENRY M. DEAVITTV. 242 So. Jefferson St., Chicago, Ill.		Chemist, with Western Electric Co.

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
LEONARD M. DEMERITT . . . 60 Congress St., Boston.	II.	With Walter H. Sawyer, Civil Engineer.
ARTHUR S. DEWOLF . . . Melrose Highlands, Mass.	II.	
EDWIN S. DODGE	IV.	Student (Paris, France).
71 High St., Newburyport, Mass.		
FRANKLIN W. DOLIBER . . .	IX.	With Mellin's Food Co.
291 Atlantic Ave., Boston.		
JOHN A. DONOVAN	IX.	Teacher, Lowell High School.
256 Branch St., Lowell, Mass.		
ALFRED R. DOTEN	II.	With Department of Yards and Docks, U. S.
64 Mt. Vernon St., Boston.		Navy Yard (Charlestown, Mass.).
PROCTOR L. DOUGHERTY . . .	VI.	With James Means (Brockton, Mass.).
77 Lake View Ave., Cambridge, Mass.		
ALFRED K. DOWNES	I.	Assistant Foreman, Road Department, South-
Ware, Mass.		ern Division, Boston & Maine R. R.
IRÉNÉE DU PONT, S.M.	X.	In Pusey & Jones' Machine Shops.
P. O. Box 354, Wilmington, Del.		
JOHN R. DWYER	IV.	Architect.
422 Holland Bldg., St. Louis, Mo.		
CHARLES H. EAMES	VI.	Superintendent, Light, Heat, and Power
67 Middle St., Lowell, Mass.		Corporation.
WILLIAM W. EATON	II.	With Pencoyd Iron Works (Pencoyd, Pa.).
222 Rochelle Ave., Wissahickon, Pa.		
FREDERICK L. EDMANDS . . .	II.	Assistant in Mechanical Drawing, Mass. In-
Boston, Mass.		stitute of Technology.
ARTHUR ELSON, A.B.	X.	
79 Fort Ave., Roxbury, Mass.		
FRANK W. EVERETT	VI.	With Electrical Department, Union Iron
912 Bush St., San Francisco, Cal.		Works.
MALCOLM F. EWEN	IV.	With Luxfer Prism Co.
372 Fulton St., Chicago, Ill.		
WILLIAM C. EWING	VI.	With C. H. W. Wood, Civil Engineer and
23 So Washington St., Boston.		Surveyor.
JOHN S. EYNON	VI.	Insurance Inspector, John C. Paige & Co.
20 Kilby St., Boston.		
WILLIAM ALECK FAXON	V.	With Faxon, Williams, & Faxon, Wholesale
401 Main St., Buffalo, N. Y.		and Retail Grocers.
FRANK G. FEELEY	II.	With Eastman Kodak Co.
Kodak Park, Rochester, N. Y.		
ROBERT M. FERRIS, JR. . . .	VI.	In Engineering Department, New York &
81 Willoughby St., Brooklyn, N. Y.		New Jersey Telephone Co.

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JOHN WATSON FITZGERALD, S.B. Chicago, Ill.	VI.	Engineer, Western Electric Co.
MORTIMER FRANK 233 Hampden Court, Chicago, Ill.	I.	Medical Student, University of Illinois.
FREDERIC WILLIAM FULLER, Phoenix Bldg., Springfield, Mass.	VI.	General Agent, Equitable Life Assurance Society (New York, N. Y.).
JAMES L. FYFE 417 Home Ave., Oak Park, Ill.	IV.	
LAWRENCE L. GAILLARD Schenectady, N. Y.	VI.	With General Electric Co.
J. MONROE GILMORE, B.L., B.S. Renne Ave., Pittsfield, Mass.	VI.	With Stanley Electric Manufacturing Co.
WALTER A. GLEASON 44 Wyoming Ave., Malden, Mass.	I.	
GEORGE M. GOODSPEED McKeesport, Pa.	V.	With National Tube Works Co.
SUMNER GOWEN Phoenixville, Pa.	I.	Draughtsman, Phoenix Bridge Co.
OWEN H. GRAY Carthage, Mo.	VI.	Secretary and Treasurer, The Hermit Mining Co.
R. GEORGE HALL Pueblo, Colo.	V.	With Pueblo Smelting and Refining Co.
ALFRED STARR HAMILTON 249 Larch St., Albany, N. Y.	IX.	Student of Law.
CHARLES L. HAMMOND Anytown, Nicaragua.	I.	Assistant on Engineering Force, U. S. Canal Commission.
CHARLES N. HASKINS Cambridge, Mass.	VIII.	Graduate Student, Harvard University.
ISRAEL HATCH, JR. Kodak Park, Rochester, N. Y.	X.	With Eastman Kodak Co.
EDGAR M. HAWKINS Steelton, Pa.	II.	Machinist, Pennsylvania Steel Co.
NATHAN HAYWARD, A.B. 215 So. Seventeenth St., Philadelphia, Pa.	VI.	With Bell Telephone Co. of Philadelphia.
ROYAL H. HAYWARD Schenectady, N. Y.	VI.	In Testing Department, General Electric Co.
FREDERICK E. HEALY East Providence, R. I.	II.	
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 Boston, Mass.	XI.	Secretary, Society of Arts; Editor "The Technology Review."

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ROGER F. HOSFORD 42 Farnsworth St., South Boston, Mass.	V.	With American Bell Telephone Co.
ETHAN HENRY HOWARD . .	VI.	In Business.
366 Delaware Ave., Buffalo, N. Y.		
BENJAMIN A. HOWES . . .	VI.	
117 Marlboro St., Keene, N. H.		
CHESTER D. HUBBARD . . .	VI.	Sergeant, Fifteenth U. S. Volunteer Signal Corps.
Guilford, Conn.		
WALTER HUMPHREYS . . .	II.	With S. Homer Woodbridge Co., Heating, Ventilating, and Sanitary Engineering.
4 Post Office Sq., Boston, Mass.		
FREDERICK A. HUNNEWELL .	XIII.	Assistant Draughtsman, in Office of U. S. Naval Constructor.
116 Twenty-eighth St., Newport News, Va.		
HARRY B. HUNT	II.	Special Apprentice, Erie R. R. Co.
Hotel Langford, Susquehanna, Pa.		
HARRY D. HUNT	IX.	Proprietor and Publisher, "The Evening Chronicle."
44 Elen St., North Attleboro, Mass.		
JOHN P. ILSLEY, JR.	II.	With Bell Telephone Co. of Philadelphia.
Eleventh & Filbert Sts., Philadelphia, Pa.		
ELBRIDGE C. JACOBS	III.	Assistant in Mining Engineering, Mass. Institute of Technology.
Boston, Mass.		
ARTHUR L. JENNINGS	II.	Special Apprentice, Pittsburgh, Cincinnati, Chicago & St. Louis Ry. Shops.
Logansport, Ind.		
FRANK H. KEISKER	IV.	Draughtsman, with Keen & Mead, Archi- tects.
1420 Chestnut St., Philadelphia, Pa.		
WILLIAM A. KENT	I.	Lieutenant, Third U. S. Volunteer Engineers.
625 E. Capitol St., Washington, D. C.		
JAMES W. KILLAM	I.	With Metropolitan Water Board.
3 Mt. Vernon St., Boston.		
ALBERT E. KIMBERLY	V.	Assistant Bacteriologist, Lawrence Experi- ment Station, Mass. State Board of Health.
Lawrence, Mass.		
GEORGE H. KNIGHT	II.	With Putnam Machine Co.
Fitchburg, Mass.		
AUGUSTUS C. LAMB	X.	With Hurlbut Paper Manufacturing Co.
South Lee, Mass.		
GEORGE S. LAWLER	VI.	Electrician, Halpine Torpedo Co.
259 Webster St., East Boston.		
WILLIAM H. LEACH, JR. . . .	II.	With Union Metallic Cartridge Co.
101 William St., Bridgeport, Conn.		

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ERNEST F. LEARNED . . . 1 Mt. Vernon St., Boston.	VI.	With Metropolitan Sewer Commission.
FREDERIC N. LEBARON . . . 160 Fifth Ave., New York, N. Y.	IV.	With American Luxfer Prism Co.
JAMES E. LEWIS 13 Exchange St., Boston.	I.	With Engineering Department, Metropolitan Park Commission.
HENRY M. LOOMIS Niagara Falls, N. Y.	V.	With Mathieson Alkali Works.
BENJAMIN A. LOVELAND . . . Post Office Bldg., Boston, Mass.	I.	Draughtsman, U. S. Engineer Office.
ROBERT S. LUNT 100 Westford St., Lowell, Mass.	X.	In charge of Dye House, Lowell Bleachery and Dye Works.
GEORGE H. MCCARTHY . . . IX. 266 West St., New York, N. Y.		With Magnolia Metal Co.
EDMUND B. MCCORMICK . . . II. Bozeman, Mont.		Instructor in Mathematics and Mechanical Engineering, Montana Agricultural Col- lege.
JOHN P. McMILLAN X. Petrolia, Ont.		
THOMAS F. J. MAGUIRE . . . VI. 8 Beale St., Boston.		With Boston Board of Survey.
JOSEPH M. MAHONEY VI. 11 Wareham St., Boston.		With Electrical Construction Division, Pub- lic Buildings Department, City of Boston.
EDMUND S. MANSON, JR., S.M. VIII. Boston, Mass.		Graduate Student, Mass. Institute of Tech- nology.
HEFMAN W. MARSHALL . . . VII. 456 Bloomfield Ave., Montclair, N. J.		Assistant Health Inspector.
EARL P. MASON II. P. O. Box 344, Hopedale, Mass.		Mechanical Engineer, with Draper Co.
GEORGE A. MORAN V. 224 Rhode Island Ave., Pawtucket, R. I.		Chemist, with Dunnell Print Works.
EDWARD R. MOTCH II. 49 Park St., Providence, R. I.		With Brown & Sharpe Manufacturing Co.
HAROLD T. MULHALL VI. 407 Chamber of Commerce, Boston.		With H. P. Mulhall, Grain Dealer.
HOWARD A. NOBLE II. Twenty-first & Liberty Sts., Pittsburgh, Pa.		In Mechanical Department, A. French Spring Co.
ALBERT P. NORRIS V. Lawrence, Mass.		Assistant Chemist, Pacific Mills.
EDWIN R. OLIN X. 101 Milk St., Boston.		With Boston Elevated Ry. Co. (Elevated Lines.)

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HUGH ORR Brockton, Mass.	IV.	
EDWIN P. OSGOOD Address unknown.	XI.	
CHARLES B. PAINE Augusta, Me.	IV.	With Hallowell Granite Works (Hallowell, Me.).
W. THORNTON PARKER, JR. 14 Thayer Hall, Cambridge, Mass.	IX.	Student, Harvard Law School.
ARCHIBALD L. PARSONS Clinton, Mass.	I.	With Metropolitan Water Board.
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 Hartford, Conn.	V.	With Department of Tests, Pope Manufacturing Co.
OTTO S. PIKE 628 Tremont Bldg., Boston.	II.	With Boston Pneumatic Transit Co.
WILLIAM C. POTTER Telluride, Colo.	III.	Engineer and Assayer for Liberty Bell Gold Mining Co.
GILBERT H. PRATT 502 State House, Boston.	V.	Assistant Chemist, Mass State Board of Health.
ACHILLES H. PUGH, JR. Madison Ave., Cincinnati, Ohio.	X.	
WILLIAM E. REED Hotel de France et Choiseule, Rue St. Honoré, Paris, France.	VI.	In the Laboratory of Professor Moisson.
WILLIAM S. RHODES 38 Oakdale St., Jamaica Plain, Mass.	XII.	Rodman, Mass. Highway Commission.
LOUIS J. RICHARDS City Hall, Elizabeth, N. J.	XI.	Health Officer and Sanitary Inspector.
ELMER H. ROBINSON 61 Woburn St., Reading, Mass.	VI.	In Construction Department, New England Telephone and Telegraph Co.
JOHN R. ROGERSON 180 Summer St., Boston.	I.	In Engineering Department, New York, New Haven, & Hartford R. R. Co.
WARREN A. ROOKE 258 Fifth Ave., New York, N. Y.	IV.	With Hertz & Tallant, Architects.
JAMES C. ROYCE 653 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.

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
LUTHER R. SAWIN 34 Robbins St., Waltham, Mass.	V.	With Mass. State Board of Health.
CARL SCHUTTLE 11 Broadway, New York, N. Y.	II.	With Diesel Motor Co. of America.
DAVID SCHWARTZ 2101 Washington St., Houston, Tex.	V.	Refiner, The Southern Cotton Oil Co.
WILLIAM H. SELLEW Richmond, Va.	II.	With Richmond Locomotive Works.
HENRY A. SHERMAN 537 Mass. Ave., Boston.	III.	With Sewer Division, Street Department, City of Boston.
JESSE W. SHUMAN 1405 Tenth Ave., South, Minneapolis, Minn.	VI.	With Twin City Rapid Transit Co.
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., 627 Rookery, Spokane, Wash.	III.	Assistant to J. C. Ralston, Mechanical En- gineer.
PERCY M. SMITH Lowell, Mass.	II.	Draughtsman, Tremont and Suffolk Mills.
W. FRANKLIN SMITH 247 College St., Lewiston, Me.	II.	Principal, Manual Training School.
WALTER E. SPEAR Clinton, Mass.	XI.	Draughtsman, Metropolitan Water Board.
ARTHUR D. SPIESS Dawson City, N. W. T., Canada.	IV.	Treasurer, Trading and Exploring Co. (Lim- ited).
RUSSELL C. SPRING Newton Lower Falls, Mass.	IV.	
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 Pittsburgh, Pa.	III.	With Shoenberger Steel Co.
PERCY G. STILES Boston, Mass.	VII.	Assistant in Biology, Mass. Institute of Technology.
HARRISON S. TAFT, B.P.	XIII.	(See Class of 1896.)
JOHN TAYLOR Burlington, Vt.	VI.	With New England Telephone and Tele- graph Co.
EDGAR L. TINKHAM, B.P. Eleventh & Filbert Sts., Philadelphia, Pa.	VI.	In Maintenance Department, Bell Tele- phone Co. of Philadelphia.

300 MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

1897. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JAY E. TONE 109 Court Ave., Des Moines, Iowa.	X.	With Tone Bros., Manufacturers of Flavoring Extracts.
MORRIS K. TRUMBULL . . . 34 W. Congress St., Detroit, Mich.	I.	With Board of Engineers for Deep Waterways.
LUCIUS S. TYLER 43 So. Market St., Boston.	VI.	With Geo. Tyler & Co.
T. ERNEST VIDETO, S.M. . . South Framingham, Mass.	IV.	Architect.
RALPH SUMNER VINAL . . . 120 Tremont St., Boston.	IV.	Draughtsman, with Walter H. Kilham, Architect.
GEORGE R. WADLEIGH . . . Massachusetts Ave., Lexington, Mass.	II.	With Nicaragua Canal Co.
THURLOW WASHBURN . . . Grafton, N. Mex.	III.	With United States and British Columbia Mining Co.
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.	
FLORENCE A. WOOD 9 Bainbridge St., Roxbury, Mass.	VIII.	Instructor in Mathematics, Wheaton Seminary (Norton, Mass.).
WILLIAM R. WOOD 1336 Beach St., Philadelphia, Pa.	XIII.	With Veafie & Levy, Ship and Engine Building.
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.	Architect.
LEON ALLAND 34 Bicknell St., Dorchester, Mass.	I.	
ROBERT STARR ALLYN 1211 Thirteenth St., N. W., Washington, D. C.	II.	Student, National University Law School.

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
LYMAN ARNOLD	VI.	
West Springfield, Mass.		
MILAN V. AYRES	VI.	Electrical Machinist, New York Navy Yard (Equipment Department).
170 Adams St., Brooklyn, N. Y.		
ROGER WARD BABSON	I.	Broker; Municipal and Street Railway Bonds.
10 Wall St., New York, N. Y.		
LYMAN E. BACON	I.	Draughtsman, Santa Fé Pacific R. R. Co.
Williams, Ariz.		
JOSEPH BANCROFT	X.	With Joseph Bancroft & Sons Co., Dyers and Bleachers.
Wilmington, Del.		
ELLIOTT R. BARKER	V.	Assistant Chemist, Sewer Department, City of Worcester.
Worcester, Mass.		
HARRINGTON BARKER	II.	Draughtsman, Rawson & Morrison Manu- facturing Co.
31 Main St., Cambridgeport, Mass.		
WILLIAM H. BARLOW	V.	
95 So. Madison Ave., Pasadena, Cal.		
HENRY C. BELCHER	II.	With McKay Metallic Fastening Associa- tion.
221 Main St., Winchester, Mass.		
FRANCIS P. BERGEN	VI.	With Chicago Great Western Ry.
Oelwein, Iowa.		
FREDERIC L. BISHOP	VIII.	Director of Physics, Bradley Polytechnic In- stitute, University of Chicago.
Peoria, Ill.		
WILLIAM D. BLACKMER	III.	With Triumvirate Exploration Association.
South Pass City, Wyo.		
ARTHUR A. BLANCHARD	V.	Research Assistant to Prof. Noyes, Mass. Institute of Technology.
Newton Centre, Mass.		
JOHN S. BLEECKER	II.	Graduate Student, Mass. Institute of Tech- nology.
Boston, Mass.		
HOWARD L. BODWELL	II.	Draughtsman, with Howe Scale Co.
Brock House, Rutland, Vt.		
GEORGE H. BOOTH	II.	
Poughkeepsie, N. Y.		
MARTIN BOYLE	V.	With Towle Manufacturing Co., Silver- smiths.
Newburyport, Mass.		
WILLIAM BREWSTER	II.	With Plymouth Mills.
11 Court St., Plymouth, Mass.		
DICKSON Q. BROWN, A.B.	VI.	Engineer, Tide Water Oil Co., Bayonne, N. J.
160 West Fifty-ninth St., New York, N. Y.		
GEORGE BURNHAM	IV.	Of Firm of Burnham & Hoyt, Architects.
701 Congregational House, Boston, Mass.		

