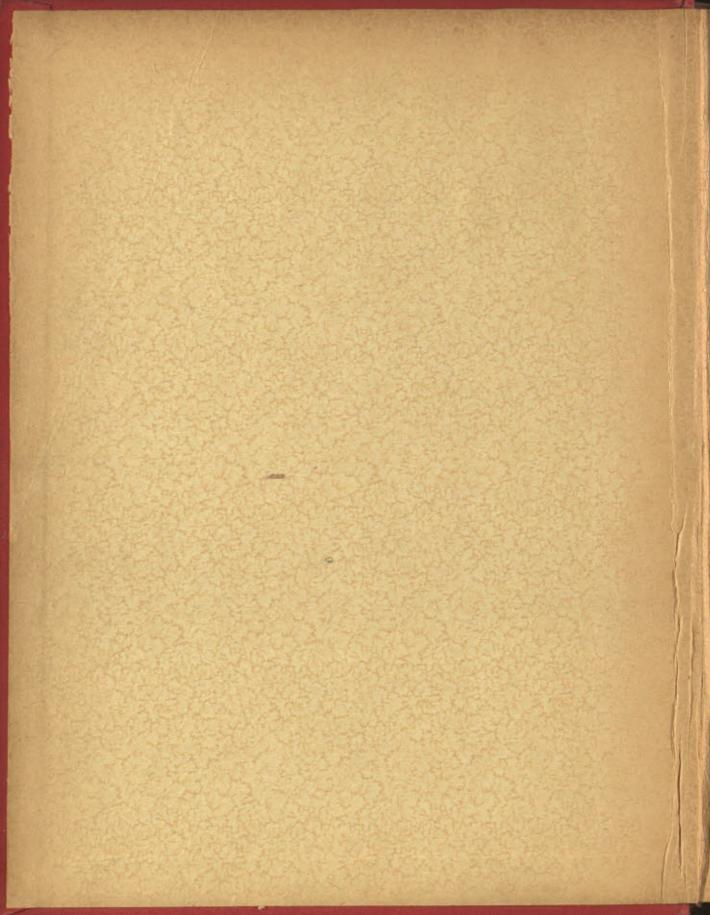
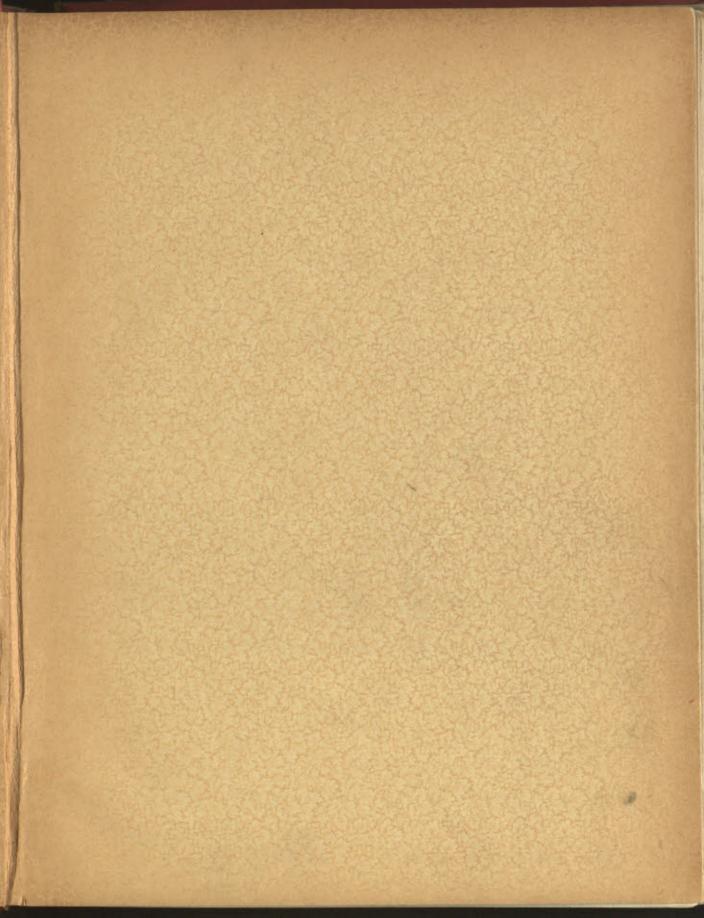
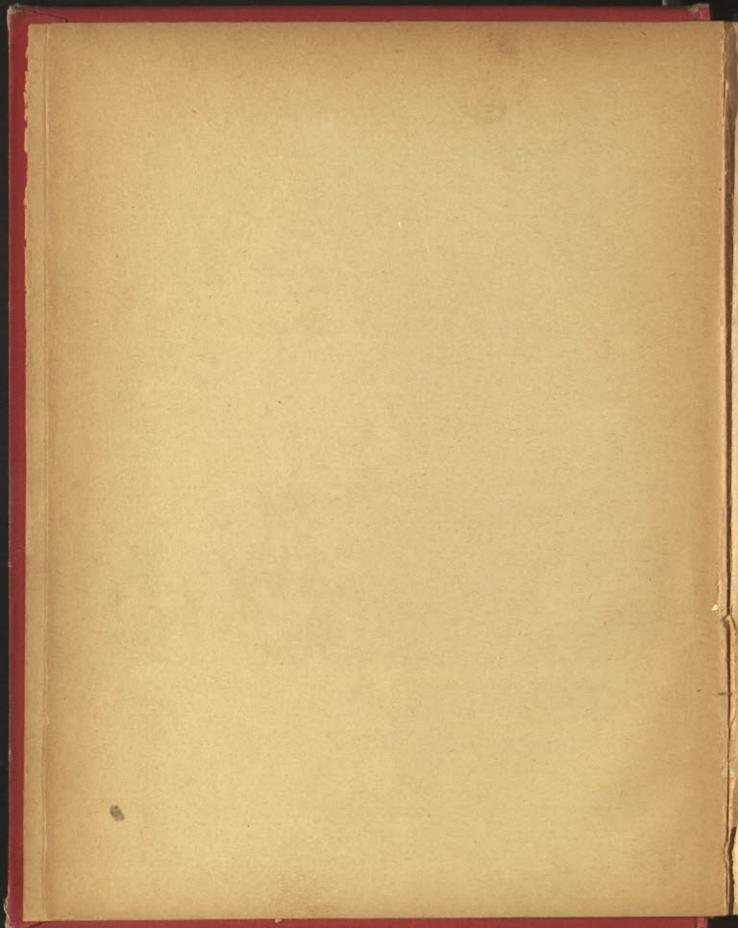


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TECHNIQUE

VOLUME IX.

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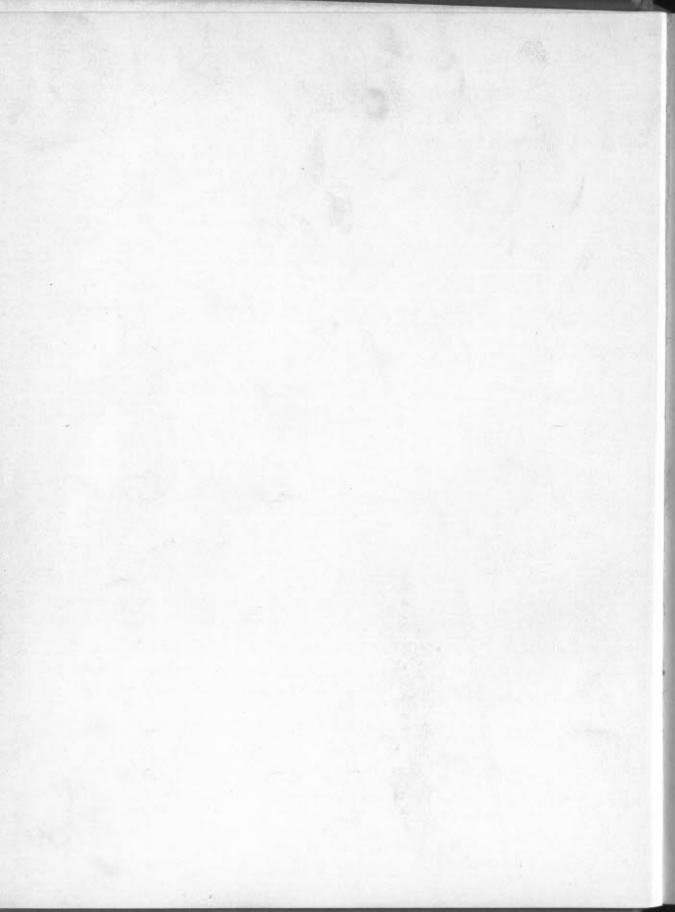
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

BOSTON, MASS.

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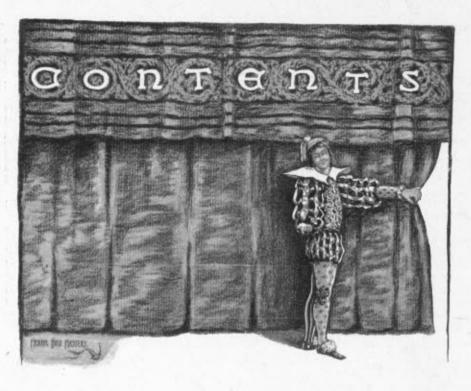




To the true friend of every Student

President Francis A. Walker

This book is affectionately Dedicated



FRONTISPIECE							14	100	200		1.	-		2
DEDICATION														3
GREETING .														5
OFFICERS OF (GOVE	RNME	NT	AND	INST	RUCT	ION							7
MILITARY CAR	EER	OF G	ENE	RAL	WAL	KER					33			24
HISTORY OF T												-		28
CLASS HISTOR						-				0		100	1733	31
T7														53
LOCAL SOCIETI	ES												0.0	73
PROFESSIONAL		ETIE	s								3			89
MUSICAL ORGA														97
MISCELLANEOU					19									105
PUBLICATIONS					19					0				129
ATHLETICS				120					195	8				133
TRIBUTE TO P	ROFES	SSOR	No	RTON										156
ORIELLA POLK						251	-				9			158
LIFE OF CHAR	LES F	CORE	RT (CROS	s									160
LIFE OF ROBE						DS		10				•		166
GRINDS .					CHAR									175
QUOTATIONS								18						203
ROLL OF STUD	ENTS													
INDEX .		-				100				*	*			215
Advertisemen	TE		1							-				257
TENTERTISEMEN	10		1.0		*									263



ECHNIQUE of the Class of Ninety-Five, with its errors for our successors to avoid, with its virtues for you to descry, is before you.

Feeling that the Annual has reached its limiting size, and that improvement should be made along other lines rather than those of mere enlargement,

the Board has worked with this end in view.

As a book for the students, and by the students, it has been the endeavor of the editors to render it interesting, both to those connected with Technology and to its host of friends and admirers.

In connection with the desire to place in the hands of every student a true likeness of our President, Francis A. Walker, we have given a short sketch of his military career. For many facts of his army life we are indebted to the kindness of Gen. D. N. Couch and of Col. Thomas L. Livermore. To those who have so kindly aided us in our labors we express our most hearty thanks.

We trust you will find nothing to your distaste. If, perchance, it should not be so, bear in mind that our aim has been to amuse,—with malice toward none, but good will toward all.

With the best wishes for Technology we will take up our pens and silently steal away, leaving you to peruse the book alone. It is yours to censure or admire.



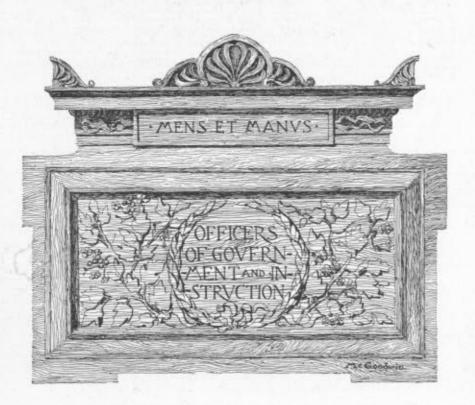
1893-94.

School year began		. Monday, Sept. 25, 1893.	
Second term began		. Tuesday, Jan. 30, 1894.	
TECHNIQUE issued		. Tuesday, March 27, 1894.	
Degrees conferred		Tuesday, May 29, 1894.	
First Entrance Examinations .		Thursday, June 28, 1894, and Friday, June 29, 1894.	C
Examinations for Advanced Stand	ing	. Wednesday, Sept. 12, 1894.	
Second Entrance Examinations		Tuesday, Sept. 18, 1894, and Wednesday, Sept. 19, 1894.	
School year of 1894-95 will begin		Monday, Sept. 24, 1894.	

1894-95.

School year will begin	. Monday, Sept. 24, 1894.
Second term will begin	Tuesday, Jan. 29, 1895.
Degrees conferred	. Tuesday, May 28, 1895.
First Entrance Examinations	Thursday, June 27, 1895, and Friday, June 28, 1895.
Examinations for Advanced Standing	. Wednesday, Sept. 18, 1895.
Second Entrance Examinations .	Tuesday, Sept 24, 1895, and Wednesday, Sept. 25, 1895.
School year of 1895-96 will begin .	. Monday, Sept. 30, 1895.

Stated Meetings of the Corporation .	Oct. 11 and Dec. 13, 1893. March 14 and May 25, 1894.
Stated Meetings of the Executive Com- mittee of the Corporation	First and third Tuesdays of every month.





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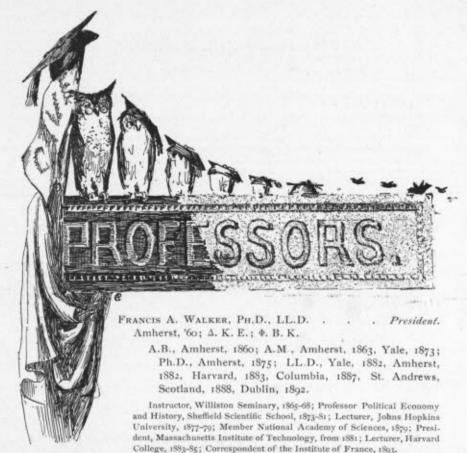
HIS EXCELLENCY GOV. FREDERICK T. GREENHALGE.

HON. WALBRIDGE A. FIELD, Chief Justice of the Supreme Court.

HON. JOHN W. DICKINSON, Secretary of the Board of Education.







Author of The Indian Question, The Wage Question, Money, Political Economy (1883), First Lessons in Political Economy (1883), Money, Trade, and Industry, History of the Second Army Corps (1886), articles on Wages, Wage Fund, Public Revenue, etc., in Laloe's Encyclopedia of Political Science; also numerous articles in The Century, The Atlantic Monthly, Princeton Review, Scribner's, Lippincott's, The Forum, Quarterly Journal of Economics, North American Review, Technology Quarterly, etc., etc.

JOHN D. RUNKLE, PH.D., LL.D. Walker Professor of Mathematics.
Harvard University, '51.

B.S., A.M., Harvard University, 1851; Ph.D., Hamilton College, 1867; LL.D., Wesleyan University, 1871.

Assistant upon the American Ephemeris and Nautical Almanac, 1849-84; Editor Mathematical Monthly, 1858-61; Professor of Mathematics, Massachusetts Institute of Technology, 1865-68; Acting President, 1868-70; President, 1870-78; Professor of Mathematics from 1880.

Author of New Tables for Determining the Values of the Coefficients in the Perturbative Function of Planetary Motion, The Manual Element in Education (published in Report of Massachusetts Board of Education), 1876-77, a second Paper on same subject in Report of 1880-81, Report on Industrial Education, American Institute of Education, 1883, Analytic Geometry, etc.

Assistant Professor of Mathematics, U. S. Naval Academy, 1861-65; Professor of Mathematics Massachusetts Institute of Technology, from 1865; Secretary of the Faculty, 1858-71.

Author of Examples of Differential Equations (1896), Differential and Integral Calculus (1891), etc.

James M. Crafts, S.B. Professor of Organic Chemistry. Harvard S. S., '58.

Professor of Chemistry, Cornell, 1868-70; Professor of Chemistry, Massachusetts Institute of Technology, 1870-80 (nonresident, 1874-80), 1892- ; member National Academy of Sciences, 1872.

Author of recherchés sur les combinations du silicium avec les radicaux alcoholiques (with C. Friedal), The Ethers of Arsenic Acid and Arsenious Acid, Estimation of Iron with Hyposulphite of Sodium, Sur une nouvelle forme de thermomèter à air, a series of papers on the densities of halogens at high temperatures, numerous papers in connection with C. Friedal and E. Ardor, etc., etc.

ROBERT H. RICHARDS, S.B. . Professor of Mining Engineering and Metallurgy M. I. T., '68, III.

Assistant in Chemistry, Massachusetts Institute of Technology, 1868-69; Instructor in Assaying and Qualitative Analysis, 1869-70; Assistant Professor of Analytical Chemistry, 1870-71; Professor of Mineralogy and Assaying, in charge of the Mining and Metallurgical Laboratories, 1871-72; Professor of Mining Engineering, 1873-84; Secretary of the Faculty, 1879-83; Professor of Mining Engineering and Metallurgy from 1884.

Author of Notes on Assaying (1875), Notes on Ore Dressing, Notes on Metallurgy of Iron, Notes on Blowpipe Silver Assay, Notes on Metallurgy of Copper, and numerous papers on mining and metallurgical subjects published in Transactions American Institute of Mining Engineers, Proceedings Society of Arts, Chemical News, Technology Quarterly, etc.

WILLIAM H. NILES, Ph.B., A.M. . . Professor of Geology and Geography. Yale S. S., '67.

Ph B., Yale S. S., '67; A.M., Wesleyan, '69.

Professor of Physical Geography, Massachusetts Institute of Technology, 1871; Professor of Geology and Geography, Massachusetts Institute of Technology, 1878—; Lecturer on Geology, Wellesley College, 1881-91; Professor of Geology, Wellesley College, 1891; President of the Boston Society of Natural History from 1892; President of the New England Meteorological Society from its organization, 1884.

Author of Agency of Glaciers in the Excavation of Valleys and Lake Basins, Zones of Physical Features of Mountains, Some Expansions, Movements, and Fractures of Rocks, observed at Monson, Mass., The Causes of the Recent Floods in Germany (1887), etc.

CHARLES R. CROSS, S.B.,

Theyer Professor of Physics and Director of the Rogers Laboratory.
M. I. T., '70, IX.

Instructor in Physics, Massachusetts Institute of Technology, 1870-71; Assistant Professor of Physics, 1871-75; Professor of Physics from 1875; in charge of Department of Physics from 1877; in charge of Course in Electrical Engineering from 1882.

Author of Course in Elementary Physics (1873), Notes of Lectures on Light in its Relations to Color (1876), Notes on Mechanics (1884), Notes on Optics (1884), and of many original scientific papers on acoustics, electricity, and other branches of physics, chiefly published in the Proceedings of American Academy of Arts and Sciences.

GAETANO LANZA, C.E.

Professor of Theoretical and Applied Mechanics, in charge of the Department of Mechanical Engineering.

University of Virginia, '70.

Instructor, Massachusetts Institute of Technology, 1871-72; Assistant Professor, 1872-75; Professor of Theoretical and Applied Mechanics from 1875.

Author of Notes on Mechanical Engineering (1886), Notes on Friction (1887), Applied Mechanics (1889), and of many papers in Transactions American Society Mechanical Engineers, Proceedings Society of Arts, Proceedings American Institute Civil Engineers, Tech. Quarterly, etc.

THOMAS M. DROWN, M.D. . Richard Perkins Professor of Analytical Chemistry. University of Penn., '62.

Student in Freiberg, Saxony, Mining School and University of Heidelberg; Instructor in Metallurgy, Harvard University, 1869-70; Professor of Analytical Chemistry, Lafayette College, 1874-81; Secretary and Editor of the Transactions of American Institute Mining Engineers, 1871-84; Professor of Chemistry, Massachusetts Institute of Technology from 1885.

Author of Chemical Examination of Drinking Water (1887), Review of Blair's Chemical Analysis of Iron (1889), The Filtration of Natural Water (1890), The Effect of the Aëration of Natural Waters (1891), and many other scientific papers published in Proceedings Society of Arts, Transactions American Institute Mining Engineers, Reports of the Massachusetts State Board of Health, Technology Quarterly, etc.

GEORGE F. SWAIN, S.B., M. Am. Soc. C. E.

M. I. T., '77, I. Hayward Professor of Civil Engineering.

Student in Germany, 1877-80; Expert on Tenth U. S. Census, 1880-83; Instructor in Civil Engineering, Massachusetts Institute of Technology, 1881-83; Assistant Professor of Civil Engineering, 1883-87; Associate Professor, 1887-88; Professor from 1888; Engineer of Massachusetts Railroad Commissioners from 1887.

Author of Report on Water Power of Atlantic Slope, Notes on Hydraulics and on Theory of Structures, numerous reports on Railroad Bridges, Brake Equipment, and other subjects, in the reports of the Massachusetts Railroad Commission, and many papers on engineering subjects, published in the Transactions of American Society Civil Engineers, Proceedings New England Waterworks Association, Technology Quarterly, Proceedings Society Arts, Journal Franklin Institute, etc.

Francis W. Chandler, M. Am. Inst. Arch. . . . Professor of Architecture.

With Messrs. Ware & Van Brunt, Architects, 1854-55; Student in Paris, 1866-58; Assistant with Professor Ware at the Massachusetts Institute of Technology, 1869; Assistant Supervising Architect at Washington, 1870-73; in partnership with Mr. E. C. Cabot, of Boston, 1873-88; Professor of Architecture, Massachusetts Institute of Technology, from 1888.

Author of A Few Hints About Drainage (1888), Construction Details (1892), Notes on Limes, Cements, Mortars, and Concretes (1892), etc.

Professor of Modern Language, Kentucky College, 1876-70; Instructor in Haverford College, and Lecturer in University of Pennsylvania, 1885-86; Director Modern Languages, Boston High and Latin Schools, 1886-89; Professor of Modern Languages, Massachusetts Institute of Technology, from 1889.

Author of A Monograph on the Study of Modern Languages, La parole française (in collaboration with Dr. L. Sauvern), Dasdeutsche Buch (in collaboration with J. Schrakanp), Leander's Traumerein (edited and annotated), Heine's Harzreise (edited and annotated), Memoirs du duc de Saint-Simon (edited and annotated), An Introduction to the French Language, An Introduction to the French Authors, etc.

Assistant Professor of Biology, Massachusetts Institute of Technology, 1883-84; Associate Professor, 1884-91; Professor from 1891.

Author of General Biology (1886), Biological Examination of Water (1888), Sanitary Condition of the Water Supply of Lowell, Mass. (1891), The Purification of Drinking Water by Land Filtration (1892), Modern Scientific Views of the Cause and Prevention of Asiatic Cholera (1892), various articles in Wood's Reference Handbook of Medical Science; etc.

- HARRY L. HAWTHORNE. First Lieutenant, Fourth U. S. Artillery.
 U. S. Naval Academy, '82. Professor of Military Science and Tactics.
- DAVIS R. DEWEY, Ph.D., A.B. Professor of Economics and Statistics. Univ. of Vermont, '79; A. P.; P. B. K.

A.B., University of Vermont, '79; Ph.D., Johns Hopkins University, '86.

Teacher, Underhill, Vt., 1879-81; Principal Hyde Park High School, Chicago, 1881-83; Student and Fellow at Johns Hopkins University, 1883-86; Instructor, Massachusetts Institute of Technology, 1887-88; Assistant Professor, 1888-89; Associate Professor, 1889-92; Professor from 1892; Secretary American Statistical Association, from 1886; editor of its publications from 1887.

Author of A Syllabus on Political History since 1815 (1887), Review of Emigration and Immigration, by Richmond Mayo-Smith (1890), Nativity of New England (1892), Relation of Social Reforms (1892), Syllabus of Lectures on Economic Questions of Commerce (1892), etc.

Assistant, Massachusetts Institute of Technology, 1876-80; Instructor, 1880-82; Assistant Professor, 1882-85; Associate Professor, 1885-93; Professor from 1893.

Author of Physical Laboratory Notes (1885), The Effect of Temperature on the Viscosity of Air and Carbon Dioxide (1886), Discussion of the Precision of Measurements (1887), Friction of Leather Belts on Iron Pulleys, Standard for the Resistance of Copper (1891), and numerous other papers in Proceedings American Academy, American Journal Science, Appalachia, Journal of Franklin Institute, Technology Quarterly, etc.

Instructor in Mathematics, Massachusetts Institute of Technology, 1873-80 and 1882-83; Assistant Professor of Mathematics, 1883-85; Associate Professor from 1885.

Author of Academic Arithmetic, Academic Algebra, Higher Algebra, University Algebra, College Algebra, Plane and Solid Geometry, Plane and Spherical Trigonometry, Logarithmic Tables, etc.

Cecil H. Peabody, S.B., Professor of Marine Engineering and Naval Architecture. M. I. T., '77, II.

Mechanical Engineer for Western Union Railroad, 1877-78; Professor of Mathematics and Engineering, Imperial Agricultural College, Japan, 1878-80; Assistant Professor of Mechanical Engineering, University of Illinois, 1881-83; Instructor, Massachusetts Institute of Technology, 1883-84; Assistant Professor of Steam Engineering, 1884-89; Associate Professor, 1889-93; Professor of Marine Engineering from 1893.

Author of Notes on Governors and Fly Wheels (1885), Notes on Valve Gears (1887), Notes on Thermodynamics and Steam Engine Experiments (1887), Thermodynamics of the Steam Engine and other Heat Engines (1889), Economy and Efficiency of the Steam Engine (1892), etc.

HARRY W. TYLER, Ph.D., S.B. Professor of Mathematics.
M. I. T., '84, V.

S.B., M. I. T., 1884; Ph.D., Erlangen, 1889.

Assistant, Massachusetts Institute of Technology, 1884-86; Instructor, 1886-90; Assistant Professor, 1890-92; Associate Professor, 1892-93; Secretary of the Faculty, 1889-90 and 1891- ; Professor of Mathematics, 1893- .

Author of Entertainments in Chemistry, The Application of Determinant Theorems to a Particuular Case, Ueber die Sylvestersche und die Bézoutsche Determinanten, Technological Education in the United States, etc.

Editor of Broadside, 1878-79; editor of Boston Courier, 1880-93; correspondent Providence Journal, Chicago Tribune, Book Buyer, etc., 1880-93; Professor of English, Massachusetts Institute of Technology, from 1893.

Author of Patty's Perversities, The Pagans, A Wheel of Fire, Berries of the Briar, Sonnets in Shadow, A Lord's Love, The Philistines, Prince Vance, Albrecht, Book o' Iréne Tales, The Poet and His Self, Told in the Gate, In the Bundle of Time, etc.

PETER SCHWAMB, S.B.,

Associate Professor of Mechanism and Director of the Workshop. M. I. T., '78, II.

Graduate Student, Massachusetts Institute of Technology, 1878-79; Draughtsman, Howe Scale Co., Rutland, Vt., 1879-80; Draughtsman, Hinkley Locomotive Co., Boston, 1880-83; Instructor, Massachusetts Institute of Technology, 1883-84; Assistant Professor, 1884-88; Associate Professor of Mechanism from 1888.

Author of Notes on the Elements of Mechanism (1885), Notes on Gearing (1888), etc.

C. FRANK ALLEN, S.B., M. Am. Soc. C. E.

M. I. T., '72, I. Associate Professor of Railroad Engineering.

Assistant Engineer, Providence Waterworks, 1872-73; Assistant Engineer, Providence Sewerage, 1873-75; Assistant Engineer, Newton Waterworks, 1875-76; Engineer Inspector, Boston Sewerage, 1877; Assistant Engineer, Atchison, Topeka & Santa Fé R. R., 1878-80; Assistant Engineer, Mexican Central R.R., 1880; Chief Engineer, Las Vegas Waterworks, and general engineering, 1880; Assistant Engineer, Atchison, Topeka & Santa Fé R. R., 1881-84; Assistant Professor, Massachusetts Institute of Technology, 1887-89; Associate Professor from 1889.

Author of Measurement of the Angular Deflection of Beams Fixed at One End, Railroad Curves and Earthworks, Roads and Road Building, Railroad Building with Reference to Economy in Operating, articles in Engineering Record, Railroad Gazette, Technology Quarterly, etc.

ALFRED E. BURTON, S.B. Associate Professor of Topographical Engineering. Bowdoin, '78; Δ. K. E.; Φ. B. K.

Land Surveyor, 1878-79; Topographical Draughtsman and Topographer on U. S. Coast and Geodetic Survey, 1879-82; Instructor in Topographical Engineering, Massachusetts Institute of Technology, 1882-84; Assistant Professor, 1884-89; Associate Professor from 1889.

DWIGHT PORTER, Ph.B., M. Am. Soc. C. E.

Yale, S. S., '80. Associate Professor of Hydraulic Engineering.

Berzelius Society.

Special Agent, Tenth Census U. S., Report upon Water Power, 1880-83; Instructor in Mathematics, Massachusetts Institute of Technology, 1883-85; Instructor in Civil Engineering, 1885-87; Assistant Professor of Civil Engineering, 1887-90; Associate Professor from 1890.

Author of Flood Discharge from Small Watersheds, Report upon a Sanitary Inspection of Certain Tenement-House Districts of Boston, portions of vols. XVI. and XVII., Tenth Census U. S., Reports on Water Power, Notes on Stereotomy and Warped Surfaces, etc.

HEINRICH O. HOFMAN, E.M., Ph.D., Associate Professor of Mining and Metallurgy. E. M., Met. E., Prussian School of Mines, Clausthal, 1877; Ph.D., Ohio University, 1889

Practicing Metallurgist, 1877-85; Private Assistant to Prof. R. H. Richards, and Lecturer on Metallurgy, Massachusetts Institute of Technology, 1885-87; Professor of Metallurgy and Assaying, Dakota School of Mines, 1887-89; Assistant Professor of Mining and Metallurgy, Massachusetts Institute of Technology, 1889-91; Associate Professor of Mining and Metallurgy from 1891.

Author of Gold Milling in the Black Hills (1888), The Dry Assay of Tin Ores (1890), Recent Progress in the Treatment of Argentiferous Lead Ores (1892), Some Experiments on the Fusibility of Fire Clays, The Metallurgy of Lead and the Desilverization of Base Bullion, etc.

D. Despradelle Associate Professor of Architectural Design.

Received first promotion at Ecole des Beaux-Arts, 1882; many of the prizes at the Ecole des Beaux-Arts and Institut de France; received diplomas from Ecole des Beaux-Arts and Societé centrale des Architects français; took part in the Concour de Rome four times, and received 1st Second Grand Prix in 1880, Lauriat du Salon; Assistant Inspector State Buildings and National Palaces, and under this title helped in the building of the New Ministry of Agriculture, National Library, the mansion of M. Wilson, and M. Grévy (ex-President), and various other public and private edifices.

WILLIAM O. CROSBY, S B., Assistant Professor of Structural and Economic Geology. M. I. T., '76, VII.

Student Assistant in Paleontology, 1875-76; Assistant in Paleontology, 1876-78; Assistant in Geology, 1878-80; Instructor in Geology, 1880-83; Assistant Professor of Mineralogy and Lithology, 1883-92; Assistant Professor of Structural and Economic Geology from 1892.

Author of Geology of Eastern Massachusetts, Origin of Continents, Geology of Frenchman's Bay, Maine, Dynamical Geology and Petrography, Physical History of the Boston Basin, Geology of the Outer Islands of Boston Harbor, and numerous other papers, published in Proceedings Boston Society Natural History, American Journal Science, Geological Magazine, Technology Quarterly, etc.

THOMAS E. POPE, A.M. . . . Assistant Professor of General Chemistry. Harvard University, '69.

Instructor in Chemistry, Massachusetts Institute of Technology, 1874-76; Professor of Chemistry, Iowa Agricultural College, 1876-84; Assistant Professor of General Chemistry, Massachusetts Institute of Technology, 1884-94.

LINUS FAUNCE, S.B. Assistant Professor of Drawing. M. I. T., '77, II.

Draughtsman for Superintendent of Bridges, P. C. & St. L. R. R., 1878-79; Chief Clerk Car Shops, P. C. & St. L. R. R., 1879-82; in charge of Waterworks and Signals, N. Y. & N. E. R. R., 1882-84; Assistant Professor, Massachusetts Institute of Technology from 1884. Author of Descriptive Geometry, Mechanical Drawing, etc.

JEROME SONDERICKER, S.B., C.E. . Assistant Professor of Applied Mechanics.

University of Illinois, '80.
Instructor, University of Illinois, 1880-83; Assistant Professor Engineering and Mathematics, 1883-85; Instructor in Applied Mechanics, Massachusetts Institute of Technology, 1885-89; Assistant

Professor of Applied Mechanics from 1889.

Author of An Investigation as to How to Test the Strength of Cements (with G. Lanza), Experiments Relating to Theory of Beams, A Description of Some Repeated Stress Experiments, etc.

ELEAZER B. HOMER, S.B. . . . Assistant Professor of Architecture. M. I. T., '85, IV.

Instructor in Architecture, Massachusetts Institute of Technology, 1887-90; Assistant Professor from 1890.

Author of Notes on Stereotomy,

GEORGE T. DIPPOLD, Ph.D. . . . Assistant Professor of Modern Languages.

Boston University, '83.

Postgraduate student in Sanskrit and Germanic Philology and Instructor in German, Harvard University, 1871-74; Instructor in French, Sanskrit, and Anglo-Saxon, Boston University, 1874-83; Lecturer in German Literature, Gothic and Middle High German, Johns Hopkins University, 1883-85; Instructor in Modern Languages, Massachusetts Institute of Technology, 1886-91; Assistant Professor from 1801.

Author of The Great Epics of Mediæval Germany, Translation of Emanuel Geibel's Brunhild, Deutsche Litteraturdenkmale des 18 Jahrhunderts, Theories as to the Original Home of the Indo-European Race, Richard Wagner's Ring of the Nibelung explained, and in part translated, etc.

ALLYNE L. MERRILL, S.B., M. Am. Soc. M. E. . Assistant Professor of Mechanism. M. I. T., '85, II.

Assistant, Massachusetts Institute of Technology, 1885-87; Instructor, 1887-91; Assistant Professor of Mechanism from 1891.

HENRY P. TALBOT, Ph.D., S.B. . Assistant Professor of Analytical Chemistry. M. I. T., '85, V.

Ph.D., University of Leipzig, 1890.

Assistant in Analytical Chemistry, Massachusetts Institute of Technology, 1885-87; Instructor, 1887-88, and 1890-92; Assistant Professor of Analytical Chemistry, from 1892.

Author of Ueber das Verhalten der Tiglinsliure und Angelicasiure gegen Bromwasserstoff und Jodwasserstoff (1890), Notes on the Action of Hydrobromic and Hydroiodic Acids on Tiglic and Angelic Acids (1891), An Index to the Literature of Angelic and Tiglic Acids from 1842 to 1892, On The Properties of Hydrogen Peroxide Solutions (with H. R. Moody), etc.

Dana P. Bartlett, S.B. . . . Assistant Professor of Mathematics. M. I. T., '86, VI.

Assistant in Mathematics, Massachusetts Institute of Technology, 1886-87; Instructor in Mathematics, 1888-91; Assistant Professor of Mathematics from 1891.

EDWARD F. MILLER, S.B., M. Am. Soc. M. E.
M. I. T., '86, II.

Assistant Professor of Steam Engineering.

Assistant, Massachusetts Institute of Technology, 1886-88; Instructor, 1888-92; Assistant Profes sor of Steam Engineering from 1892.

Author of Tests on the Triple Engine at the Massachusetts Institute of Technology (with C. H. Peabody), published in Technology Quarterly, Description of a New Torsion Machine, published in Technology Quarterly, etc.

Frank Vogel, A.M. (absent) . . Assistant Professor of Modern Languages. Harvard University, '87, A. U.

WILLIAM L. PUFFER, S.B. . . Assistant Professor of Electrical Engineering. M. I. T., '84, III.

Assistant, Massachusetts Institute of Technology, 1884-86; Instructor, 1886-93; Assistant Professor from 1893.

FREDERICK H. BAILEY, A.M., A.B. . . . Assistant Professor of Mathematics. Harvard University, '87; Ф. B. K.

A.B., Harvard University, 1887; A.M., Harvard University, 1889.

Instructor of Mathematics, Harvard University, 1889-91; Instructor of Mathematics, Massachusetts Institute of Technology, 1891-93; Assistant Professor of Mathematics from 1893.

CHARLES F. A. CURRIER, A.M., A.B. . . . Assistant Professor of History. Harvard University, '87; \$\Phi\$. B. K.

A.B., Harvard University, 1887; A.M., Harvard University, 1888; Fellow of Harvard University studying at Berlin and Paris, 1889-91.

Instructor in History and Political Science, Massachusetts Institute of Technology, 1891-93; Assistant Professor of History from 1893.

Author of Constitutional and Organic Laws of France, American Editor of Brockhaus's Konversations Lexikon, Assistant Editor of Book Department, Annals of American Academy of Political and Social Science, etc.





Instructors and Assistants.

HENRY K. BURRISON, S.B., M. I. T., '75, I.		. Instructor in Mechanical Drawing.
ELLEN H. RICHARDS, A.M., S.B M. I. T., '73, V.	*	. Instructor in Sanitary Chemistry.
S. Homer Woodbridge, A.M Williams, '73.		Instructor in Warming and Ventilation.
CLEMENT W. Andrews, A.M., **Librarian of the Company of the Compa	of the	Institute; Instructor in Optical Analysis.
CHARLES L. ADAMS		. Instructor in Freehand Drawing.
Joseph J. Skinner, Ph.D Yale, S. S., '69.		Instructor in Mathematics.
GEORGE H. BARTON, S.B M. I. T., '80, III.		Instructor in Geology.
FRED L BARDWELL, S.B M. I. T., '84, V.		. Instructor in General Chemistry.
Peter S. Burns, Ph.D Iowa State College, '86; Δ. T. Δ.		. Instructor in General Chemistry.
JOHN W. SMITH Instructor	r in In	dustrial Chemistry and Textile Coloring.
HARRY E. CLIFFORD, S.B M. I. T., '86, VI.; 0. \(\pi \)		. Instructor in Theoretical Physics.
ARTHUR G. ROBBINS, S.B M. I. T., '86, I.		. Instructor in Highway Engineering.
RICHARD W. LODGE		. Instructor in Mining and Metallurgy.
FREDERICK S. WOODS, A.M (absent)		Instructor in Mathematics.

	Augustus H. Gill, Ph.D Instructor in Gas Analysi M. I. T., '84, V.											
	ARTHUR A. NOYES, Ph.D Instructor in Organic Chemistr M. I. T. '86, V.											
	James H. Stanwood, S.B Instructor in Civil Engineerin, M. I. T., '87, I.											
	EDWARD COLLINS, JR., S.B Instructor in Physic M. I. T., '88, VI.											
	HENRY N. DICKINSON, A.M Instructor in English Amherst, '89; \(\psi\). U.											
	Frank M. Greenlaw, S.B. (absent) Instructor in Mathematic M. I. T., '90, VI.											
	George W. Hamblet, S.B Instructor in Mechanical Engineering M. I. T., '88, II.											
	Frank A. Laws, S.B Instructor in Physic M. I. T., '89, VI.											
0	Nathan R. George, Jr., A.M Instructor in Mathematic Harvard University, '90; Φ. B. X. K.; Θ. Δ. X.											
With Jauns	WILLIAM H. LAWRENCE, S.B Instructor in Architecture											
	WILLIAM S. DAVENPORT, S.B Instructor in Analytical Chemistry M. I. T., '89, V.											
	HARRY M. GOODWIN, S.B. (absent) Instructor in Physic. M. I. T., '90, VIII.											
	WILLIAM LINCOLN SMITH, S.B Instructor in Physics M. I. T., '90, VI.											
	WILLIAM H. METZLER, Ph.D Instructor in Mathematics Toronto University, '88; Clark University, '92.											
	Leonard M. Passano, A.B Instructor in Mathematics Johns Hopkins University, '89.											
	Edward Robinson, S.B., M. I. T., '90, II. Instructor in Mechanical Drawing and Descriptive Geometry.											
	Charles H. L. N. Bernard Instructor in Modern Languages Chaptal College, Paris, '77.											
	Joseph Blachstein Instructor in Modern Languages Realschule erster Ordnung, Hanover, '68; Institution Springer, Paris, '70.											
	WILLIS R. WHITNEY, S.B Instructor in Analytical Chemistry M. I. T., '90, V.											
	CARLETON A. READ, S.B Instructor in Mechanical Engineering M. I. T., '91., II.											
	JAMES SWAN, S.B Instructor in Naval Architecture											

G. RUSSELL LINCOLN, S.B M. I. T., '71, III.		*	. Instructor in Sanitary Chemistry.	
THOMAS EVANS, Ph.D Columbia School of Mines, '85;	ь. В. ө.,	II.;	. Instructor in Organic Chemistry. Erlangen, Bavaria, '86.	
Louis Derr, M.A., S.B Amherst, '89, A. U.; M. I. T., '9			Instructor in Physics.	
GEORGE V. WENDELL, S.B M. I. T., '92, VIII., Δ. K. E.			Instructor in Physics.	
ROBERT S. BALL, S.B			Instructor in Mechanical Engineering.	
LEON E. BERNARD	79-		. Instructor in Modern Languages.	ino
ROBERT P. BIGELOW, Ph.D., A.B. Johns Hopkins University, '92.			Instructor in Biology.	1/2
BENJAMIN E. CARTER, JR., A.M. Harvard University, '90.			Instructor in Mathematics.	3
THEODORE HOUGH, Ph.D., S.B. Johns Hopkins University, '93.			Instructor in Biology.	3
JOHANN MEYER	nover,	· 70.	. Instructor in Modern Languages.	ms of
HENRY G. PEARSON, A.B Harvard University, '93.			Instructor in English.	A.
WILLIAM Z. RIPLEY, PH.D M. I. T., '90, I.	1		. Instructor in Political Science.	
Frank H. Thorp, Ph.D M. I. T., '89, V.			. Instructor in Industrial Chemistry.	VIE
EDSON L. WHITNEY, LL.B., PH.D. Harvard University, '85.), ,		Instructor in History.	
OSCAR W. PICKERING			. Assistant in General Chemistry. 2 6.4 13	
L. KIMBALL RUSSELL, S.B. M. I. T., '86, V.			Assistant in General Chemistry.	٧.
ROBERT S SHEDD			Assistant in Architecture. \$ 5 4.3	1/2
FRED A. WILSON, S.B M. I. T., '91, II.			. Assistant in Mechanical Engineering.	9
PHILLIPS P. BOURNE, S.B M. I. T., '92, II.		3	. Assistant in Mechanical Engineering, And A	du
OTHO W. McD. Cushing			. Assistant in Freehand Drawing.	6.
CHARLES E. FULLER, S.B M. I. T., '92, II.			. Assistant in Mechanical Engineering.	1.8.
JESSE F. JOHNSON, S.B M. I. T., '92, X.			. Assistant in Industrial Chemistry.	2

WILLIAM A. JOHNSTON, S.B. M. I. T., '92, II.				. Assistant in Mechanical Engineering.
JOSEPH P. LYON, S.B M. I. T., '92, I.				. Assistant in Civil Engineering.
HERBERT R. MOODY, S.B. M. I. T., '92, V.				Assistant in General Chemistry.
CHARLES F. PARK, S.B M. I. T., '92, II.	*	٠	*	. Assistant in Mechanical Engineering.
CHARLES M. FAUNCE, A.B.,				1.1.D
Harvard University, '92.	tant	in M	есная	nical Drawing and Descriptive Geometry.
BARRON P. Du Bois, S.B. M. I. T., '92, VI.	7.	*1		. Assistant in Mechanical Engineering.
WILLIAM W. CROSBY, S.B. M. I. T., '93, II.		٠	*	. Assistant in Mechanical Engineering.
GORHAM DANA, S.B M. I. T., '92, I.	•	**	٠	. Assistant in Civil Engineering.
JAMES A. EMERY, S.B M. I. T., '93, I.	٠		¥	. Assistant in Civil Engineering.
Simeon C. Keith, Jr., S.B. M. I. T., '93, VII.		**		Assistant in Biology.
ERVIN KENISON, S.B M. I. T., '93, II.		٠		. Assistant in Mechanical Drawing.
HENRY W. NICHOLS, S.B M. I. T., '93, XII.		17	•	Assistant in Geology.
CHARLES L. NORTON, S.B. M. I. T., '93, VI.		* 5	٠	Assistant in Physics.
Frank D. Richardson, S.B. M. I. T., '93, II.	•	٠	*	. Assistant in Mechanical Engineering.
KILBURN S. SWEET, S.B M. I. T., '93, I.	174		*	. Assistant in Civil Engineering.
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Instructors and Assistants in the Mechanic Arts.

THEODORE B. MERRICK	0			Ins	truct	or in	Wood	work and Foundry-work.
JAMES R. LAMBIRTH .	2	10						. Instructor in Forging.
ROBERT H. SMITH .								
CLARENCE M. BROCKWAY			3935	50			82	Assistant in Woodwork.
WILLIAM H. LAMBIRTH								. Assistant in Forging.
EDWARD P. HUTCHINSON						4	ssistan	t in Machine Tool Work.

Instructor in Gymnastics.

HERMAN Boos.

Teachers and Lecturers for 1893=94.

WALTER S. ALLEN, S.B	,			*	On t	he	Man	ufact	ure o	f Ferti	lizers.
TRUMAN H. BARTLETT .		1								On Moo	deling.
GEORGE W. BLODGETT, S.B.,	On	the Af	plie	ation	s of E	lect	ricity	to I	ailu.	ay Wo	rking.
Louis D. Brandeis, LL.B.	,								On E	Rusiness	Law.
SEVERANCE BURRAGE, S.B.	On	the A	licr	oscop	ical E	van	inat	ion oj	e Wa	ter Su	pplies.
CHARLES S. DOGGETT .			40	-		On	Ace	tic A	cid a	nd Pig	ments.
JOHN FISKE, LL.D					\$, .	On 2	1mer	ican H	istory.
JONATHAN P. B. FISKE, S.B.		On Co	onst	ructio	on and	Ap	plica	tions	of E	lectron	noters.
John R. Freeman, S.B., On the Hydra	ulic	s of F	ïre	Prote	ction a	ınd	on F	rirep	roof	Constri	uction.
GEORGE W. FULLER, S.B.			P						On.	Bacteri	iology.
DAVID A. GREGG			*:	*			On I	Pen a	nd I	nk Dra	ewing.
HAMMOND V. HAYES, Ph.D.		23	ź.			0	On I	elepi	hone .	Engine	ering.
CHARLES W. HINMAN, S.B.		181		On ti	he Mar	nuf	ictur	e of	Illum	inating	g Gas.
HENRY M. HOWE, A.M., S.B.	×.		٠	*					On	Metal	lurgy.
J. Franklin Jameson, Ph.D.		. 0	n A	meri	can Hi	sto	гу ан	d Hi	storie	cal Cri	ticism.
CHARLES D. JENKINS .				*				On I	Potte	ry, Til	es, etc.
ARTHUR D. LITTLE	,							1		On I	Paper.
A. LAWRENCE LOWELL, LL.B.		151				et.	-	On	Poli	tical H	istory.
SAMUEL W. MEAD			×		V.	,	On	Arc	hiteci	tural D	esign.
Webster Norris, S.B.	,			-				- 0	7	On R	ubber,
HORACE F. PARSHALL, S.B				* 3	On the	D	esign	of I)yna)	mo Ma	chines.
Louis J. Schiller	9	- 3	10	On .	Sugar,	S_t	gar	Refi	iing,	Glucos	se, etc.
FRANK G. STANTIAL, S.B.	ä	285			On	M	inero	ıl Ac	ids a	nd Ami	nonia.
Ross Turner	1	-3		Ç.	1			2	On	Water	Color.
George R. Underwood, S.B.		3.5	533	50		15		50		On	Glue.
GERALD M. WEST, Ph.D.	4				ŷ.				On A	Inthrof	ology.
C. HOWARD WALKER .		1		13		0	n the	Hist	ory o	of Orno	iment.
ANTHONY C. WHITE, S.B., On I	he .	Distrit	buti	on of	Electr	icit	y for	Com	merc	ial Pur	poses.
HENRY J. WILLIAMS, A.B.		U.		2.0	70		On	Indi	istric	al Chen	nistry.

MILITARY CAREER OF GENERAL FRANCIS A. WALKER.

ORE than a dozen years the Massachusetts Institute of Technology has seen at its head a man who as a President, scholar, and soldier, has been its pride ever since the time he assumed the duties of presiding officer. But although we know him as a President, although we have read his life history, there are few of us, if any,

who know what Gen. Francis A. Walker has achieved during those years of toil and trouble known as the Civil War. Herewith is presented a short sketch of the most interesting and important features of General Walker's military career and life in the field. It affords an excellent example of the facility with which the youth of '61, accustomed to nothing but peace, adapted himself to the pursuit of war; how from the quiet citizen grew that gallant, undaunted soldier who, abandoning his peaceful occupations, hurried to the combat with that bravery and patriotism which characterize the whole war of secession.

At the call to arms, fired with patriotism and regardless of the questions of rank, Francis A. Walker enlisted in the ranks of the Fifteenth Massachusetts Regiment of Volunteers, under Colonel, afterwards General Charles Devens, Jr., with the rank of sergeant major; this position, however, he did not hold long. General D. N. Couch, upon his promotion to brigadier generalship in August, 1861, looking for an educated officer to hold the responsible position of brigade adjutant general, heard of Sergeant-Major Walker, and he obtained from President Lincoln his appointment to that position with the rank of captain. It was thus that on the 14th of September, 1861, Captain Walker, at the age of twenty-one years, assumed charge of a department in which he later became so greatly distinguished. In March of the following year, the army having been further organized by the President's directions into army corps, General Couch took command of the First Division of the Fourth Corps under General Keyes. May 5, 1862, the division fought its first battle at Williamsburg, and the General, in his report of the battle, said that Captain Walker rendered him most valuable assistance, "maintaining perfect composure while under the enemy's shot and shell." On the 31st of May took place the battle of Fair Oaks, in which the division of the Generals Casey and Couch were terribly assailed by the enemy. In this battle, which was remarkable for its fierceness, Captain Walker rode with Colonel Neill (leading the Twenty-third and Sixtyfirst Pennsylvania) almost into the enemy's ranks in the effort to relieve Casey's shattered lines. But a short time afterwards, Captain Walker volunteered to reconnoiter the position of the brigade of the Confederate General, G. W. Smith, and, as General Couch expresses it in his report of the battle, "made a daring personal reconnoissance, and had his horse shot under him." He passed the succeeding month with the division in front of Richmond, under the guns of the enemy, and at the close of the exhausting "Seven Days," he participated in the glorious victory of Malvern Hill, on the 1st of July. During this battle, which General Couch described as one of the sublimest sights ever presented in war, the first division was attacked incessantly from half-past four to eight o'clock that evening, losing six hundred men. Again, in his report of the battle, General Couch makes honorable mention of Captain Walker for his faithful and gallant service.

In August, 1862, Captain Walker was promoted to the rank of major. "It was a well-earned promotion," says General Couch. "He had shown himself quick to grasp the substance of whatever came before him. Furthermore, he did not put off until to-morrow, and his records and papers were faultless." In October, while General McClellan was recuperating his troops in Maryland, after the battle of Antietam, General Couch was promoted to the command of the Second Corps, thus relieving Sumner. He was also permitted to nominate Major Walker to the grade of corps adjutant general, which office he held during the remainder of his service. Shortly afterwards, in January of the following year, the President appointed him lieutenant colonel. His first battle with the Second Corps was in the bloody carnage of Fredericksburg, in which the corps lost three thousand eight hundred and thirty-three men out of fifteen thousand. General Couch, obeying the orders of his superiors, pushed forward two of his divisions, brigade after brigade, only to see them melt away under the destructive musketry of the enemy, who stood four ranks deep, securely covered in the sunken road at the base of Marye's Heights. It is related of General Couch that, heart-broken with the slaughter of his men, he sought death by slowly riding down his line, among the dead and wounded, within pistol shot of the enemy. He did not wish for company in this sad ride, but three brave and faithful ones rode closely behind him,-one of these being Colonel Walker. Again the General commended Colonel Walker in his report of the battle.

In the battle at Chancellorsville, May 1, 1863, Colonel Walker was so seriously wounded, by the bursting of a shell, that he was incapacitated for service

during the remainder of the campaign. General Couch in his report again testified to his gallantry and devotion; and later the President, in conferring upon him the brevets of colonel and brigadier general, specified that the latter was for "gallant and meritorious services at the battle of Chancellorsville, where he was severely wounded."

After recovering from his wound, General Walker rejoined the Second Corps in time for the campaign following the battle of Gettysburg, in which campaign he participated in the battles of Auburn, Bristoe Station, and Mine Run. General Warren, the commander of the Second Corps in this campaign, said in a report that General Walker, "so thoroughly acquainted with his office duties, so important to the duties of an army chief, is equally willing and gallant on the field." General Walker made the Wilderness and Petersburg campaigns, in 1864, with the Second Corps, which in these campaigns fought pitched battles on ten fields, and was under fire for many days. He was repeatedly commended in the reports of General Hancock, the commander of the corps. His career in the field was terminated at the battle of Ream's Station, where, while seeking some commander in the confusion which prevailed, he rode into the enemy's ranks, and unable to extricate himself, was compelled to yield himself up a prisoner. A few hours afterwards, while marching with many other prisoners on the road from Petersburg to Richmond, he saw a chance to elude the guards; and willing to accept any risk in order to free himself, he escaped from the ranks and took refuge in a thicket by the roadside, where he lay until night. Then shaping his course by the stars to the Appomattox River, exhausted as he was, he threw himself into the current and swam for the opposite shore, in the hope of reaching the Union lines. But fate once more turned against him, for to his despair he found himself hailed by the enemy's pickets; and being too fatigued to turn or swim farther, the alternative of drowning was recapture. His strong constitution, which had carried him through three years of hard campaign, was so weakened by the hardships of prison life that he was obliged to resign in January, 1865, on account of disability. Thus terminated one of the most brilliant careers achieved by a volunteer officer of the Union army.