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NAME AND ADDRESS.	COURSE.	OCCUPATION.
WILLIAM L. BUTCHER . . . 101 Milk St., Boston, Mass.	I.	With Boston Elevated Ry. Co.
ELWELL R. BUTTERWORTH . . . 111 Putnam Ave., Cambridge, Mass.	II.	Mechanical Engineer, with Reversible Collar Co.
LE ROY H. BYAM	I.	With Road Department, Boston & Maine R.R.
DONALD C. CAMPBELL	II.	With Rand Drill Co.
100 Broadway, New York, N. Y.		
IRA M. CHACE, JR.	I.	With C. F. W. Felt, Chief Engineer, Gulf, Galveston, Tex.
EDWARD S. CHAPIN	V.	
23 Hemenway St., Boston, Mass.		
PAUL CLIFFORD	II.	
11 Waverley Ave., Newton, Mass.		
HERBERT FRANKLIN COBB	II.	With McKay Metallic Fastening Association.
135 Highland Ave., Winchester, Mass.		
HERBERT LUTHER COBB	VI.	
984 Garfield Boul., Chicago, Ill.		
HOWARD L. COBURN	II.	Draughtsman, with E. D. Leavitt (Cambridge).
143 Appleton St., Boston.		
JOSEPH G. COFFIN	VIII.	Assistant in Physics, Mass. Institute of Technology.
Boston, Mass.		
FRANK F. COLCORD	III.	With Chicago & Aurora Smelting and Refining Co.
Aurora, Ill.		
FRANK E. COOMBS	IV.	Draughtsman, with Wheelwright & Haven, Architects.
Tremont Bldg., Boston.		
WORTHINGTON CORNELL	VI.	With Stone & Webster, Electrical and Mechanical Experts and Engineers.
4 Post Office Sq., Boston, Mass.		
WILLIAM E. COTTER	IV.	
18 Skehan St., Somerville, Mass.		
GEORGE T. COTTLE	V.	
13 Copley St., Roxbury, Mass.		
EVA H. CRANE	IV.	Draughtsman, with Lois L. Howe, Architect.
194 Clarendon St., Boston.		
GEORGE W. CRAVEN	VI.	With Boston & Montana Mining Co.
617 Dooly Block, Salt Lake City, Utah.		
LUTHER A. CROWELL	VI.	
West Dennis, Mass.		
HARVEY L. CURRIER	II.	With Erecting Department, Wm. Cramp & Sons, Ship and Engine Building Co.
841 No. Seventh St., Philadelphia, Pa.		

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
EVERETT N. CURTIS 19 Follen St., Boston.	IX.	Student, Boston University Law School.
FRED. B. CUTTER 16 Otis St., Wakefield, Mass.	VI.	With Edison Electric Illuminating Co. (Boston).
WILLIAM S. B. DANA Worcester, Mass.	IV.	
RAYMOND H. DANFORTH Lynn, Mass.	II.	With General Electric Co.
PHILIP H. DATER, B.A. 57 Lumber District, Albany, N. Y.	I.	With Allen Hazen, Chief Engineer, Albany Water Filtration Plant.
ALVAN L. DAVIS Thurlow, Pa.	III.	With American Steel Casting Co.
HUNTLY W. DAVIS 9 Common St., Montreal, Que.	IV.	
GEORGE R. DAVISON 33 M St., South Boston.	VI.	With Boston Elevated Ry. Co. (Albany St.).
ROBERT S. DE GOLYER 1819 Hinman Ave., Evanston, Ill.	IV.	
JOHN B. DIXON 32 Lawrence St., Boston.	V.	
IRVING B. DODGE Grafton, Mass.	II.	
CHESTER F. DRAKE 15 Cortlandt St., New York, N. Y.	XI.	Civil Engineer.
ROBERT M. DRAPER 712 Third Ave., South, Great Falls, Mont.	III.	Assistant Chemist, Boston & Montana Con- solidated 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 Boston, Mass.	V.	Graduate Student, Mass. Institute of Tech- nology.
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. 211 Fountain St., Providence, R. I.	II.	
FINLAY F. FERGUSON, A.B., B.S. Columbia Bldg., Norfolk, Va.	IV.	Draughtsman, with J. E. R. Carpenter, Architect.
HOWELL FISHER Orkney Road, Boston.	X.	
GEORGE I. FISKE Pawtucket, R. I.	VI.	Assistant to Treasurer, American Machine Co.

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
SIMON FLEISHER Maple St., Marlboro, Mass.	VI.	With Marlboro Electric and Machine Co.
MABEL F. FORREST Lowell, Mass.	VII.	
EDWARD T. FOULKES Music Hall Bldg., Boston.	IV.	With C. H. Blackall, Architect.
WILLIAM C. FOWNES, JR. Bessemer, Pa.	X.	Assistant Consulting Engineer, Edgar Thompson Works, Carnegie Steel Co.
ARTHUR I. FRANKLIN Boston, Mass.	V.	Private Assistant to Prof. Talbot, Mass. Institute of Technology.
ALBERT I. FRYE 263 Yamhill St., Portland, Oreg.	I.	Bridge Engineer, Pacific Bridge Co.
FREDERIC FURBISH, B.S. Iowa City, Iowa.	IV.	
ERNEST A. GALLISON Border St., East Boston.	II.	Draughtsman for Bertelsen & Petersen, De- signers and Builders of Marine Engines.
LESTER D. GARDNER Chicago, Ill.	IX.	Representative of the "Chicago Journal."
FREDERIC C. GILBERT 530 Atlantic Ave., Boston.	V.	Assistant to Treasurer, Library Bureau.
CHARLES H. GODBOLD, JR. 429 ¹ / ₂ Mississippi St., San Francisco, Cal.	XIII.	Draughtsman, Union Iron Works.
JOHN N. GODDARD Pueblo, Colo.	V.	With Pueblo Smelting and Refining Co.
GEORGE M. GODLEY Freiberg, Saxony.	III.	Student, Königliche Bergakademie.
CLARENCE GOLDSMITH North Andover, Mass.	II.	Superintendent of Water Works.
ARTHUR L. GOODRICH Cinclare, La.	X.	Chemist, Cinclare Central Factory.
GEORGE O. HASKELL 70 Blackstone St., Woonsocket, R. I.	II.	With Social Manufacturing Co.
LEWIS A. HAYDEN Anaconda, Colo.	III.	Superintendent, The Work Mining and Mill- ing Co.
JAMES E. HAZELTINE 213 Fourteenth St., N. W. Washington, D.C.	VI.	With U. S. Electric Lighting Co.
FRANK B. HEATHMAN 55 Kilby St., Boston.	IV.	Draughtsman, with J. Williams Beal, Archi- tect.
LYMAN F. HEWINS Washington, D.C.	XIII.	Draughtsman, with Department of Con- struction and Repair, Navy Yard.
CARL S. HIGH McPherson, Kans.	VI.	Engineer, Water Works and Electric Light Co.

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
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.	Engineering Corps, Rome, Watertown, & Ogdensburg Division of New York Cen- tral & Hudson River R. R.
ARTHUR F. HOWARD, B.S. 56 Middle St., Portsmouth, N. H.	VI.	With Portsmouth Electric R. R.
WINFRED D. HUBBARD . . . Concord, Mass.	XI.	Inspector, Concord Sewerage System.
GEORGE D. HUNTINGTON, A.B. 526 West Ave., Rochester, N. Y.	I.	With Buffalo, Rochester, & Pittsburgh Ry.
CHARLES S. HÜRTER San José, Costa Rica.	III.	Mining Engineer, with Boston & Central America 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.	Draughtsman, Carrère & Hastings, Archi- tects (New York, N. Y.).
AKELI H. JACOBY Boston, Mass.	V.	Assistant in Industrial Chemistry, Mass. In- stitute of Technology.
PAUL F. JOHNSON 14 So. Broad St., Philadelphia, Pa.	II.	With Johnson Electric Service Co.
FREDERIC A. JONES Needham, Mass.	I.	Rodman, Chicago Great Western Ry.
IRVIN H. KAUFMAN University Road, Brookline, Mass.	II.	
ARTHUR SAMUEL KEENE . . . 122 Ames Bldg., Boston.	IV.	With Shepley, Rutan, & Coolidge, Archi- tects.
WILLIAM KELLEY Savannah, Ga.	V.	Assistant Chemist, Southern Oil Co.
FRANKLIN M. KELLOGG . . . West Stafford, Conn.	VI.	With General Electric Co. (Lynn, Mass.).
ROBERT E. KENDALL Glens Falls, N. Y.	V.	Chemist, with Glens Falls Portland Cement 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 Boston, Mass.	V.	Assistant in Mining Engineering, Mass. In- stitute of Technology.

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
EDWIN KUTTROFF	X.	
17 E. Sixty-ninth St., New York, N. Y.		
ROBERT LACY, A.B.	I.	In Engineering Department, Boston & Albany R. R.
1630 Linden Ave., Baltimore, Md.		
EDWARD P. LANE	I.	With Chicago Great Western Ry.
Savannah, Mo.		
VANRENSSELAER LANSINGH, B.S. VI.		Private, Second Regiment, U. S. Volunteer Engineers.
5109 Kimbark Ave., Chicago, Ill.		
WALTER H. LEE	IV.	Draughtsman, Samuel Hannaford & Sons, Architects.
Sixth & Vine Sts., Cincinnati, Ohio.		
JESSE T. LIPPINCOTT	X.	With The Lippincott Glass Co.
Alexandria, Ind.		
EDMUND C. LITTLE	IV.	Architect.
717 Tremont Building, Boston.		
PERCIVAL H. LOMBARD, A.B., VI.		With American Bell Telephone Co.
42 Farnsworth St., South Boston.		
CHARLES E. LORD	VI.	
63 Columbus Ave., Somerville, Mass.		
WALTER G. MCCONNELL	XIII.	With Bath Iron Works.
Bath, Me.		
JAMES S. MCINTYRE	IV.	Draughtsman, with Little & Browne, Archi- tects.
70 Kilby St., Boston, Mass.		
PAUL MCJUNKIN	VIII.	Graduate Student, Johns Hopkins University.
Baltimore, Md.		
WILLIAM ADAMSON MARSHALL X.		With Baeder, Adamson, & Co., Glue Manu- facturers.
182 Lake St., Chicago, Ill.		
GEORGE EUGENE MATHEWS, IV.		With Williams & Andrews, Architects.
Dayton, Ohio.		
DURAND MAYER	VI.	
144 Madison Ave. New York, N. Y.		
SUMNER M. MILLIKEN	I.	With New York Central & Hudson River R. R.
Watertown, N. Y.		
JOSEPH J. MOEBS	I.	
235 Magnolia St., Dorchester, Mass.		
RICHARD MOMMERS	V.	
South Manchester, Conn.		
EDWARD F. MORRILL	VI.	With Engineering Department, New York & New Jersey Telephone Co.
81 Willoughby St., Brooklyn, N. Y.		

1898. -- *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
JAMES FRED MUHLIG . . .	II.	
Natick, Mass.		
SAMUEL A. NEIDICH, Ph.B., A.M. II.		Mechanical Engineer.
1104 Drexel Bldg., Philadelphia, Pa.		
WILLARD B. NELSON . . .	VI.	With Engineering Department, New York & New Jersey Telephone Co.
81 Willoughby St., Brooklyn, N. Y.		
GEORGE K. NEWBURY . . .	XIII.	Draughtsman, Bath Iron Works.
Bath, Me.		
HENRY B. NEWHALL, JR. . .	VI.	With Electrical Construction Department, New Jersey Foundry & Machine Co.
26 Cortlandt St., New York, N. Y.		
CLARENDON NICKERSON . . .	X.	With Waterbury Farrel Foundry and Machine Co.
349 Grand St., Waterbury, Conn.		
HENRY D. OSGOOD	XI.	
Fort Riley, Kans.		
ALPHEUS A. PACKARD . . .	XIII.	Draughtsman, with Herreshoff Manufactur- ing Co.
Bristol, R. I.		
WALTER PAGE	XIII.	Draughtsman, with Harlan & Hollingsworth Co.
1106 Jefferson St., Wilmington, Del.		
CHARLES H. PEASE	II.	Draughtsman, Equipment Department, U. S. Navy Yard.
Navy Yard, Brooklyn, N. Y.		
LEROY D. PEAVEY	I.	Draughtsman, New England Structural Co. (East Everett).
131 School St., Everett, Mass.		
CHARLES W. PEN DELL . . .	VI.	Draughtsman, American Hoist and Derrick Co.
656 Lincoln Ave., St. Paul, Minn.		
WILLIAM M. PERLEY	V.	With Chicago & Northwestern Ry.
1846 E. Belmont Ave., Chicago, Ill.		
FRANK B. PERRY	II.	With American Machine Co. (Pawtucket, R. I.).
61 Pond St., Woonsocket, R. I.		
SHIRLEY S. PHILBRICK . . .	II.	Draughtsman, Laconia Car Company Works.
P. O. Box 222, Laconia, N. H.		
ARTHUR F. PORTER	V.	Assistant to Prof. Adriance.
143 Lexington Ave., New York, N. Y.		
ROBERT W. PRATT, JR. . . .	I.	In Engineer's Office, Boston & Albany R. R.
Boston, Mass.		
BENSON B. PRIEST	I.	Inspector on Water Works Improvement.
Town Hall, Westfield, Mass.		
WILLIAM E. PUTNAM, JR., A.B., IV.		With W. H. Kilham, Architect.
120 Tremont St., Boston.		
EDWARD B. RICHARDSON . .	VI.	
155 Beacon St., Boston.		

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
HENRY P. RICHMOND . . . 12 E. Twenty-third St., New York, N. Y.	IV.	With Howard & Cauldwell, Architects.
JOSEPH C. RILEY	II.	Assistant in Mechanical Engineering, Mass. Institute of Technology.
EDWARD W. RITCHIE	IV.	
Newton Highlands, Mass.		
THOMAS MAYO ROBERTS, A.B. 755 Tremont St., Boston.	VI.	Electrician, with Boston Electric Light Co.
ERNEST F. RUSS	IX.	General Salesman for Baeder, Adamson, & Co.
143 Milk St., Boston.		
BENJAMIN F. W. RUSSELL . .	IV.	Draughtsman, with Herbert D. Hale, Archi- tect.
13 Exchange St., Boston.		
EUGENE W. RUTHERFORD . .	II.	Assistant in Mechanical Engineering, Mass. Institute of Technology.
Boston, Mass.		
HOMER E. SARGENT, JR., Ph. B. 3100 Groveland Ave., Chicago, Ill.	VI.	With Western Electric Co.
HARRY F. SAWTELLE	I.	With Cambridge Bridge Commission (City Hall, Boston).
12 Magazine St., Cambridge, Mass.		
ERNEST H. SCHROEDER . . .	IV.	With A. W. Longfellow, Jr., Architect.
1124 Tremont Bldg., Boston.		
HENRY F. SCOTT	II.	With Dennison Manufacturing Co.
6 Alexander St., South Framingham, Mass.		
HEYWARD SCUDDER, B.A. . .	V.	
21 E. Twenty-second St., New York, N. Y.		
JOSEPH H. SEARS	V.	
East Dennis, Mass.		
LEWIS J. SEIDENSTICKER . .	V.	Assistant in Gas and Oil Analysis, Mass. Institute of Technology.
Boston, Mass.		
ALBION W. SHAW	VI.	With H. D. Trask Co., Heating Con- tractors.
97 Portland St., Boston.		
ALBERT R. SHEDD	II.	Mechanical Engineer, with Illinois Steel Company.
6441 Kimbark Ave., Chicago, Ill.		
EDWARD C. SHERMAN	I.	With U. S. Board of Engineers on Deep Water-ways.
37 Langdon St., Cambridge, Mass.		
CHARLES J. SKINNER	I.	With the Atchison, Topeka, & Santa Fé Ry. Co.
Hotel Morrill, Chanute, Kans.		
CHARLES H. SMITH	II.	With Ivers & Pond Piano Co.
Main St., Cambridgeport, Mass.		
HORACE T. SMITH	V.	Chemist, Farist Steel Co.
Bridgeport, Conn.		

1898.— *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WILLIAM G. SMITH	I.	
Mansfield, Mass.		
FRANK A. SPAULDING	I.	
P. O. Box 117, West Stockbridge, Mass.		
WILLIAM D. STAPLES	VI.	With Inspection Department, American Telephone and Telegraph Co.
406 Market St., Philadelphia, Pa.		
WILLIAM F. STEFFENS	I.	Draughtsman, Bridge Department, New York, New Haven, & Hartford R. R.
118 Putnam St., New Haven, Conn.		
GORHAM P. STEVENS	IV.	Graduate Student, Mass. Institute of Technology.
Boston, Mass.		
WILLIAM W. STEVENS	IV.	Constructor, with Kendall, Taylor, & Stevens, Architects.
87 Milk St., Boston.		
LEWIS S. STRENG	VI.	With General Electric Company.
P. O. Box 445, Schenectady, N. Y.		
WILLIAM R. STRICKLAND	I.	Assistant Engineer, U. S. S. "Bennington."
Navy Pay Station, San Francisco, Cal.		
EDWARD STURTEVANT	IX.	Teacher of Mathematics and Science, St. George's School.
Sea View Ave., Newport, R. I.		
THOMAS E. TALLMADGE	IV.	Draughtsman, with D. H. Burnham & Co., Architects (Chicago, Ill.).
Evanston, Ill.		
EDWARD MOLINEUX TAYLOR	II.	Second Lieutenant, Company F, First U. S. Volunteer Engineers.
Ponce, Porto Rico.		
MARK E. TAYLOR	II.	Draughtsman, in Baldwin Locomotive Works.
500 No. Broad St., Philadelphia, Pa.		
HORACE R. THAYER	I.	Assistant with E. Worthington, Civil Engineer.
Dedham, Mass.		
MAURICE DE K. THOMPSON	VIII.	Assistant in Physics, Mass. Institute of Technology.
Boston, Mass.		
MARY JANE THOMSON	V.	
119 W. Grand St., Elizabeth, N. J.		
RUDOLPH TIETIG	IV.	Draughtsman, with Robert Maynicke, Architect.
725 Broadway, New York, N. Y.		
GEORGE W. TREAT	I.	With Wabash Bridge Co.
Wabash, Ind.		
ATHERTON H. TUCKER	IV.	With Henry A. Phillips, Architect.
120 Tremont St., Boston.		
FRANK S. TUCKER	II.	
Allerton Pl., Marblehead, Mass.		
FRED H. TWOMBLY	IX.	With Flint, Eddy, & Co., Exporting Commission Merchants.
30 Broad St., New York, N. Y.		