From the very first, General Walker administered the functions of his office to the entire satisfaction of his commanders. Couch, Warren, and Hancock, officers bred in all the traditions of the regular army, and as exacting with others as they were rigid themselves, have always spoken of General Walker in none but kind terms, and have made honorable mention of his name in more than one report. It is said of General Hancock, that soon after he had assumed command of the Second Corps, he broke out one day with the exclamation: "Colonel Walker is the best adjutant general that I ever knew." To those who served with General Walker on the staff of the Second Corps, it appeared

that he viewed his military duties and career much more seriously than was common among the young officers of volunteers. His intercourse with every one was marked by his regard for military etiquette and the dignity due to the individual. The transactions in his office were conducted with the greatest regularity, and he insisted upon regularity with every one under his direction. But although it remained for the lapse of time and the times of peace to fully evolve that genial manner and broad philosophy which characterize him to-day, yet his companions at arms say that, however much of a precision he was at his desk or in camp life, he rode stirrup to stirrup with the most reckless in battle, and that no one had the respect of his associates to a greater extent than he.

Thirty years have elapsed: no longer does the din of battles disturb the citizen's ear; no longer are men killing each other by thousands every day; no longer is General Walker galloping down the battlefields. Rich crops are now gathered on these once blood-stained fields. Fewer and fewer every day becomes the number of those who are the heroes of that war. But we, students of Technology, still have one of these brave ones in our midst, whose constant thoughts are now bent on securing the brightest future for the Massachusetts Institute of Technology. May he remain in our midst to guide and protect us for many a year to come. Long live our President, Gen. Francis A. Walker.



HISTORICAL SKETCH.



O the Class of Eighty-Seven is due the credit and honor of originating and putting into execution the idea of an annual publication for Technology which should portray the social side of Institute life. Little thought had been given to the subject of a Junior annual, as there were no indications that it was a sufficient necessity to receive the hearty support of the students; but with the advent of fraternities and other social stimulus, it was slowly realized that Technology was lacking in this important and distinctive feature of college life. Although the matter had been previously discussed to some extent, nothing was actually accomplished

in this direction until the Class of '87, then in its Sophomore year, decided that it would take the responsibility of this rather hazardous undertaking, and attempt to establish the custom of an annual Junior publication. So with little ado they chose the editors, and awaited the result of their experiment.

As a consequence of the energy they displayed, there appeared in December, 1885, the first volume of TECHNIQUE, clad in a modest paper cover and containing about one hundred and fifty pages of reading matter. A heliotype of President Walker served as a frontispiece, while on another page some views of the Institute were shown. The book consisted of class lists, class histories, lists of fraternities, local societies, athletic statistics, a few pages of verse and of grinds, together with a very few drawings. Although the material of the book was quite insignificant by the side of that which now goes to make up TECHNIQUE, it is surprising that an annual so complete and so well arranged as this could thus suddenly come into existence without that slow process of evolution which seems to be the history of most college annuals.

TECHNIQUE of '88 made its appearance on December 23, 1886, and although the general arrangement of the book was the same as that of the year before, there was a marked improvement in many respects: an increased number of drawings, which for the most part possessed greater artistic merit and originality; a greatly enlarged and improved grind department; and illustrated

letters from the different departments, which were introduced for the first time. A heliotype of Professor Nichols appeared on the first page.

Eighty-Nine's TECHNIQUE appeared in December, 1887, and showed a great advancement in the excellency and number of its drawings. The letters from the courses formed a very prominent feature and possessed great merit, while the number of grinds and witty verses was greatly increased. Greater care than heretofore was shown in the suppression of errors and inaccuracies, and in the preparation of statistics. For the first time alphabetical verse was introduced among the advertising pages. The design upon the cover was one of unusual taste and beauty, representing a jester leaning against a column and stirring into a caldron bits of wisdom, wit, and wickedness.

TECHNIQUE of '90 was brought out in the year of 'eighty-eight at the usual time, in December. It exhibited no startling innovations, but showed a steady and sure improvement in each department. The grinds here became for the first time the leading feature of the book, while a still further enlargement in the number of drawings was noticeable. An excellent heliotype of Professor Rogers was used as a frontispiece. Although the ordinary edition appeared in the usual paper cover, a special edition of a few copies was issued, bound in cloth, with the class colors of blue and silver appearing upon the cover.

In February, 1890, nearly two months later in the year than the usual date of issue, the Class of Ninety-One brought out its annual. The annual having now become an established feature and its financial success having been assured through the support it had received in the past at the hands of the students, the entire edition appeared in a substantial board binding, and with a far greater amount of subject matter than any TECHNIQUE heretofore had possessed. From an artistic point of view this book takes a leading rank among the TECHNIQUES so far published, while in other respects, save in point of size, it falls but little short of the best. The charm of the book lies in the skill in design and the fitness of the illustrations; the success of the book being due, in no small measure, to the efforts of Mr. Bird, one of the editors, whose reputation as an artist has since made him so well known to all Technology men.

The Class of Ninety-Two presented its TECHNIQUE shortly before Christmas, eighteen hundred and ninety. Although the steady improvement which had been shown from year to year by each TECHNIQUE over its predecessor had warranted the expectation of increased excellency in '92's annual, yet few had anticipated a change so complete or a growth so rapid as was exhibited by this book. Bound in cloth, showing both Class and Institute colors upon the cover, printed upon a fine quality of paper, showing unusually fine typographical work, with illustrations, much above the ordinary grade of amateur work, decorating nearly every page, and nearly double the size of '90's TECHNIQUE, this book stands comparison with the best of college annuals. The other

prominent features were the greatly improved statistics, the large number of photographs of athletic teams, and the photogravure of the Board of Editors.

The book having now assumed such a size as to render the completion of the work before the semi-annual examinations almost an impossibility, the TECHNIQUE of Ninety-Three did not appear until March, 1892. The aim of the '93 board seems to have been to publish what should be essentially a book of reference, containing complete statistics as well as class, fraternity and society lists, making the grind department, however, of secondary importance rather than a leading feature, as heretofore. Hence we find the book reduced somewhat in size, the letters from the courses having been dropped entirely, and the grind department occupying but a few pages. In general, however, the illustrations and grinds, though less in number, are choice in quality.

The present Senior Class brought out its TECHNIQUE in April, 1893. Of the characteristics of this book it is scarcely necessary to speak, since it is familiar to most of the students now at Technology. It is notable for its artistic merit, for its grind and literary department, and its completeness as a book of reference. The photogravure of pen and ink sketches of Professor Rogers, Professor Runkle, and President Walker exhibit some of the finest artistic work

ever published in TECHNIQUE.

It is only necessary to compare the TECHNIQUE of the Class of '94, containing over three hundred pages, with the paper-covered publication of the Class of '87, to appreciate the increase in social sentiment among the students which has necessitated its creation and its maintenance. TECHNIQUE has now reached the point at which further increase in size is undesirable, and in future it should be the aim of each succeeding Junior Class to improve its trust through refinement rather than enlargement. Its proper and legitimate sphere is to present as clearly as possible the social side of Technology life; and as a faithful chronicle of student life and student organization, may it live for many prosperous years to come.

Carleta A. Read





LASS OF NINETY TOUR.

YELL.

Ninety-Four! Rah! Rah! Ninety-Four! Rah! Rah! Hoo-rah! Hoo-rah! M. I. T., Ninety-Four! Rah! Rah! Rah!

COLORS: GRAY AND BLUE.

Officers.

President. RAYMOND BEACH PRICE.

Secretary. CHARLES WILLIAM DICKEY.

Vice President. COLBERT ANDERSON MACCLURE.

Treasurer. SAMUEL HENRY BLAKE.

Executive Committee.

THOMAS PELHAM CURTIS.

ARTHUR AUSTIN CLEMENT.

WILLIAM HERBERT KING.

History of the Class of Minety=four.

IME slips by so swiftly that one can scarcely realize that nearly four years have passed since the members of the Class of '94 first assembled in old Rogers corridor. Then everything was new and strange, and we had no thought of how in a few short years every object would have become dear to us, and suggestive of happy days and lasting

friendships. Gathered from the four parts of the globe, we were strangers to the old students and to each other; a noble band of "Freshies," hopeful and ambitious, but unorganized and without a leader. No wonder that we became rich prey for the lordly Sophomores, and narrowly escaped electing a board of class officers chosen from their ranks.

The account of our first year's progress and achievements is perhaps the most interesting part of our whole history, for it abounds in stories of warfare and struggles; but it has been related so often before that it is ancient history now. Suffice it to say that we were probably no more verdant than many other first-year classes, and in a surprisingly short time became quite acclimated to our new surroundings, and able to act the parts of hard working Tech students,—to our own satisfaction, at least.

It was with much different feelings we came back at the beginning of our Sophomore year. We were no longer shy and silent, not knowing what to do, and watching the bulletin board like the recordings of an oracle; but were happy and boisterous, and, sad to relate, delighted to be able to wreak vengeance upon the unsophisticated Freshmen for indignities received by us when in the same position. There were more battles royal and brave deeds, which, however, have also been dwelt upon too often before to withstand reiteration.

It is unnecessary to try to recount our progress in the work of the Institute, for every one knows the requirements. The standard of the Institute is high, and the faithful student-worker has few spare hours upon his hands which he does not richly earn. But this fact should not discourage; it should rather act as a spur, for each student should feel that he is being tested—at the same time he is learning his profession—as to his character and ability to succeed in the future. Thus regular work becomes a matter of course when one is well started in his field of study, and few events worthy of record occur to interrupt the systematic progress of instruction.

The time since our Sophomore escapades up to the present has indeed been free from any occurrences worthy of writing. The beginning of each term has been marked by the mild excitement of commencing new subjects, and the rapid quenching of one's curiosity as to their nature and bearing; while the end of each has been emphasized by the wild enthusiasm shown by every one to review a maximum amount of matter in a minimum extent of time, only equaled by the alacrity with which the class scatters upon the beginning of the vacation.

As the terms have rolled by, there has seemed to be a noticeable increase of thought, interest, and application upon the work at hand, as should be expected of students steadily advancing in the study of their chosen professions. Things develop, as it were, and the practical use of much of the elementary and theoretical knowledge acquired in the early part of one's course becomes evident. This time is the beginning of the end, and the necessity of finishing up all the required work in time for graduation makes the most delinquent student earnest, and promotes an interest quite different from that experienced at any other time.

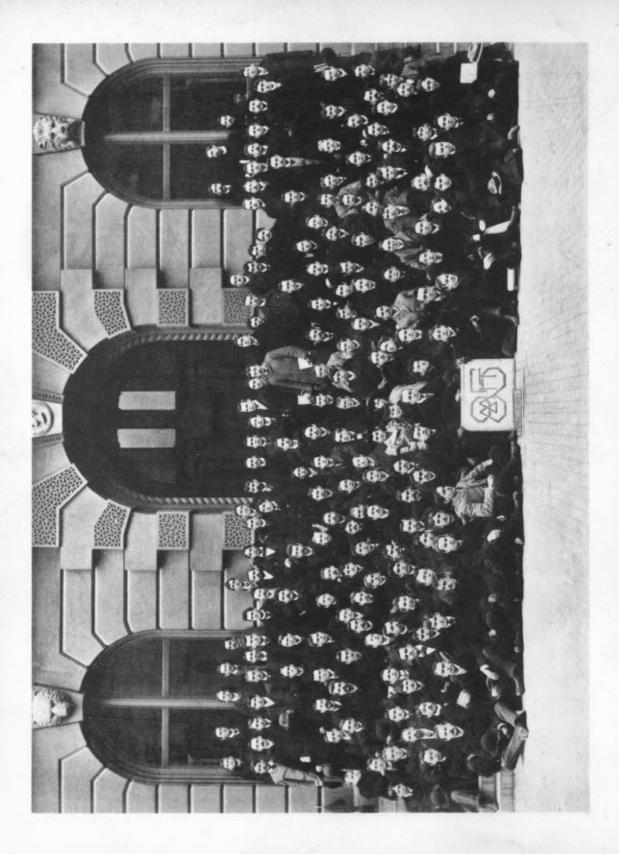
For years we have all been at school or college fitting ourselves for the work of life, and now for most of us the time of preparation is nearly over. In a few short months we shall be cast adrift, and then it remains with ourselves to utilize what knowledge and experience we have acquired for the best of our advantage. These years of training have been pleasant, and perhaps the happiest of our lives. We have made many dear friends, whom, fortunately, we do not have to lose when we separate. Although scattered to all parts of the world, we shall not forget each other and the years we have spent so enjoyably in old Boston and Tech.

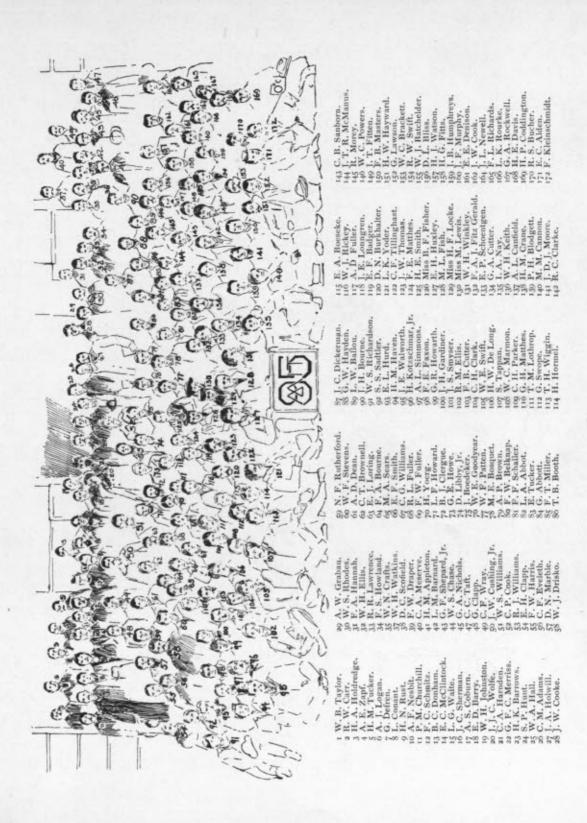
I have spoken of the day next June when we step out into the world, as the end; but as we look back upon it in years to come it will seem, as it is called, our commencement. It seems to us now that our education is nearly completed; but we will find in after life that it is just begun, and that we now are just completing our instruction in the way to gain it for ourselves. Therefore it will be with various feelings of sadness and of expectation that the members of the Class of '94 will meet together to go through the culminating ceremonies of their course in the Institute: feelings of sadness at the thought of leaving the familiar buildings where so much of their time for the past four years has been spent, and of parting with the many, many friends whose constant companionship has made the hard work seem easier, and the time pass so swiftly; and with feelings of expectation and ambition for the new life which is to begin at the close of the old.





J. Dowland & and ver. 93 Fred. A. Hannah, 95 Her. herelle Leifer 94 Henry F. Ripley 94 Geo. Enppy 33 Samil ls. Reed. 94 Franklin H. Robbin 94 Ned St. Janvin '94. Roger J. Williams 95 Ilm. J. Rice 95 Suther Conant, Jr. '95 Gustavue Clapp. 95. John H. Fregory '95. Chas. Ho. Centler 194. Joseph Hilton Smyth, 96.







LASS OF NINETY-TIVE.

YELLS.

Rah! Rah! Rah! Ree! Ree! Ree! Ninety-Five! Ninety-Five! M. L. T.! Rah! Rah! Rah! M. I. T.! Rah! Technology! X. C. V.!

COLORS: BLUE AND GOLD.

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Minety=Jfive's Reverie.

ORE than a week had passed since Ninety-Five, joyous at the thought of a few days of well-earned rest, had completed his last exam., thrown aside his books, and hastened away. And now, as he entered his study once more, and the familiar scenes came before him, his mind, which was still filled with the gayety of the past week, and with tender thoughts for a sweet face left behind him, reverted to the many pleasant hours he had passed in bygone days while comfortably stretched out in his big armchair, musing on

the past and speculating on the future. Pulling up the chair before the cheery fire, Ninety-Five felt that nothing now remained to complete his happiness but a good cigar, and to let his mind wander where it would, like the little clouds of tobacco smoke floating aimlessly hither and thither. So thought Ninety-Five;

and with a yawn he stretched his arm toward the table and took a cigar from the silver-mounted case which his black-eyed beauty gave him when he made the bicycle record. As he lit this fragrant cigar his mind irrepressively wandered back to those days when he, clothed in all his greenness, entered the Massachusetts Institute of Technology; and as the fumes of the fragrant weed mounted heavenward, ever expanding in their course, he beheld those days once more. As in a trance, he found himself transported back two years, and a smile of pleasure stole over his face as many pleasant recollections passed through his mind.

Through the distance the sound of music was wafted to his ear; it recalled to him the music at Tech during his first year. What music did he find when he came? There was the Glee and the Banjo Club; Ninety-Five joined them, and his harmonious tones have rendered them more attractive, and added to their charm. The success of the Banjo Club under Ninety-Five's continued leadership speaks for itself; and to reward his efforts it is pronounced to be the finest amateur club in the country. Was this all? No; picking up his violin, Ninety-Five called on all Tech men to help in the formation of an orchestra, and his efforts have not been in vain. And now, in his vision, he sees again the day when he descended for the first time those narrow, steep steps of that model of shanties known as the gymnasium. The tales of the feats of strength performed by his Sophomore friends at first impressed him with awe; but Ninety-Five did not lack confidence, and when he entered the gymnasium he was determined to show to the other classes that he, also, with an equal amount of training, could achieve something, and would not have to stand back in any events. This he soon did, and wonderful was his improvement and development. No doubt Ninety-Four has been successful in hurdle races, but Ninety-Five carried off the acorn in the cross-country runs and team races.

Thus Ninety-Five approached the end of his first year; and a happy college year it had been. After one more hasty, uninterested glance at the annual exams., his first year at Technology, like one quarter of his cigar, had passed pleasantly away. Ever since it had been lighted it had burned at a true and steady pace, and nothing had intervened to disturb it. And now, as his thoughts turn upon the opening of his second year, before allowing himself to be entirely absorbed in the coming pleasant reflections, Ninety-Five taps all superfluous matter into the ash pan,—an open-mouthed receptacle, giving forth a hollow, brassy sound. Ninety-Six received this matter gratefully, and apparently esteemed his new acquisition. Yes, he even went so far as to honor part of this refuse with nothing less than a presidency. In his second year Ninety-Five's popularity became more and more recognized, and soon he was chosen to take charge of the 'Varsity Football Team and of the Glee Club. The records which have been made under his leadership have proved that he is fully capable

of fulfilling these positions to the general satisfaction. Not that Ninety-Five strives for these honors. No; he would much rather prefer to sit in his big armchair dreamily toasting his feet before the glowing fire, and blow little rings of smoke in quick succession at her photo on the mantel, until they broke against the glass and formed a halo about her sweet face and laughing eyes; but his interest in Technology as a whole, and his strong desire for the success of his college in these affairs, is what called his ability into play. Among other reminiscences of his second year figure the fights and struggles with obstreperous Ninety-Six; and, further, in that bluish haze of smoke he recognizes the Physical Lecture room, with its cranks, marbles, and ghost-like apparitions; and through all this, like a chaos, are flying tin cans, burning kerosene, red and gray gowns and caps, and other features of a certain glorious night.

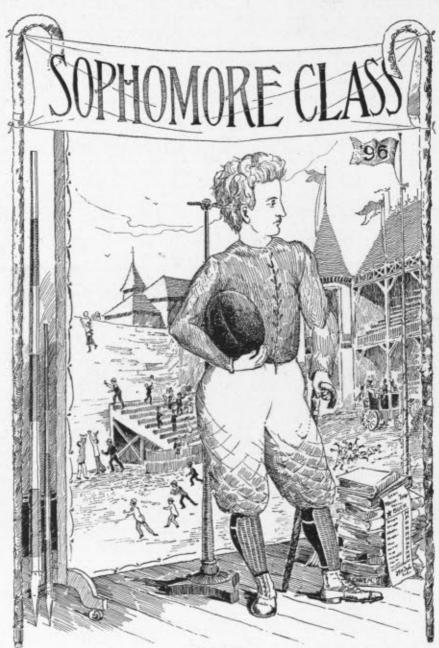
Another year has passed by, and, like his cigar, half of his Technology life is over. Again he taps the ashes into the ash tray, and this time Ninety-Six stands ready to receive some good athletic material. Though Ninety-Five regrets its loss, he has no more use for it; he retains only the live material. As the cigar continually increased in fragrance and strength, Ninety-Five enjoys it more than ever; and as he is now well advanced into his third year, it is not without a feeling of sadness that he thinks of the time when his cigar will die out,- when its soothing influence will no longer cheer him. But then he remembers that there are yet others who smoke, and among them is an older brother of his, Ninety-Four. The mere thought of him causes his heart to fill with pity, for his brother is of a nervous, dyspeptic temperament; and like most people who live upon poor banquets and eat very sparingly, he is extremely critical, and soon made ill by a good Havana weed. There is yet a younger brother, Ninety-Six, who when he smokes soon suffers from a swelling of the head and lungs, causing him to cough and blow a great deal. His name has lately appeared several times in The Tech, and it was entirely too much for his light mind. Surely his awkward manners and crude attire show that it was intended for Ninety-Six to remain at home, and see that the old farm did not pass out of the hands of the family. But why should Ninety-Five trouble himself in his delicious reverie with sad thoughts? Like a puff of smoke they soon vanish, and presently it is the fast approaching Junior Assembly that occupies his mind; there he is to appear as the hero of the evening, and in the midst of his fair friends and class comrades he will pass the most brilliant night of his student days. The thought of music and dance calls to his memory a pair of dark eyes at which he has often gazed with admiration, and which are ever before him to stimulate and encourage him in his work.

The end of the third year is swiftly approaching. Anew the rings of smoke sail upward; this time higher than before. As they float away, first small and

dense, then expanding, and ever increasing, they resemble Ninety-Five's life at Technology. Thus has his experience and his knowledge increased during the years of study that have passed, until he is now ready to solve the more hidden and complicated portions of nature's laws, and soon will he enter the social and business world. When at last the remaining portion of his cigar has burnt away, when Ninety-Five shall step out into the world, then will all his friends join with his parents and say for the thousandth time, "Would that all our men were up to the standard of Ninety-Five, and could give us as complete evidence of future success."







His Idea

LASS OF NINETY SIX.

YELL.

Rackety-rix, co-ix, co-ix! Rackety-rix, co-ix, co-ix! Heigh-ro-kee, Heigh-ro-kee! Ninety-Six! Ninety-Six! M. I. T.!

COLORS: CRIMSON AND BLACK.

Officers.

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ROBERT DOUGLASS FLOOD.

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Myron Everett Pierce.

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JOSEPH HARRINGTON.

ROBERT SAMUEL HARDY.

And the Wind blew quite Windy!

* Hail, Clio, historical Muse, let me "crib" a few verses from thee, Of great Ninety-Six and its deeds, writ with gold paint in thy history.



Y! Buzz! buzz!! buzz!!! How my brain works!†
What reminiscences of mighty deeds throng upon
it! Attach, O Muse of Physical Science, to these
my thoughts, a series of small cranks, operated
by a larger crank behind; turn that crank with a
uniformly accelerated motion, and let these
thoughts of '96 and its might leap forth with
irresistible momentum. Our first day at Tech!
What joy welcomed us! How delighted were

all,—all, from instructor to M. F. (member of the Faculty, otherwise Master of Flunks); from the lofty Senior to the Sophomore, resplendent in his tanned, kid-leather boots, smiling at the sight of our mighty forms; for all felt a wondrous class had come. At once we proceeded to show our mettle; and

† For the first time.

^{*}To all who are interested in gas analysis we recommend a careful perusal of this article. Experimenters need have no fear of exhausting the gas, as obviously the supply is unbounded.

though scarcely had we had time to learn that the Arch, printed on the front of our tabular views did not refer to the Archway Bookstore, and that "Mr. Linus" did not sell drawing instruments, still, convinced of our worth, we decided our likeness must be preserved to posterity. Immediately notices were posted on our beautiful new blackboard, and early on the appointed morning we assembled on the front steps of old Rogers, were artistically posed, and had our faces arranged with a scholarly, hard-worked expression. Suddenly a commotion is perceived above! The frisky Soph is upon us! At once the features but just in repose become animated! The enemy is in camp! He has seized our blackboard, and straightway we make a vigorous rush to rescue it. We are beginning to be tried in the ordeal of the cane rush, and most nobly do we stand the test. At length beaten, discomfited, the enemy must retire, leaving a broken blackboard but a triumphant class. But the photographer! Ah! who can depict his feelings? Who could look unmoved at his sad, feeble smile, as he saw his dreams of shekels fade away under the heat of class spirit? Our first encounter had ended, then, disastrously for our picture, but most honorably for ourselves. There is promise of great things, and soon will it be fulfilled.

The scene changes. The occasion is the cane rush. The place is the South End grounds. The great trial of our mettle is at hand. The football game has just ended; be this statement sufficient. Why give details? Why tell the score?* Enough to say it has ended. Formed in the middle of the field is a stout little phalanx surrounding a little thing, merely a cane, but fraught, ah, with such significance! All is ready; the signal is given. Suddenly the atmosphere about that little phalanx, but just now cool and clear, becomes heated and of a bluish tinge, and is filled with yells of "Get off my feet!!" "Where's the man that punched me in the eye???" "Hold on to the cane!" etc., etc. And what pushing, and turning, and jumping over heads, and various other similar gyrations are indulged in for twenty endless minutes, while outside stands an excited crowd of upper classmen and small urchins, shouting and cheering. At length time is called, the hands after much difficulty counted, and in a loud voice the cane is declared won by '96.

Many months have elapsed. Our first "semies" have been reached and passed, but ah! how many have failed, and have left us fewer, older, and wiser. Our courses have been chosen, we feel already well seasoned, and hence it is only proper to celebrate this by a feast. After mature deliberation the committee decides that, whereas the Parker House spoons seem best fitted for preservation as mementoes, that this is the proper place in which to hold festivities. On the appointed evening, after having properly prepared by prayer and fasting for the occasion, one of the largest gatherings ever seen at a

^{*} Score, 14 to 0; '95 wins.

Tech class dinner assembled. And that was a dinner indeed! What a jolly, musical, historical, and festive time we had! Everyone enjoyed himself, from the waiter, who served cigars, and something stronger "for a consideration," to the orator, who gave a timely address on boarding-house hash; and when at last it was time to disperse, and we started somewhat unsteadily homeward, all felt that the Class of '96, '96—things seemed duplicated then—was a most glorious one.

But why continue further with these glowing details? Why relate of our annual drill, which was such a success, that, in despair of ever having such a battalion again, Lieutenant H. has decided to abolish annual drills. Why detail our triumphal march through the annuals, in which, though many fatigued ones dropped behind, most, thanks to our military training, kept steadily on. Why describe our return to school, our feelings of haughtiness and pride at seeing ourselves now in a position from which we could look down upon our successors, and smile at the pea-green shadows they cast. Why relate of our great victory in football over them; why dwell on the accomplishment of that very rare and difficult feat of wresting the cane away from the very midst of the Freshmen; let all these facts, blazoned in gold, be read by the attentive student in the above-mentioned Clio's history, which may be found at Ridler's any time after this week.

As a class, in what science or art have we not excelled? In drawing, on the authority of Professor F. himself, we were one of the most rapid (?) classes he ever had. As cane winners our prowess is already known, and as cane swingers, look but into the umbrella rack of Rogers; behold, in spite of General De Pression, the goodly array of our handsome class canes, and feel proof enough has been given of our skill in that line. In athletics, too, who has not Hurd of our great achievements: of our twice winning the class cup by an overwhelming score; of our breaking old records and establishing new ones; and of the winning of prizes innumerable by the doughty champions of '96. With such a record behind us, what a future lies before us! Burlesque aside, the Class of '96 is one to be proud of, and one that should be proud of itself.



Let us, then, all strive, first for the Institute, our *Alma Mater*, and then for our class, for sturdy '96. May it ever bear an honorable name in history, and may it always do its duty bravely and well! And now, boys, the long cheer for '96:

Rackety-rix, co-ix, co-ix!
Rackety-rix, co-ix, co-ix!
Heigh-ro-kee! Heigh-ro-kee!
Ninety-Six! Ninety-Six! M. I. T.!

Twas the night fore the Temier



LASS OF NINETY SEVEN.

YELL.

Tech! Rah! Rah! Tech! Boom! Bah! Ninety-Seven! Ninety-Seven! Rah! Rah! Rah!

COLORS: ORANGE AND BLACK

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Secretary.
Walter Page.

Treasurer.

THOMAS MACINTIRE VINTON.

Executive Committee.

JOHN PARKER ILSLEY, JR.

JOSEPH BANCROFT

Chronicle of the Migration.



the beginning all was chaos, and behold there came a great awakening, and it was known throughout the earth that there was at the Hub, in the district of Massachusetts, the Tech,—temples where the tribe of Rogers, of Runkle, and of Walker paid great sacrifice unto Minerva. And it became known, also, that those who did receive the blessing and the sheepskins of the tribe became as the elders of the nations.

And it came to pass that a great multitude did repair to the place of the temple; and they came from the five quarters of the earth, yea, from Kansas City and Pittsburg, from Chicago and Chelsea, from New York and Hyde Park, and from many other hunting grounds, as Philadelphia; although such as came from the latter place were, by force of breeding, a long time in coming, and for many moons after arriving were slow of speech and thought. And it was far into the month of June that many of these came

unto the temple Rogers to strive with examinations that were to the tasks of Hercules as a game of football.

Again, in the month of September, there came others to the temple to do like battle as had their predecessors. And the Lord looked with favor upon many of these, and he did commune with one Tyler, who was high in the ranks of the faithful. And they were admitted, and became the Class of Ninety-Seven.

Chronicles of the Later Days.

On the twenty-fifth day of the ninth month of the year eighteen hundred and ninety-three, all who had found favor in the eyes of the Lord came unto the Tech, and they were sore afraid, looking at the Sophomores with great fear and trembling; and there were many who were afflicted with much quaking for many weeks.

On this, the first day, after each had received certain Chinese puzzles called tabular views, it being about the tenth hour, the Class of Ninety and Seven did repair to a place of sacrifice known as Huntington Hall; and did meet there one Lienus, a Pharisee, who was son of Nero; and he spake unto the multitude, saying, "Repair ye hither unto the uppermost parts of the house, and purchase of those you will find there, of instruments, of triangles, and of many things used in drawing." And there were many of fools who did thusly. Others there were who went unto the house of Maclachlan, paying thereby much less of money. And the many did commune with one another, understanding that the difference in prices for the whole class amounted to more than one thousand pieces of silver. They marveled at these things, and from that time forth the praise of the son of Nero knew no bounds.

About the first week the tribe had also to buy many bundles of parchment covered with hieroglyphics and protected by boards, among them one of great weight and price, written by a prophet called Remsen. And many were thus filled with forebodings as to what was to come. On the sixth day, which was Saturday, the people listened unto the word of the great Walker, chief of the tribe, and what he spake was wholesome, so that many who were before fainthearted, took heart in great measure, and did thenceforth strive for honor.

In the tenth month of the year the multitude did come together that they might take counsel. And there were amongst them some of the Philistines, called Sophomores, who sought to pervert those of the chosen class and to make discord. And the chosen people waxed mighty in their wrath, and rising up as a man, they did cast out all that were not of their seed, and did shut and make fast the portals amidst the crying and gnashing of teeth of the sons of Satan so cast out. So forever after the tribe did commune in peace. Many

meetings were held, laws were passed, and a constitution made, and the class prospered. So it was that in time the class was respected, and Bragg, a pilgrim from the Hamlet of Bangor, was chosen king.

It was on the sixth day of the eleventh month that there was a great struggle of the chosen people with the Philistines, the manner of it being thus: the barbarians were yet cast down because of their great discomfiture at class meeting. And they did send men unto the chosen people, saying, "Let us come together, tribe against tribe, and show which be of the mightiest, and let the people who have to use canes after the battle hath come to an end bow down their heads in everlasting shame." So the tribes came together, and there was a mighty struggle. And behold, the chosen people did battle with might and main; but the giants of the tribe were invincible, as with their king in their midst they did triumph. And it came to pass that the Sophomores were confounded, being grievously confused; and there was many a man who did neglect to keep his shirt on. So it was that of the Philistines there were many of the lame, the halt, and the blind who were sore afflicted, and had to carry canes. And there was no one of all the chosen people who used a cane, so great was the victory.

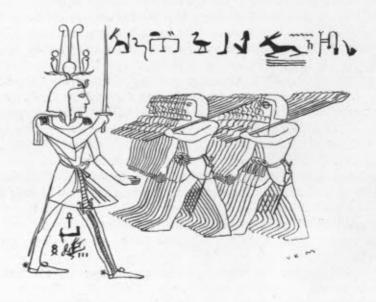
There was at the Tech a place of torment called the laboratory, that was as the lower regions, and full of smells of sulphur and of brimstone. In this place the people were punished twice of a week; and there were those that were tempted and did rush to the windows to look without, and did waste time. These returned unto their places, and did make blunders, because of a compound called F $\rm O_2$ L; and there was weeping, and swearing, and breaking of glass.

There was among the tasks of the people a study of lines, taught by Line-us, many there being who were vexed with it as with the Devil. And it was discovered that there were in the class two wizards, who wrought with charms, and did make a record that was fifteen H's in length. And it came to pass that there were lectures on projections. The lecturer was a Pharisee, and he was greatly tangled with his lines, talking of shade lines between two dark surfaces. And there were come together of the class the fifteenth, the sixteenth, the seventeenth, and the eighteenth parts. Thereupon he bade them take the two best draughtsmen in all the land, and lo and behold they would find him of the two to be foremost. But the people smiled, and there was a sound of mirth, prolonged and loud; then there was a great moving of feet, so that the very lights in the wall cracked with smiling.

Then came there a day when peace ceased to reign in the room of Drawing. Behold, the Pharisee came unto the class, saying: "O ye Class of Ninety-Seven, ye have departed from the ways of the right; there is amongst you a thief, for the seventh plate is gone, and the frame thereof knoweth it no

more. I will cut ye off from the blessings of work after hours; I will close against you the drawing room;" and according as he spake so did he. So the taskmaster did give it unto his servant to drive all from the rooms. And each day the servant came on apace, and did call while yet afar, "All out! all out!" And there were certain ones who did mock the servant, saying, "All out! all out!" And it came to pass that the mocking became a malady, many being grievously stricken with the disease. And even as there doth exist to this day the "all-out" fiend, so it is decreed that in that time when man shall be cut off from the face of the earth, only the mournful wail of these lost souls shall break the silence that shall wrap the crumbling walls of the temples of Tech; the cry, "All out! all out! all out!"

And now as the end of time of ancient history did draw nigh, the people did work by night and by day that they might, in the fullness and greatness of their heads, pass examinations called semies, and find favor with the chiefs of the tribe. And that which they sought was given unto them; and they rejoiced, ceasing to labor, and joined with the two great nations, aye, even with the Philistines, in a week of peace and rest.





GREEK LETTER

FRATERHITIES

OF THE

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

SIGMA HI.

Chapter Roll.

1857.	T.	Ohio Wesleyan Universit			2.		Delaware, O.		
1857.	H.	University of Mississippi					Oxford, Miss.		
1858.	Δ.	Indiana University					Bloomington, Ind.		
1859.	Ξ.	De Pauw University					Greencastle, Ind.		
1859.	0.	Dickinson College					Carlisle, Penn.		
1859.	Ψ.	University of Virginia					Charlottesville, Va.		
1863.	θ.	University of Virginia Pennsylvania College					Gettysburg, Penn.		
1864.	K.					-	Lewisburg, Penn.		
1866.	Z.	Washington and Lee Uni	iversity				Lexington, Va.		
1866.	P.	Butler University			-				
1867.	М.	Denison University .					Granville, O.		
1869.	Ω.	Northwestern University					Evanston, Ill.		
1871.	X.	Northwestern University Hanover College					Hanover, Ind.		
1872.	T.	Roanoke College					Salem, Va.		
1872.	Σ, Σ.	Hampden-Sydney Colleg	е.						
1873.	В.	University of Wooster		1910			Wooster, O.		
1874.	т. т.	Randolph-Macon College							
1874.	Δ. Δ.	Purdue University .					Lafayette, Ind.		
1876.	Z. Z.	Centre College					Danville, Ky.		
1876.	I. I.	University of Alabama					Tuscaloosa, Ala.		
1877.	θ. θ.	University of Alabama University of Michigan			·		Ann Arbor, Mich.		
1880.	Δ. X.	Wabash College					Crawfordville, Md.		
1882.	Ζ. Ω.	University of Cincinnati					Cincinnati, O.		
1882.	A. T.	University of Cincinnati Ohio State University				•	Columbus, O.		
1882.	A. Z.	Beloit College					Beloit, Wis.		
1882.	Δ, θ.						Boston, Mass.		
1883.			Massachusetts Institute of Technology Stevens Institute of Technology						
	Α. Δ.	University of Nebraska	motogy				Hoboken, N. J. Lincoln, Neb.		
1883.	A. E.	University of Nebraska .				*	Bloomington, Ill.		
1883.	A. I.	Illinois Wesleyan Univer Wisconsin State Universi	sity		*		Madison, Wis.		
1883.	A. A.								
1884.	A. Z.	University of Kansas					Lawrence, Kan.		
1884.	A. N.	University of Texas			*	*	Austin, Tex.		
1886.	A. 0.	Tulane University				*	New Orleans, La.		
1886.	777	Albion College University of California			*		Albion, Mich.		
1886.	A. B.	University of California	100		*				
1886.	A. P.	Lehigh University			22		Bethlehem, Penn.		
1888.	A. E.	University of Minnesota					Minneapolis, Minn.		
1889.		University of North Care	nna						
1889.	Α. Υ.	University of Southern C					Los Angeles, Cal.		
1890.	Α. φ.	Cornell University					Ithaca, N. Y.		
1892.	A. Y.	Vanderbilt University	11.54				Nashville, Tenn.		
1892.	Α. Ω.	Leland Stanford, Jr., Un	iversity		(#./)		Menlo Park, Cal.		
1893.		Dartmouth College Miami University					Hanover, N. H.		
1893		Miami University	- 1						
1893.		Hobart College					Geneva, N. Y.		

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ALPHA THETA CHAPTER.

ESTABLISHED MARCH 22, 1882.

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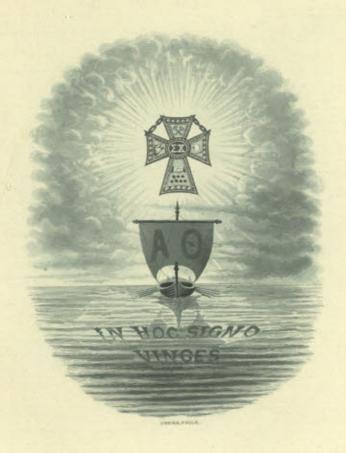
ERNEST WOODYATT.

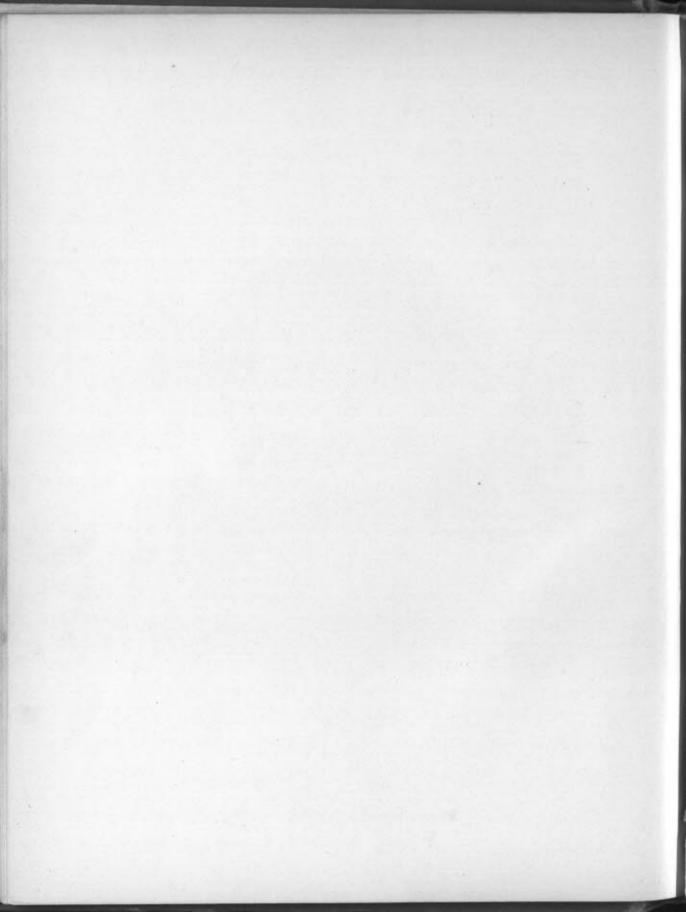
Fratres in Urbe.

F. L. PIERCE.
J. A. HIGHLANDS.
H. T. BARDWELL.

W. W. CUTLER.
C. E. LOCKWOOD.
C. L. NUTTER.

Lucius S. Tyler. '96.





HETA XI.

Chapter Roll.

Α.	Rensselaer Polytechnic Institute	\mathcal{F}	0.0		*	Troy, N. Y.
В.	Yale College	*				New Haven, Conn.
г.	Stevens Institute of Technology					Hoboken, N. J.
Δ.	Massachusetts Institute of Technol	logy				Boston, Mass.

HETA XI.

DELTA CHAPTER.

Members.

MARK WEBB ALLEN.
WILLIAM POPE ANDERSON, JR.
JOSEPH BANCROFT.
VALLETTE LYMAN BENEDICT.
WILLIAM HENRY CLIFFORD.
NATHAN BROWN DAY.
FRANKLIN WHITNEY DOLIBER.
CHARLES HARDY ELY.

DAVID DUDLEY FIELD, JR.
RICHARD STANLEY HOWLAND.
GEORGE PARK LAWSON.
FREDERIC WAIT LORD.
DAVID JEROME SPENCE.
FRANCIS CLARK THOMAS.
PEDRO URQUIZA Y BEA.
RIGBY WASON.

Fratres in Urbe.

ARTHUR HUMPHREYS ALLEY.
ALBERT FARWELL BEMIS.
ALFRED MILLARD BLINN.
EDWARD LYMAN BROWN.
THOMAS IRVING CHAPMAN.
WILLIAM LEE CHURCH.
HARRY ELLSWORTH CLIFFORD.
HENRY JOHN CONANT.
NATHAN DURFEE.

FRED PARKER EMERY.
CHARLES HAYDEN.
MORRIS LEIDY JOHNSON.
HENRY ADAMS MORSS.
HERBERT STURGIS POTTER.
JAMES HENRY REED, JR.
WILLIAM FLOYD SPALDING.
JOHN WATSON TARBOX.
WALTER BACON TROWBRIDGE.

HARRY HAYWARD YOUNG.



Decka Phila

Hany Elsworth Glifferd. Righy Wason 93.

DELTA PSI.

Chapter Roll.

Α.	Columbia College							New York City.
Δ.	University of Pennsylvania				4	1		Philadelphia, Penn.
E.	Trinity College	10						Hartford, Conn.
	University of Rochester							
Λ.	Williams College		10					Williamstown, Mass.
Φ.	University of Mississippi		120	27		¥	,	Oxford, Miss.
Υ.	University of Virginia							Charlotteville, Va.
	Sheffield Scientific School							
Т.	Massachusetts Institute of T	echr	nology	y				Boston, Mass.

DELTA PSI.

TAU CHAPTER.

Members.

HENRY WALTER ALLEN.
WILLIAM AMES, JR.
WILLIAM JENNINGS BATCHELDER.
DANIEL MOORE BATES, JR.
SIDNEY ALFRED BEAN.
CHARLES WILLARD BIGELOW.
EDWARD DUTTON CLARKE.
ROBERT CAMPBELL CLARKE.
ALBERT EDMUND CLUETT.
HENRY MIDDLEBROOK CRANE.
HENRY DISSTON.

James Turner Fitten.
Francis Cushing Green.
Lewis Stone Greenleaf.
Henry Robert Heard.
James Barnes Humphreys.
John Sanford Humphreys.
Malcolm Hobart McGann.
William Thornton Parker.
William Powell Robins.
Andrew Le Baron Russell.
John Conyngham Stevens.

ENOCH ROSKRANS VEDDER.



Harry G. Fisk.

4777

HI PHI.

FOUNDED 1824, AT PRINCETON, NEW JERSEY.

Chapter Roll.

A.	University of Virginia .					×	Charlottesville, Va.
В.	Massachusetts Institute of Tec	hnol	ogy				Boston, Mass.
г.	Emory College						Oxford, Ga.
Δ .	Rutgers College						New Brunswick, N.
E.	Hampden-Sidney College .						Hampden-Sidney, Va.
Z.	Franklin and Marshall College						Lancaster, Penn.
Н.	University of Georgia .						Athens, Ga.
θ.	Rensselaer Polytechnic Institut	e					Troy, N. Y.
T.	Ohio State University .				,		Columbus, Ohio.
К.	Brown University	4		4			Providence, R. I.
$\Lambda.$	University of California .						Berkeley, Cal.
М.	Stevens Institute of Technolog	y		2			Hoboken, N. J.
N.	University of Texas						Austin, Tex.
Ξ.	Cornell University						Ithaca, N. Y.
0.	Sheffield Scientific School, Yal	e Co	ollege				New Haven, Conn.
п.	Vanderbilt University .						Nashville, Tenn.
P.	Lafayette College						Easton, Penn.
Σ.	Wofford College						Spartanburg, S. C.
т.	College of South Carolina						Columbia, S. C.
Φ,	Amherst College				-		Amherst, Mass.
х.	Ohio Wesleyan University					,	Delaware, O.
$\Psi.$	Lehigh University						So. Bethlehem, Penn.

(H1]H1.

BETA CHAPTER.

ESTABLISHED 1890.

Members.

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ELWYN WILFRED STEBBINS.
CHARLES WILLIAM DICKEY.
HARRY ALEXANDER BALDWIN.
WALTER DANFORTH BLISS.
LESLIE DANA.
GEORGE MOORE.
LUTHER ROBERTS NASH.
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BENJAMIN HALSTED SHEPARD.
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EDWARD ASHLEY EAMES.
CHARLES JEWETT CHAPIN.
CARL SHUTTLER.
THOMAS MACINTIRE VINTON.

HOWARD AGNEW NOBLE.

Fratres in Urbe.

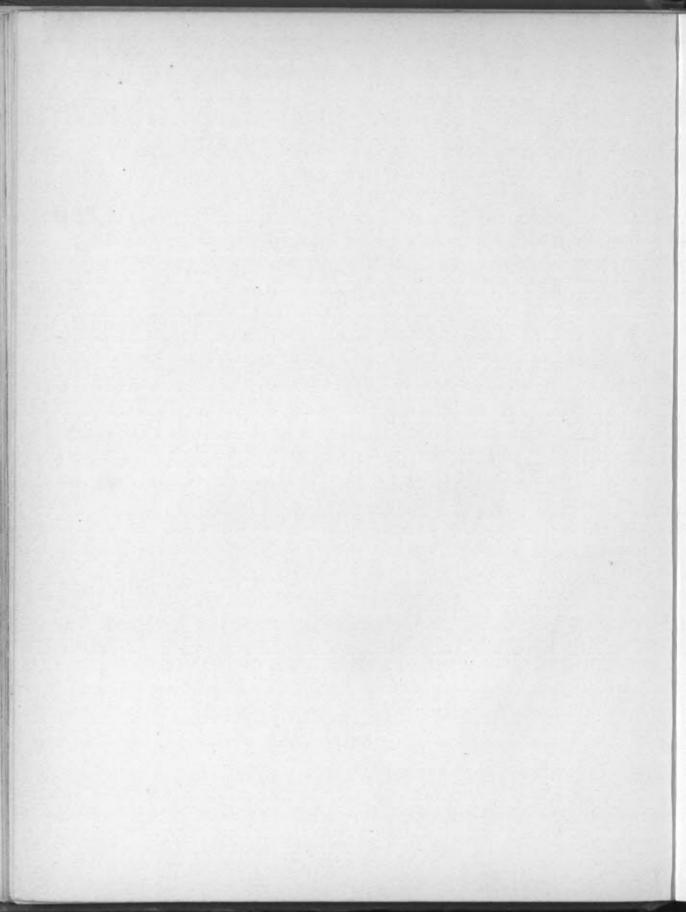
Ross Francis Tucker.
WILLIAM HARTLEY DENNETT.

JAMES VAUGHAN DENNETT. AMASA WALKER.

LEONARD CHASE WASON.



Dreka.Phila



DELTA KAPPA EPSILON.

Chapter Roll.

Phi.	Yale University .										1844
Theta.	Bowdoin College										1844
Xi.	Colby University							61			1845
Sigma	Amherst College										1846
Psi.	University of Alaban	na							+		1847
Gamma.	Vanderbilt University				14		15				1847
Upsilon.	Brown University		+0					60			1850
Chi.	University of Mississ	sipp	i .								1850
Beta.	University of North	Car	olina		-						1851
Eta.	University of Virgini	ia									1852
Kappa.	Miami University										1852
Lambda.	Kenyon College				12						1852
Pi.	Dartmouth College					12	1	-			1853
Iota.	Central University of	f Ke	entuc	ky	*				*	- 4	1854
Alpha Alpha.	Middlebury College			1							1854
Omicron.	University of Michig	an				1	-				1855
Epsilon.	Williams College										1855
Rho.	Lafayette College	0.0			,		0.0				1855
Tau.	Hamilton College										1856
Mu.											1856
Nu.	College of the City of	f N	ew Y	ork							1856
Beta Phi.	University of Roches										1856
Phi Chi.	Rutgers College .										1861
Psi Phi.	De Pauw University		40			14		40			1866
Gamma Phi.	Wesleyan University										1867
Psi Omega.	Rensselaer Polytechi	nic									1867
Beta Chi.	Adelbert College										1868
Delta Chi.	Cornell University										1870
Phi Gamma.	Syracuse University					1.5					1871
Gamma Beta.	Columbia College										1874
Theta Zeta.	University of Califor	nia				2					1876
Alpha Chi.	Trinity College .								×:		1879
Phi Epsilon.	University of Minnes					4		-			1889
Sigma Tau.	Massachusetts Institu	ate o		chno	logy						1890
Delta Delta.	Chicago University										1893

DELTA KAPPA EPSILON.

SIGMA TAU CHAPTER.

ESTABLISHED 1890.

Fratres in Facultate.

FRANCIS AMASA WALKER.

ALFRED EDGAR BURTON

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WILLIAM HOWARD BOVEY.
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ARTHUR AUSTIN CLEMENT.
WINTHROP COOLIDGE.
HENRY FILLMORE COPELAND.
THEOPHILUS CLIVE DAVIES.
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WILLIAM EBENEZER HAZELTINE.
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PERCY FARNHAM LAWRENCE.
HORACE MANNING.
REGINALD NORRIS.
WILLIAM CHAPMAN POTTER.
WILLIAM OTIS SAWTELL.
ROBERT KIMBALL SHEPPARD.
JAMES SWETT SMYSER.
AUSTIN SPERRY.
EDWARD AUSTIN TUCKER.
RALPH SPELMAN WHITING.

In Collegio.

THOMAS PELHAM CURTIS.

FREDERICK WALDO BARTLETT.

ROBERT SPURR WESTON.

In Urbe.

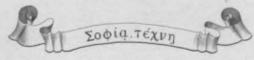
HERBERT WATSON ALDEN.
ROBERT STEELE BALL.
EDMUND ENOS BLAKE.
FREDERIC CHAMBERS BLANCHARD.
SEVERANCE BURRAGE.
ARTHUR GEORGE FARWELL.

WILLIAM STUART FORBES.
GAYLE TILTON FORBUSH.
ARTHUR EDWIN FOWLE.
GEORGE EARNEST MERRILL
LEONARD METCALF.
JAMES SWAN.

GEORGE VINCENT WENDELL.







Severance Burrage. '92

Someon lo With Jr. '93.

Arthur M. Worthington '92

Robert K. Sheppard, '94.

James Swaie: '91

James Switt Smyser. '96.

DELTA [PSILON.

FOUNDED AT WILLIAMS COLLEGE, 1834.

Chapter Roll.

1834.	Williams	$\hat{\mathcal{C}}_{i}$	40								Williamstown, Mass.
1838.	Union	***	×	14.			63	30	30		Schenectady, N. Y.
1847.	Hamilton		2.5	$\tilde{\mathcal{C}}$	17	٠.	100	20	1	12	Clinton, N. Y.
1847.	Amherst	25	100		7.	1	40				Amherst, Mass.
1847	Adelbert		Ψ.		9	1	26	1		0	Cleveland, Ohio.
1852.	Colby						16				Waterville, Me.
1852.	Rochester										Rochester, N. Y.
1856.	Middlebury	7									Middlebury, Vt.
1857.	Bowdoin										Brunswick, Me.
1858.	Rutgers		*			2.0					New Brunswick, N. J.
1860.	Brown			140				*:			Providence, R. I.
1865.	Colgate				- 4						Hamilton, N. Y.
1865.	New York		20				4		*	4	New York City.
1869.	Cornell					154			100		Ithaca, N. Y.
1870.	Marietta					- 1					Marietta, Ohio.
1873.	Syracuse	2	2			12.0				12	Syracuse, N. Y.
1876.	Michigan						0.00				Ann Arbor, Mich.
1880.	Northweste	ern		100	1			90		12	Evanston, Ill.
1880.	Harvard							-			Cambridge, Mass.
1885.	Wisconsin										Madison, Wis.
1885.	Lafayette								-		Easton, Penn.
1885.	Columbia							- 207 - 100			New York City.
1885.	Lehigh	***				0.00	14	W.D.			South Bethlehem, Penn.
1886.	Tufts .	1000	**		100		100				West Somerville, Mass.
1887.	De Pauw	#5			14	- 0					Greencastle, Ind.
1888.	Pennsylvar	nia				34		40		-	Philadelphia, Penn.
1890.	Minnesota										Minneapolis, Minn.
1891.	Technology	v			4	100	101				Boston, Mass.
	0.										

DELTA (PSILON.

TECHNOLOGY CHAPTER.

ESTABLISHED 1891.

In Facultate.

FRANK VOGEL.

Members.

HARRY REYBURN BATES.
JOSEPH WARD CLARY.
FREDERICK EDWARD COX.
HORACE ALLEN CRARY.
ALFRED KIMBALL DOWNES.
CHARLES WARREN HAPGOOD.
HERBERT EDMUND HEWITT.
HENRY ATKINSON HOLDREGE.
ETHAN HENRY HOWARD.
ALBERT LINCOLN KENDALL.
MAURICE LE BOSQUET.

WALTER ELBRIDGE PIPER.
RICHARD WARREN PROCTOR.
THOMAS GLEASON RICHARDS.
DONALD CLEVELAND SCOFFIELD.
WALTER OSGOOD SCOTT.
EDWARD ALLEYNE SUMNER, JR.
ALBERT BALL TENNEY.
JOSEPH EARLSTON THROPP, JR.
KENNETH FOSTER WOOD.
LUTHER KELLER YODER.
HENRY YOERG.