1898. — *Continued.*

NAME AND ADDRESS.	COURSE.	OCCUPATION.
GEORGE F. ULMER Pearl St., Brooklyn, N. Y.	V.	Assistant Chemist, Arbuckle Bros., Sugar Refiners.
SUSANNAH USHER 9 Kirkland Pl., Cambridge, Mass.	VII.	Teacher, Pratt Institute (Brooklyn, N. Y.).
GEORGE R. WADSWORTH Albany, N. Y.	I.	Transitman, Mohawk Division, New York Central & Hudson River R. R.
JOHN E. WARREN Oelwein, Iowa.	II.	With Chicago Great Western Ry.
KARL W. WATERSON 42 Farnsworth St., South Boston.	VI.	With Bell Telephone Co.
EDGAR A. WEIMER Boston, Mass.	II.	Graduate Student, Mass. Institute of Technology.
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 503 Phillips Bldg., Boston.	IV.	Draughtsman.
CLIFTON W. WILDER Leominst , Mass.	II.	
RALPH E. WILDER 600 Grand Central Station, New York, N. Y.	I.	With Engineer of Maintenance of Way, New York Central & Hudson River R. R.
DAVID L. WING Trout Creek, Mich.	IX.	With Trout Creek Lumber Co.
CHARLES-EDWARD A. WINSLOW Boston, Mass.	VII.	Graduate Student, Mass. Institute of Technology.
WINTHROP B. WOOD 89 State St., Boston.	I.	With Leonard Metcalf, Civil Engineer.
WALTER G. ZIMMERMANN 683 Sedgwick St., Chicago, Ill.	II.	With Illinois Central R. R.

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	27
" " 1870	10	" " 1886	59
" " 1871	17	" " 1887	58
" " 1872	12	" " 1888	77
" " 1873	26	" " 1889	75
" " 1874	18	" " 1890	102
" " 1875	27	" " 1891	103
" " 1876	43	" " 1892	133
" " 1877	32	" " 1893	129
" " 1878	19	" " 1894	138
" " 1879	23	" " 1895	144
" " 1880	8	" " 1896	188
" " 1881	28	" " 1897	179
" " 1882	24	" " 1898	199
" " 1883	19		

Total	1,972
Deduct names counted twice	11
	<hr/>
	1,961

ALPHABETICAL LIST OF GRADUATES.

NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Abbot, Charles G.	VIII.	1894	Atwood, Frank W.	V.	1890
Abbot, Louis A.	II.	1895	Atwood, Thomas C.	I.	1897
Abbott, Frederic B.	VI.	1893	Atwood, William P.	V.	1876
Abbott, Ira	I.	1881	Austin, Amory	V.	1873
Aborn, George P.	II.	1886	Ayer, Arthur W.	II.	1890
Adams, Arthur H.	II.	1890	Ayres, Milan V.	VI.	1898
Adams, Benjamin	VI.	1895	Babb, Cyrus C.	I.	1890
Adams, Charles M.	VI.	1895	Babson, Roger Ward	I.	1898
Adams, Raleigh B.	X.	1894	Bachelor, Charles S.	V.	1877
Aiken, Charles W.	II.	1891	Bacon, Lyman E.	I.	1898
Albee, Orton W.	III.	1893	Badger, Ernest F.	V.	1895
Alden, Charles H., Jr.	IV.	1890	Badger, Frank S.	I.	1893
Alden, Edwin C.	VI.	1895	Bailey, Thomas W.	I.	1896
Alden, Herbert W.	II.	1893	Bakenhus, Reuben E.	I.	1896
Alden, John	V.	1877	Baker, Charles M.	IV.	1878
Alden, John T.	II.	1897	Baker, David	III.	1885
Alexander, Donald N.	IV.	1898	Baker, Fred C.	II.	1894
Alland, Leon	I.	1898	Baker, Frederic W.	II.	1893
Allbright, William B.	V.	1878	Baker, Joseph B.	VI.	1890
Allen, C. Frank	I.	1872	Baker, William H.	I.	1860
Allen, Charles F.	III.	1876	Baldwin, Charles F., Jr.	VI.	1897
Allen, Charles R.	V.	1885	Baldwin, E. Arthur	VI.	1896
Allen, Charles V.	VI.	1893	Baldwin, Henry F.	II.	1884
*Allen, Henry W. (July 2, '97)	X.	1897	Baldwin, Hiram E.	I.	1890
Allen, John H.	III.	1881	Baldwin, Thomas W.	I.	1876
Allen, Samuel E.	I.	1875	Ball, Robert S.	II.	1891
Allen, Walter S.	V.	1879	*Ballard, Hetty O. (Dec. 20, '97)	XII.	1893
Allen, William H., Jr.	XIII.	1897	Ballou, Henry W.	I.	1897
Alyu, Robert Starr	II.	1898	Ballou, Latimer W.	II.	1895
Ames, Azel	I.	1895	Bancroft, Joseph	X.	1898
Ames, Butler	II.	1896	Bancroft, Wilfred	II.	1897
Ames, Clara P.	V.	1882	Barbour, Minard T.	II.	1893
Anderson, George H.	X.	1894	Bardwell, Fred L.	V.	1884
Anderson, Robert	VI.	1897	Bardwell, Herbert T.	I.	1883
Anderson, William P.	III.	1896	Barker, Elliott R.	V.	1898
Andrew, William M.	VI.	1896	Barker, Harrington	II.	1898
Andrews, Edmund L.	VI.	1894	Barkhouse, Edgar L.	VI.	1897
Anthony, Arthur C.	III.	1886	Barlow, William H.	V.	1898
Anthony, John G.	III.	1893	Barnes, Warren H.	I.	1897
Appleton, Charles B.	II.	1884	Barnes, William T.	I.	1893
Appleton, Ellery C.	III.	1868	Barr, Lawrence	VI.	1895
Armington, George A.	II.	1887	Barri, Joel G.	I.	1891
Arnold, Lyman	VI.	1898	Barrows, Bernard	X.	1897
Arnott, James L.	Sci. and Lit.	1875	Barrows, Harold K.	I.	1895
Ashton, George F.	II.	1896	Barrows, Herbert	I.	1874
Aspinwall, Thomas	I.	1876	Barrows, Walter B.	VII.	1876
Atkins, Ernest C.	II.	1896	Barrus, George H.	II.	1874
*Atkinson, James S. (Dec. 17, '83)	II.	1881	Barry, Edmund D.	XIII.	1895

* Deceased.

NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Barstow, George E.	II.	1894	Blackmer, William D.	III.	1898
Bartholomew, Ethel	IV.	1895	Blackwell, Ethel B.	VII.	1891
Bartlett, Dana P.	VI.	1886	Blake, Edmund E.	II.	1893
Bartlett, Sidney R.	VII.	1887	Blake, Francis P.	III.	1896
Bartlett, Spaulding	V.	1890	Blake, William B.	I.	1887
Bartlett, T. Harris	III.	1884	Blanchard, Arthur A.	V.	1898
Bartol, George	III.	1877	Blanchard, Frederick C.	II.	1891
Barton, Charles A.	II.	1887	Blanchard, Winslow	II.	1888
Barton, George H.	III.	1880	Bleecker, John S.	II.	1898
Barton, Howard R.	VI.	1894	Bliss, Walter D.	IV.	1895
Basford, George M.	II.	1889	Bliss, Zenas W.	II.	1889
Bassett, William H.	V.	1891	Blodgett, Aaron D.	II.	1876
Batchelder, Charles E.	VI.	1896	Blodgett, George W.	I.	1873
Batchelder, John L., Jr.	VII.	1890	Blodgett, Perley H.	V.	1895
Batcheller, Binney C.	II.	1886	Blood, Grosvenor T.	II.	1894
Bates, Daniel M., Jr.	X.	1896	Blood, Percy E.	I.	1897
Bates, Harry R.	V.	1894	Blunt, William T.	I.	1884
Bates, Henry D.	IV.	1888	Boardman, Henry A.	V.	1874
Batson, Walter V.	VI.	1894	Bodwell, Howard L.	II.	1898
Beach, Charles B.	X.	1894	Boedeker, John	VI.	1895
Beach, Edward J.	V.	1889	Boeseke, Edgar A.	II.	1895
Beach, Irving E.	V.	1894	Bolan, Thomas V.	VI.	1891
Beal, Charles A.	VI.	1892	Bonesteel, Sara Hall	VIII.	1894
Beal, Foster E. L.	I.	1871	Booth, George H.	II.	1898
Beal, J. Williams	IV.	1877	Booth, Thomas B.	VI.	1895
Beaman, David W.	VI.	1896	Borden, Charles N.	II.	1889
Bean, Norwin S.	VI.	1894	Borland, Hugh	I.	1897
Beason, Charles B.	II.	1890	Boss, Austin D.	II.	1890
Beattie, Roy H.	I.	1893	Boss, Charles R.	IX.	1884
Beckler, Alice H.	VII.	1892	Bothfeld, Charles C.	I.	1894
Beeching, William H.	II.	1877	Bourne, Frank A.	IV.	1895
Beers, Herbert P.	IV.	1897	Bourne, Jesse H.	II.	1895
Belcher, Henry C.	II.	1898	Bourne, Phillips P.	II.	1892
Belknap, Francis W.	I.	1895	Boveri, Marcella O.	IX.	1885
Bellows, Arthur B.	II.	1889	Bovey, William H.	VI.	1894
Bemis, Albert F.	I.	1893	Bowen, Edgar C., Jr.	II.	1897
Benedict, Vallette L.	VI.	1894	Bowen, Ralph A.	V.	1897
Benton, Edward R.	IV.	1885	Bowen, Stephen	II.	1892
Bergen, Francis P.	VI.	1898	Bowes, George S.	II.	1896
Berry, Charles W.	VI.	1895	Bowie, Augustus J., Jr.	II., VI.	1896
Berry, Hereford	VI.	1894	Boyd, John	V.	1897
Bickford, Elizabeth E.	VII.	1890	Boyden, Amos J.	IV.	1875
Bigelow, Charles H.	VI.	1892	Boyle, Martin	V.	1898
Bigelow, Henry F.	IV.	1888	Brace, Walter C.	III.	1887
Bigelow, Samuel Lawrence	V.	1895	Brackett, E. Raymond	V.	1896
Binley, William, Jr.	XIII.	1897	Brackett, Wallace C.	XI.	1895
Binney, Amos	V.	1881	Bradlee, Arthur T.	II.	1888
Bird, Adelaide	VII.	1891	Bradlee, Charles W.	IX.	1887
Bird, Herbert S.	V.	1888	Bradlee, Henry G.	VI.	1891
Birkes, John H.	II.	1891	Bradley, Frederick W.	VI.	1889
Biscoe, Maurice B.	IV.	1893	Bradley, Harry C.	I.	1891
Bishop, Frederic L.	VIII.	1898	Bragg, Charlotte A.	V.	1890
Bissell, David S.	III.	1881	Bragg, Edward F.	II.	1890
Bixby, George L.	X.	1895	Bragg, Edward M.	XIII.	1896
Bixby, Willard G.	II.	1889	Brainerd, Dwight	IX.	1887
Blackmer, Adelaide S.	V.	1890			

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NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Brainerd, Edwin A.	I.	1897	Burnham, Harry A.	II.	1892
Brainerd, Frederick H.	III.	1889	Burrage, Severance	VII.	1892
Brainerd, Henry B.	IX.	1887	Burrison, Henry K.	I.	1875
Brainerd, Wallace H.	VI.	1891	Burton, Frank H.	II.	1891
Brainerd, William L.	IV.	1886	Busby, Fred E.	V.	1897
Braley, Samuel T.	II.	1879	Bush, Walter M.	II.	1897
Braman, Samuel N.	II.	1893	Butcher, William L.	I.	1898
Bramhall, Charles T.	II.	1897	Butterworth, Elwell R.	II.	1898
Brand, Horace L.	II.	1891	Buttolph, Benjamin G.	II.	1888
Breed, Charles B.	I.	1897	Buttolph, Harry T.	I.	1876
Breed, Joshua B. F.	I.	1876	Byam, LeRoy H.	I.	1898
Breed, Lewis B.	VI.	1896	Cabot, John W.	III.	1879
Breed, Stephen Alec	II.	1894	Calkins, Gary N.	IX.	1890
Brewster, Benjamin E.	III.	1872	Callahan, Dennis E.	VI.	1893
Brewster, William	II.	1898	Callan, John G.	VI.	1896
Bridges, Luther W.	II.	1889	Came, Frank E.	I.	1881
Briggs, Frank H.	IX.	1881	Cameron, Julian A.	II.	1887
Brooks, John F.	II.	1896	Campbell, Donald C.	II.	1898
Brotherton, William E.	V.	1873	Campbell, George A.	I.	1891
Brown, Alice I. (<i>see</i> Tyler).			Campbell, Harry H.	III.	1879
Brown, Allen P.	IX.	1895	Canfield, Arthur L.	II.	1895
Brown, Bertha M.	VII.	1892	Cannon, Lewis T.	IV.	1896
Brown, Charles H.	I.	1880	Capen, Barnard, Jr.	VI.	1891
Brown, Dickson Q.	VI.	1898	Capen, G. Walter	IV.	1877
*Brown, Edward D. (July 16, '98)	VI.	1890	Card, Huber D.	XII.	1892
Brown, Edward Percy	III.	1897	Carleton, Elbridge S.	IV.	1888
Brown, Harry W.	VI.	1890	Carlisle, Morten	VI.	1890
Brown, James M.	II.	1897	Carlton, Chester V.	I.	1890
Brown, John Clifford	VI.	1893	Carney, Edward B.	II.	1893
Brown, Walter Vail	VI.	1894	Carney, Frank D.	III.	1887
Brown, Warren D.	VI.	1897	Carney, James A.	V.	1890
Browne, Harry P.	VI.	1896	Carpenter, Anne E.	V.	1891
Brownell, Ernest H.	I.	1890	Carr, W. Frank	I.	1884
Bryant, Dixie L.	XII.	1891	Carson, Howard A.	I.	1899
Bryant, Ernest C.	I.	1893	Carson, Thomas B.	II.	1882
Bryant, George H.	II.	1883	Carter, Henry H.	I.	1877
Bryant, Henry F.	I.	1887	Carter, William W.	VI.	1894
Bryant, William P.	X.	1891	Carty, John E.	I.	1897
Bryden, George W.	II.	1891	Carvalho, Raul de R.	IX.	1892
Buchanan, Leonard B.	VI.	1893	Carven, Christopfler J.	I.	1884
Bucher, Russell S.	IV.	1896	Cater, Douglas A.	II.	1892
Buchholz, Charles E.	I.	1893	Center, David A.	VI.	1888
Buck, Arthur A.	VI.	1893	Chace, Ira M., Jr.	I.	1898
Bulkeley, J. Norman	VI.	1889	Chace, Mason S.	II.	1894
Burbank, Philip M.	VI.	1892	Chadbourn, William H., Jr.	III.	1886
Burdick, Howard H.	II.	1897	Chamberlain, Herbert W.	IV.	1895
Burgess, Gelett	I.	1887	Chamberlain, Marion Lewis	IV.	1896
Burgess, George K.	VIII.	1896	Chamberlin, Helen	IV.	1896
Burgess, John K.	II.	1886	Chamberlin, William E.	IV.	1877
Burke, John R.	I.	1893	Chapin, Edward S.	V.	1898
Burlingham, Charles L.	III.	1886	*Chapman, George H. (Jan. 21, '79)	II.	1877
Burnet, Moses D.	III.	1875	Chapman, George D.	II.	1890
Burnham, Charles M.	VI.	1892	Chapman, John Winslow	II.	1894
Burnham, Edward C.	II.	1890	Chapman, Nathan C. W.	II.	1894
Burnham, George	IV.	1898	Chase, Charles H.	VI.	1892
Burnham, Guy J.	X.	1892	Chase, Edwin E.	I.	1880

* Deceased.

NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Chase, Frank D.	III.	1881	Cole, Winthrop	II.	1887
Chase, Frank L.	I.	1890	Coleman, Ezra A.	VI.	1897
Chase, Harold M.	V. 1896	X. 1894	Coley, John L.	II.	1896
Chase, Harvey S.	II.	1883	Collins, Benjamin G.	II.	1881
Chase, Richard D.	XI.	1892	Collins, Bertrand R. T.	II.	1888
Chase, Roscoe L.	V.	1884	Collins, Edward, Jr.	VI.	1888
Chase, Walter S.	IV.	1895	Collins, John A., Jr.	X.	1897
Chenery, Winthrop H.	IV.	1896	Collins, Reuben B.	I.	1891
*Childs, Edward L. (Mar. 3, '94)	II.	1891	Collins, William H.	V.	1890
Childs, Stephen	I.	1888	Colman, Willard H.	II.	1896
Church, Albert K.	V.	1892	Conant, Francis M.	X.	1896
Church, Christopher A.	I.	1875	Conant, Henry J.	II.	1887
Church, William L.	VI.	1886	Conant, Luther, Jr.	IX.	1895
Cilley, Frank H.	I.	1889	Conant, Roger W.	VI.	1891
Claflin, Alan A.	V.	1894	Conant, Whitney	III.	1868
Claflin, George E.	VI.	1888	Conner, Arthur J.	V.	1888
Claflin, William B.	IV.	1895	*Connor, Addison (Jan. 4, '91)	I.	1871
Clapp, Harry L.	X.	1893	Cook, Charles Nourse	X.	1893
Clapp, Sidney K.	I.	1895	Cook, Walter F.	IX.	1890
Clapp, Wilfred A.	I.	1893	Cooke, Charles P.	VI.	1895
Clark, Arthur H.	VI.	1895	Cooke, J. Williamson	VI.	1895
Clark, Carl H.	XIII.	1895	Cooke, John Winfield	VI.	1895
Clark, Carrie Rice	V.	1882	Cooley, Helen	V.	1887
Clark, Charles B.	I.	1897	Coolidge, Prescott H.	I.	1894
*Clark, Edward K. (Sept. 10, '78)	II.	1870	Coolidge, Frederick D.	VI.	1896
Clark, Frederick W.	III.	1880	Coolidge, Winthrop	III.	1896
Clark, Henry A.	II.	1897	Coombs, Frank E.	IV.	1898
Clark, James, Jr.	VI.	1890	Copeland, Frederick K.	I.	1876
Clark, Schuyler S.	VIII.	1895	Copeland, Henry F.	I.	1894
*Clarke, Edward D. (July 30, '98)	VI.	1894	Cornell, Worthington	VI.	1898
Clarke, Fred H.	I.	1894	Cotter, William E.	IV.	1898
Clary, Joseph W.	XIII.	1896	Cottle, George T.	V.	1898
Clement, Arthur A.	X.	1894	Cowles, Luzerne S.	I.	1897
Clement, Hugh B.	IV.	1891	Cox, Frederic E.	IV.	1895
Clifford, Harry E.	VI.	1886	Crabtree, Fred	V.	1889
Clifford, Paul	II.	1898	Crafts, Walter N.	III.	1895
Clough, Albert L.	VI.	1891	Craighill, Nathaniel R. VI. 1894	II.	1893
Cluett, Albert E.	VI.	1896	*Craigin, Henry A. (Nov. 27, '96)	II.	1889
Cobb, Herbert F.	II.	1898	Cramer, Edwin Claassen	IV.	1896
Cobb, Herbert L.	VI.	1898	Crane, Eva H.	IV.	1898
Cobb, Louis R.	I.	1886	*Crane, Francis H. (Apr. 15, '93)	VI.	1886
Cobb, Sylvanus H.	VI.	1888	Crane, Henry M.	VI. 1896	II. 1895
Coburn, Arthur S.	III.	1895	Crane, John G.	I.	1890
Coburn, Howard L.	II.	1898	Crane, Joshua, Jr.	VI.	1892
Cochran, Heywood	II.	1885	Crane, Stephen D.	VI.	1896
Codman, John S.	VI.	1893	Crary, Horace A.	I.	1894
Cody, Lewis P.	VI.	1892	Craven, George W.	VI.	1898
Coffin, Fred S.	III.	1879	Crocker, Allen S.	II.	1897
Coffin, Joseph G.	VIII.	1898	Crocker, Calvin Ira	I.	1896
Cogswell, Charles P., Jr.	I.	1892	Cromwell, Charles H.	II.	1889
Colby, John M., Jr.	II.	1892	Crosby, Ralph W.	XIII.	1896
Colby, Russell H.	V.	1888	Crosby, William O.	VII.	1876
Colcord, Frank F.	III.	1898	Crosby, William W.	II.	1893
Cole, Fred A.	II.	1891	Cross, Charles R.	Sci. and Lit.	1870
Cole, Fred B.	II.	1888	Crowell, Luther A.	VI.	1898
Cole, Harrison I.	II.	1891	Cummings, Henry, Jr.	IV.	1865

* Deceased.

NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Cunningham, Edward	X.	1891	Delano, Alexander J.	I.	1890
Currier, Charles R.	II.	1897	DeLong, Harold W.	XIII.	1896
Currier, Harvey L.	II.	1898	Demeritt, Leonard M.	II.	1897
Curtin, John A.	I.	1892	Demond, Charles D.	III.	1893
Curtis, Arthur V.	XIII.	1897	Denison, Edward C.	X.	1895
Curtis, Everett N.	IX.	1898	*Dennett, Clarence L. (June 6, '78)	II.	1876
Curtis, Ralph E.	II.	1887	Dennett, Hartley	IV.	1892
*Curtis, Russell H. (June 8, '97)	I.	1870	Densmore, Edward D.	VI.	1893
Cushing, William C.	I.	1887	Derr, Louis	VI.	1892
Cutler, Charles H.	VI.	1894	Devens, Richard	II.	1888
Cutler, Harry H.	II.	1881	De Wolf, Arthur S.	II.	1897
*Cutler, Henry M. (May 16, '77)	I.	1871	De Wolf, John O.	II.	1890
Cutler, William H.	IV.	1897	Dewson, Edward H., Jr.	II.	1885
Cutter, Fred B.	VI.	1898	Dickerman, Judson C.	X.	1895
Cutter, George A.	II.	1895	Dickey, Charles W.	IV.	1894
Cutter, Louis F.	I.	1886	Dickinson, Leonard D. P.	VI.	1896
Cutter, Roland N.	I.	1889	Dill, Howard A.	I.	1891
Dadmun, George E.	II.	1892	Dillon, Frederick N.	V.	1893
Daggett, Herbert C.	I.	1891	Dixon, John B.	V.	1898
Dalton, Nelson W.	VI.	1894	Dixon, Laurence B.	VI.	1893
Dame, Frank L.	VI.	1889	Doane, Alfred O.	III.	1884
Dan, Takuma	III.	1878	Doane, George E.	I.	1874
Dana, Gorham	I.	1892	Dodd, Margaret E.	VII.	1892
Dana, William S. B.	IV.	1898	Dodge, Charles B.	IX.	1889
Danforth, Raymond H.	II.	1898	Dodge, Edwin S.	IV.	1897
Daniell, Jere R.	XIII.	1897	Dodge, Frank S.	I.	1875
Daniels, Nathan H., Jr.	VI.	1896	Dodge, Frederick H.	II.	1890
Darlington, F. Graef	IX.	1881	Dodge, Irving B.	II.	1898
Darrow, Courtland R.	I.	1893	Dodge, Samuel D.	I.	1893
Dater, Philip H.	I.	1898	*Dodge, William B. (Jan. 29, '98)	I.	1872
Dates, Henry B.	VI.	1894	Doe, Charles C.	VIII.	1886
Davenport, William S.	V.	1889	Dolan, Peter F.	VI.	1893
Davies, T. Clive	II.	1894	Doliber, Franklin W.	IX.	1897
Davis, Albert G.	VI.	1893	Donham, Benjamin C.	I.	1895
Davis, Alvan L.	III.	1898	Donn, Edward W., Jr.	IV.	1891
Davis, Arthur L.	II.	1889	Donovan, John A.	IX.	1897
Davis, Carleton E.	I.	1893	Doolittle, Orrin S.	V.	1886
Davis, Frank E.	II.	1883	Dorman, Theodore T.	X.	1893
Davis, Franklin H.	III.	1896	Dorr, Edgar S.	I.	1875
Davis, Huntly W.	IV.	1898	*Dorr, Frank H. (Jan. 8, '97)	VI.	1891
Davis, Leon K.	X.	1894	Dorrance, John Thompson	V.	1895
Davis, Robert A.	VI.	1896	Dorrance, William T.	I.	1896
Davis, William E., Jr.	IV.	1895	Doten, Alfred R.	II.	1897
Davis, Willis E. Sci. and Lit.		1876	Dougherty, Proctor L.	VI.	1897
Davison, George R.	VI.	1898	Douglass, Walter B.	I.	1892
Dawes, Herbert N.	II.	1893	Downes, Alfred K.	I.	1897
Day, Nathan B.	II.	1894	Dowse, William B.	IV.	1874
Day, Sarah L.	V.	1887	Drake, Albert W.	VI.	1895
Dean, Arthur D.	VI.	1895	Drake, Chester F.	XI.	1898
Dearborn, George K.	IX.	1893	Draper, Fred W.	III.	1895
Deavitt, Henry M.	V.	1897	Draper, Robert M.	III.	1898
Defren, George	V.	1895	Dresser, Henry C.	II.	1892
De Golyer, Robert S.	IV.	1898	Drew, Albert T.	X.	1898
Dejonge, Alfred L.	II.	1895	Driscoll, James M.	I.	1896
de Lancey, Darragh	II.	1890	Driscoll, Joseph	I.	1896
deLancey, Harriet Gallup	V.	1894	Drisko, William J.	VIII.	1895

* Deceased.

ALPHABETICAL LIST OF GRADUATES.

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NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Drum, Alphonsus L.	VI.	1896	Faunce, George	III.	1882
Du Bois, Barron P.	VI.	1892	Faunce, Linus	II.	1887
Duckworth, Harry S.	V.	1894	Favor, George W.	III.	1891
Duff, James C.	V.	1886	Faxon, Francis E.	II.	1895
Duff, John	V.	1881	Faxon, William A.	V.	1897
Dunbar, Albert	V.	1895	Fay, Frederic H.	I.	1893
Dunbar, Francis W.	VI.	1890	Fearing, Albert J.	I.	1898
Dunbar, W. Otis	II.	1879	Feeley, Frank G.	II.	1897
Dunham, Lewis A.	I.	1891	Feland, Logan	IV.	1892
du Pont, Henry Belim	X.	1894	Felton, Samuel M.	I.	1873
du Pont, Irénée	X.	1897	Fenn, William H.	I.	1890
du Pont, Pierre S.	V.	1890	Fenner, David Colton	II.	1898
Durfee, Nathan	II.	1889	Ferguson, Finlay F.	IV.	1898
Dutton, Edgar F.	VI.	1888	Ferguson, John N.	I.	1894
Dwellely, Edwin F.	I.	1890	Ferguson, Louis A.	VI.	1888
Dwyer, John R.	IV.	1897	Ferris, Robert M., Jr.	VI.	1897
Dyar, Harrison G.	V.	1889	Field, Frederick E.	XI.	1896
Eames, Charles H.	VI.	1897	*Firth, Frank R. (June 9, '72)	I.	1868
Eastman, Henry F.	II.	1888	Fish, Milton L.	VI.	1895
Eaton, Charles S.	IV.	1878	Fish, Walter C.	VI.	1887
Eaton, William W.	II.	1897	Fisher, Charles H.	II.	1877
Edes, William C.	I.	1875	Fisher, Elizabeth F.	XII.	1896
Edgerly, Daniel W.	V.	1898	Fisher, Frederick L.	I.	1873
Edmands, Frederick L.	II.	1897	Fisher, Howell	X.	1898
Edmands, J. Rayner	II.	1899	Fisk, Harry G.	IX.	1896
*Edwards, Arthur V. (Aug. 3, '97)	IV.	1889	Fiske, George I.	VI.	1898
Eldridge, George F.	V.	1892	Fiske, Henry A.	VI.	1892
Ellis, John	VI.	1894	Fiske, J. Parker B.	VI.	1889
Ellis, Rolfe M.	V.	1895	Fitch, Alfred L.	II.	1884
Ellis, Walter H.	I.	1895	Fitz Gerald, Francis A. J.	VI.	1895
*Ellsworth, Alfred B. (Jan. 10, '93)	I.	1888	Fitz Gerald, John W.	VI.	1897
Elson, Arthur	X.	1897	Fleisher, Simon	VI.	1898
Ely, Edward F.	IV.	1882	Fletcher, Charles R.	V.	1876
Ely, Sumner B.	II.	1892	Flint, Bertram P.	II.	1888
Emerson, Joseph S.	I.	1874	*Flint, Wm. C. (June 14, '81)	III.	1877
Emery, Elwood A.	IV.	1890	Flint, William P.	II.	1890
Emery, James A.	I.	1893	Flood, Samuel D.	II.	1890
Emmerton, Frederic A.	V.	1872	Foote, Edward H.	I.	1871
England, Paul W.	VI.	1891	Foque, Theodore A.	II.	1888
Ensworth, Horace H.	VI.	1891	Foran, George J.	II.	1883
Eppendorff, John G.	IV.	1883	Forbes, Eli	Sci. and Lit.	1868
Eppes, Richard, Jr.	II.	1888	Forbes, Fred B.	V.	1893
Esty, William	VI.	1893	Forbes, Howard C.	VI.	1892
Eveleth, Charles F.	VI.	1895	Forbush, Gayle T.	X.	1892
Everett, Frank W.	VI.	1897	Forrest, Mabel F.	VII.	1898
Ewen, Malcolm F.	IV.	1897	Forster, Frederick E.	X.	1896
Ewing, William C.	VI.	1897	*Foss, Edward S. (Oct. 3, '90)	V.	1886
Eynon, John S.	VI.	1897	Foss, Fred E.	I.	1886
Fabens, George W.	I.	1879	*Foss, Harry A. (Aug. 19, '85)	II.	1882
*Fabens, S. A., Jr. (Mar. 14, '75)	I.	1873	*Foster, Theodore R. (Apr. 15, '97)	II.	1886
Farmer, George W.	II.	1886	Foulkes, Edward T.	IV.	1898
Farnsworth, Arthur J.	VI.	1894	Fowle, Arthur E.	X.	1893
Farguhar, Robert D.	IV.	1895	Fowie, Frederick E., Jr.	VIII.	1894
Farwell, Arthur	VI.	1893	Fownes, William C.	X.	1868
Faught, Ray C.	VI.	1898	Fox, Frederick, Jr.	V.	1885
*Faunce, Elmer (July 6, '82)	III.	1871	Fox, John M.	VI.	1887

*Deceased.

NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Francis, Frederick L.	IV.	1892	Gilkey, R. Waldo	II.	1894
Frank, Mortimer	I.	1897	Gill, Augustus H.	V.	1884
Franklin, Arthur I.	V.	1898	Gill, Edward P.	IV.	1892
Freeman, John R.	I.	1876	Gilman, Charles C.	III.	1868
French, Alfred W.	I.	1889	Gilmore, George L.	II.	1890
French, Allen	IX.	1892	Gilmore, Howard	VI.	1893
French, Charles A.	III.	1882	Gilmore, Jonathan Monroe	VI.	1897
French, Edward R.	VI.	1892	Gleason, Walter A.	I.	1897
French, Edward V.	II.	1889	Gleason, Walter H.	V.	1887
French, George L. R.	I.	1884	Glidden, John W.	II.	1890
French, Hollis	VI.	1889	*Glover, Marie O. (<i>see</i> Holman).		
French, Lester G.	II.	1891	Godbold, Charles H., Jr.	XIII.	1898
Fresch, George, Jr.	IV.	1896	Goddard, David S.	III.	1881
Frisbie, Walter L.	II.	1893	Goddard, John N.	V.	1898
Frost, Howard V.	V.	1882	Godley, George M.	III.	1898
Fry, Thomas W.	II.	1885	Goldsmith, Clarence	II.	1898
Frye, Albert I.	I.	1898	Goodale, Charles W.	III.	1875
Flüger, Frederick W.	II.	1891	Goodell, George H.	II.	1892
Fukuzawa, Stejiro	I.	1888	Goodhue, Leonard H.	V.	1896
Fuller, Andrew D.	I.	1895	Gooding, Charles S.	II.	1879
Fuller, Charles E.	II.	1892	Goodrich, Arthur L.	X.	1898
Fuller, Frank L.	I.	1871	Goodrich, Robert R.	III.	1885
Fuller, Frederic W.	VI.	1897	Goodspeed, George M.	V.	1897
Fuller, George W.	V.	1890	Goodwin, Harry M.	VIII.	1890
Fuller, J. Edward, Jr.	IV.	1888	Goodyear, Watson E.	VI.	1895
Fuller, Myron L.	XII.	1896	Gordon, Edward B., Jr.	II.	1896
Fuller, Robert L.	IV.	1896	Gorham, Marvine	II.	1893
Fuller, William B.	I.	1883	*Gould, Robert H. (Nov. 19, '78) Metall.		1876
*Furber, Pierce P. (Apr. 7, '93)	IV.	1877	Gowen, Sumner	I.	1897
Furbish, Frederic	IV.	1898	Grabau, Amadeus W.	XII.	1896
Fyfe, James L.	IV.	1897	Gray, Joseph P.	I.	1877
Gage, Stephen De M.	V.	1896	Gray, Owen H.	VI.	1897
Gaillard, Lawrence L.	VI.	1897	Gray, William F.	VI.	1892
Gale, Horace B.	II.	1883	Green, Andrew H.	I.	1896
Gallison, Ernest A.	II.	1898	Green, Francis C.	XI.	1895
Galloupe, Francis E.	II.	1876	Green, William W.	I.	1892
Gallup, Harriet T. (<i>see</i> de Lancey).			Greene, Charles E.	I.	1868
Gamble, William Burt	IX.	1893	*Greene, Irving G. (Feb. 24, '91)		1888
Gannett, Earl W.	VI.	1889	Greenlaw, Frank M.	VI.	1890
Gardiner, Edward G.	VII.	1882	Greenleaf, Lewis S.	VI.	1894
Gardiner, John H.	II.	1895	Greer, Medorem W.	VI.	1891
Gardner, Harry W.	IV.	1894	Gregory, John H.	I.	1895
Gardner, Henry	II.	1896	Grimes, Charles B.	V.	1892
Gardner, J. Howland	II.	1894	Gross, Harold G.	VII.	1888
Gardner, Lester D.	IX.	1898	Grover, Edmund	I.	1877
Garfield, Abram	IV.	1896	Grover, Nathan C.	I.	1896
Garfield, Alexander S.	II.	1886	Grush, Henry G.	VI.	1896
Garrison, Charles	VI.	1891	Guild, Frederick, Jr.	Sci. and Lit.	1873
Gay, Charles M., Jr.	IV.	1895	Guppy, Benjamin W.	I.	1889
Gay, Joseph B.	IV.	1887	Guptill, Frank E.	VI.	1896
Gay, Martin	I.	1877	Gustin, George H.	III.	1883
Gaylord, Wallace K.	V.	1893	Hadaway, William S., Jr.	VIII.	1887
Gerrish, William H.	II.	1888	Hadley, Frederick W.	VI.	1893
Gilbert, Frederick C.	V.	1898	Hagar, Edward M.	II.	1893
Gilbert, James P.	V.	1889	Haines, Frank M.	III.	1884
Gilbert, Perley Fred	IV.	1895	Hale, George E.	VIII.	1890

* Deceased.

ALPHABETICAL LIST OF GRADUATES.

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NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Hale, Richard A.	I.	1877	Hayden, Sophia G.	IV.	1890
Hall, Albert F.	II.	1868	Hayes, Frank	II.	1890
Hall, Edward C., Jr.	II.	1892	Hayes, Harry E.	VI.	1890
Hall, Francis P.	V.	1882	Hayward, Harrison W.	X.	1896
Hall, John R.	VI.	1890	Hayward, Nathan	VI.	1897
Hall, Robert G.	V.	1897	Hayward, Royal H.	VI.	1897
Hall, Sara A. (<i>see</i> Bonesteel).			Hazard, Schuyler	I.	1890
Hall, Walter A.	VI.	1896	Hazeltine, James E.	VI.	1898
Hall, William T.	V.	1895	*Head, James H. (Aug. 18, '75)	II.	1875
Hallaran, John S.	I.	1896	Healy, Frederick E.	II.	1897
Hamblet, George W.	II.	1888	Heath, George L.	V.	1888
Hamilton, Alfred Starr	IX.	1897	Heathman, Frank B.	IV.	1898
Hamilton, Edgar L.	III.	1891	Hedge, Henry R.	IX.	1896
Hamilton, George W.	I.	1880	Hedge, William R.	IX.	1896
Hammatt, Edward A. W.	I.	1875	Heermann, Frederick M.	II.	1896
Hammett, Philip M.	II.	1890	Heins, George L.	IV.	1882
Hammond, Charles F.	I.	1891	Hemmings, Frederick J.	V.	1897
Hammond, Charles L.	I.	1897	Henck, John B., Jr.	VIII.	1876
Hanchett, George T.	VI.	1893	Henderson, James B.	II.	1896
Handy, Edward A.	I.	1875	Henry, Ralph C.	IV.	1896
Hannah, Frederick A.	II.	1895	Herrick, Edward W.	II.	1888
Hapgood, Charles W.	V.	1896	Herrick, James A.	V.	1872
Hardman, John E.	III.	1877	Hersam, Ernest A.	V.	1891
Hardy, Robert S.	VI.	1896	Hewett, Joseph	VIII.	1896
Harkness, George E.	I.	1896	Hewins, Lyman F.	XIII.	1898
Harriman, Frederic O.	I.	1883	Heywood, Albert S.	VI.	1892
Harrington, Joseph	II.	1896	*Heywood, Geo. H. (May 17, '98)	III.	1884
Harrington, Walter K.	I.	1885	*Heywood, Lincoln C. (Dec. '94)	I.	1891
Harris, Frederick W.	XI.	1895	Hibbard, Henry D.	III.	1877
Harris, W. Dale	I.	1873	Hibbard, Thomas	II.	1875
Harris, William L.	VII.	1888	Higgins, Alfred S.	IV.	1878
Harrison, Burt S.	IV.	1894	Higgins, Edward E.	VI.	1886
*Hartwell, Ernest G. (Sept. 22, '89)	IV.	1879	High, Carl S.	VI.	1898
Hartwell, Hiram B.	II.	1896	Hildreth, William O.	II.	1887
Harvey, Frederic H.	III.	1893	Hill, William G., Jr.	V.	1897
Harvey, George L.	II.	1888	Hill, William Reed	IV.	1894
*Harwood, F. W., Jr. (Oct. 18, '95)	VI.	1894	Hilliard, John D., Jr.	VI.	1892
Harwood, Harry A.	I.	1892	Hinckley, J. Fred	X.	1893
Haskell, George O.	II.	1898	Hinman, Charles W.	III.	1870
Haskins, Charles N.	VIII.	1897	Hobart, Henry M.	VI.	1889
Haskins, William	III.	1891	Hobart, James C.	II.	1887
Haste, James H.	V.	1896	Hobbs, Franklin W.	II.	1889
Hastings, Charles F.	III.	1888	Hodgdon, Frank W.	I.	1876
Hastings, Harry P.	I.	1894	Hodge, James M.	III.	1872
Hatch, Arthur E.	I.	1891	Holbrook, Elliot	I.	1874
Hatch, Israel, Jr.	X.	1897	Holder, James G.	V.	1884
Hathaway, D. Lewis K.	II.	1886	Holdrege, Henry A.	VI.	1895
Hathaway, Herbert E.	V.	1891	Hollingsworth, Sumner	II.	1876
Hathaway, Savory C., Jr.	VI.	1888	Hollis, Frederick S.	V.	1890
Haven, George B.	II.	1894	Hollis, Walter M.	VI.	1896
Haven, Harry M.	II.	1895	Holman, George U. G.	VI.	1889
Hawkins, Edgar M.	II.	1897	*Holman, Marie G. (May 5, '85)	V.	1881
Hawley, Harvey F.	I.	1896	Holman, Silas W.	VIII.	1876
Hayden, Charles	IX.	1890	Holmes, Francis C.	IX.	1892
Hayden, George W.	VI.	1895	Holmes, George A.	X.	1891
Hayden, Lewis A.	III.	1898	Holton, Edward C.	V.	1888

* Deceased.

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NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Homer, Eleazar B.	IV.	1885	Hutchinson, George A.	II.	1898
Hongma, Aechirau	I.	1874	Hutchinson, W. Spencer	III.	1892
Hooker, Richard	IV.	1889	Huxley, Edward H.	II.	1895
Hopewell, Charles F.	VI.	1894	Hyde, Charles G.	XI.	1896
Hopkins, Arthur T.	XI.	1897	Ilisley, John P., Jr.	II.	1897
Hopkins, Frederick L.	V.	1889	Ingalls, Charles H.	VI.	1896
Hopkins, Heber A.	II.	1898	Ingalls, Harry C.	IV.	1898
Hopkins, James C.	IV.	1896	Ingalls, Walter Renton	III.	1886
Hopkins, Prescott A.	IV.	1892	Ingraham, George H.	IV.	1892
Hopkins, William J.	VI.	1886	Jackson, Daniel D.	V.	1893
Hopton, Walter E.	II.	1891	Jackson, Frank H.	III.	1874
Horn, Henry J., Jr.	I.	1888	Jacobs, Arthur L.	VI.	1892
Horton, Ralph T.	I.	1898	Jacobs, Elbridge C.	III.	1897
Horton, S. Ellsworth	II.	1890	Jacoby, Areli H.	V.	1898
Horton, Theodore	XI.	1894	Jacques, William W.	VIII.	1876
Hosea, Raphael M.	I.	1879	James, Frank M.	II.	1888
Hosford, Roger F.	V.	1897	James, Lawrence S.	V.	1893
Houck, William G.	I.	1893	James, Samuel, Jr.	III.	1876
Howard, Arthur F.	VI.	1898	James, Walter H.	II.	1896
Howard, Charles P.	I.	1874	Jameson, Arthur H.	V.	1893
Howard, Ethan H.	VI.	1897	Jameson, Minor S.	I.	1896
Howard, Frank A.	I.	1896	Janvrin, Ned H.	I.	1894
Howard, Lemuel Frederic	VI.	1895	Jenkins, Charles D.	V.	1882
Howarth, George R.	II.	1895	Jenny, Walter	III.	1877
Howe, George E.	I.	1895	Jennings, Arthur L.	II.	1897
Howe, Henry M.	III.	1871	*Jewett, William P. (Jan. 4, '84)	I.	1873
Howe, Horace J.	I.	1879	Johnson, Charles H.	I.	1894
Howe, Joseph M.	I.	1896	Johnson, Herbert E.	VI.	1894
Howes, Benjamin A.	VI.	1897	Johnson, James W.	I.	1882
Howes, Clarence L.	II.	1873	Johnson, Jesse F.	X.	1892
Howes, Clifton A.	VI.	1894	Johnson, Lewis E.	II.	1886
Howland, Albert H.	I.	1871	Johnson, Paul F.	II.	1898
Howland, Frederick H.	IX.	1893	Johnson, William S.	I.	1889
Hoxie, Frederick J.	VI.	1892	Johnston, William A.	II.	1892
Hoyt, William E.	I.	1868	Jones, Arthur W.	VI.	1888
Hubbard, Chester D.	VI.	1897	Jones, Edward A.	II.	1887
Hubbard, Winfred D.	XI.	1898	Jones, Frederic A.	I.	1898
Hulse, William S.	VI.	1894	Jones, Howard K.	IV.	1896
Hultman, Eugene C.	I.	1896	Jones, Theodore I.	VI.	1896
Humphreys, Walter	II.	1897	Jordan, Edwin O.	VII.	1888
Hunnewell, Frederick A.	XIII.	1897	Jordan, Harry W.	V.	1891
Hunt, Albert F.	I.	1894	Jordan, William F.	I.	1886
Hunt, Alfred E.	III.	1876	Kales, William R.	II.	1892
Hunt, Edward M.	I.	1894	Kauffman, Milton H.	V.	1891
Hunt, Harry B.	II.	1897	Kaufman, Irvin H.	II.	1898
Hunt, Harry D.	IX.	1897	Kebler, Julian A.	I.	1878
Hunt, Harry H.	VI.	1889	Keene, Arthur S.	IV.	1898
Hunt, Samuel P.	VI., X.	1895	Keene, Thomas M.	I.	1891
Huntington, George D.	I.	1898	Keene, William F.	I.	1891
*Huntington, W. F. (Aug. 7, '77)	I.	1875	Keisker, Frank H.	IV.	1897
Hurd, Benjamin	VI.	1896	Keith, Simeon C., Jr.	VII.	1893
Hurd, E. Laurence	II.	1895	*Keith, William H. (Oct. 17, '98)	VI.	1896
Hürter, Charles S.	III.	1898	Kelley, William	V.	1898
Hussey, Oren S.	II.	1887	Kellogg, Franklin M.	VI.	1898
Hutchings, James H.	II.	1883	Kendall, Albert L.	II.	1894
Hutchins, Edward S.	II.	1889	Kendall, Charles B.	V.	1887

* Deceased.

ALPHABETICAL LIST OF GRADUATES.

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NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Kendall, Francis H.	I.	1898	Lawrence, Charles E.	VI.	1896
Kendall, Robert E.	V.	1890	*Lawrence, J. A. M. (Jan. 18, '93)	II.	1886
Kendall, William R.	VI.	1892	Lawrence, Ralph R.	VI.	1895
Kenison, Ervin	II.	1893	Lawrence, William H.	IV.	1891
Kenney, C. Belle	V.	1886	Laws, Eugene H.	V.	1896
Kennicott, Harry A.	I.	1890	Laws, Frank A.	VI.	1889
Kent, William A.	I.	1897	Lawton, Charles F.	I.	1877
Keough, William T.	II.	1888	Leach, Albert E.	II.	1886
Keys, Frederic Hale	II.	1893	Leach, William H., Jr.	II.	1897
Kilham, Alfred C.	II.	1876	Learned, Ernest F.	VI.	1897
Kilham, Walter H.	IV.	1889	LeBaron, Frederic N.	IV.	1897
Kilam, James W.	I.	1897	Le Bosquet, Maurice	V.	1895
Kimball, Elwell F.	I.	1898	Lee, Elisha	I.	1892
Kimball, Herbert S.	X.	1891	Lee, George S.	I.	1888
Kimball, Joseph H.	XI.	1894	Lee, Walter H.	IV.	1898
Kimball, Walter E.	XIII.	1898	Leeming, Woodruff	IV.	1891
*Kimball, William A. (Dec., '87)	II.	1873	Leighton, Marshall O.	VII.	1896
Kimberly, Albert E.	V.	1897	Leland, Walter S.	XIII.	1896
King, Warren D.	VI.	1893	Leland, William E.	II.	1891
King, William Herbert	IX.	1894	Lenfest, Bertram A.	II.	1890
Kinnicutt, Leonard P.	V.	1875	Leonard, Frederick M.	I.	1894
Kinsman, Arthur D.	VIII.	1889	Leonard, H. Ward	III.	1883
*Kirk, Joseph (July, '86)	II.	1877	Le Sueur, Ernest A.	VI.	1890
Kirk, Robert H.	II.	1894	Lewis, Edwin J., Jr.	IV.	1881
Kittredge, George W.	I.	1877	Lewis, Herbert	VI.	1893
Kittredge, John W.	II.	1894	Lewis, James E.	I.	1897
Knapp, Charles R.	IV.	1894	Lewis, Marion L. (see Chamberlain).		
Knapp, Frederick B.	I.	1879	Lewis, Theodore J.	II.	1876
Knapp, George Frederick	V.	1884	Lewis, Wilfred	II.	1875
Knapp, J. Austin	II.	1875	Lewis, William W.	II.	1889
Knight, Franklin	I.	1890	Libby, Dorville, Jr.	VI.	1895
Knight, George H.	II.	1897	Lincoln, Alfred V., Jr.	II.	1895
Knight, Joseph H.	IX.	1896	Lincoln, G. Russell	III.	1871
Knowles, Morris, 2d	I.	1891	Lindsay, William B.	V.	1881
Knowlton, Willis T.	I.	1893	Linzee, John W., Jr.	I.	1889
Koch, Armand D.	IV.	1892	Lippincott, Jesse T.	X.	1898
Koch, Carleton S.	V.	1898	Litchfield, Paul W.	X.	1896
Koehler, Walter J.	V.	1881	Little, Edmund C.	IV.	1898
Kotzschmar, Hermann, Jr.	II.	1895	Livermore, William D.	V.	1887
Kunhardt, Lewis Henry	II.	1889	Locke, Bradford H.	III.	1872
Kuttruff, Edwin	X.	1898	Locke, Charles E.	III.	1896
Lacount, Henry O.	VI.	1895	Locke, Frank L.	I.	1886
Lacy, Robert	I.	1898	Locke, William W.	XI.	1892
Lamb, Augustus C.	X.	1897	Logan, Andrew J.	I.	1895
Lamb, William F.	VI.	1893	Logan, John W.	II.	1893
Lambert, Wallace C.	I.	1893	Lombard, Percival H.	VI.	1898
Lamborn, Leebert L.	V.	1896	Lonngren, John E.	II.	1896
Lane, Edward P.	I.	1898	Loomis, Henry M.	V.	1897
Lane, Frederic H.	II.	1879	Lootz, Alf C.	I.	1896
Lane, Lucius Page	IX.	1894	Lord, Charles E.	VI.	1898
Lane, William H.	VI.	1892	*Lord, Frank H. (Dec. 31, '90)	II.	1885
Lansingh, Van Rensselaer	VI.	1898	Loring, Ernest J.	IV.	1895
Latey, Harry N.	VI.	1893	Loring, Frederic R.	VII.	1879
Latham, Harry M.	II.	1893	Loring, Harrison, Jr.	II.	1889
Lauder, George B.	VI.	1889	Loring, Robert	X.	1894
Lawler, George S.	VI.	1897	Lothrop, Thomas Mark	II.	1895

* Deceased.

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NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Lovejoy, Frank W.	X.	1894	Mansfield, George W.	III.	1882
Loveland, Benjamin A.	I.	1897	Mansfield, Harvey M.	III.	1883
Loveland, James W.	V.	1888	Mansfield, R. Herbert, Jr.	VI.	1892
Low, Albert H.	V.	1876	Manson, Edmund S., Jr.	VIII.	1897
Low, John F.	V.	1882	Marble, Dwight N.	VI.	1895
Low, Wilson H.	V.	1886	March, Clement	I.	1891
Lowell, Guy	IV.	1894	Marcy, Willard A.	II.	1893
Lufkin, Elgood C.	II.	1886	Marmon, Walter C.	II.	1895
Lukes, Joseph B.	VI.	1892	Marquand, Philip	I.	1891
*Lund, Amy Stantial (Feb. '88)	V.	1884	Marshall, Herman W.	VII.	1897
Lund, James	V.	1881	Marshall, William A.	X.	1898
Lunt, Robert S.	X.	1897	Martin, Henry	V.	1885
Lyle, David A.	III.	1884	Mason, Earl P.	II.	1897
*Lyman, George W. (July, '98)	VI.	1896	Mason, Sampson D.	I.	1870
Lynch, Patrick M.	I.	1894	Masters, Frank B.	II.	1895
Lynde, James P.	IX.	1886	Mathews, Albert P.	VII.	1892
Lyon, Joseph P.	I.	1892	Mathews, George E.	IV.	1898
Lyon, Tracy	II.	1885	Matthes, François E.	I.	1895
Lythgoe, Hermann Charles	V.	1896	Matthes, Gerard H.	I.	1895
McAlpine, William H.	XI.	1896	May, George H.	V.	1892
McCann, Frank G.	II.	1896	*May, William C. (Mar. 11, '78)	V.	1873
McCarthy, George H.	IX.	1897	Mayer, Durand	VI.	1898
McCaw, Wallace E.	VI.	1892	Mayer, Virginius A.	VI.	1894
MacClure, Colbert A.	IV.	1894	Meade, Charles A.	I.	1894
McConnell, George B.	I.	1890	Melluish, James G.	IX.	1896
McConnell, Walter G.	XIII.	1898	Merrell, Charles G.	V.	1888
McCormick, Edmund B.	II.	1897	Merrell, Irving Seward	II.	1896
Macfarlane, William W.	V.	1879	Merriam, Harry B.	I.	1886
McGoodwin, Henry K.	IV.	1894	Merriam, Henry P.	VI.	1886
McIntyre, James S.	IV.	1898	*Merrick, George E. (April 23, '92)	V.	1890
McJennett, William D.	X.	1894	Merrill, Allyn L.	II.	1885
McJunkin, Paul	VIII.	1898	*Merrill, Eben G. (Oct. 12, '87)	I.	1885
Mackay, Angus R.	III.	1894	Merrill, Frank H.	X.	1893
McKenna, Alexander G.	V.	1891	Merrill, George A.	XI.	1892
McKibben, Frank P.	I.	1894	Merrill, N. Frederick	V.	1870
McKim, Alexander Rice	I.	1886	Merryweather, George E.	II.	1896
*McLaughlin, G. V. (Aug. 14, '92)	V.	1888	Merriss, George F. C.	I.	1895
McManus, James T. R.	I.	1895	Meserve, Charles A.	V.	1895
McMillan, John P.	X.	1897	Messenger, William H.	II.	1892
McQuesten, George E.	VI.	1893	Metcalfe, Arthur H.	II.	1879
MacRae, Hugh	III.	1885	Metcalfe, Frederick	II.	1890
Maguire, Thomas F. J.	VI.	1897	Metcalfe, Leonard	I.	1892
Mahoney, Joseph M.	VI.	1897	*Meyer, Jos. A., Jr. (Dec. 20, '94)	IV.	1891
Mahony, Marion L.	IV.	1894	Mildram, Samuel H.	I.	1889
Main, Charles T.	II.	1876	Millen, Loring R.	III.	1880
Maki, Heichiro	VI.	1893	Miller, Edward F.	II.	1886
Maltby, Margaret E.	VIII.	1891	Miller, Edwin C.	II.	1879
Manahan, Elmer G.	XI.	1892	Miller, Franklin T.	XIII.	1895
Manahan, John H.	VI.	1896	Miller, Herbert S.	VI.	1892
Manley, Laurence B.	I.	1892	Miller, Lilly	V.	1892
Mann, Arthur S.	II.	1888	Miller, William T.	Elective.	1880
Mann, Bertram H.	VI.	1890	Milliken, Sumner M.	I.	1898
Mann, Frederick M.	IV.	1894	Mills, Arthur L.	I.	1876
Manning, Harry G.	II.	1882	Minot, Charles S.	V.	1872
Mansfield, Arthur N.	VIII.	1891	Mitchell, Benjamin M.	II.	1893
Mansfield, Edward S.	VI.	1896	Mitchell, Guy E.	II.	1891

* Deceased.