ALFRED EDWARD ZAPF.

In Arbe.

FRANK VOGEL.
LOUIS DERR.
EDWARD CASTLE WELLS.
EDWARD HUGER JAMESON.
JOSHUA ATWOOD, 3D.

WILIFRED AMERTON CLAPP.
WILLIAM CORTELYON WHISTON.
WILLIS TAYLOR KNOWLTON.
JAMES RUSSELL WELLS.
FRANK CUMMINGS SHEPHERD.

Win Spences Hut Chinson Kenneth Fister Wood. About Back Danney,



Transferor Tills (Ave.

Harry R. Bates (alias Old Tubas Cam") Waster E. Piper. H. von Holet Fred. E. Cox. Marriel Le Boquet. albert L. Hendall.

PHI BETH EPSILON.

FOUNDED 1890.

LOCAL AT TECHNOLOGY.

Gel America. '95 Course IV.

Raymond Brektrice, Course IV.

SIGMA ALPHA EPSILON.

FOUNDED IN 1856, AT ALABAMA STATE UNIVERSITY, TUSCALOOSA, ALABAMA.

Chapter Roll.

Mass. Beta Upsilor
Mass. Iota Tau.
Mass, Gamma,
Conn. Alpha.
Penn. Omega.
Penn. Sigma Phi.
Penn. Alpha Zeta.
Penn. Omega. Penn. Sigma Phi. Penn. Alpha Zeta. Penn. Delta.
renn. Zeta.
Va. Omicron.
Va. Sigma.
Va. Sigma, N. C. Xi. N. C. Theta. S. C. Delta, S. C. Phi. S. C. Gamma. S. C. Mu.
N. C. Theta.
S. C. Delta.
S. C. Phi.
S. C. Gamma.
S. C. Mu.
Ga. Psi. Ga. Epsilon. Ga. Phi.
Ga. Epsilon.
Ga. Phi.
Mich. Iota Beta.
Mich. Alpha.
Ohio Sigma.
Ohio Delta. Ohio Epsilon
Ohio Epstion
Ohio Theta.
Ind. Alpha. Ind. Beta.
V. Vanna
Ky. Kappa. Ky. Iota.
Tenn Zeta
Tenn. Zeta Tenn. Lambda. Tenn. Nu. Tenn. Kappa. Tenn. Omega. Tenn. Eta.
Tenn Nu
Tenn. Kanna.
Tenn. Omega.
Tenn. Eta.
Ala Mili.
Ala. Iota.
Ala. Alpha Mu.
Miss. Gamma.
Ia. Sigma.
Mo. Alpha.
Mo. Beta.
Neb. Lambda Pi.
Texas Rho.
Col. Chi.
Col. Zeta.
Cal. Alpha.
Part 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10

Boston University			
Massachusetts Institut	e of	Tec	hnole
Harvard University			
Trinity College .	100		
Cornell University			
Alleghany College		10	2.
Dickinson College			
Penn. State College	20		100
Pennsylvania College			
Bucknell University			88
University of Virginia			
Washington and Lee U	Iniv	ereit	
University of North C	anal	ina	
Davidson College	aro	iiia.	
South Carolina College	re.		
Furman University			3.5
Wofford College .	*		
Erskine College .			
University of Georgia			
Mercer University			
Emory College . Georgia School of Teo			
Georgia School of Teo	chno	ology	
University of Michiga	n		
Adrian College .			
Mt. Union College			
Ohio Wesleyan Univer	rsity		
University of Cincinna	ati		
Ohio State University			
Franklin College .	٥,	-	
Purdue University		18	- 10 -
Central University			
Bethel College .			
Southwestern Presbyt	- dela	n II-	inana
		n Un	ivers
Cumberland Universit	y		
Vanderbilt University		1	114
University of Tenness University of the Sout	ee	1.5	
University of the Sout	th	Э.	
Southwestern Baptist	Uni	versi	ty
University of Alabama	a	- 4	
Southern University		1	
Alabama A. and M. C	olle	ge	
University of Mississip	ppi		
Simpson College		0.0	
University of Missour	1		
Washington Universit	v	13	115
University of Nebrask	9	10	30
University of Texas			
University of Texas University of Colorad	lo	85	2.0
University of Desum	10		
University of Denver Leland Stanford, Jr.,	Tm.		
Leiand Stanford, Jr.,	Unity	ersi	1

. Boston, Mass. ogy Boston, Mass. Cambridge, Mass. Hartford, Conn. Ithaca, N. Y. Meadville, Penn. Carlisle, Penn. State College, Penn. Gettysburg, Penn. Louisburg, Penn. Charlottesville, Va. Lexington, Va. Chapel Hill, N. C. Davidson, N. C. Columbia, S. C. Greenville, S. C. Spartanburg, S. C. Due West, S. C. Athens, Ga. Macon, Ga. Oxford, Ga. Altanta, Ga. Ann Arbor, Mich. Adrain, Mich. Alliance, Ohio. Delaware, Ohio. Cincinnati, Ohio. Columbus, Ohio. Franklin, Ind. Lafayette, Ind. Richmond, Ky. Russelville, Ky. sity Clarksville, Tenn. Lebanon, Tenn. Nashville, Tenn. Knoxville, Tenn. Sewanee, Tenn. Jacksonville, Tenn. Tuscaloosa, Ala. Greenboro, Ala. Auburn, Ala. Oxford, Miss. Indianola, Iowa. Columbus, Mo. St. Louis, Mo. Lincoln, Neb. Austin, Texas. Boulder, Col. Denver, Col. Palo Alto, Cal.

Chester H. Drake.

SIGMA ALPHA EPSILON.

MASSACHUSETTS IOTA TAU CHAPTER.

ESTABLISHED NOVEMBER 25, 1892.

Members.

ERNEST FRANKLIN BADGER.
WALLACE CLARKE BRACKETT,
FRANK BIRD MASTERS.
SILAS ANTHONY SAVAGE.
ALBERT WESLEY DRAKE.
JOHN THOMPSON DORRANCE.
HERMAN HORMEL.
MYRON EVERETT PIERCE.

ROBERT SIDNEY WASON.
ARTHUR HENRY CLARK.
WINSLOW ABBOT WILSON.
RUSSELL SAMUEL BUCHER.
STEPHEN DOW CRANE.
CHESTER FRANCIS DRAKE.
FLOYDE FRAZIER.
ROBERT JOHNSTON.

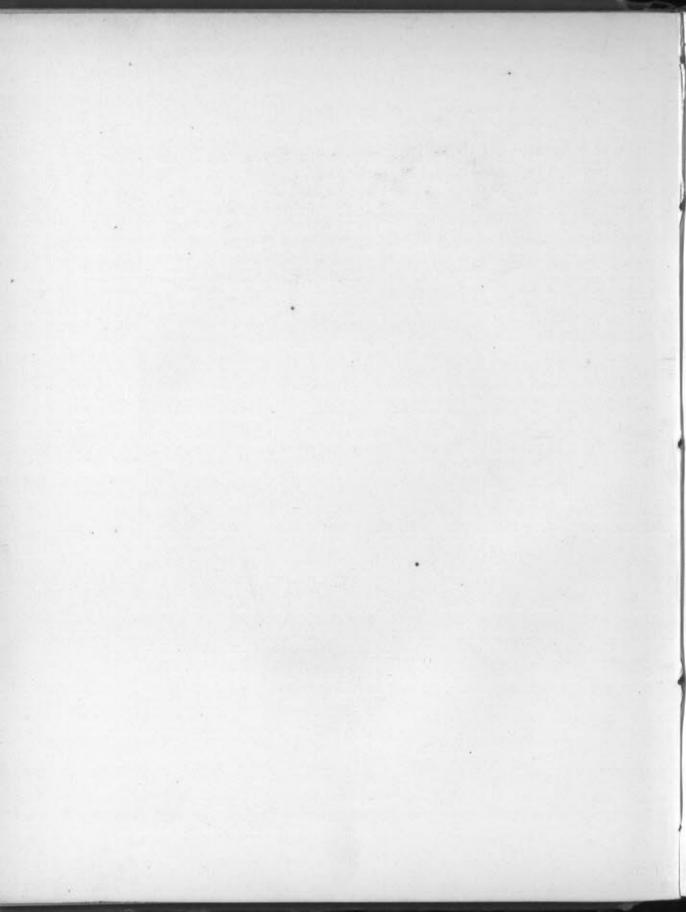
In Collegio.

L. L. LAMBORN.

In Urbe.

HAROLD CHASE BUCKMINSTER. WILLIAM WYMAN CROSBY. HERBERT NATHAN DAWES. WALTER ROBERT PHEMISTER.
ALBERT RICHARD BEDDALL.
HARRY GABRIEL HAMLET.







			PSI	UPS	SILO	N.		
WILLIAM E. SWIFT .								Amherst College.
F. M. MANN		-						University of Minnesota.
JAMES K. MORGAN .			21					University of Michigan.
		PH	I DE	LTA	TH	ETA		
DWIGHT N. MARBLE		300						Centre College.
F. P. BLAKE								University of the South.
E. BELL CROCKETT .								Vanderbilt University.
		AL	PHA	TA	U 01	MEGA	٨.	
WILLIAM H. JOHNSTON					,			University of the South.
CHARLES E. LAWRENCE	. 3		-					College of Charleston.
		В	ETA	TH	ETA	PI.		
JOHN L. NISBET .	10	*						University of Virginia.
CONRAD H. YOUNG .	(6.)	*		*				Wooster University.
		TH	ETA	DE	LTA	CH		
EDWIN F. HICKS .								Columbia College.
PARKER C. NEWBEGIN	(*)		*					Bowdoin College.
		AL	PHA	DE	LTA	PH		- 21 ST ON ACT IN TALKS A DISTANCE
HARRISON S. TAFT .		*				*		Brown University.
			DE	LTA	PH	1.		
GUY LOWELL		*					*	Harvard University.
	1	(AP	PA	KAP	PA	KAP	PA.	
SAMUEL P. HUNT .								Dartmouth College.
			Н	KAP	PA	PSI.		
SAMUEL S. SADTLER								University of Pennsylvania.
		DE	LTA	TA	U D	ELT	Α.	
HERBERT W. CHAMBER	RLAIN							Iowa State College.
			SI	GMA	PH	1.		
P. B. NASH	• 3	*						Hobart College.



Sigma Chi											1	1		16	Members
Theta Xi	,							,						16	**
Delta Psi	ĕ,	\mathbf{x}						*						23	64
Chi Phi	2									3.	- 4			23	-44
Delta Kapp	a E	psilo	n.		3.60					100				26	11
Delta Upsil	on		4	1		1			¥			7		23	44
Phi Beta E	psile	on	12			50				0.0	- 55	*		29	14
Sigma Alpl	ha E	Epsilo	n	100			*		.9		100	4.1	1	17	**
Total	1		2						á					173	
Other Frate	erni	ties F	Repre	sente	ed.	66								18	**
Total		- 02				7.5		1						101	44



K2 S.

Officers.

President.
HORATIO NEWTON PARKER, '94.

Vice President.

Angus Robert Mackay, '94.

Secretary.
Leslie Rogers Moore, '94.

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SAMUEL LAWRENCE BIGELOW, '95.

BRADLEY STOUGHTON, '95.

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WILLIAM HOOPER JOHNSTON, '95.

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Francis Polk Blake, '95.

John Francis Murphy, '95.

Joseph Edward Walworth. '95.

Willard Haskell Walkins, '95.

Robert Johnston, '96.

Stephen De Meritte Gage, '96.

Franklin Hayes Davis, '96.

Francis Melvin Conant, '96.

Leonard Harrington Goodhue, '96.

William Ebenezer Haseltine, '96.

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Bonorary Members.

DR. THOMAS M. DROWN. PROF. THOMAS E. POPE. DR. HENRY P. TALBOT. WILLIAM S. DAVENPORT.



Denku Jäkile.

Horatio Mewton Parker.

Augus R. Mackay.

Hung R. Betcheller,

Brujanin Hady.

Sam! S. Sadther.

Ferdinand A. Schiertz.

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Officers.

Chief.

H. W. ALLEN.

Chief's Daughter. W. C. Potter. Medicine Man. Walter Page.

F. E. Bragg.

Council of War. D. J. Spence.

G. M. LANE,

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W. H. CLIFFORD, JR.

P. K. CROCKER.

R. D. FLOOD.

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R. S. HOWLAND, JR.

B. HURD, JR.

C. G. HYDE.

M. H. McGann.

J. A. ROCKWELL, JR.

A. LEB. RUSSELL.

D. J. SPENCE.

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W. BANCROFT.

C. W. BRADLEE.

F. E. BRAGG.

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J. S. Humphreys.

J. P. ILSLEY.

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W. PAGE.

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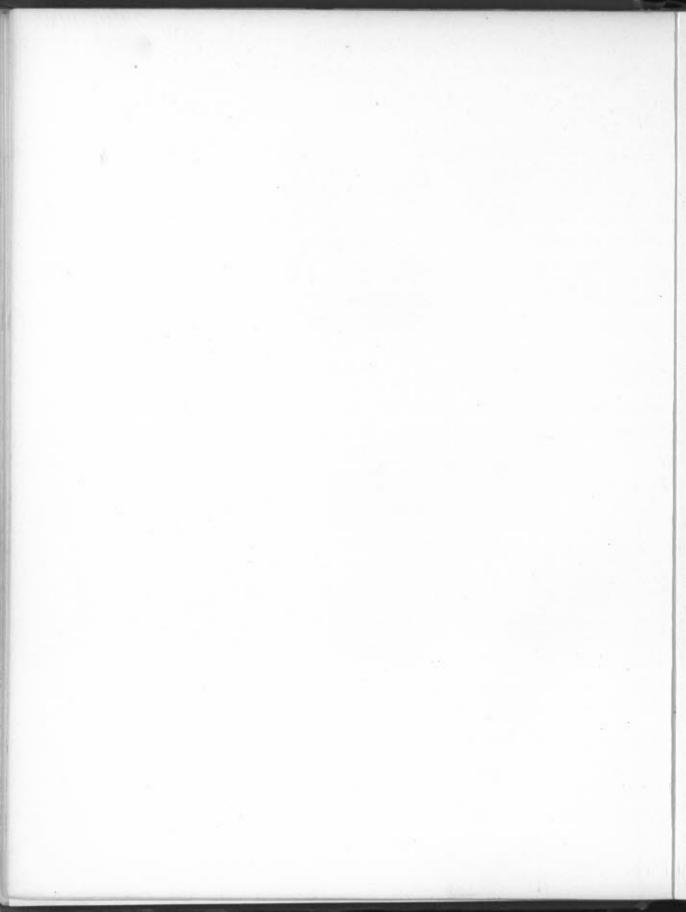
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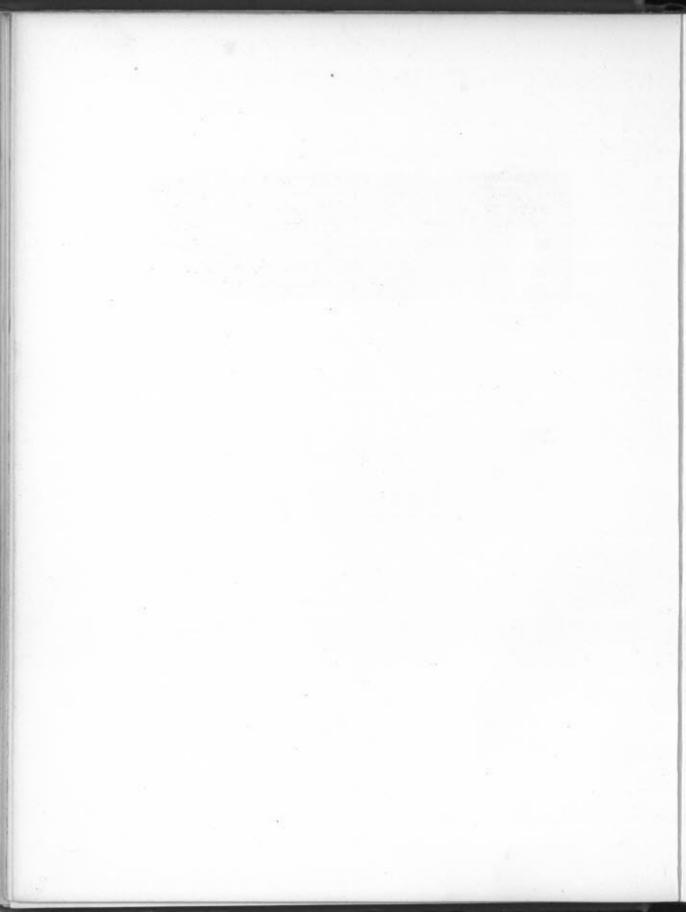
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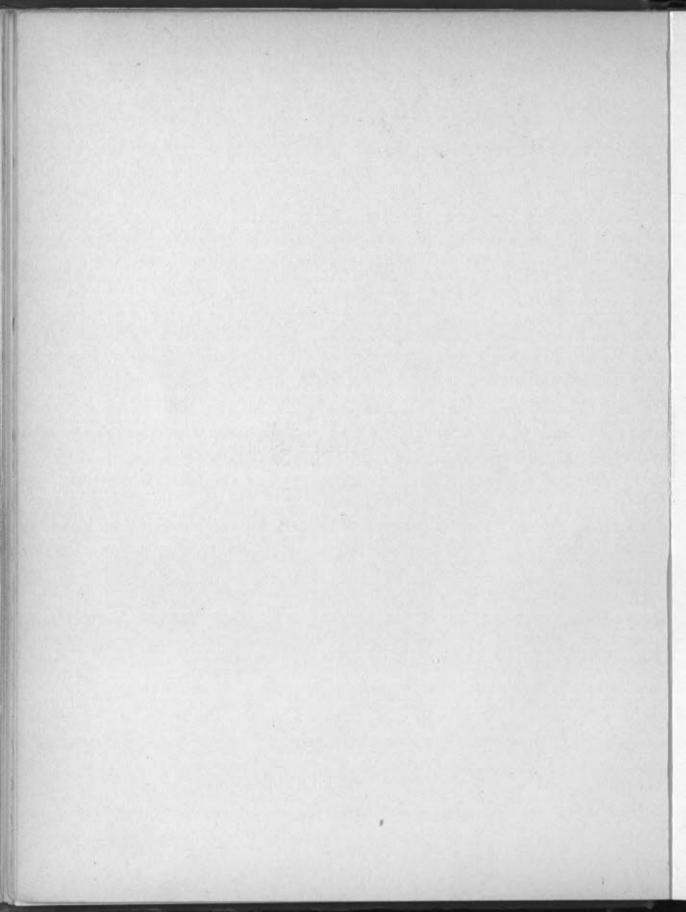
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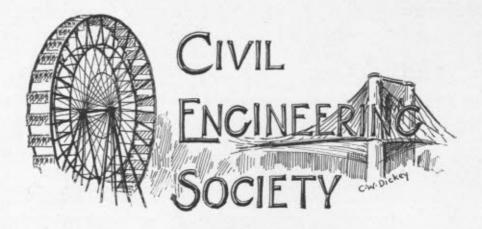
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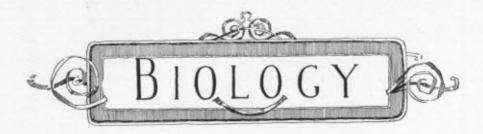
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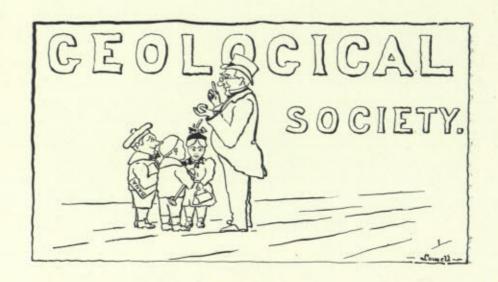
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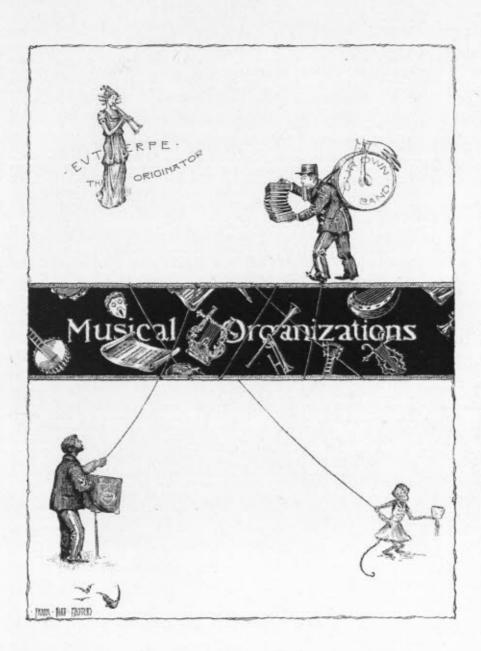
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CONRAD HENRY YOUNG, '96.

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ELEANOR: "How is Jack progressing at Tech?"

ETHELWINNE: "Oh! finely. You know he has practiced Mining Engineering before."

ELEANOR: "No! Really?"

ETHELWINNE: "Yes; he has often worked a bluff."





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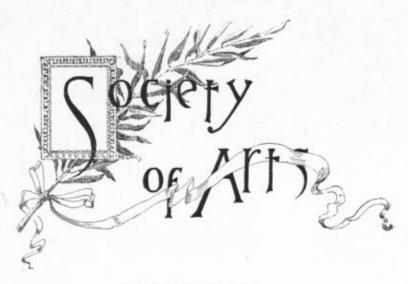
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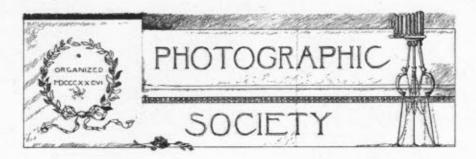
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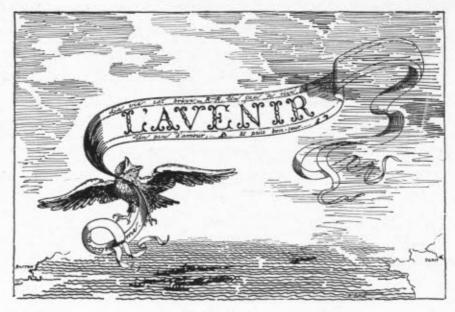
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R. E. BAKENHUS.

Programme Husschuss.

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PIERCE HALL, APRIL 4, 1893.

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MRS. WILLIAM B. ROGERS.

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MAY 28, 1893, TRINITY CHURCH.

BACCALAUREATE SERMON BY DR. DONALD.

Class=Day Committee.

First Marshal.
CHARLES WILSON TAINTOR.

Second Marshal.
Frederic Nathan Dillon.

Third Marshal.

MARVINE GORHAM.

HERBERT WATSON ALDEN.

ROY HAMILTON BEATTIE.

ALBERT FARWELL BEMIS.

George Knight Dearborn.

Laurence Belmont Dixon.

THEODORE TAYLOR DORMAN.

FRANCIS WRIGHT FABYAN.

FREDERIC HAROLD FAY.

CHARLES LADD NORTON.

FREDERIC POND SIMONDS.

MAY 29, 1893, HUNTINGTON HALL.

Programme.

Overture							1.50	80		*	Orchestra.
Address i	by th	e P	reside	ent o	f the	Cla.	55				ALBERT FARWELL BEMIS.
History	4			*1							WILLIAM GABRIEL HOUCK.
Oration		(*)		100	19		- 63		,		. Edmund Enos Blake.
Music	39		2			0.4	- 63	43	1		TECHNOLOGY BANJO CLUB.
Poem		10	,	100	13.		100	,		H	AROLD ANTHONY RICHMOND.
Statistics				2	97		43		0	54	PERCY HOLBROOK THOMAS.
Music	100		27			1.5	2	7		1	TECHNOLOGY BANJO CLUB.
Prophecy	7.1			32		200	2.7			3.	. HENRY ADAMS MORSS.
Music			4				2				Orchestra.

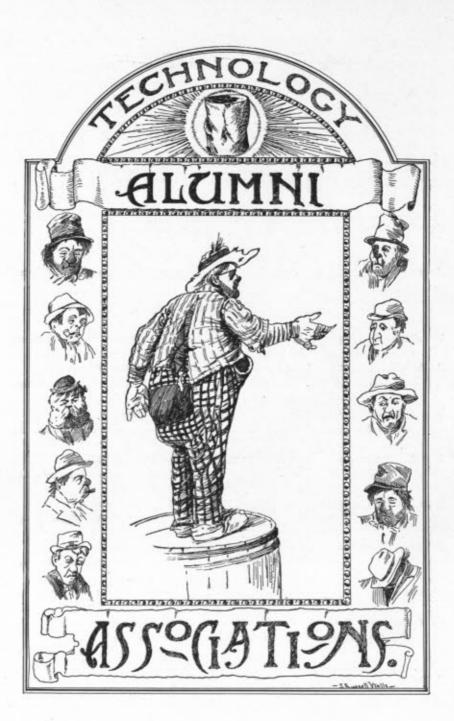
MAY 29, 1893, PIERCE HALL.

EVENING RECEPTION.



MAY 30, 1893, HUNTINGTON HALL.

Address President Francis A. Walker.
Reading of Abstracts of Theses.
The Amalgamation of a Nova Scotia Gold Ore Frank Sidney Badger.
An Investigation of the Volatile Compounds formed by the Solution of Ferro-
manganese in Acid Fred Bettinson Forbes.
The Effect of Different Methods of Producing Aniline Blacks upon the
Tensile Strength of Cotton Cloth John Fred Hinckley.
Test of a Dynamo and Storage Battery Plant used for House Illumination
by Electricity Warren Dudley King.
Experiments on the Application of Brakes to the Truck of a Locomotive,
John Wood Logan.
The Drift Formation of a Part of Wellesley and Cochituate,
HENRY WINDSOR NICHOLS.
Stresses in Headers Frank Douglas Richardson,
An Investigation into the Variation of Velocity in the Cross Section of a
Stream of Water Flowing under Pressure through a Pipe,
KILBURN SMITH SWEET.
A Study of a 500-light Thomson-Houston Alternating Current Dynamo,
Samuel Edgar Whitaker.



ALUMHI ASSOCIATION.

Organized March 17, 1875.

INCLUDES IN ITS MEMBERSHIP ALL GRADUATES OF THE INSTITUTE.

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JAMES P. MUNROE, '82.

Vice President. Samuel J. Mixter, '75. Secretary.

H. W. TYLER, '84.

Executive Committee.

JAMES P. MUNROE, '82.

Samuel J. Mixter, '75. Arthur T. Bradlee, '88. H. W. Tyler, '84. George J. Foran, '83.

NORTHWESTERN ALUMNI ASSOCIATION.

Organized February 12, 1887.

President.

FREDERICK GREELEY, '76.

First Vice President. Frank Dabney, '75. Second Vice President. Frederick W. Clark, '80.

Secretary and Treasurer.

SOLOMON STURGIS, '87, 563 "The Rookery," Chicago, Ill.

WESTERN ALUMNI ASSOCIATION.

Organized June 2, 1891.

President.

EDWARD W. ROLLINS, '71.

Vice President.

Theodore E. Schwarz, '76.