ALPHABETICAL LIST OF GRADUATES.

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NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Mixter, Samuel J.	VIII.	1875	Nichols, Henry W.	XII.	1893
Moat, Charles P.	V.	1896	*Nichols, William R. (July 14, '86)	V.	1869
Moebis, Joseph J.	I.	1895	Nickerson, Addison D.	I.	1888
Mommers, Richard	V.	1898	Nickerson, Clarendon	X.	1898
Moody, Burdett	I.	1890	Nickerson, William E.	V.	1876
Moody, Herbert R.	V.	1892	Nims, Norman G.	IV.	1890
Moore, Frank A.	IV.	1888	Noa, Frederic M.	IX.	1894
Moore, Fred F.	I.	1891	Noble, Howard A.	II.	1897
Moore, Frederick Campbell	X.	1892	Norris, Albert P.	V.	1897
Moore, Frederick Clouston	II.	1891	Norris, Almon E.	II.	1890
Moore, Henry C.	II.	1888	Norris, Clarence G.	I.	1890
Moore, John D. J.	II.	1895	Norris, George L.	III.	1887
Moore, Leslie R.	V.	1894	Norris, Webster	III.	1881
Moore, Stephen W.	II.	1890	Norton, Charles L.	VI.	1893
Moran, George A.	V.	1897	Norton, Francis C.	IX.	1893
Morey, Richard	I.	1895	Norton, Fred E.	II.	1891
*Morgan, Frank H. (Dec. 5, '89)	V.	1878	Nowell, John C.	VI.	1894
Morrill, Asa Hall	I.	1892	Noyes, Arthur A.	V.	1886
Morrill, Edward F.	VI.	1898	Noyes, Harry L.	I.	1890
Morris, Charles, Jr.	VI.	1896	Noyes, Joseph K.	I.	1890
Morrison, Frank C.	I.	1882	Nute, Joseph E.	I.	1885
Morse, Frank B.	I.	1873	Nutter, Charles L.	II.	1893
Morse, Philip S.	III.	1884	Ober, Arthur J.	I.	1892
Morss, Everett	III.	1885	O'Grady, Marcella I. (<i>see</i> Boveri).		
Morss, Henry A.	VI.	1893	Olin, Edwin R.	X.	1897
Moseley, Alexander W.	II.	1891	Ordway, Evelyn W.	V.	1881
Mosman, Phillip A.	III.	1887	Orr, Hugh	IV.	1897
Mossmann, William	VI.	1891	Osgood, Edwin P.	XI.	1897
Motch, Edward R.	II.	1897	Osgood, Henry D.	XI.	1895
Mott, William E.	I.	1889	Otis, Hamilton	I.	1892
Mower, George A.	II.	1881	*Owen, E. H., Jr. (July 3, '90)	II.	1879
Mudge, Benjamin C.	I.	1877	Owen, Fred B.	VI.	1896
Muhlig, James F.	II.	1898	Owen, George, Jr.	II.	1894
Mulhall, Harold T.	VI.	1897	Oxford, George H. K.	VI.	1891
Mulliken, Samuel P.	V.	1887	Oxnard, Benjamin A.	III.	1875
Mumford, Edgar H.	II.	1886	Packard, Alpheus A.	XIII.	1898
Munroe, James P.	III.	1882	Packard, George A.	III.	1890
*Myrick, Willis H. (Oct. 17, '75)	II.	1874	Page, Walter	XIII.	1898
Nash, Luther R.	VI.	1894	Paine, Cecil E.	II.	1893
Neave, Charles	VI.	1890	Paine, Charles B.	IV.	1897
Neidich, Samuel A.	II.	1898	Palmer, William I.	VI.	1891
Nelson, Willard B.	VI.	1898	*Paraschos, N. T. (Mar. 22, '93)	I.	1892
Nesbit, Arthur F.	VI.	1895	Parce, Joseph Y., Jr.	II.	1893
Nevin, Charles K. B.	IV.	1896	Park, Charles F.	II.	1892
Newbegin, Parker C.	I.	1894	Park, Franklin A.	II.	1895
Newbury, George K.	XIII.	1898	Parker, Edwin M.	IV.	1894
Newell, Allan H.	II.	1890	Parker, Theodore	I.	1881
Newell, Frederick H.	III.	1885	Parker, Winthrop D.	IV.	1895
Newell, Herbert D.	I.	1896	Parker, W. Thornton, Jr.	IX.	1897
Newell, John L.	X.	1895	Parks, Oren E.	I.	1893
Newhall, Charles S.	III.	1896	Parmelee, Charles L.	I., XI.	1895
Newhall, Henry B., Jr.	VI.	1898	Parrish, J. Scott	II.	1892
Newhouse, Henry L.	IV.	1894	Parsons, Archibald L.	I.	1897
Newkirk, Walter M.	II.	1892	*Parsons, Charles O. (Oct. 5, '94)	III.	1873
Newman, Frank E.	IV.	1892	Patch, Maurice B.	III.	1872
Nichols, Everett J.	I.	1878	Patch, Walter W.	I.	1894

* Deceased.

NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Patten, William F.	VI.	1895	Pratt, William H.	VI.	1894
Patterson, George W., Jr.	VI.	1887	Prentiss, Frederick H.	II.	1878
Pauly, Karl A.	VI.	1896	Prentiss, Wm. A.	Sci. and Lit.	1875
Peabody, Cecil H.	II.	1877	Prescott, Charles O.	V.	1884
Pearson, Edwin R.	VI.	1888	Prescott, Samuel C.	V.	1894
Pease, Charles H.	II.	1898	Pressey, Harry A.	I.	1895
Peavey, LeRoy D.	I.	1898	Price, Raymond Beach	X.	1891
Pechin, John Shelley	II.	1897	Prichard, Charles F.	II.	1876
Peirce, Vernon M.	I.	1897	Priest, Benson B.	I.	1898
PenDell, Charles W.	VI.	1898	Proctor, Richard W.	V.	1894
Pennell, Walter O.	VI.	1896	Puffer, William L.	III.	1884
Perkins, Frank Edson	IV.	1892	Pugh, Achilles H., Jr.	X.	1897
Perkins, Herbert B.	I.	1874	Pulsifer, Louis W.	IV.	1894
Perley, Clarence W.	VII.	1896	Purinton, Arthur J.	II.	1884
Perry, Frank B.	II.	1898	Putnam, John L.	VI.	1896
Perry, John C.	II.	1892	Putnam, William E., Jr.	IV.	1898
*Peters, Quintard (Aug. 2, '94)	IX.	1887	Quevedo, Narciso T.	II.	1894
Peterson, Charles A.	VI.	1888	Raeder, Henry	I.	1876
Pettee, Charles L. W.	V.	1897	Ramsey, Allan	VII.	1891
Peyton, William R.	II.	1890	Randall, Newbert M.	III.	1885
Phelan, Joseph W.	V.	1894	Ranlett, Arthur G.	III.	1892
Philbrick, Shirley S.	II.	1898	Ranno, Fred W.	I.	1889
Phillips, George	III.	1873	Rawson, Harry D.	IV.	1896
Phillips, Harry M.	II.	1893	Ray, John Stites	II.	1888
Phillips, Henry A.	IV.	1873	Raymond, Edward B.	VI.	1890
Phillips, Henry M.	VI.	1892	Raynolds, James W.	III.	1896
Phipps, David W.	Phil.	1876	Read, Carleton A.	II.	1891
Pickering, William H.	VIII.	1879	Reed, James H., Jr.	VI.	1893
Pickernell, Frank A.	VI.	1885	Reed, Samuel G.	II.	1894
Pickert, Leo W.	V.	1893	Reed, Walter W.	VI.	1895
Pierce, Arthur G.	VI.	1892	Reed, William E.	VI.	1897
Pierce, Arthur W.	VI.	1892	Resor, William S.	VI.	1893
Pierce, Edward L.	II.	1886	*Reynolds, George F. (Jan. 9, '91)	II.	1886
Pierce, Herbert F.	I.	1888	Reynolds, Howard S.	VI.	1894
Pierce, Richard H.	VI.	1885	Reynolds, Robert D.	II.	1894
Pike, Clayton W.	VI.	1889	Rhodes, Frederick L.	VI.	1892
Pike, Otto S.	II.	1897	Rhodes, William S.	XII.	1897
*Pike, William A. (Oct., '95)	I.	1871	Rice, Calvin W.	VI.	1890
Pillsbury, Joel H.	I.	1896	Rice, Carrie (<i>see</i> Clark).		
Pingree, Edwin D.	II.	1896	Rice, Harry L.	X.	1893
Piper, Walter E.	V.	1894	Rich, Charles L.	I.	1876
Plimpton, Arthur L.	I.	1877	Rich, William J.	III.	1884
Plimpton, Thomas D.	II.	1875	Richards, Charles Russell	II.	1885
Poland, William B.	I.	1890	Richards, Ellen H.	V.	1873
Pollock, Clarence D.	I.	1894	Richards, Franklin B.	III.	1884
Pond, Frank H.	II.	1874	Richards, Frederick L.	X.	1895
Peol, George B.	VI.	1888	Richards, Louis J.	XI.	1897
Pope, Macy S.	I.	1892	Richards, Robert H.	III.	1868
Porter, Arthur F.	V.	1898	Richards, Thomas G.	II.	1894
Potter, William C.	III.	1897	Richardson, Charles F.	II.	1886
Power, Charles W.	VI.	1889	Richardson, Daniel A.	II.	1896
Powers, Walter C.	X.	1895	Richardson, Edward B.	VI.	1898
Pratt, Dana M.	I.	1892	Richardson, Frank D.	II.	1893
Pratt, George H.	V.	1871	Richardson, George L.	I.	1889
Pratt, Gilbert H.	V.	1897	Richardson, Herbert A.	V.	1887
Pratt, Robert W., Jr.	I.	1898	Richardson, William C.	II.	1891

* Deceased.

ALPHABETICAL LIST OF GRADUATES.

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NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Richmond, Harold A.	II.	1893	Rust, Harold N.	VI.	1895
Richmond, Henry P.	IV.	1898	Rutherford, Eugene W.	II.	1898
Richmond, Knight C.	II.	1890	Rutherford, Norman F.	VI.	1896
Ricker, Charles W.	VI.	1891	Ryder, Josiah Peterson	V.	1884
Rickey, Walter J.	II.	1895	Sabine, Annie W. (<i>see</i> Siebert).		
Riggs, George F.	I.	1879	Sackett, Ward M.	VI.	1892
Riley, Joseph C.	II.	1898	Sadtler, Samuel S.	V.	1895
Ripley, Henry F.	II.	1894	Safford, Frederick H.	VI.	1888
Ripley, Henry L.	I.	1873	Sage, Henry Judson	VI.	1892
*Ripley, William T. (Aug. 26, '93)	II.	1882	Sager, Lawrence K.	VI.	1896
Ripley, William Z.	I.	1890	Sager, Oscar F.	II.	1892
Ritchie, Edward W.	IV.	1898	Sanborn, Clifford B.	IX.	1895
Ritchie, James	I.	1878	Sanborn, Frank E.	II.	1889
Robb, Russell	VI.	1888	Sanderson, Nathan H.	I.	1896
Robbins, Arthur G.	I.	1886	Sargent, Albert F., Jr.	I.	1892
Robbins, Franklin H.	II.	1894	Sargent, Francis T.	II.	1875
Roberts, Edwin H.	II.	1896	Sargent, Homer E., Jr.	VI.	1898
Roberts, Harold B.	II.	1890	Sargent, Welland F.	I.	1875
Roberts, Odin B.	II.	1888	*Saunders, Robert T. (Sept. 15, '96)	I.	1892
Roberts, Thomas M.	VI.	1898	Sauveur, Albert	III.	1889
Roberts, William J.	I.	1891	Savage, S. Anthony	II.	1894
Robertson, Andrew R.	II.	1892	Sawin, Charles D.	Sci. and Lit.	1878
Robinson, C. Snelling	III.	1884	Sawin, Luther R.	V.	1897
Robinson, Dwight P.	VI.	1892	Sawtelle, Harry F.	I.	1898
Robinson, Edward	II.	1890	Sawyer, Albert H.	IX.	1894
Robinson, Elmer H.	VI.	1897	Sawyer, Alfred H.	II.	1888
Robinson, Theodore W.	III.	1884	Sawyer, Charles A.	Sci. and Lit.	1876
*Robinson, Thos. W. (Nov. 3, '80)	III.	1876	Sax, Moritz	IV.	1896
Rockwell, George A.	X.	1895	Sayer, Frederick L.	II.	1888
Rockwell, J. Arnold, Jr.	VII.	1896	Sayward, William H., Jr.	VIII.	1894
Rogers, Allen H.	III.	1890	Schaller, Frederick F.	VI.	1896
Rogers, Arthur S.	VI.	1894	Schiertz, Ferdinand Alfred	III.	1894
Rogers, Minnie H.	IX.	1890	Schmidt, Louis	V.	1890
Rogerson, John R.	I.	1897	Schmitz, Frank C.	I.	1895
Rollins, Edward W.	III.	1871	Schoentgen, Edward P.	IV.	1895
Rollins, James W., Jr.	I.	1878	Schroeder, Ernest H.	IV.	1898
Rooke, Warren A.	IV.	1897	Schuttler, Carl	II.	1897
Root, William Lacy	X.	1896	Schwamb, Peter	II.	1878
Roots, Willard H.	IX.	1891	Schwartz, David	V.	1897
Rose, Frederick H.	II.	1891	Schwarz, Franz H.	II.	1887
Rosewater, William M.	II.	1892	Schwarz, Theodore E.	III.	1876
Ross, Henry F.	III.	1882	Scotfield, Donald C.	IV.	1896
Ross, John H.	Sci. and Lit.	1882	Scott, Henry F.	II.	1898
Rotch, A. Lawrence	II.	1884	Scott, Robert W.	II.	1883
Rounds, George W.	VI.	1889	Scott, Walter O.	V.	1894
Rourke, Louis K.	I.	1895	Scovel, John C., Jr.	II.	1896
Rowell, George F.	I.	1892	Scudder, Heyward	V.	1898
Royce, James C.	II.	1897	Sears, Henry D.	VI.	1887
Ruckgaber, A.	VI.	1896	Sears, Henry K.	IX.	1896
Ruggles, Horace F.	II.	1892	Sears, Joseph H.	V.	1898
Russ, Ernest F.	IX.	1898	Sears, Mortimer A.	III.	1896
*Russel, Richard L. (July 31, '94)	I.	1889	Sears, Walter H.	I.	1868
Russell, A. LeBaron	IX.	1896	Seavey, John Frank	II.	1886
Russell, Benjamin F. W.	IV.	1898	Seidensticker, Lewis J.	V.	1898
Russell, L. Kimball	V.	1886	Selfridge, Russell	IX.	1892
Russell, Walter B.	II.	1897	Sellew, William H.	II.	1897

* Deceased.

NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Shailer, Robert A.	I.	1873	Smith, Howard E.	XI.	1896
Shattuck, A. Forrest	V.	1891	Smith, James W.	XIII.	1897
Shaw, Albion W.	VI.	1898	Smith, J. Waldo	I.	1887
Shaw, Edward S.	I.	1874	Smith, Oren B., Jr.	III.	1897
Shaw, Walter K.	II.	1888	Smith, Percy M.	II.	1897
Shed, Nathaniel W.	V.	1881	*Smith, Walter W. (July 30, '96)	II.	1871
Shedd, Albert R.	II.	1895	Smith, William Franklin	II.	1897
Shepard, Edward V.	I.	1889	Smith, William G.	I.	1898
Shepard, Frank E.	II.	1887	Smith, William Lincoln	VI.	1890
Shepard, George F., Jr.	IV.	1896	Smyser, Albert E.	II.	1896
Shepard, Walter	I.	1872	Smyser, Frederic W.	II.	1896
Shepard, William E.	VI.	1886	Smyser, James S.	II.	1896
Shepherd, Frank C.	XI.	1892	Snead, William R.	IV.	1881
Sheppard, Robert K.	X.	1895	Snelling, Grenville T.	IV.	1882
Sheridan, Richard G. B.	XIII.	1895	Snow, Walter B.	II.	1882
Sherman, Adelaide (<i>see</i> Blackmer).			Snow, William G.	II.	1889
Sherman, Charles W.	I.	1890	Snyder, Frederick T.	VI.	1891
Sherman, Edward C.	I.	1898	Soley, William A.	III.	1894
Sherman, George W.	X.	1894	Solomon, John I.	VI.	1893
Sherman, Henry A.	III.	1897	Sonnemann, George A.	III.	1890
Sherman, John Carleton	VI.	1895	Soule, Richard H.	II.	1872
Sherman, LeRoy K.	I.	1892	Southard, Francis M.	VI.	1894
Shockley, William H.	III.	1875	Souther, Henry, Jr.	III.	1887
Shuman, Jesse W.	VI.	1897	Southworth, Harry C.	III.	1877
Shurtleff, Arthur A.	II.	1894	Southworth, Martin O.	VI.	1890
Shute, Harry D.	VI.	1892	Spalding, Frederic P.	I.	1878
Siebert, Annie W. S.	VIII.	1888	Spalding, Frank A.	I.	1898
Silsbee, Francis H.	II.	1874	Spalding, Henry P.	VI.	1892
Simmons, Alfred L.	I.	1895	Spalding, Hollon C.	II.	1887
Simonds, Frederic P.	IV.	1894	Spear, Walter E.	XI.	1897
Simpson, Edmund T.	V.	1890	Speer, J. Ramsey	II.	1893
Simpson, James E.	III.	1886	Spencer, Theodore	VI.	1891
Sjöström, Ivar L.	I.	1888	Sperry, Austin	II.	1894
Skinner, Charles J.	I.	1895	Spies, Arthur D.	IV.	1897
Skinner, Fenwick F.	I.	1893	Spofford, Charles M.	I.	1893
Skinner, Theodore H.	IV.	1892	Spooner, George H.	VI.	1891
Slater, Howard C.	II.	1890	Sprague, Timothy W.	III.	1887
Sloan, Alfred Pritchard, Jr.	VI.	1895	Spring, Russell C.	IV.	1897
*Small, Nathaniel C. (July 14, '80)	V.	1880	Stafford, C. Edward	III.	1873
Smalley, Frank N.	V.	1896	*Stantial, Amy M. (<i>see</i> Lund).		
Smetters, Samuel T.	I.	1896	Stantial, Frank G.	V.	1879
Smith, A. Blakeley	IX.	1893	Stantial, Otis T.	III.	1885
Smith, Arthur C.	V.	1892	Stanwood, James B.	II.	1875
*Smith, Charles A. (Feb. 4, '84)	I.	1868	*Stanwood, James H. (May 24, '96)	I.	1887
Smith, Charles H.	II.	1898	Staples, William D.	VI.	1898
Smith, Charles P.	II.	1887	Starbuck, George F.	II.	1897
Smith, Clarence W.	V.	1888	Stearns, Harold E.	II.	1881
Smith, Edward M.	II.	1888	Stearns, Walter M.	VI.	1896
Smith, Fred Haskell	X.	1896	Stearns, William S.	I.	1879
Smith, Frederick D.	I.	1893	Stebbins, Alfred, Jr.	III.	1884
Smith, George A.	V.	1883	Stebbins, Charles B.	XIII.	1897
Smith, Harrison W.	II.	1897	Stebbins, Theodore	VI.	1886
Smith, Harry E.	V.	1887	Steffens, William F.	I.	1898
Smith, Herbert E.	IV.	1896	Steiner, Klaus J.	III.	1897
Smith, Horace T.	V.	1898	Stetson, Frank O.	V.	1887

*Deceased.