Secretary and Treasurer. FRANK E. SHEPARD, '87, 1622 Arapahoe Street, Denver, Col.



HE JUNIOR DINNER.

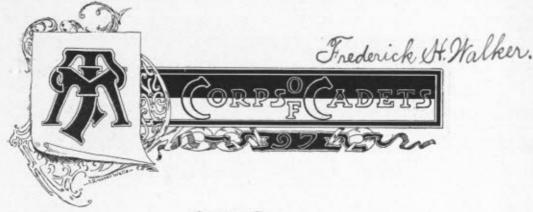
ARTHUR LAKE CANFIELD,

Toastmaster.

"A dinner lubricates business."

OLD ROGERS .									En	WARI	H	LEY	HUXLEY
	47	'here's	nothi	ing ill	can d	well i	in su	ch a	temple	.**			
TECHNIQUE .								Сна	RLES	Fost	TER	TILLI	NGHAST
		"77	it's la	ast edi	tion is	now	i' tì	' pre	88."				
THE GYM									Јама	es W	INTH	ROP '	THOMAS
		By spo The sp								'd:			
TECHNOLOGY AT	THE I	FAIR							An	DREW	DA	NIEL	FULLER
			City	of var dumne of sor	d, and	tropl of st	hied, tory-		white:				
Solo									F	RANK	CUE	TIS S	сницти
	** 5	Soft we	ords w	rith no	thing	in the	em n	nake	a song	.**			
Course XIII.							R	ICHA	RD G	BRI	INSL	EY SE	IERIDAN
		**]	Deeper	r than	e'er p	lumm	et so	unde	1."				
TECH As I HAV	E Four	ND IT			,						GE	RARD	SWOPE
	"There's	s not a	joy t	he wo	rld ca	n give	e like	e that	it tak	es awa	y."		
ON THE BICYCL	Е.						¥	W	LTER	CAR	PEN	TER N	TARMON
		"No p							rs, yours.	n			
Banjo Solo ,				7		5	2	GEO	RGE I	REDE	ERIC	SHEP	ard, Jr
		What	passi	ion car	nnot n	rusick	rais	e and	quell	***		- 5	
Co-Education									J	они Ј	J. C	OLVIN	Wolfe
				hat wi					lie."				
THE FINANCIAL	DEPRE	ession	N						L	UTHER	R KE	LLER	Yoder
T' "	is my vo	cation	, Hal;	'tis n	o sin	for a	man	to fo	llow h	is voci	ation.	"	





Company H.

Captain.

W. HUMPHREYS.

Licutenants.

J. W. Tewksbury.

Company 16.

Captain.

G. H. PRATT.

Lieutenants.

Eleutenants.

C. W. FRAZIER.

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Captain.

H. W. ALLEN.

Lieutenants.

W. PAGE.

C. N. HASKINS.

R. F. HOSFORD.

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Adjutant.

A. I. FRANKLIN.

Bergeant Major.

E. R. OLIN.



Civil Engineering.

The summer school in Topography, Geodesy, and Geology was held during the month of June, near Keeseville, N. Y., in the northern part of the Adirondack region. Twenty-two students attended, twenty of whom were from the Junior Class, being more than one half the total number of students in the class. The work, which was of an extremely varied character, was conducted by Professors Burton, Porter, and Niles, and by Messrs. Robbins and Campbell. The location being an especially favorable one for almost all branches of the work, the school was in every respect the most successful that has been held so far, and probably the same region will be selected for the school this summer. As an inducement to all properly qualified students who wish to take advantage of this excellent chance for practical work, no tuition is charged. The sole expense during the four weeks for board, traveling expenses, etc., does not exceed fifty dollars for each student.

Metallurgy.

Following the fashion of the summer, the School of Metallurgy for 1893 was held in Chicago, twelve men from the three upper classes availing themselves of the unusual advantages offered. During the two weeks that the school was in session, the students devoted Mondays, Wednesdays, and Fridays to metallurgical work; during the other days students were free to visit the Fair or other places, as each one desired.

In the course of the metallurgical work, lead, copper and silver refining plants, steel works, blast furnace plants and iron foundries were visited, each student being assigned a certain feature to investigate. At the end of the day the students assembled and discussed with Professors Richards and Hofman the reports of each student. The value of such a proceeding as a supplement to the year's work at the Institute, especially for the Seniors and Juniors, is readily seen.

The summer schools of Metallurgy and Mining take place in alternate years; Cape Breton being the place selected for the Mining School for 1894.



PROF. E. B. HOMER.

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D. P. HART.
H. E. HEWITT.
MISS MAHONY.

H. L. Newhouse.

A. OWEN.

C. A. PHILLIPS.
S. F. ROSENHEIM.
E. P. SCHOENTGEN.
D. C. SCOFIELD.

A. E. ZAPF.

For several years the Department of Architecture has felt the need of more time to devote to out-of-door sketching; but for many reasons, the chief among which being the limited amount of interesting subjects within easy reach, it has been impossible, up to the past summer, to realize the hope of establishing a summer school for students of Course IV. Late in the last term of '92-'93, Professor Homer conceived the idea of uniting into a class for systematic sketching those members of the department who anticipated spending part of their vacation at the World's Fair. The matter was put before the students, but its tardiness prevented many from availing themselves of the opportunity.

The class met in Chicago about the middle of June, and boldly started to work on the classic details of the Court of Honor. Soon, one by one, we were obliged to confess our weakness, and began to roam in search of the picturesque. The German buildings, the Convent of La Rabida, the California building, and afterwards the Administration, Liberal Arts, Fine Arts, and others were all in turn treated, and as we worked we had the satisfaction of observing the proportional increase of skill. Of course, one must consider the attractions that beset us on all sides,—the Midway, the camel rides, etc., etc.

However, of an evening, gathered about the large table at our rendezvous, with the productions of the day before us, and with the working drawings of the several buildings, that had been kindly supplied by the architects, upon the walls, many ideas were exchanged, and the advice and criticism of Professor Homer tended to plant the seeds of an art that we hope will one day grow within us into a vigorous life, productive of great results.

Quebec will be the scene of labor for the Architectural Summer School of the coming vacation. Its picturesque old buildings are the nearest we can come in this part of the country to those of Europe.



The M. II. T. Christian Union.

Committee.

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Frederick A. Hannah, '95.
WILLIAM C. EWING, '96.

GEORGE I. FISKE, '97.

The objects of the Society are to aid the students in living a Christian life, and to bring them into a warmer and more helpful fellowship.

Fifteen-minute prayer meetings, led by men from the different classes in turn, are held every Tuesday, at 1.50 P. M., in Room 27, Rogers.



Chairman.

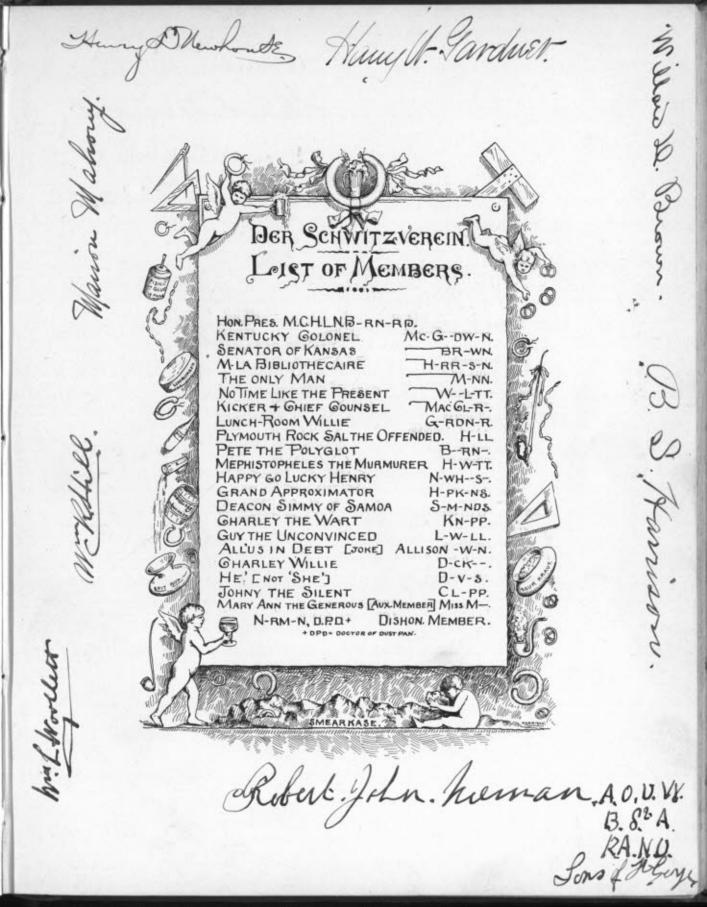
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CHARLES WILLIAM BERRY .							Course VI.
John Boedeker							Course VI.
Edgar Augustus Boeseke .							Course II.
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ARTHUR LAKE CANFIELD							Course II.
LUTHER CONANT, JR		40					Course IX.
FRANCIS EDWIN FAXON							Course II.
MILTON LATHROP FISH		X3		94	174		Course VI.
Andrew Daniel Fuller, 4. B. E						100	Course I.
GEORGE WELLINGTON HAYDEN,	b. B.	E			9.		Course VI.
FREDERICK KLEINSCHMIDT .				-	-	127	Course VI.
FRANK BIRD MASTERS, Σ. A. E.							Course II.
GERARD HENDRIK MATTHES .							Course I.
John Denis Joseph Moore .							Course II.
Franklin Atwood Park							Course II.
Waler Josiah Rickey							Course II.
LOUIS KEEGAN ROURKE	23					O.B.	Course I.
SAMUEL SCHUMEKER SADTLER .							Course V.
FRANK CURTIS SCHMITZ	(4)						Course I.
EDWARD PHILIPP SCHOENTGEN	- 0				3		Course IV.
WILLARD HASKELL WATKINS .	2.0						Course V.
THOMAS HOLLIS WIGGIN		100	\$1			100	Course I.
LUTHER KELLER YODER, A. Y.			Ų:		1.4		Course II.





Charles I Phillips Grand Purphitant It Elmer L. Wingsen



bigb Muckamuck. C. A. PHILLIPS.

Hesistant Muckamucks.

ABDULLA PARKER.

TUM TOM THOMAS.

BUM BUM NICHOLS.

Chief Snoozer.
A. F. SHUMOCKS.

DR. HART. *

Ink Grinder to the Club.
J. C. HOPKINS.

Committee on Music. W. D. PARKER. J. W. AMES.

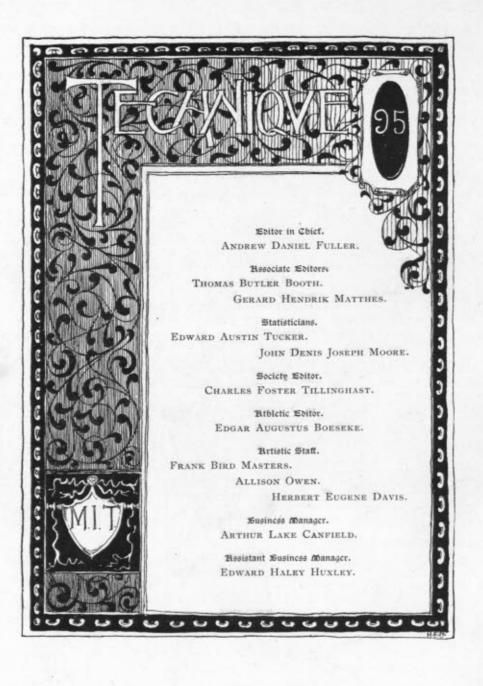
Undertaker, WENGOEN. †



* Office hours, 12-1 A. M. † Office hours, 1-2 A. M.

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Robert Hoking. Thomas G. Richards 94 Harry W. Brown "Fridays" John Taylor 47. } One Bowl.
There spoones. 100 W. B. Taylor 195. George Taylor. 194. L. a. Cary. 96. R. E. Hallander '96. Med Field 90 albert J. Lymb 94-96 asimulachem 96 Cliflon A. Howes, 1890 - 94. Marciso Tadeo Luevedo 94 Jacob Strader 1

Charl Omyser.



Published every Thursday, during the College Year, by Students of the Massachusetts Institute of Technology.

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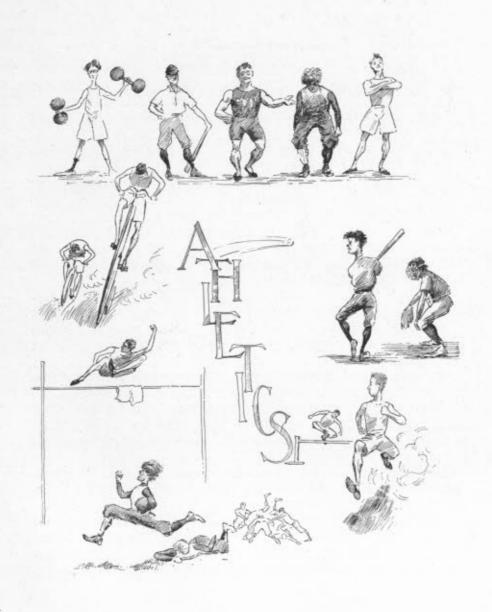
HENRY M. HOWE.

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CLEMENT W. ANDREWS.

The Technology Quarterly was originally founded as a scientific-engineering magazine, edited by members of the Senior and Junior classes, and as such was published for two years. The idea, however, of a journal representative of the professional work at the Institute was deemed of sufficient value to warrant more attention and care than could be given by a temporary Board of Editors, and so it passed into the hands of a Board composed of members of the Faculty, James P. Monroe, at that time Secretary of the Institute, having direct charge of the publication. In 1892 the importance of the Quarterly was further increased by a vote of the Society of Arts to combine with it their own scientific papers, thus making it a scientific journal of a high order, covering all branches of Institute work.



EDITORIAL.



HE reader will find the few pages allotted to this department devoted to the events which pertain strictly to Athletics at Technology. During the past year a greater amount of feeling and rivalry than heretofore has been manifested in general athletics, and this has had a tendency to revive and increase the interest of the students as a whole. The Class Team Race last year did much in this

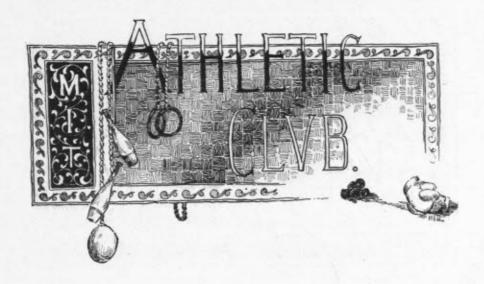
respect, for in it was evinced the greatest display of rivalry, and it showed well what strong efforts had been made by the different classes to put forth their best material in this short struggle for supremacy.

Each year sees more material developed at Technology, and each succeeding year we find some old records broken and raised nearer the limit set by the larger colleges; but the past year has been almost phenomenal in this respect, as a comparison of the present records with those of last year will show.

It has been found necessary to unite under a common head the various branches of athletics, in order that, by combined effort, better results may be obtained. This has been accomplished by forming, what has been rather ambiguously named, The Track Athletic Team, which consists only of the best athletes, and which has for its object the furtherance of the athletic interests of Technology.

Numerous Course Foot Ball Teams were formed, and deserve hearty commendation; but in spite of this fact our 'Varsity Team suffered several defeats, due to the inefficiency of material from which to choose a stronger team.

With the special notice of physical training on the tabular views, and the good will shown by many of the Faculty, wonderful strides in athletics, and the day when Technology will stand, in some events at least, on an equal footing with the larger colleges, may be prophesied for the near future.



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Vice President.

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F. W. LORD, '94, Captain.

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- Е. А. Воеѕеке, '95.

Track Team.

- E. L. Andrews, '94.
- T. P. Curtis, '94.
- F. W. LORD, '94.
- G. OWEN, JR., '94.
- G. CLAPP, '95
- W. C. MARMON, '95.
- R. D. FARQUHAR, '95.
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C. H. PARKER, '95.

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J. P. ILSLEY, '97.

- E. A. Boeseke, '95.
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- W. J. Batchelder, '96.
- J. A. Rockwell, '96.
- H. S. GILMAN, '96.
- L. Burnett, '96.
- J. Driscoll, '96.

NEW ENGLAND HAMPIONSHIP

HELD BY

M. I. T. Athletic Club and First Regiment Athletic Club.

SOUTH ARMORY, MARCH 11, 1893.

75-Yard Dash 8 s S. A. Coombs, B. A. A.	
Team Race, Worcester Athletic Club vs. Suffolk	
Athletic Club 3 m. 20 s Won by W. A. C.	
Half Mile Heavy Marching Order . 2 m. 303 s C. A. POLAND, Second Reg	t.
1000-Yard Match, W. J. Batchelder, M. I. T. A. C. vs.	
F. Rowe, S. A. C 2 m. 29\frac{2}{5} s W. J. BATCHELDER.	
One-Mile Run 4 m. 422 s D. W. FENTON, H. A. A.	
70-Yard Hurdle 9 % s O. W. Shead, H. A. A.	
1000-Yard Run 2 m. 24g s H. L. DADMUN, W. A. C.	
One-Mile Walk 7 m. 10 s W. F. MARSTON, G. A. C.	
M. I. T. Class Team Race '95 first; '93 second.	
First Regiment Mile Run 5 m. 32 s G. H. Hodgkins, First Reg	t.
Running High Jump 6 ft. 1 in G. R. FEARING, H. A. A.	
boo-Yard Run S. A. Coombs, B. A. A.	
Pole Vault 10 ft. 3 in W. W. HOYT, R. L. S.	

HANUAL OUTDOOR SPRING MEETING.

HOLMES FIELD, MAY 2, 1893.

F. C. Hersey, 'o6: T. P. Curtis, 'o4. second.	B. Hurd, Jr., '96; A. C. Jones, '95, second.	A. C. Jones, '95; C. W. TAINTOR, '93, second.	W. J. BATCHELDER, '95; C. F. TILLINGHAST, '95, second.	G. CLAPP, '95; P. H. THOMAS, '93, second.	В. Никр, Јк., '96; F. W. Lokb, '93, second.	B. HURD, JR., '96; E. L. ANDREWS, '93, second.	W. C. MARMON, '95; G. OWEN, JR., '94, second.	J. Driscoll, '96; T. P. Curtis, '94, second.	F. H. HARVEY, '93; C. H. PARKER, '95, second.
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							Safety)	· 4n	(16 16:
						. 9	le (Ju	mer
Dash	Dask	Dash	Run	Run	Hurd	Hurd	Bicyc	Broad	Ham
100-Yard Dash	220-Yard Dash	440-Yard Dash	Half-Mile Run	One-Mile Run	120-Yard Hurdle	220-Yard Hurdle	Two-Mile Bicycle (Safety)	Running Broad Jump .	Throwing Hammer (16 lbs.)

* Record,

'93 won 19 points. '95 won 35 points. '94 won 13 points. '96 won 31 points.

HIRTEENTH INDOOR WINTER MEETING.

DECEMBER 9, 1893.

									rds.	* Not allowed as records,	* Not al
R. E. BAKENHUS, '96; W. S. COBURN, '97, second.				6§ s.			2	*		6 (20 ft.)	Rope Climb (20 ft.)
Е. А. Воеѕеке. '95; R. D. FARQUHAR, '95, second.		×	u	6 ft. 4 in.				*	*		Fence Vault .
H. S. GILMAN, '95; L. BURNETT, '96, second.			in.	32 ft. 83 in.						16. Shot	Putting 16 lb. Shot
J. A. ROCKWELL, 96; A. A. CLEMENT, '94, second.				. *49 8		*	*				Potato Race .
L. BURNETT, '96; H. S. GILMAN, '96, second.		٠	in.	*ro ft. 7½ in.			1.		0	Broad Jum	Standing Broad Jump
R. D. FARQUHAR, '95; A. SPERRY, '94, second.	3		in.	5 ft. 44 in						Tigh Jump	Running High Jump
В. Нивр, JR, '96; F. W. Lorb, '94, second.			٠	55 8.					*	furdle .	35-Yard Hurdle
Е. А. Воеѕеке, '95; F. W. Lord, '94, second.		114		* 4			17	93		ash .	35-Yard Dash

'96 won 33 points,
'97 won 3 points,

'94 won 14 points.
'95 won 21 points.

Summary of Points for the Year 1892=1893.

	'93	'94	'95	'96		'93	'94	'95	'96
35-Yard Dash			3	6	100-Yard Dash		-3	1	5
35-Yard Hurdle	. 1	3		5	220-Yard Dash			3	6
Running High Jump	. 5	3		1	440-Yard Run	3		6	
Standing Broad Jump	. 4			5	Half-Mile Run			9	
Rope Climb			3	6	One-Mile Run	4		5	
Putting Shot			8	I	120-Yard Hurdle	4			7
Fence Vault	. 6		3		220-Yard Hurdle	4			7
Potato Race	. 1			8	Two-Mile Bicycle		3	7	I
Team Race	. 3		5	1	Running Broad Jump	1	3		5
Throwing Hammer.	. 7		4			-	-	_	-
		-	-	-		16	9	31	31
	27	6	26	33		27	6	26	33
						-	-	-	-
						43	15	57	64

Individual Merit Cup for the Pear 1892=1893.

Won by F. W. LORD, with 33 points.

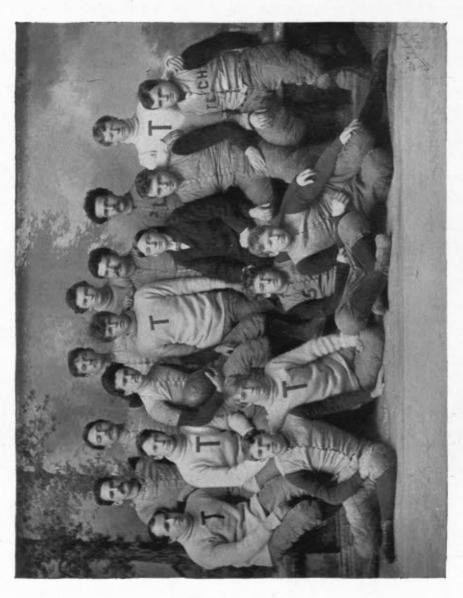
Summary of Points for Individual Merit Cup

For the Pear 1893=1894.

2	2		11	A. A. CLEMENT, '94		1		3
			11	A. Sperry, '94				3
			9	W. S. Coburn, '97	,			3
			8					
				W. B. TAYLOR, '95		7		1
					 	 A. Sperry, '94	A. Sperry, '94	M. S. Coburn, '97

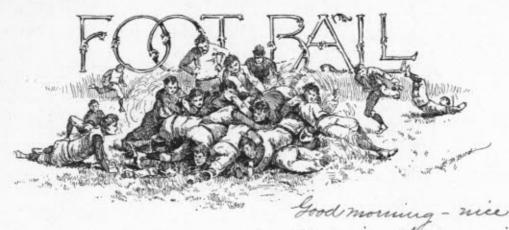
Technology Records.

20-Yard Dash				*1	3 s		F. W. LORD, '93.
50-Yard Dash					5 s		С. Е. Висногz, '93.
100-Yard Dash					10½ s		C. R. Boss, '93.
220-Yard Dash	4		9		235 s		A. FRENCH, '92.
440-Yard Dash					53% s		T. Spencer, '91.
Half-Mile Run					2 m. 6% s.		T. Spencer, '91.
One-Mile Run				50	4 m. 448 s	s	F. A. SARGENT, L. S. of D., '94.
Cross-Country Ru	"				29 m. 52 s	s	G. CLAPP, '95.
120-Yard Hurdle					165 s		B. Hurd, Jr., '96.
220-Yard Hurdle				10	26½ s		B. Hurd, Jr., '96.
One-Mile Walk				6	8 m. 5 % s.		A. H. Alley, '91.
Two-Mile Bicycle					6 m. 12 s		W. C. MARMON, '95.
Running High Ju	mp				6 ft. & in.		С. D. Неуwood, '93.
Standing High J.	ump	,		٧	4 ft. 10 in	h	F. R. Young, '86.
Running Broad J	ump				20 ft. 8å is	n	J. CRANE, JR., '92.
Standing Broad ,	Tump				10 ft. 1§	in.	L. BURNETT, '96.
Running High K	ick				9 ft. 31 in		C. D. HEYWOOD, '93.
Fence Vault .					7 ft. 2 in.		W. F. RIPLEY, '82.
Pole Vault .	,	,		2	10 ft. 7 in		J. CRANE, JR., '92.
Putting Shot (16	lbs.)				36 ft. 21	in.	J. C. E. DE BULLET, '92.
Throwing Hamm	er (1	6 lbs	.)		85 ft. 11	in.	F. H. HARVEY, '93.
Rope Climbing (2	0-f00	t roj	se)		5½ s		H. O. CARRIER, '95.
Three Broad Jun	ps				31 ft. 2 in	1	E. A. Boeseke, '95.



J. L. Newell, T. Washburn, R. S. Whiting, F. E. Underwood, W. J. Mayo, T. P. Curtis, J. P. Simonds, E. L. Andrews, J. W. Thomas, R. W. Swift, J. S. Pechin, E. B. McCornick, J. H. Manahan, W. D. Parker, J. S. Humphreys, F. Osgood, L. A. Hayden.

Varsity Foot Ball Eleven.



Officers.

President.

E. D. CLARKE, '94.

Vice President.
T. P. Curtis, '94.

Assistant Manager.

Secretary-Treasurer.

F. P. SIMONDS, '94.

Manager.
J. S. Pechin, '94.

F. W. Coburn, '96.

Captain.
J. W. Thomas, '95.

Executive Committee.

L. R. NASH, '94.

J. W. THOMAS, '95.

J. A. ROCKWELL, '96.

'Varsity Team.

E. L. Andrews, '94.

T. P. CURTIS, '94.

L. A. HAYDEN, '97.

F. Osgood, '97.

E. D. CLARKE, '94.

J. S. Humphreys, '97.

J. H. Manahan, '96.

F. E. UNDERWOOD, '97.

R. W. SWIFT, '95.

W. J. Mayo, '96.

J. W. Cushing, '95.

J. L. NEWELL, '95.

F. P. SIMONDS, '94.

R. S. WHITING, '96.

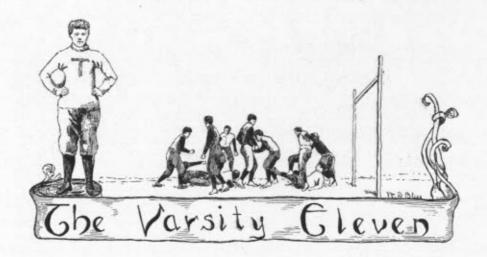
K. S. WHITING, 90

T. Washburn, '97.

E. B. McCormick, '97.

J. A. ROCKWELL, '96.

W. D. PARKER, '97.



Summary of Games.

The order of the players given is left end, left tackle, left guard, center, right guard, right tackle, right end, quarter back, left half back, right half back, and full back.

Cambridge, Mass., October 11th, Harvard vs. Technology. Score: 34-0.

G. Owen, W. J. Mayo, R. S. Whiting, J. H. Manahan, J. W. Cushing, Jr., F. P. Simonds, F. E. Underwood, J. W. Thomas (J. S. Humphreys), T. P. Curtis, E. D. Clarke (J. W. Thomas), E. L. Andrews.

Amherst, Mass., October 14th, Amherst vs. Technology. Score: 14-6.