ALPHABETICAL LIST OF GRADUATES.

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NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Stevens, Gorham P.	IV.	1898	Talbot, Marion	IX.	1888
Stevens, Harold C.	I.	1896	Tallant, George P.	IX.	1892
Stevens, John Conyngham	XI.	1894	Tallmadge, Thomas E.	IV.	1898
Stevens, Walter F.	II.	1895	*Taney, Edmund L. (May 1, '90)	I.	1878
Stevens, William W.	IV.	1898	Tappan, Lewis Hooper	II.	1896
*Stewart, Charles E. (Oct. 7, '77)	I.	1877	Taylor, Charles M.	II.	1893
Stickney, Delia	V.	1889	Taylor, Edward M.	II.	1898
Stickney, Joseph W.	VI.	1896	Taylor, George	II.	1894
Stiles, Percy G.	VIII.	1897	*Taylor, Harry B. (June 8, '97)	V.	1891
Stimpson, Thomas F.	III.	1877	Taylor, John	VI.	1897
Stix, Solomon H.	IV.	1891	Taylor, Mark E.	II.	1898
Stoddard, Arthur B.	V.	1891	Taylor, Robert R.	IV.	1892
Stoddard, Henry F.	II.	1887	Taylor, William B.	II.	1896
Stone, Charles A.	VI.	1888	Taylor, William M.	II.	1886
Stone, Charles F.	III.	1871	Tenney, Albert B.	II.	1894
Stone, Charles H.	V.	1896	Tenney, Frank	III.	1883
Stone, Esther	IV.	1896	Tenney, Winthrop P.	VI.	1893
*Stone, G. Goodwin (Mar. 4, '93)	III.	1889	Thalheimer, William C.	I.	1892
Stone, Joseph	I.	1868	Thanisch, Frank A.	III.	1896
Storrow, Samuel	I.	1890	Thayer, Horace R.	I.	1893
Story, Isaac M.	I.	1878	Thomas, Alfred C.	VI.	1893
Stose, George W.	I.	1893	Thomas, Edward G.	II.	1887
Stoughton, Augustus B.	II.	1886	Thomas, James W.	II.	1895
Stoughton, Bradley	III.	1896	Thomas, Percy H.	VI.	1893
Stowe, Lovell B.	VI.	1893	Thomas, William H., Jr.	V.	1896
Streng, Lewis S.	VI.	1898	Thompson, Albert W.	II.	1899
Strickland, William R.	I.	1898	Thompson, Frederick	I.	1887
Studley, Fred B.	VI.	1893	Thompson, Herbert A.	VIII.	1891
Sturges, Benton	IX.	1890	Thompson, Maurice De K., Jr.	VIII.	1898
Sturgis, Elliot T.	III.	1884	Thompson, Sanford E.	I.	1889
Sturm, Meyer J.	IV.	1896	Thompson, Walter S.	I.	1887
Sturtevant, Edward	IX.	1898	Thomson, Lucy D.	IV.	1896
Sturtevant, Thomas J.	VI.	1890	Thomson, Mary J.	V.	1898
Sully, John M.	III.	1888	Thomson, Samuel F.	I.	1896
Sumner, George W.	VI.	1896	Thorndike, Sturgis H.	I.	1895
Susmann, Julius H.	III.	1876	Thorp, Frank H.	V.	1889
Sutter, Frederick C.	VI.	1893	Thropp, Joseph E., Jr.	III.	1894
Swain, George F.	I.	1877	Thurber, William B.	IX.	1889
Swallow, Ellen H. (see Richards).			Tidd, Arthur W.	I.	1894
Swan, James	II.	1891	Tidd, Winthrop L.	II.	1893
Swanton, Frederick W.	VI.	1890	Tietig, Rudolph	IV.	1898
Swanton, Henry A.	II.	1894	Tilden, Bryant P.	III.	1868
Swanton, Walter I.	I.	1893	Tilley, John	VI.	1896
Sweet, Kilburn S.	I.	1893	Tillinghast, Charles F.	II.	1895
Sweetland, Ralph	II.	1889	Tillinghast, Theodore F.	I.	1879
*Sweetser, Arthur W. (Apr. 10, '78)	I.	1874	Tinkham, Edgar L.	VI.	1897
Sweetser, Ralph H.	III.	1892	Tinkham, Samuel E.	I.	1873
Swift, William E.	I.	1895	Tolman, James P.	III.	1868
Swope, Gerard	VI.	1895	Tomfohrde, John F.	II.	1893
Sykes, Henry H.	VI.	1891	Tompkins, Charles H., Jr.	III.	1883
Taber, George Aymar	I.	1894	Tone, Jay E.	X.	1897
Taft, Charles Chester	X.	1895	Torossian, Toros H.	I.	1894
Taft, Harrison S. . XIII. 1897	II.	1896	Towne, John H.	IX.	1890
Taintor, Charles Wilson	VI.	1893	Towne, Linwood O.	III.	1878
Taintor, Giles	VI.	1887	Towne, Walter I.	VI.	1888
Talbot, Henry P.	V.	1885	Townsend, Walter D.	III.	1876

* Deceased.

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NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Tozier, Henry H.	V.	1896	Walker, Charles R.	V.	1893
Treat, George W.	I.	1898	Walker, Elton D.	I.	1890
Tripp, Charles A.	VI.	1893	Walker, Francis	IX.	1892
Treut, Charles E.	I.	1896	Walker, George L.	I.	1893
*Trowbridge, A., Jr. (Dec. 5, '78)	II.	1871	Walker, Robert T.	IV.	1890
Trowbridge, Walter B.	II.	1892	Wall, William G.	VI.	1896
Truesdell, Arthur E.	VI.	1889	Wallace, Charles F.	VI.	1892
Trumbull, Morris K.	I.	1897	Wallace, Frederic A.	II.	1893
Tucker, Atherton H.	IV.	1898	Wallis, Robert N.	IX.	1893
Tucker, Charles W.	V.	1896	Walton, Evelyn M. (<i>see</i> Ordway).		
Tucker, Edward A.	I.	1895	Walworth, Joseph E.	V.	1895
Tucker, Frank S.	II.	1898	Ward, Clarence S.	III.	1872
Tucker, Greenleaf R.	V.	1887	Ward, Nahum	V.	1884
*Tucker, H. Judson (Aug. 17, '96)	VI.	1887	*Ware, Robert C. (June 25, '83).		
Tucker, Hugh M.	II.	1895	Phil. 1876. Sci. and Lit.		1874
Tucker, Ross F.	IV.	1892	Warner, Charles H.	VI.	1889
Tucker, William A.	III.	1893	Warner, George M.	VI.	1891
Turnbull, Charles D.	II.	1886	Warner, Murray	II.	1892
Turner, Edmund K.	I.	1870	Warren, A. Sydney	III.	1888
Twombly, Alexander H.	II.	1887	Warren, Edward R.	VII.	1881
Twombly, Fred H.	IX.	1898	Warren, Henry E.	VI.	1894
Tyler, Alice Brown	V.	1884	Warren, H. L. J.	III.	1875
Tyler, Clifford M.	II.	1891	Warren, John E.	II.	1898
Tyler, Harry W.	V.	1884	Warren, Joseph A.	XI.	1892
Tyler, Lucius S.	VI.	1897	Washburn, Thurlow	III.	1897
Ulmer, George F.	V.	1898	Wason, Leonard C.	VI.	1891
Underhill, Arthur P.	VI.	1896	Wason, Rigby	VI.	1894
Underhill, William W.	II.	1889	Wason, Robert S.	V.	1896
Underwood, George R.	V.	1883	Waterman, Charles C.	VI.	1892
Usher, Susannah	VII.	1893	Waterman, Harry C.	IV.	1893
Vaillant, George W.	III.	1892	Waterman, Henry A.	II.	1896
Van Alstine, David	II.	1886	Waterman, Richard, Jr.	IX.	1892
Van Everen, Grace A.	V.	1896	Waterson, Karl W.	VI.	1898
Vanier, George P.	III.	1885	Watkins, Willard H.	V.	1895
Varney, Theodore	VI.	1894	Watts, Francis H.	I.	1897
Verges, Luis F.	I.	1891	Wayne, Jacob Lloyd	VI.	1896
Very, Frank W.	V.	1873	Webb, Henry S.	VI.	1892
Videto, Theodore Ernest	IV.	1897	Webster, Edwin S.	VI.	1888
Vielé, Francis S.	VI.	1891	Webster, William R.	III.	1875
Vielé, Maurice A.	II.	1886	Weed, Henry T.	V.	1891
Vinal, Ralph S.	IV.	1897	Weeks, Isaiah S. P.	I.	1871
Vining, John F.	IV.	1892	Weil, Charles L.	II.	1888
Vining, Louis B.	VI.	1893	Weimer, Edgar A.	II.	1898
von Holst, Hermann V.	IV.	1896	Wells, Albert J.	II.	1896
Vorce, Clarence B.	I.	1888	Wells, Edward C.	II.	1892
Vose, Ralph	VI.	1887	Wells, Webster	I.	1873
Wadleigh, George R.	II.	1897	Wendell, George V.	VIII.	1892
Wadsworth, Augustus B.	VII.	1893	Wentworth, Charles A.	I.	1896
Wadsworth, George R.	I.	1898	Wessel, John F.	VI.	1898
Wait, Henry H.	VI.	1891	Wesson, David	V.	1883
Waite, Charles N.	V.	1876	Wesson, Paul B.	II.	1898
Waite, Loren G.	VI.	1895	Westcott, Frank T.	I.	1892
Waitt, Arthur M.	II.	1879	Westcott, William R.	VI.	1894
Waitt, Henry M.	I.	1876	Weston, David B.	V.	1895
Waldron, Samuel Payson	I.	1893	Weston, William H.	III.	1891
Wales, Thomas C., Jr.	VI.	1892	Wetherbee, Charles P.	II.	1891

* Deceased.

NAME.	COURSE.	CLASS.	NAME.	COURSE.	CLASS.
Weymouth, Thomas R.	VI.	1897	Wilson, Elwood J.	III.	1886
Wheeler, Ralph N.	I.	1895	Wilson, Fred A.	II.	1891
Wheeler, Robert C.	I.	1894	Windett, Victor	II.	1889
Whipple, George C.	I.	1889	Wing, David L.	IX.	1898
Whitaker, Channing	II.	1869	Winkley, William H.	XIII.	1895
Whitaker, S. Edgar	VI.	1803	Winslow, Arthur	III.	1881
*White, A. C. (Dec. 27, '93)	VIII.	1882	Winslow, Charles-Edward A.	VII.	1898
White, Annie E. (<i>see</i> Carpenter).			Wolfe, John J. C.	II.	1895
White, Franklin W.	VII.	1890	*Wood, Charles (Nov. 28, '95)	I.	1886
Whiting, Jasper	III.	1889	Wood, Charles Hancock	II.	1891
Whitmore, Walter G.	VI.	1887	Wood, Florence A.	VIII.	1897
Whitney, Frank P.	VI.	1889	Wood, Frederick W.	III.	1877
Whitney, Granger	III.	1887	Wood, Henry B.	I.	1876
Whitney, Lambert N.	VI.	1896	Wood, Kenneth F.	II.	1894
Whitney, William A.	I.	1887	Wood, Louis F.	V.	1873
Whitney, William M.	II.	1884	Wood, Willett A.	VI.	1896
Whitney, Willis R.	V.	1890	Wood, William R.	XIII.	1897
Whiton, David T.	II.	1897	Wood, Winthrop B.	I.	1898
Whitten, Roscoe B.	IV.	1898	Woodbridge, Jonathan E.	VI.	1893
Whitten, William H., Jr.	VIII.	1896	Woodbury, Charles H.	II.	1886
Whittier, Randal	I. 1873	V. 1871	Woodman, Alpheus G.	V.	1897
*Wiggin, Frank E. (Dec. 21, '90)	I.	1877	Woodman, Andrew W.	I.	1890
Wiggin, Thomas H.	I.	1895	Woodman, Caroline A.	VII.	1886
Wilcox, Herbert A.	III.	1887	Woodman, George M.	I.	1897
Wilder, Clifton W.	II.	1898	Woods, Henry T.	II.	1893
Wilder, C. Morris	VI.	1886	*Woodward, A. E. (Sept., '91)	III.	1888
Wilder, Parker H.	VI.	1893	Woodwell, Julian E.	II.	1896
Wilder, Ralph E.	I.	1898	Woodworth, Edward Harold	V.	1897
Wilder, Salmon W., Jr.	X.	1891	Woodyatt, Ernest	IV.	1897
Wilder, Stephen H.	Sci. and Lit.	1874	Woolworth, James G.	V.	1878
Wilkes, Charles M.	IV.	1881	Worcester, Vernor F.	II.	1886
Willard, Daniel W.	II.	1870	Worthington, Arthur M.	VII.	1892
Williams, Arthur S.	VI.	1888	Worthington, Erastus, Jr.	I.	1885
Williams, Charles G.	I.	1895	Wrightington, C. Nelson	II.	1894
Williams, Emile F.	I.	1878	Wrinkle, Laurence F. J.	III.	1870
Williams, Francis C., Jr.	I.	1884	Wuichet, Walter G.	II.	1889
Williams, Francis H.	V.	1873	Yoder, Luther K.	II.	1895
Williams, Robert C.	III.	1889	Yoerg, Henry	II.	1895
Williams, Roger J.	IX.	1895	Yorke, George M.	VI.	1893
Williams, Sidney	I.	1887	Young, Conrad H.	II.	1896
Williams, Walter S.	X.	1895	Young, Fred R.	III.	1886
Willis, John H.	IV.	1896	Young, John E.	I.	1888
Williston, Arthur L.	II.	1889	Zapf, Alfred E.	IV.	1895
Wilson, Arthur R.	I.	1890	Zimmermann, Walter G.	II.	1898

* Deceased.

Titles of Theses

OF SUCCESSFUL CANDIDATES FOR GRADUATION,
JUNE, 1898.

Candidates for the Degree of Master of Science.

JOHN ARTHUR COLLINS, JR., S.B.

A Study of the Corrosion of Iron.

IRÉNÉE DU PONT, S.B.

Methods for the Measurement of Smoke.

EDMUND SEWALL MANSON, JR., S.B.

The Electrical Conductivity of Mixed Electrolytes and its Bearing on Ostwald's Dilution Law.

ALBERT ERNEST SMYSER, S.B.

Precipitation of Gold from Potassium Cyanide Solutions by Means of Silver and Acidulation.

THEODORE ERNEST VIDETO, S.B.

Military Architecture. The History and Growth of Military Constructions from the Earliest Times to the Close of the Mediæval Period.

Candidates for the Degree of Bachelor of Science.

DONALD NELSON ALEXANDER.

A Design for a Savings Bank in a Large City.

LEON ALLAND.

Design for a Single Track Deck Bridge on an "Abt" System Railroad.

ROBERT ALLYN.

Design of a Machine for the Measurement of Pivot Friction.

LYMAN ARNOLD.

The Variations of Stray Power in a 25 K. W. Generator. (*With F. M. Kellogg.*)

MILAN VALENTINE AYRES.

An Electro-Chemical Current Recorder for Sudden Rushes of Current.
(*With S. Fleisher.*)

ROGER WARD BABSON.

Estimate of Cost for a Street Railway between Newton and West
Roxbury, Mass.

LYMAN EDWARD BACON.

Steel Freight Car Construction. (*With I. M. Chace, Jr.*)

JOSEPH BANCROFT.

A Comparison of Cloth Bleached by the Mather System with that
Bleached by Other Systems in Common Use.

ELLIOTT RENNELAER BARKER.

An Investigation of Some Class Reactions for Organic Nitrogen
Bases and Nitro Compounds.

HARRINGTON BARKER.

An Investigation of Wind Pressure. (*With H. A. Hopkins.*)

WILLIAM HARVEY BARLOW.

An Investigation of the Hydrolysis of Cellulose.

HENRY CLIFFORD BELCHER.

Forms of Briquettes for Cement Testing.

FRANCIS PATRICK BERGEN.

An Investigation of the Disruptive Effect upon Air at Different
Pressures of Alternating Currents of High Potential and Low
Frequency.

FREDERIC LENDALL BISHOP.

A Method for the Determination of Thermal Conductivity. (*With P.
McJunkin.*)

WILLIAM DANIELS BLACKMER.

Chlorination of a Cripple Creek Gold Ore and Precipitation of the
Gold. (*With F. F. Colcord.*)

ARTHUR ALPHONZO BLANCHARD.

Some Attempts to prepare Hexamethylene from Trimethylene Com-
pounds.

JOHN STEARNS BLEECKER.

A Series of Tests on a Water Ejector. (*With W. G. Zimmermann.*)

HOWARD LAWRENCE BODWELL.

The Variation in the Density of Steel under Stress. (*With W. Brewster.*)

GEORGE HENRY BOOTH.

A Study of the Stresses in Timber Trusses. (*With E. M. Taylor.*)

MARTIN BOYLE.

The Velocity of the Reactions between Organic Bromides and Silver Nitrate.

WILLIAM BREWSTER.

The Variation in the Density of Steel under Stress. (*With H. L. Bodwell.*)

DICKSON QUEEN BROWN, A.B.

A Test of a Municipal Electric Lighting Plant. (*With A. F. Howard.*)

GEORGE BURNHAM.

A Design for an American Villa.

WILLIAM LARAMY BUTCHER.

Experiments on the Flow of Water in a Compound 36-inch and 30-inch Pipe. (*With L. H. Byam.*)

ELWELL ROBERT BUTTERWORTH.

A Test on a Paper Calender.

LEROY HENRY BYAM.

Experiments on the Flow of Water in a Compound 36-inch and 30-inch Pipe. (*With W. L. Butcher.*)

DONALD CHENERY CAMPBELL.

An Experimental Study of the Application of Compressed Air to Shop Uses.

IRA MASON CHACE, JR.

Steel Freight Car Construction. (*With L. E. Bacon.*)

EDWARD SAMUEL CHAPIN.

The Effect of Diionic Electrolytes on the Solubility of Diionic and Triionic Electrolytes with Different Ions.

PAUL CLIFFORD.

A Study of the Jet Delivered by the Steam Injector. (*With H. L. Currier.*)

HERBERT FRANKLIN COBB.

A Design and Test of a Device to Reduce the Initial Condensation in a Steam Engine.

HERBERT LUTHER COBB.

A Study of the Efficiency of an Electrical Plant under Varying Conditions.

HOWARD LINCOLN COBURN.

An Investigation of the Variations of the Coefficient of Friction between Leather Belting and Cast Iron at Different Speeds of Slip. (*With G. O. Haskell.*)

JOSEPH GEORGE COFFIN.

The Thermo-Electric Determination of the Melting and Freezing Points of Inorganic Salts, and of their Mixtures.

FRANK FOREST COLCORD.

Chlorination of a Cripple Creek Gold Ore and Precipitation of the Gold. (*With W. D. Blackmer.*)

FRANK EUGENE COOMBS.

A Design for a Gymnasium, Bathing Establishment, and Club House for a University.

WORTHINGTON CORNELL.

Tests of a Special 30-inch Ventilating Fan. (*With A. W. Shaw.*)

WILLIAM EDWARD COTTER.

A Design for a Savings Bank for a Small City.

GEORGE THURSTON COTTLE.

The Measurement of the Velocity of the Reactions between Aromatic Hydrocarbons and Bromine, and between Silver Acetate and Sodium Formate.

EVA HAYES CRANE.

A Design for a Small Church.

GEORGE WARREN CRAVEN.

A Comparative Test of the Amyl Acetate Lamp, and an Investigation of the Positive Crater of the Continuous Current Arc as an Absolute Standard of Light.

LUTHER ALBERTO CROWELL.

A Comparative Test of the Efficiencies of Commercial Incandescent Lamps. (*With G. R. Davison.*)

HARVEY LEON CURRIER.

A Study of the Jet Delivered by the Steam Injector. (*With P. Clifford.*)

EVERETT NICHOLS CURTIS.

The History of the Financial Interest of the Commonwealth of Massachusetts in the Troy & Greenfield Railroad and Hoosac Tunnel.

FRED BERTRAM CUTTER.

A Test of an Electric Light Plant at Wakefield, Mass. (*With V. R. Lansingh.*)

WILLIAM SUMNER BARTON DANA.

A Design for a Town Library and Museum.

RAYMOND HEWES DANFORTH

A Design for a Repeated Stress Beam Testing Machine.

PHILIP HERRICK DATER, B.A.

A Preliminary Design for a Water Supply for the Town of Blackstone, Mass. (*With H. R. Thayer.*)

ALVAN LAMSON DAVIS.

The Forming Temperatures of Some Ferrous Slags.

HUNTLY WARD DAVIS.

A Design for a House near a City for a Governor-General.

GEORGE RUPERT DAVISON.

Comparative Test of the Efficiencies of Commercial Incandescent Lamps. (*With L. A. Crowell.*)

ROBERT SEELY DE GOLYER.

A Design for a Club House for a Country Club in the South.

JOHN BROWN DIXON.

The Action of Metals on Halogen-Substitution Products of the Fatty Amines.

IRVING BIGELOW DODGE.

Determination of Shaft Friction under Ordinary Working Conditions. (*With F. F. Muhlfig.*)

CHESTER FRANCIS DRAKE.

Investigations regarding the Sewerage of Hingham, Mass.

- ROBERT MAY DRAPER.
The Smelting of a Sulphide Copper Ore. (*With G. McM. Godley.*)
- ALBERT THOMPSON DREW.
An Investigation of the Explosiveness of Some of the Lighter Petroleum Products.
- DANIEL WILBERT EDGERLY.
Preparation and Decomposition of the Basic Nitrate of Tellurium.
- RAY CLINTON FAUGHT.
A Study of the Efficiency and Regulation of Transformers with Different Periodicities. (*With T. M. Roberts.*)
- ALBERT JUSTIN FEARING.
Design for a Steel Pratt Truss Bridge.
- DAVID COLTON FENNER, Ph.B.
A Determination of the Initial Strains in Steel Shafting Due to Hammering.
- FINLAY FORBES FERGUSON, A.B., B.S.
A Design for a Terminal Railway Station Fronting on a Public Square.
- HOWELL FISHER.
The Effect of Moisture in Coal for Retort Coking. (*With J. T. Lippincott.*)
- GEORGE ISAAC FISKE.
Tests of a Rotary Converter. (*With H. B. Newhall, Jr.*)
- SIMON FLEISHER.
An Electro-Chemical Current Recorder for Sudden Rushes of Current. (*With M. V. Ayres.*)
- MABEL FLORA FORREST.
A Study of the Diets of the Pauper Institutions at Long Island and Tewksbury.
- EDWARD THOMAS FOULKES.
A Design for a Building devoted to the Fine Arts.
- WILLIAM CLARK FOWNES.
An Investigation of the By-Product Coke Oven. (*With E. Kuttroff.*)
- ARTHUR IRA FRANKLIN.
The Action of Iodine on Some Aliphatic Amines.

ALBERT IRWIN FRYE.

Design for a Two-hinged Steel Arch Bridge for a Standard Four-track Railroad.

FREDERIC FURBISH, B.S.

A Design for a Collegiate Building for a State University.

ERNEST AUGUSTUS GALLISON.

Comparative Tests on Centrifugal Pumping Engine, Metropolitan Sewerage Commission, East Boston, Mass.

LESTER DURAND GARDNER.

The Development of the Mayoralty of Boston.

FREDERICK CHESTER GILBERT.

The Recovery of Lead and Tin from Solder Process.

CHARLES HENRY GODBOLD, JR.

Steamship Vibrations.

JOHN NEWTON GODDARD.

The Treatment of an Oxide Copper Ore together with a Roasted Sulphide Ore. (*With C. S. Koch.*)

GEORGE MCMURTRIE GODLEY.

The Smelting of a Sulphide Copper Ore. (*With R. M. Draper.*)

CLARENCE GOLDSMITH.

Test on Rubber Calenders and Grinding Mills.

ARTHUR LINDSAY GOODRICH.

The Brix Spindle as a Measure of Total Solids in Sugar-house Solutions.

GEORGE OWENS HASKELL.

An Investigation of the Variations of the Coefficient of Friction between Leather Belting and Cast Iron at Different Speeds of Slip. (*With H. L. Coburn.*)

LEWIS ANDREWS HAYDEN.

The Determination of Potassium Cyanide in Solutions and the Effect of Different Impurities thereon.

JAMES EZRA HAZELTINE.

Study of Wave Forms in Phasing Transformers. (*With W. B. Nelson.*)

FRANK BOLTIN HEATHMAN.

A Design for a Club House for a Social Club in a Small City.

- LYMAN FOSTER HEWINS.
Stability of a Modern Battleship under Damaged Conditions. (*With W. E. Kimball.*)
- CARL STOUT HIGH.
Design and Construction of a Differential Wattmeter.
- HEBER AUGUSTUS HOPKINS.
An Investigation of Wind Pressure. (*With H. Barker.*)
- RALPH TUCKER HORTON.
Modern Methods in the Construction of Foundations.
- ARTHUR FISKE HOWARD, B.S.
A Test of a Municipal Electric Lighting Plant. (*With D. Q. Brown.*)
- WINFRED DEAN HUBBARD.
Studies for the Disposal of the Sewage of Braintree, Mass.
- GEORGE DANFORTH HUNTINGTON, A.B.
Design for a Highway Bridge across the Charles River, at Cambridge, Mass. (*With E. C. Sherman.*)
- CHARLES SWANBERG HÜRTER.
The Stamping, Milling, and Concentration of a Nova Scotia Gold Ore, and the Treatment of the Concentrates.
- GEORGE ANTHONY HUTCHINSON.
A Study of Corliss Valve Gears.
- HARRY CREIGHTON INGALLS.
A Design for a Museum for Sculpture.
- ARELI HULL JACOBY.
The Permanence of Colors to Light when Dyed upon Cellulose, Nitrocellulose, and Celluloid.
- PAUL FRANKLIN JOHNSON.
Loss of Pressure of Air Flowing through Small Pipes.
- FREDERIC ALEXANDER JONES.
A Plan for the Separation of Grades at Needham, Mass. (*With R. W. Pratt, Jr.*)
- IRVIN HAYES KAUFMAN.
Efficiency Tests of a Hydraulic Elevator. (*With F. S. Tucker.*)
- ARTHUR SAMUEL KEENE.
A Design for a Conservatory of Music.
- WILLIAM KELLEY.
Oxyinduline, a New Blue Dyestuff.

FRANKLIN MINER KELLOGG.

The Variations of Stray Power in a 25 K. W. Generator. (*With L. Arnold.*)

ROBERT EVERETT KENDALL.

On the Reaction of some Organic Substances with Liquid Ammonia and its Sodium Compound.

ELWELL FAIRFIELD KIMBALL.

Determination of Friction Losses at Low Velocities in a One-and-one-half-inch Wrought Iron Pipe. (*With F. A. Spaulding*)

WALTER EVERARD KIMBALL.

The Stability of a Modern Battleship under Damaged Conditions. (*With L. F. Hewins.*)

CARLETON SPAYTH KOCH.

The Treatment of an Oxide Copper Ore together with a Roasted Sulphide Ore. (*With J. N. Goddard.*)

EDWIN KUTTROFF.

An Investigation of the By-Product Coke Oven. (*With W. C. Fownes.*)

ROBERT LACY, A.B.

A Design for a Three-hinged Arch Railroad Bridge.

EDWARD PERCY LANE.

Design for a Movable Dam.

VAN RENSSELAER LANSINGH, B.S.

Test of an Electric Light Plant at Wakefield, Mass. (*With F. B. Cutter.*)

WALTER HENRY LEE.

A Design for an Elevated Railway Station.

JESSE TREADWELL LIPPINCOTT.

Effect of Moisture in Coal for Retort Coking. (*With H. Fisher.*)

EDMUND COOK LITTLE.

A Design for a Post Office Suitable for Back Bay, Boston, Mass.

PERCIVAL HALL LOMBAARD, A.B.

Plant Test at Trinity Court, Boston, Mass. (*With E. B. Richardson.*)

CHARLES EDWARD LORD.

A Study of the National Electric Light Association's Suggestion for the Rating of Incandescent Lamps. (*With W. D. Staples.*)

WALTER GARDNER MCCONNELL.

A Design for a Floating Dock.

- JAMES SHERWOOD McINTYRE.
A Design for a Restaurant on a Public Promenade.
- PAUL McJUNKIN.
A Method for the Determination of Thermal Conductivity. (*With F. L. Bishop.*)
- WILLIAM ADAMSON MARSHALL.
An Investigation of the Viscosity, the Jelly Test, and the Binding Strength of Hide Glue.
- GEORGE EUGENE MATHEWS.
A Design for a Library and Museum.
- DURAND MAYER.
A Study of the Variation of the Constant of a Thomson Recording Wattmeter and of a Thomson Indicating Wattmeter with Varying Power Factors. (*With J. F. Wessel.*)
- SUMNER MOULTON MILLIKEN.
A Design for a Stone Arch.
- JOSEPH JULIUS MOEBS.
A Design for a Single Track through Railroad Bridge.
- RICHARD MOMMERS.
Some Double Salts of Tellurium with Di-methylamine.
- EDWARD FRANCIS MORRILL.
Design and Construction of a Radial Arm Photometer. (*With C. W. PenDell.*)
- JAMES FRED MUHLIG.
Determination of Shaft Friction under Ordinary Working Conditions. (*With I. B. Dodge.*)
- SAMUEL ABRAHIMS NEIDICH, PH.B.
The Design of a 400-ton Beet Sugar Plant.
- WILLARD BUNDY NELSON.
Study of Wave Forms in Phasing Transformers. (*With J. E. Hazeltine.*)
- GEORGE KELLOGG NEWBURY.
Experiments upon the Tow-rope Resistance of a Model of the U. S. S. Yorktown. (*With A. A. Packard.*)
- HENRY BORDEN NEWHALL, JR.
Tests of a Rotary Converter. (*With G. I. Fiske.*)

- CLARENDON NICKERSON.
Viscosity as a Test for Kerosene.
- HENRY DOUGLAS OSGOOD.
The Sewage Disposal of Pittsfield, Mass.
- ALPHEUS APPLETON PACKARD.
Experiments upon the Tow-rope Resistance of a Model of the
U. S. S. Yorktown. (*With G. K. Newbury.*)
- WALTER PAGE.
Launching Experiment on Model of U. S. S. Yorktown.
- CHARLES HENRY PEASE.
Tests on a Twelve-foot Limestone Arch. (*With A. R. Shedd.*)
- LEROY DEERING PEAVEY.
A Design for an Elevated Water Tank.
- CHARLES WILLIAM PENDELL.
Design and Construction of a Radial Arm Photometer. (*With E. F.
Morrill.*)
- FRANK BRIDGHAM PERRY.
An Investigation of the Distribution of Power in a Cotton Mill and a
Study of the Losses in Transmission. (*With S. S. Philbrick.*)
- SHIRLEY SEAVEY PHILBRICK.
An Investigation of the Distribution of Power in a Cotton Mill and a
Study of the Losses in Transmission. (*With F. B. Perry.*)
- ARTHUR FELIX PORTER.
Some Compounds of Tellurium.
- ROBERT WINTHROP PRATT, JR.
A Plan for the Separation of Grades at Needham, Mass. (*With F.
A. Jones.*)
- BENSON BULKELEY PRIEST.
Experiments to Determine the Coefficient for a Triangular Weir.
(*With W. B. Wood.*)
- WILLIAM EDWARD PUTNAM, JR., A.B.
A Design for a Campo-santo.
- CHARLES RUSSELL RICHARDS.
Comparative Efficiency of a Sectional Boiler with Forced and Natural
Draught.
- EDWARD BRIDGE RICHARDSON.
Plant Test at Trinity Court, Boston, Mass. (*With P. H. Lombard.*)

- HENRY PARSONS RICHMOND.
A Design for a Grand Opera House for Boston, Mass.
- JOSEPH CAINS RILEY, JR.
An Approximate Mean Effective Pressure Gauge for High Speed Engines.
- EDWARD WARREN RITCHIE.
A Design for an Armory for a Battalion of M. V. M.
- THOMAS MAYO ROBERTS, A.B.
A Study of the Efficiency and Regulation of Transformers with Different Periodicities. (*With R. C. Faught.*)
- ERNEST FRANK RUSS.
A Statistical Study of the Export Trade of the United States with the Countries of South America.
- BENJAMIN FRANKLIN WINSLOW RUSSELL.
A Design for a Music Hall for a City of Twenty Thousand Inhabitants.
- EUGENE WHITE RUTHERFORD.
Wear of Brake Shoes of Different Materials relatively to the Wear on the Wheel Tire.
- HOMER EARLE SARGENT, JR., Ph.B.
Efficiency of a 40 K. W. Alternating Current Generator.
- HARRY FRANCIS SAWTELLE.
Design for a Transfer Table.
- ERNEST HERMAN SCHROEDER.
A Design for a Palatial Villa by the Sea.
- HENRY FRANCIS SCOTT.
A Study of the Axial Oil Machine with Tests upon the Coefficient of Friction of Babbitted Journals. (*With C. H. Smith.*)
- HEYWARD SCUDDER, B.A.
Reactions for the Detection of Some Organic Compounds.
- JOSEPH HOMER SEARS.
Liquid Ammonia as a Solvent in the Determination of Molecular Weights.
- LEWIS JEROME SEIDENSTICKER.
The Composition of Potassium Periodide in Solution.

ALBION WALKER SHAW.

Tests of a Special 30-inch Ventilating Fan. (*With W. Cornell.*)

ALBERT RIX SHEDD.

Tests on a Twelve-foot Limestone Arch. (*With C. H. Pease.*)

EDWARD CLAYTON SHERMAN.

Design for a Highway Bridge across the Charles River at Cambridge, Mass. (*With G. D. Huntington.*)

CHARLES JERNEGAN SKINNER.

A Study for the Water Supply and Sewage Disposal of a Country Estate.

CHARLES HENRY SMITH.

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