G. Owen, W. J. Mayo, A. G. Robinson, F. C. Schmitz, R. S. Whiting, F. P. Simonds, J. A. Rockwell, J. W. Thomas, T. P. Curtis, F. Osgood, E. L. Andrews.

Andover, N. H., October 18th, Andover vs. Technology. Score: 10-6.

F. E. Underwood, F. P. Simonds, R. S. Whiting, F. C. Schmitz, J. W. Cushing, W. D. Parker, J. W. Thomas, T. P. Curtis, L. A. Hayden (F Osgood), E. L. Andrews. Game not finished.

Worcester, Mass., October 21st, Worcester P. I. vs. Technology. Score: 0-40.

W. D. Parker, J. W. Cushing, T. Washburn, J. H. Manahan, R. S. Whiting, F. P. Simonds, F. E. Underwood, J. W. Thomas, T. P. Curtis, L. A. Hayden, E. L. Andrews.

Fitchburg, Mass., October 28th, Fitchburg A. C. vs. Technology. Score: 0-26.

W. D. Parker, J. W. Cushing (J. A. Rockwell), T. Washburn, J. H. Manahan (J. W. Cushing), R. S. Whiting, J. L. Newell, F. E. Underwood, J. W. Thomas, T. P. Curtis, L. A. Hayden, E. L. Andrews.

Hartford, Conn., November 1st, Trinity vs. Technology. Score: 12-18.

F. E. Underwood, W. J. Mayo, W. Paige, E. B. McCormick, T. Washburn, W. S. Leland, W. D. Parker, J. W. Thomas, T. P. Curtis, L. A. Hayden, E. L. Andrews.

Boston, Mass., November 4th, Amherst vs. Technology. Score: 12-4.

F. E. Underwood, J. W. Cushing, R. S. Whiting, J. H. Manahan (E. B. McCormick), T. Washburn, W. J. Mayo, W. D. Parker, J. W. Thomas, T. P. Curtis, L. A. Hayden (J. A. Rockwell), E. L. Andrews (T. P. Curtis).

Providence, R. I., November 8th, Brown vs. Technology. Score: 36-0.

F. E. Underwood, J. L. Newell, T. Washburn, J. H. Manahan, A. G. Robinson, J. W. Cushing, W. D. Parker, J. S. Humphreys, T. P. Curtis, J. W. Thomas, E. L. Andrews.

Boston, Mass., November 15th, Trinity vs. Technology. Score: 10-18.

W. D. Parker, J. W. Cushing, T. Washburn, J. H. Manahan, E. B. McCormick, R. S. Whiting, F. E. Underwood, J. W. Thomas, T. P. Curtis, L. A. Hayden, E. L. Andrews.

Boston, Mass., November 18th, Brown vs. Technology. Score: 28-6.

J. A. Rockwell, J. W. Cushing, T. Washburn, E. B. McCormick, R. S. Whiting (R. W. Swift), J. L. Newell, F. E. Underwood, W. D. Parker, T. P. Curtis (J. F. McElwaine), L. A. Hayden, E. L. Andrews.

Games were canceled with Exeter, B. A. A., Dartmouth, and Williams.



W. J. Batchelder. J. A. Rockwell, H. S. Gilman, R. S. Whiting, W. J. Mayo, E. E. Meade, A. G. Robinson, C. B. Tower, Jr. F. M. Crosby, H. P. Browne, J. H. Manahan, R. S. Howland, F. S. V. Slas,

'96 Foot Ball Eleven.

'96 FOOT BALL CLEVEN.

Manager. "Lunch Room O.K.

Rusbers.

- H. P. Browne Ends . . . W. J. Batchelder.
 W. J. Mayo Tackles . . . R. S. Whiting.
 H. S. Gilman Guards . . . A. G. Robinson.

 Center.
 - J. H. MANAHAN.

Quarter Back. C. B. Tower, Jr. (Captain).

Balf Backs.

R. S. HOWLAND. J. A. ROCKWELL.

Mull Back.

F. S. V. SIAS.

Summary of Games.

Cane Rusb.

- '96 Twenty-one hands.
- '97 Ten hands.



E. B. McCormick. J. F. McElwaine. F. E. Mansfield. W. T. Parker. T. D. Conness. T. M. Vinton. F. B. Goudy.

'97 Foot Ball Eleven.

'97 FOOT BALL CLEVEN.

Manager.

W. T. PARKER.

Rusbers.

F. E. Underwood W. D. Parker.

T. M. Vinton T. Washburn.

H. E. Worcester H. R. Heard.

Center.

E. B. McCormick.

Quarter Back.

F. E. MANSFIELD.

Balf Backs.

J. F. McElwain.

G. WALDO.

Hull Back.

F. B. GOUDY.

Summary of Games.

'97 vs. Boston Latin						12-8
'97 vs. Boston College						6-0
'97 vs. Hyde Park .	į.					0-30
'97 vs. Groton Academy		25			3.	0-20
'97 vs. St. Mark's .						8-22
'97 vs. '96						4-18

Cane Rusb.

'97 Ten hands.
'96 Twenty-one hands.

'95 OURSE FOOT BALL CEAMS.

Course II.	C	Course VI.					Course V.					
D. L. Bliss, Jr., l. e.	1. e.			J.	T. I	OORR	ANCE, l. e.					
F. E. FAXON, l. t.	F. E. FAXON, l. t. R. C. CLARK,						. S. S	SADT	LER, 1. t.			
C. H. PARKER, l. g.	F. W	. Ful	LER,	l. g.	g. R. S. Wason, l. g.							
G. R. HOWARTH, c.	J. Bo	EDEK	ER, C			C. A. Meserve, c.						
W. J. RICKEY, r. g.	W. J. RICKEY, r. g. F. B. CUTTER, r. g.						W. H. Watkins, r. g.					
T. M. LOTHROP, r. t.	T. M. LOTHROP, r. t. A. B. NEWMAN, r. t.						G. Defren, r. t.					
W. F. Stevens, r. e.	H. N	Rus	т, г.	e.		P. H. BLODGETT, r. e.						
W. B. Stork, q. b.	A. W	. DR	AKE,	q. b.		H. Hormel, q. b.						
C. F. TILLINGHAST, l. h. b.	E.C.	ALD	EN, 1.	h. b		R. M. Ellis, l. h. b.						
H. M. TUCKER, r. h. b.	A. F. NESBIT, r. h. b					J. E. Walworth, r. h. b						
E. L. HURD, f. b.	E. M	INK, f	. b.			N	I. LE	Boso	QUET, f. b.			
Course IV.						Cou	rse	ı.				
P. F. GILBERT, l. e.		R. N. Wheeler, l. e.										
A. E. ZAPF, l. t.		P. M. CHURCHILL, l. e.							e.			
F. A. Gutterson, 1.	t.	W. E. Swift, l. t.										
G. A. Nichols, l. g.			E	. C.	DONI	нам,	l. g.					
C. M. GAY, JR., c.		F. C. Schmitz, c.										
E. P. Schoentgen,		C. A. HARNDEN, r. g.										
D. C. Scofield, r. t.		W. H. Ellis, r. t.										
C. G. BADGLEY, r. e.		G. E. Howe, r. e.										
R. D. FARQUHAR, q.		F. W. BELKNAP, r. e.										
R. L. FULLER, l. h. l	A. D. FULLER, q. b.											
W. S. Chase, r. h. b				1	A. An	tes, 3	D, 1.	h. b.				
J. C. HOPKINS, f. b.				F	. S.	How	LAND	, r. h	. b.			
TO CONTRACT OF THE PARTY OF THE	A. J.	G. L)GAN	f. b								
		Gan	ies.									
Course II. vs. Course	VI								2-6			
Course V. vs. Hyde P.	ARK .							÷	0-10			
Course I. vs. Course 1	V							*	0-18			

'94 OURSE FOOT BALL EAMS.

Course II.

N. Cheney, l. c.

H. Yoerg, l. t.

K. F. Wood, l. g.

S. G. Reed, c.

E. L. Eaton, r. g.

A. Sperry, r. t.

A. L. Kendall, r. c.

A. B. Tenney, q. b.

C. N. Wrightington, l. h. b.

G. Owen, Jr., r. h. b.

D. W. Richards, Jr., f. b.

Substitutes,

Course VI.

A. S. Rogers, l. e.

L. R. Nash, l. t.

H. L. Clapp, l. g.

R. Wason, c.

W. H. Bovey, r. g.

T. Varney, r. t.

F. W. Lord, r. e.

F. W. Harwood, Jr., q. b.

F. M. Southard, l. h. b.

J. C. Nowell, r. h. b.

H. Berry, f. b.

Substitutes.

S. H. Blake.

N. S. Bean.

Course V.

G. N. LEIPER.

N. T. QUEVEDO.

W. O. SCOTT, l. e.

H. S. DUCKWORTH, l. t.

C. N. KINNEY, l. g.

H. R. BATES, c.

W. E. PIPER, r. g.

L. R. MOORE, r. t.

J. L. NISBET, r. e.

E. F. HICKS, q. b.

J. W. PHELAN, l. h. b.

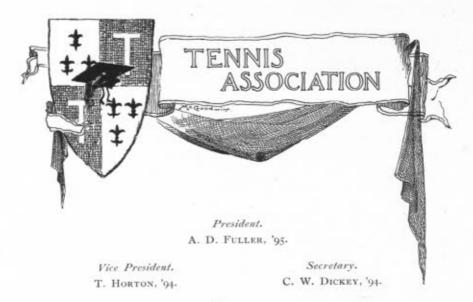
A. A. CLAFLIN, r. h. b.

P. W. LINCOLN, f. b.

Course X.

R. B. Price, l. e.
H. M. Chase, l. t.
L. K. Davis, l. g.
F. W. Lovejoy, c.
C. B. Beach, r. g.
G. H. Anderson, r. t.
R. B. Adams, r. e.
A. A. Clement, q. b.
R. K. Sheppard, l. h. b.
W. D. McJennett, r. h. b.
H. B. du Pont, f. b.
Substitutes.
R. Loring.
G. W. Sherman.

Games.



Treasurer.
J. C. Stevens, '94.

Members.

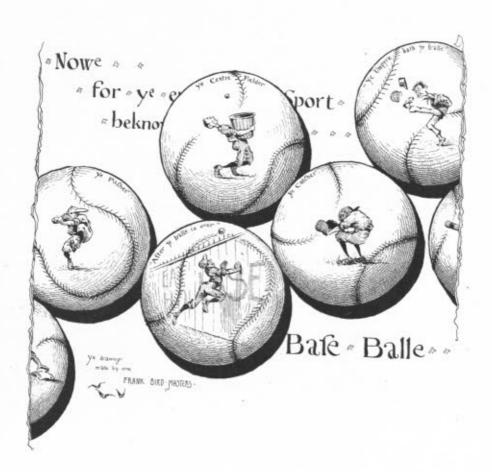
94.

N. S. Bean.	H. K. McGoodwin.	F. H. MURKLAND.
A. A. CLAFLIN.	T. HORTON.	W. H. SAYWARD, JR.
G. Dana.	A. R. MACKAY.	W. B. TAYLOR.
C. W. DICKEY.	E. I. MARVELL.	T. VARNEY.
	'95.	

L. A. ABBOTT.	D. N. Burkhalter.	F. W. FULLER.
F. W. BARDWELL.	E. E. Denison.	T. M. Lothrop.
H. C. Buckminster.	A. D. FULLER.	J. L. NEWELL.

'97.

C. H. Pope, Jr.



'95 BASE BALL EAM.

Captain.

Manager.

J. W. THOMAS.

A. Geiger, Jr.

Team.

W. A. HALL, 1st b.

C. W. BIGELOW, c. f.

J. F. MURPHY, 2d b.

E. MINK, l. f.

H. G. FITTS, s. s.

F. F. MAXWELL, 3d b.

R. C. CLARK, r. f.

H. K. TURNER, p.

J. W. THOMAS, c.

Substitute.

G. LAWSON.

Sophomore-Freshman game was prevented by rain.

'96 BASE BALL CEAM.

Captain.

Manager.

G. W. DAKIN.

F. M. CROSBY.

Team.

M. E. MOORE, c.

G. L. MORRILL, 3d b.

G. W. Dakin, p.

S. D. CRANE, s. s.

M. O. LEIGHTON, 1st b.

E. H. Robinson, I. f.

H. H. TOZIER, 2d b.

R. H. Lewis, c. f.

R. Johnston, r. f.

Substitutes.

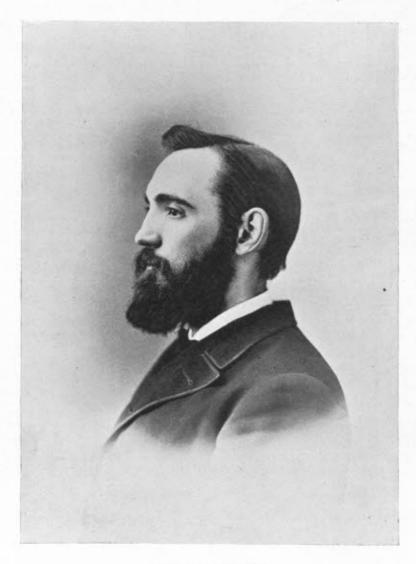
A. E. Wheeler.

A. G. Robinson.

Summary of Games.

Ninety-Six				5	West Medford	dA.	A.	-	6
Ninety-Six				8	Harvard, '96		6		4
Ninety-Six		1		3	В. А. А.		20		4
Ninety-Six			*5	0	Andover .	10.	-		7
Ninety-Six	8	200	7.	1.4	Wellington	(4)	2		6
Ninety-Six		1	-	13	West Medford	IA.	Α.		7

Sophomore-Freshman game was prevented by rain.



LEWIS MILLS NORTON.

LEWIS MILLS NORTON.

R. LEWIS MILLS NORTON was born in Athol, Mass., in 1855, and died in Auburndale, Mass., on April 26, 1893. He received his early training in a New England home. At the age of seventeen he became a special student of chemistry at the Institute, continuing his work there until 1877. During the last two years of that period he was engaged as an assistant in analytical chemistry. From 1877 to 1879 he studied chemistry in France and Germany, and obtained the degree of Doctor of Philosophy from the University of Göttingen. For the next three years he was chemist at the Amoskeag Manufacturing Company, Manchester, New Hampshire. From 1882 until his death his work was at the Institute, where he served successively as instructor in general chemistry and qualitative analysis, assistant professor in organic chemistry, and associate professor of organic and industrial chemistry.

The practical experience which he possessed enabled him to propose a scheme for the present course in Chemical Engineering. This was founded in 1888, and Dr. Norton was placed at its head. It is with the recollection of him in that capacity that the present students revere his life and mourn his death. His position placed him in close relationship with many young men who were uncertain as to what work would fit them most thoroughly for life. His quick perception of character, and his wish to aid all who needed assistance, made his advice pertinent, concise, and kind. Moreover, the respect paid by the other members of the Faculty to Dr. Norton's suggestions, gave evidence to the students that their trust had not been misplaced.

As a lecturer, he was admired by all who heard him. He had the ability necessary for carefully arranging his work; and, notwithstanding his limited time, which caused him to lecture rapidly, never was there any confusion of his ideas. The sequence of the subjects discussed in any series of lectures was, invariably, both natural and logical.

The students who have studied under his direction, or been benefited by his counsel, will remember him as an able tutor, a tireless worker, and a true friend.



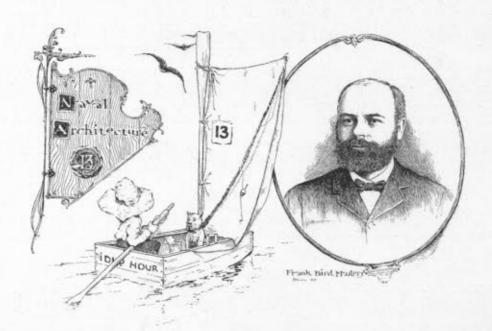
Written especially for and Dedicated to Mr. George Shepard and Members of the Massachusetts Institute of Technology Banjo Club, Boston.

ORIELLA POLKA.









Bon Voyage! Courge XIII.



AMBITION.

OGETHER in our childhood days
We passed the sunny hours,
Explored unknown and dangerous ways,
Carolled youth's ingenuous lays,
While plucking nodding flowers.

Time flew apace — it always will,
Despite man's dread of changes.
For us it brought Ambition's hill,
To climb which ever means to kill
Sweet love, — e'en friends estranges.

Ah well! she courted social fame, Attention, wealth, and beauty. Science scorned I made my aim, Nature's self I longed to tame, Of study made a duty.

Nature's secrets ope'd in time,
And love was mine unbounded;
But lacking was that joy sublime
Of souls in sympathetic chime,—
My life was cold, unrounded.

Years passed by, — an old man I, But sad and discontented. Knowledge, alas, alone can't buy Respect and love, treasures high Scorned by those demented.

Has she, I wonder, better fared,
Or heeded admonition?
Less willful,—friends for her have cared.
Oh, would that I in youth had dared
To yoke oft-cursed ambition!

- R. B. P.



Chas. R. Crops

CHARLES ROBERT CROSS.



writing the following lines, it has been my object to present to the reader a short history of the life of one of our most esteemed professors, with special reference to his work at the Institute. It is the history of a man who is known, not only as an able lecturer and a highly qualified physicist, but as a hard worker, to whose unflinching energy and unremittent activity is due to a large extent the present standing of our department of Physics; a standing which is not behind that of any similar institution.

Professor Charles Robert Cross was born at Troy, N. Y., March 29, 1848, in which city he lived until 1862, when his father removed to Newburyport, Mass., which, for many generations, had been the family home. He entered the Putnam Free School, an English High School in that city, and graduated in 1865. After pursuing an additional year there, partly in study and partly in teaching, he accepted a position as instructor in the Bartlett High School of New London, Conn., where he remained for a year. It had been his intention for several years to devote himself to the subject of physics, and, after carefully considering the apparent advantages offered by the several scientific schools then in existence, he came to the conclusion that the newly established Massachusetts Institute of Technology was most likely to give him the training which he desired. Accordingly he entered this school in 1867, after having prepared himself for advanced standing. He entered the "Course in Science and Literature" of those days, which allowed of considerable freedom in the choice of studies, and at once devoted himself to the study of Physics, under Professor E. C. Pickering. During his Senior year he acted as student assistant in German, and upon his graduation he was appointed instructor in Physics, having under his charge the entire lecture course in general Physics.

It was at this period of his life that Professor Cross began to devote himself with heart and soul to the strengthening and development of the department of Physics. The lecture course under him saw one improvement succeed another, and through the generous aid of various friends of the Institute, he was able to procure the proper means for experimental illustration,—an invaluable factor of successful teaching.

In 1871 he was appointed Assistant Professor, and four years later he received a full professorship. In the winter of 1876 and 1877, upon the resignation of the head of the department, Professor Pickering, who had been appointed Director of the Harvard College Observatory, Professor Cross was placed in charge of the entire department of the instruction in Physics at the Institute. Thus his work became divided among the several branches of the department.

Besides further improving the lecture course in general Physics, then, as now, required of all regular students, Professor Cross aimed at securing a higher grade of work as to accuracy, than had hitherto been obtained in the physical laboratory. This could be accomplished only by putting into the hands of the student apparatus of better construction than much of that which had previously been used. Unfortunately, however, the time of which we are writing was of such severe pecuniary stress at the Institute, as to forbid the purchase of other than the most necessary apparatus. With such conditions, progress was necessarily slow. Nevertheless, by continued efforts, from year to year, the character of the work was steadily improved, until the most marked progress had been made. Professor Cross, furthermore, turned his attention to the enlargement of Course VIII. (Physics), which had been established in 1873, and which was the first course of its kind in the country. He felt the need of more opportunity for advanced study in Physics, and also in higher Mathematics, than the courses had offered, and from year to year, as the needed facilities could be furnished, the courses were expanded in number and in scope. This improvement has continued steadily up to the present time.

That portion of his work at the Institute which has attracted the widest attention, not only here, but also at other technical institutions, is the establishment and development of the course in Electrical Engineering. Even as early as 1879 the idea of establishing such a course had occurred to him. Strengthened in his convictions by what was suggested abroad, Professor Cross, in 1882, made the proposition that such a course be established at the Institute in connection with the course in Physics. His proposition met with the hearty approval of both the President and the Faculty, and that same year the Corporation sanctioned the opening of the course, now known as Course VI. It must be added that in planning and laying out this course, and especially in working out the details of the instruction in the various electrical studies, Professor Cross undertook something where there was but little to guide him. The success with which this undertaking was accomplished, once more proved him to be possessed of a thorough knowledge of the requirement of the new

profession of Electrical Engineering, as well as of excellent qualities as an instructor.

The rest of his work at the Institute has consisted chiefly in the performance of the duties imposed by the great amount of executive work which necessarily comes to the head of any department at the Institute. Whatever has been accomplished, has been the result of the steady and unremitting effort of many years to so improve and enlarge the work of the department of Physics of the Institute, that each year might show a distinct advance over the preceding.

In close connection with his labors here, Professor Cross has given many public courses of lectures, the most important being those before the Lowell Institute. He has also lectured from time to time in the Lowell Free Courses in the Institute of Technology, covering the various branches of pure Physics, and, also, the different technical applications of electricity. Besides these, he has given numerous courses of lectures before scientific and miscellaneous audiences, both in Boston and other cities. Although the duties of a teacher at a technical institution in this country are so constantly varying and multiplying as to leave little time to devote to original research, yet Professor Cross has been able to carry on a large number of investigations, and, from time to time, to make important contributions to science.

Professor Cross is a Fellow of the American Academy of Arts and Sciences, and has often served on its council, of which he is at present a member, being also one of the Rumford Committee of that Society. He is a Fellow of the American Institute of Electrical Engineers, of the American Association for the Advancement of Science, and a member of various other scientific societies. During the year 1880 he was president of the Appalachian Mountain Club; and in 1893 he presided over the sessions of one of the three sections of the International Electrical Congress, held in connection with the World's Fair, at Chicago, in the month of August. Professor Cross was also one of those who co-operated in the founding of the Alumni Association of the Institute in 1875, and served as its first secretary from that date to 1884.

From year to year we have come to listen to Professor Cross, and from year to year we have found him ever cheerful and ready to give help and information. Those who have personally consulted him know best how very interested he is in the welfare of the students. The beneficial influence of his good work has been felt ever since he came to Technology, and has increased as time went on. It is but the wish of all that he will stay with us for the remaining years of his life. It would be a hard blow, and one from which Technology would be long in recovering, should he ever see fit to place his work here into other hands.



TECHNOLOGY AT THE FAIR.

ERTAINLY at the annual banquet held last year the Northwestern Alumni Association showed true enthusiasm. Amid the festivities of the evening they unanimously decided to make special efforts to entertain all Technology men who should visit Chicago

during the World Fair season. Then and there the Alumni subscribed eleven hundred dollars to carry out their plans. A pleasant suite of rooms were secured on the corner of Michigan Avenue and Thirteenth Street, looking down upon one of Chicago's finest driving boulevards. These were thrown open to

Tech men on June first. On every Wednesday evening special preparations were made for the comfort and pleasure of the jolly crowd that collected to meet old friends, and live over again the many bright parts of Technology life. Later in the season reunions were held in Old Vienna, and many a time the resounding "M. I. T., Rah! Rah! Rah!" would cause the uninitiated to ask the cause, and learn from those about us of the greatness of the Massachusetts Institute of Technology.



If after wandering among the grand buildings one should enter the portal of the largest of all, the Manufacturers and Liberal Arts Building, and, picking his way



between the maze of exhibits from countries far and near, should finally ascend to the South Gallery, there he would find the exhibit of the Massachusetts Institute of Technology. Although the space occupied was somewhat smaller than was at first allotted, Technology having generously donated a part of her space to the public schools, it contained a most ex-

cellent synopsis of our methods of work, and a systematic review of the scope of the education we offer. So good was our exhibit, that it was said that if all our buildings and apparatus were destroyed, the

whole could be restored by reference

to the constituents of the exhibit, so thoroughly and excellently was it prepared.



In less than four months over eight hundred had registered in the M. I. T. book. Besides being the only institution to have rooms and weekly gatherings at the Fair, we had the distinction of having a special steamer run from Boston to Chicago and return. About twenty Tech students left for Buffalo on

> May thirty-first, where they met the steamer "Cadet," from Portland, Me., on which they continued their trip

to Chicago, and, after staying eleven days, they returned by the way of the Lakes and Erie Canal to Boston.

Technology's relations with the Fair were marked on all sides by

great success, and many words of praise are due to those who so kindly assisted in extending the glory of the Massachusetts Institute of Technology.









ROBERT HALLOWELL RICHARDS.

NE of the first to appreciate and take advantage of the opportunities offered by the Institute, and one of the few to aid from the very beginning in its development along the lines laid down by Professor Rogers, Professor Richards possesses a life of peculiar interest to all the students of Technology. Graduated from the Institute in the first class, that of Sixty-Eight, and immediately enlisted in its service, his life has been ever since connected with its interests, and his services as a scholar, a teacher, and an executive officer, alike generously tendered, have in no small measure contributed to its success.

Professor Robert Hallowell Richards was born August 26, 1844, at Gardiner, Maine. When thirteen years of age he went to England, where he attended school for five years; but in 1862 he returned to this country in order to prepare for college, and to this end, after spending one year in Boston, entered Phillips Academy, at Exeter. Just before the completion of his course at Exeter, however, the Institute of Technology was opened, and being strongly impressed by the advantages offered by this new institution, he came to Boston in February, 1865, to be enrolled as the seventh pupil to enter. The result proved that he had chosen well. Up to this time his studies had been of slight interest to him; the old-fashioned methods of teaching made little or no impression upon his mind. No sooner, however, did he begin his work at the Institute than this was entirely changed. The modern scientific method of learning from experiment, introduced by Professor Rogers, proved to be exactly the process needed to develop the strong, scholarly traits in his character.

With the stimulus which his course at the Institute had given him, his rise in his chosen profession was steady and sure. Graduating in the Class of '68, he was immediately appointed Assistant in General Chemistry, and the following year filled the position of Instructor in Assaying and Qualitative Analysis. In 1870, owing to the sudden resignation of Professor Storer, he was appointed Assistant Professor of Analytical Chemistry. From this position, the next year he was made Professor of Mineralogy and Assaying, in charge of the Mining and Metallurgical laboratories, and the following year was appointed Professor of Mining Engineering. From 1878 to 1883 he filled the position of Secretary

of the Faculty, and a year later received the appointment of Professor of Mining Engineering and Metallurgy, which position he still holds. Under his direction the courses in Mining Engineering and Metallurgy have been developed from their crude beginnings to their present state of excellency; while the splendid laboratory system, a feature so valuable and essential to these courses, has been the result of his wisdom and forethought. In order to study new mining processes and metallurgical methods, Professor Richards has visited Europe a number of times, besides making many extended trips to the Pacific Coast and the Northwest; the result being that, under his instruction, the latest and the best of modern methods have been followed and studied, to the exclusion of the discarded or faulty systems of the past.

While serving in the capacity of Secretary of the Faculty, from 1878 to 1883, the duties of the Secretary's office devolved upon him: it was through his careful management that the work was laid out on substantially the same general lines which it now possesses, and the foundation prepared for a practical system. As a member of the Faculty, Professor Richards has initiated many schemes for rendering the working of the office more efficient, and for bringing the Faculty and students into more direct communication. The present course schemes are a growth of a plan originally suggested by him, and devised in 1873 by a committee of which he was chairman. He was also largely instrumental in instituting the present schedule of topics, and in 1878 he introduced the idea of written petitions, by which the student is enabled to communicate his exact wishes to the Faculty. Professor Richards was one of the first to recognize the advantages, and in fact the necessity, of a strong alumni organization; and when, through the energy of some of the early graduates, the present Alumni Association was finally formed, he was chosen President, and retained the office for several successive years. His wide acquaintance among the alumni has well fitted him to act as chairman of the committee collecting the William Barton Rogers Scholarship Fund of the Alumni, which has recently been closed with a total of \$10,009.

His labors, however, have not been confined altogether to Technology. In the scientific world and in industrial affairs he has been very active in matters connected with his profession, and his summer vacations have always been partly, or wholly, taken up with professional work. During these summer periods his attention has been occupied in various quarters, one summer having been spent upon United States Coast Survey work, while several entire vacations have been devoted to work at the Calumet and Hecla mines in Michigan. In spite, however, of the large amount of work which he is accustomed to accomplish during the summer, Professor Richards has always found time to be present at the Summer School of Mining and Metallurgy, and it is due chiefly to his efforts that these four weeks of optional work have always been

so successful and enjoyable. Many interesting papers have been prepared at different times by Professor Richards, some of which have proved to be very valuable additions to the science of metallurgy. Nearly all of his scientific papers have appeared in the proceedings of the American Institute of Mining Engineers; among the most important being, in 1876, a paper on "Copper Plate Amalgamation for Gold"; in 1888, one on "Descent of Charge in Blast Furnace"; and in 1891, one on "Prismatic Stadia." His deep interest in educational matters has caused him to be a frequent attendant at the numerous educational conventions held in the East, and upon several occasions he has addressed these gatherings. An address made by him in 1886, as President of the American Institute of Mining Engineers, upon "Mining Schools," and one in 1891, to the New England Association of Educational Workers, upon "Manual Training," was received with great attention and awakened considerable interest. Among those who are following the profession of teaching, or who have adopted the more abstract study of a science, great practical originative power is not often met with; but to this rule Professor Richards seems to be an exception, and many are the new and useful things which have been devised by him in connection with his work, for a number of which patents have been granted him. Among the most important of these have been: in 1872, the invention of a jet fitter pump,—a device which is now universally used; and, in 1880, the Calumet separator,—an invention which caused an entire revision in the methods then in vogue of ore separation. In 1889 he also invented a prismatic stadia telescope, which has already attracted considerable interest, and seems destined to be of great future importance.

As an instructor, Professor Richards has always commanded the sincerest respect of the students under him. While every member of his class is thoroughly known, and is instructed, criticised, or encouraged, according to his special need, and thereby his defects are made good by the discovery and development of the better elements, yet he never commits the error of teaching for the favored few. Many a student with whom he has come in contact has had occasion to remember with gratitude his kindness, sympathy, and his heartfelt interest in the progress and career of those placed under his care.

THE ARCHITECT'S DREAM.



Architect of Ninety-Four Once dreamed a dream ne'er dreamt before. He stood (by fancy's strange decree) In wondrous lands across the sea, Where dwelt some prehistoric race,-I know not either name or place; For I have sought, and sought in vain, If I might locate this domain. In fact it was a beauteous spot, By ancient history long forgot, Where architecture, pure and grand, As never wrought of human hand, Here met the eye and did inspire, And satisfy the heart's desire; Which bore the simplest forms it could, And yet was noble, grand, and good. By care intent, or strange caprice, It savored neither Rome, nor Greece, Nor any other style or form To which our Architects conform: A style so wholly of its own, The dreamer ne'er before had known. One simple rule seemed to control The smallest detail and the whole. All this the dreamer noted well, When suddenly the magic spell Was broken, and, as soon as broke, He sighed aloud, and then awoke. He seized a pen and sketched a plan, Drew the façade, and then began To view with pleasure unconcealed The beauties which the sketch revealed, But ne'er again could he recall The simple rule which governed all; But keeps the sketch, and hopes in vain The vision may return again.

And often when the day is done,
And in the west the setting sun
Sends golden rays the landscape o'er,
The busy members of Course IV.
May still be seen, with thoughts intent,
On some perplexing problem bent;
Seeking for some magic sign,
To solve proportions in design.
Disturb them not; mayhap they be
In fancy's realm across the sea,
And just about to see unfold
The wondrous law till now untold.

-B. S. H., '94-





ON TREMONT STREET.

Why do I gaze on those eyes so brown,
That looked at me coyly and then glanced down?
Because they're owned by a maiden sweet,
Of manner enchanting, in figure petite.
It does my heart good just to see the dear girl;
To know her, indeed, would make my head whirl.
You chide me, and yet I'm sure, if you could,
You'd do just the same,—of course you would.

-R. В. Р.

MIDSUMMER'S DREAM.



I lay afloat
In a tiny boat,
On a sea as blue as indigo;
And the summer breeze in its trackless path,
Came gently down like an angel's breath,
And rocked my boat on the ebbing flow.

Afar and wide
O'er the summer tide,
I looked with listless eyes, and saw
Nor form nor shore on the shimmering blue
That stretched afar till its mellowed hue
Was the vaulted azure bended low.

The waters plashed,
And gently dashed
Till the western sky grew fiery red;
And the sun sank down in a crimson flood,
And dropped from sight in the sea of blood
Which the dying day in penance shed.

Then one by one,
When the day was done,
The stars shone forth as the darkness fell;
Till myriad full were shining bright,
And myriad lamps lit up the night,
And myriad lanterns signaled—Well!

From th' inky sea,
In noisy glee,
Up bounced two bonny dolphins hale;
And in their wake the sea sprites danced;
Their slippery backs with fire glanced,
And glanced aloft each curling tail.

Then up spoke one
In dolphin tongue.

Quoth he, "Good sir, where would you go?"
And hitched them both before my shell,
With star beams for the reins, as well
As corded star beams for the tow.

I looked away,
And straight there lay
A fairy island on the lee;
Where sirens sang in a joyous band,
And sea-nymphs danced on the silver strand,
And splashed in the waves of the silver sea.

The night was still,
And low and shrill
Came echoes from the Triton's horn;
And the sea was deep, and the night was high,
And the stars that waned in the silent sky
Proclaimed the coming of the morn!

-н. в. н.

THE EMERY TESTING MACHINE.*



RIFFIN dragged into the light
From out his lair, his strength despite,
Prisoner from the hollow earth
Of echoing caves in darkness girth:
Lured into a pitfall dug
To grapple with his deadly hug,
Starved until the life ebbed low,
Then hurried off without a throe.
Pinioned to a low cell's floor
With iron bands, that erst he tore,

Spirit broken, and at length
Submissive in his sinister strength,
Slave unto his captor's yoke,
Yet treacherous when the mood provoke,—
Rending iron and quartered oak
Like straws as soon the order spoke;
Snapping ropes and iron chains
Like pack-thread, ere the echo wanes;
Laboring in the eager hope
That Vigilance may one day mope,
And he into his lair grope.

-A. A. S.

^{* 300,000} pound testing machine in the Mechanical Engineering Laboratory.



Elder Sister (musing): "I wonder if anything has happened to Mr. Rusher. He has not called for ages!"

Enfant Terrible: "Oh! he called the other day, when you were dressing for the ball. He said he was sorry you were engaged. I told him you were not engaged yet, but Pa said if he came here much more you soon would be, or he'd know the reason why."



GRINDS

Think you that our country, great,
Could e'er have reached its present state
Had not Technique its lessons taught,
By savory grinds with morals fraught?
But bear in mind, the coming grind
Does not refer to you.

A delicate compliment,— The compliment of 89° 59' 59".

Significant figures,-Massachusetts Institute of Technology, Dr., To tuition, \$200.

The professor's sponge act,-Soaking the men.

· " Que j'ai gagnés en aidant à décharger des voitures à Grasse." Sch-ntg-n translates: "Which I won by helping to unload the hay-carts."

Prof. M-LL-R (to L-bby, '95, who is blowing into an indicator): "There is no use in trying that, Mr. L-bby; you can't raise a sixty-pound spring by blowing."

L-BBY: "O, yes I can; I have raised it 3 of an inch already."

Soph, to brother Soph, after the semies: "What did you get, old man?" B.S.: "H. at home."

Mr. B-rn-rd (A to Z), explaining to class the meaning of la háche: "It is a hatchet, an axe,—la hâche—the hatchet, of course, don't you remember? Franklin used one when he cut down the cherry tree." (Class looks doubtful.)

FIRST SOPH: "What's the matter with that Cercle Français, anyhow?"

SECOND SOPH: "Oh! it's become somewhat eccentric, don't you know."

It is rumored that before the examination on Railroads, many of the third-year Civils bought railroad life-insurance tickets, but they failed to collect. D-v-s, '94 (studying Applied): "txi=t,-yes, that must be right; it's the first thing I've really understood in this lesson."

Mr. B-RN-: "Mr. Ad-ms, will you ring the gong every two minutes for the next half hour?"

AD-Ms, '94: "But my watch is about three minutes fast."

And-rs-n, '94: "d-P-nt, are you going to hang up your stocking Christmas?" D-P-nt: "No; but I'm going to hang up my watch, so that I can go home."

Problem in applied.

If the three legs of a tripod will sustain a definite load applied at the head, how much of a load will the two legs of a man sustain when his head is twice as large?



I've stood beside the raging sea, And listened to its roar; But it was very tame compared With John D. Joseph M--r-.

PROFESSOR WELLS: "Mr. Brown, define a rectangular parallelopiped."
MR. BR-wn: "It is a rectangular biped whose legs are perpendicular."

A WOOD be swell,-'94.

DR-K-, '96: "Mr. B-rdw-ll, is this acid on my desk consecrated?"

(In Heat lecture) "Say, lend me your tabular view a minute, will you?" — Returning same: "O, yes; this lecture is heat, isn't it?"

Freshman to Junior, as Engineering janitor passes by: "Say, is that Professor P-b-dy?"

Dr. R-PL-Y: "Can I have an interview with you on Friday, Mr. B-ldw-n?"

B-LDW-N, '94: "No, sir; I am full on Fridays."

DR R-PL-Y: "Will you be over it by Tuesday?"

Mr. M-Y-R (in German recitation): "Will all the gentlemen who are not here please give me their names, so I may mark them absent."

PROFESSOR S-ND-R-CK-R: "Mr. H-nt, will you please explain Bow's notation." H-NT, '95: "Well, you see you place a line between every other letter. . . ."

AN UNPAID AD.

The Fresh was in a hurry,
As Freshmen always are;
He was at the top of Rogers,
And had to journey far.
So he tried to slide the banisters,
But struck that little bump;
And the Soph who watched his actions,
Murmured gently, "See that HUMP?"

Professor N-L-s (showing the class a remarkable instance of shrunken wood): "I might add, gentlemen, that the Institute is rather a dry place."

LADY (passing M. I. T. buildings): "What are those buildings?"

LADY'S FRIEND (who knows all about Boston): "That is the Children's Hospital."

Mr. P-ss-n-: "What is the definition of a term?"

F. W. -NDR-w, '96: "A term is an algebraic expression unique in itself."

INSTRUCTOR in Pol. Econ.: "What is wealth?"
NINETY-Five Man: "Wealth is an accumulation of P's."

Mr. BL-CHST-N: "You make very economical use of your dictionary, Mr. Ch-ff-."

Mr. Bl-chst-n's Recitation.

Miss W-rr-n (translating): "' Une longue promenade à cheval': A long promenade on horseback."

Professor M-RR-LL: "This machine, gentlemen, is very useful in shaping long pieces of short length."



CUTTING MECHANISM.



A REGULAR GRIND.

Professor R-NKL- (accidentally running against F-nc-'s blackboard for descrip.): "Descriptive geometry is a nuisance, isn't it, boys?" (Class sympathyses.)

I WONDER.

I wonder if the Faculty have dropped H from the list Because it was so seldom used, it never will be missed? Or, if in sudden burst of light, they saw the common fad, And dropped it just to imitate the hackney English cad?

Mr. CL-FF-RD (lecturing to class in acoustics): "In general, the mouth cavity with women is smaller than with men; but what the woman lacks in size she makes up in —— (great excitement and indignation among the Co-eds present): I assure you I was not at the point of saying what you think."

Professor Cr-ss, lecturing on reflection of light by mirrors: "It is possible, gentlemen, to see any number of moons, provided you take the right kind of a glass."

Professor C-rr-1-r: "Gentlemen, I have been requested to lecture more slowly, and I will endeavor to do so in future. We left the subject at a very interesting point inourlastlectureandIpurposetospeakthismorngabouttheJaytretyandthMonrodoctrneasappldtoourtmes."

MR. B-RN-RD: "Mr. —, how do you translate 'I am hungry'?" —, '96: "Je suis faim" (pronounces it femme).

MR. B-RN-RD: "You must be pretty well disguised, then."

THE REASON.

The Sophomore sits in the Physics room;
In his eyes is a steadfast gaze.
He smiles not, neither does he sleep,
But strict attention pays.
His thoughtful air increases
As the closing hour draws nigh,
For he wonders if he'll be in time
To get some chocolate pie.



At the first meeting of the German Society: Mr. F. E. M-tth-s is chosen president pro tempore, which is announced on the blackboard as follows: "F. E. M-TTH-s Pr. Pro Tem. (Assembly collapses.)

Mr. B-rdw-ll, to a young lady from the Boston University: "What are you doing there, Miss ——?"

B. U. Co-ed: "Oh! I am only looking at these lovely sulphur crystals through the microscope."

MR. B-RDW-LL: "Microscope! That's the blast lamp."

Professor Cross (after performing an experiment at a Lowell Institute lecture in Physics one evening): "Now we will have the daylight, please."

YE SOPHOMORE AND YE SEMIS.

"There's no such word as fail," he cried,
"What e'er may come to pass."

But when he got the mail, he sighed,
For he had failed to pass.

FAIR ACQUAINTANCE TO J. M. SM-s-R, '95, in Brookline car: "What is the little book you have there, Mr. Sm-s-r?"

SM-s-R: "Oh, that is Lanza's Applied Mechanics."

F. A .: "Is that so? Well, what is an applied mechanic, anyhow?"

PROFESSOR B-RT-N: "Is that the right result, Mr. D-nh-m?"

D-NH-M, '95: "Well, my formula doesn't agree with the one in the book, but I think it is right."

D-L-B-R, '95 (in Physics recitation): "Mr. W-nd-ll, what does the 'R' in my problem book signify, right or wrong?"

THE MOURN OF THE COLUMBIAN GUARD.

O them nights in old Vienny, when the college boys was there, A-slingin' round the schooners, an' a-cloudin' up the air; When everyone was ready fur a free an' easy fight, An' every chair had handles on, so folks would hold it right; When everything was bloomin' red, includin' of the sky,—O, them's the times that livin' was somewhat worth a try. But now the show is busted we won't see them no more,—Them happy, lively, rousin' times when Bacchus had the floor. So here's good luck to Harvard, an' here's good luck to Yale, An' here's to the boys of M. I. T. that raised the price on ale.



Wanted: A position in a museum. - C. B-rn-rd.

MR. W-ND-LL: "Give an example of a practical use of phosphorescence."

CL-RK, '96 (evidently speaking from experience): "Luminous paint for keyholes."

INQUISITIVE SOPH: "What are you doing with that umbrella, Fl-d; it's marked M. A."

FL-D, '96: "O, that's all right; F is equal to Ma."



BEFORE.

AFTER.

Technology's patent Nerve Medecine To be taken Semi-Annually.

A student, mournful, climbed the steps of Tech; I asked what millstone hung about his neck. "Two 'F's,' two double 'F's,' two 'L's,' one 'P'; "The last one simply discumfuddles me."

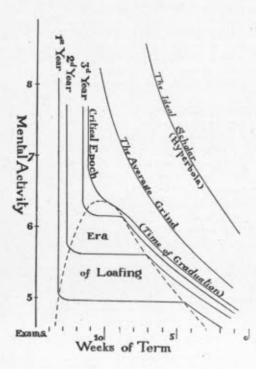
Six "H's" had I in the semi's last,
I answer when one questions how I passed.
But if one asks where "H's" six were classed,
I show my pencil; there I have them massed.

First Fresh: "Mac, do you expect ever to get an S.B. from the Institute?" Second Fresh: "At the rate I've been going, I think I'll get an LL.D."

Y-D-R, '95: "Professor M-rr-ll, in what way does that weight act?" PROFESSOR M-RR-LL: "Down, naturally."

CLASS IN PHYSIOLOGY OF SENSES.

So orderly is this class, so perfect is its behavior, that it seems worth while to give a description of this model class of M. I. T. The class, in order to avoid banging the doors and the shuffling of feet, enters the class room in a body; then marching in step it proceeds through the room in a solid column, and sits down as one (wo) man. During the hour the class proves to be well prepared; it takes copious notes, and answers promptly to all questions. No whispering, no communication of any sort disturbs the attention of the class. No wonder that Dr. Thomas Hough is exceedingly proud of it. But great was our surprise to find, on nearer investigation, that his excellent and model class is made up of —— Wood.

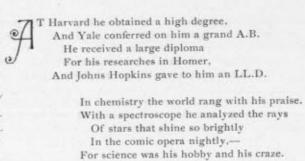


A series of recent investigations has served to throw considerable light upon the matter of saturated cogibundity, and has resulted in establishing the laws expressed by the diagram. If the mental capacity of the student remains constant as the distance from the exams, decreases, there is an increase in mental activity, and by plotting results the isostupid lines are obtained as shown in the diagram. mental activity, it will be noticed, does not have a constant increase, but rises slowly until a point is reached where it remains constant until shortly before exams., when it increases abnormally. The Era of Loafing becomes smaller in the upper years, and ultimately vanishes toward the end of the course. This is known as the Critical period. The isostupid lines for Grinds tend to approach the hyperbola.

Professor S-dgw-ck (explaining the old-time penance of walking with beans in the shoes): "Nowadays, no civilized man would ever think of putting shoes in his beans."

(In the German recitation): "Er bekam sechs kindern."
Student translates: "He became very kind."





To mathematics next he turned his eye,
And computed the equivalent of "pi";
He wrote a Chinese grammar,
And he found the lost digamma,
And discovered four new comets in the sky.

His pamphlet on the pre-Adamic race, In the philosophic world gave him first place. He wrote a life of Dante, And a book on penny-ante, And a treatise on the ultra-stellar space.

He measured the velocity of light,
And showed how Newton's theories were right.
He caught a chlorine atom,
And unearthed a fossil stratum,
And repeated Franklin's doings with a kite.

But, alas, alas! his pride soon had a fall,
And he learned too late that science was not all;
For he fell in love completely
With a maiden, who smiled sweetly,
But refused him 'cause he couldn't play football.

" GRIND," '95.

Condition of a man who, in grinding Peabody's Valve Gears, looked at the plates while reading the text.



Roll call in Junior drawing room; B-LL-, '95 (present, but absent-minded): "Hello!"

ANSWERS TO CORRESPONDENTS.

Mr. C. H. L. N. B-rn. Yes; we agree that four initials are rather troublesome in signing one's name. We suggest the following signature, which is short and strictly correct:—

 \int_{c}^{N} B-rn-rd.

SENIOR. We cannot say with certainty whether Professor Cr-ss repeats the joke about the cranks in the wave motion machine every year on purpose or not. However, to judge from appearances, we feel inclined to answer in the affirmative.

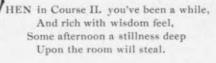
H. —. You wish to know who are the conspicuous girls of Ninety-Six, and whether you are one of them. There are different kinds and degrees of conspicuousness. As you did not specify which one you were referring to, we are not able to give you a satisfactory answer.

J. H., '96. "Is Mr. Gr--nl-w a poet?" You may find out by consulting Mr. Greenlaw.



Having become so endeared to their work by long association and patient labor, a few of the Technique editors of '94 could not resist the temptation of one last journey with their beloved work, before submitting it to the cruel public. Amid the thunder of the stone dray, the clatter of four horses, and the jeers of the street muckers, they enjoyed (?) their drive, as shown above, from Newton to Boston.

AN IDYL OF COURSE II.



You look up from your work alarmed,— You hear a noisy screech; The students gather in a throng To hear their pater's speech.

The men, to catch the precious words, Each o'er the other climbs, With H-mbl-t and his minions near To laugh at proper times.

The noble sage looks o'er the crowd,
And rubs his bony hands;
His "Plymouth Rocks" wave in the breeze,
As gracefully he stands.

"Now, gentlemen," at last he says,
"I have assembled you
That I may make my little speech
Of welcome to Course II.

I feel so glad to see you all,
I'm sure we shall agree,—
I'm sure you are the finest class
E'er seen in M. I. T."

Here, in the eyes of Denmark's prince Are seen two pearly tears; Poor man! this oft-repeated fact Brings thoughts of by-gone years.

"You are now launched upon your work;
I'm sure you will all shine;
I hope that none of you will be
Obliged to take Course IX."

A joke this is, and H-mbl-t then Sets up a lusty cheer; The minions, too, join in the din To make the matter clear.

"In hazing I can see no wrong,— The Freshmen are your meat; But I will take a hand myself If once you try to cheat. "The chapel you may make your home, And gamble all day long. And lie, and steal, and loudly swear,— For that I don't call wrong.

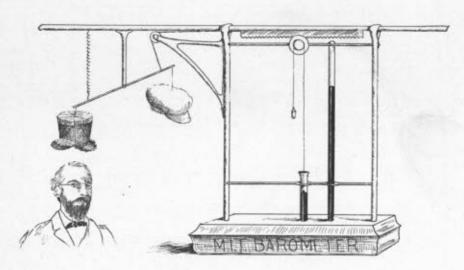
"But if you come to an 'exam.'
With data on your sleeve,
And I can catch you using it,
By gosh! you'll have to leave."

This being said his speech is done, And he has had his say; So, smiling sweetly on the crowd, He slowly walks away.

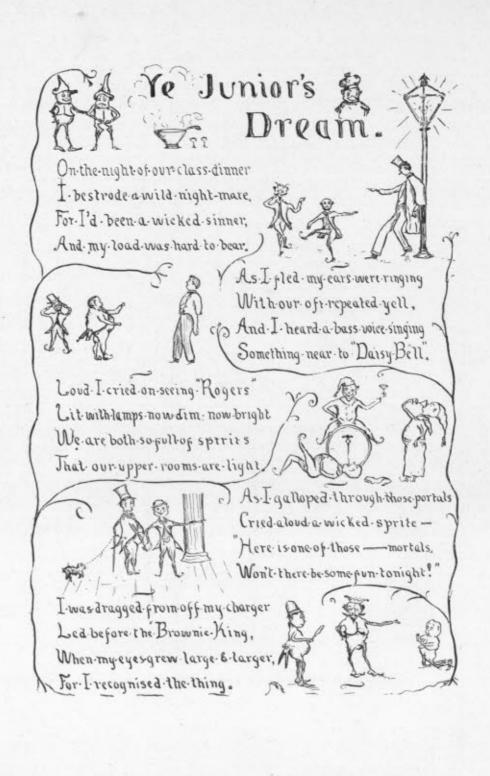
And H-mbl-t and his minions meek Give one or two more cheers, And then direct their energy Toward epicyclic gears.

The men all to their desks return,
And though the sage departs,
His words will linger bright and fresh
In all their loving hearts.

"THE GRIND," '95.



FAIR WEATHER, NORTHERLY WINDS, SLIGHTLY WARMER.





MISSING WORD CONTEST.



HE Board of Editors takes great pleasure in laying open to its readers that most engaging pastime known as the missing word contest. The prizes offered are as follows: For the first correct set of answers received, one copy of F-nc-'s Descriptive Geometry (Edition de Luxe), with likeness of author in four colors as a frontispiece. For the second correct set of answers, one large, elegantly framed etching, "Our 'Varsity Crew." For the third correct set, one patent

adjustable pocket-folding couch, designed and made especially for the use of students transacting business with the Bursar. For the fourth correct set, one roll of red tape, warranted a sufficient supply for one full term of fifteen weeks.

Prizes will be awarded April 1, 1894. Each competitor will enclose twenty-five cents with every set of answers sent.

An unprepared student, A fearful exam., On seeing the paper He softly said ———.

With haughtiness massive
The Freshmen he spurns;
His first name is Peter,
His last name is ——.

"This reaction will occur Immejitely, I hope;" Thus quoth unto the Freshmen Professor Thomas ———,

"This class is made up of hoodlums and cads;
I'll flunk you if I get a chaunce."

Each year this remark is merrily made

By the gentle and lovable ——.

There's room for but one at the top of the heap,
For this place the classes all strive;
But the class that at present is "easily queen,"
Is M. I. T. Class Ninety ——.



HOW THOSE GIRLS LOVE ONE ANOTHER!

-THE ILLUSTRATED WEEKLIES.

Miss Millions: "Walter (C. P., '95) proposed to me last night, and I accepted him."

Miss Dash: "Poor fellow, he must have had hard luck at the wheel again."

NEW BOOKS.

- DETERMINATION OF THE MODULUS OF ELASTICITY OF THE FACULTY'S LEG. BY G. RYNDE, Ph.D. 8vo, 512 pp. Ridler's. \$25.69. A thorough and complete treatise on the subject, giving the results of the best experimentation of recent years; also carefully compiled tables showing to what extent it can be pulled under various conditions.
- THE DRAMA AS AN EDUCATOR. By F. S. V. S-s. This most excellent work is the result of the author's careful and elaborate study of the subject for the past three years. It shows a keen appreciation of the beauty in the modern drama, and an intimate acquaintance with the factors in its organization.
 - "A rapid and progressive thinker." Technology Weekly.
- THREE YEARS WITH BUFFALO BILL. By H. J. K-TSZCHM-R. This is an interesting and vivid account of the life, adventures, and hair-breadth escapes of the author, who is more commonly known on the plains of Maine as "Sure Shot Kotzch."
- THE ART OF PETITIONING (Advanced Course). By H. W. T-L-R. 12mo. Ridler's. \$4.55. The peculiar merit of this book is its reality. Part I. contains a thorough explanation of the principles involved in the art; while Part II. is devoted to the practical application of these first principles, together with a discussion of special cases covering some of the most intricate met with in modern practice. It is understood that this subject will soon constitute one of the requirements for entrance.
- THEORY OF PROBABILITY. By A. G-G-R, JR. 8vo, cloth. \$3.98. In this work the author has chiefly in mind the needs of those students who desire a more intimate acquaintance with modern methods. The chapter on Chance Applied to Matching, while entirely rigid and mathematical in its treatment, is highly interesting, and alone worth the price of the book.
- THE BASHFUL MAN'S GUIDE. BY J. S. P-C-H-N. 12mo., 176 pp. Ridler's. \$4.85.





THE 'VARSITY CREW.

Top floor — Course IV.,
One man — no more;
Oars six — baskets three,
Three girls, full of glee.
Waves high, baskets shaky,
To run the risk each girl is quaky.
Dare they do it? See the fun,
As they try them one by one.
Oars are grasped, fun begins;
Great excitement, which one wins?
More excitement, basket tips,
Over its edge maiden slips.
Oh, what laughter, such a shout!
Then the question, —
Would — — — — fish her out?
Once more seated, signal given,
Each maid strives to reach the haven.
Do they reach it? Yes, they do.
See the picture "Our 'Varsity Crew."

[We regret to state that the members of the 'Varsity Crew, on hearing that their picture was to appear for the first time in TECHNIQUE, were so flattered and overwhelmed with delight that they went entirely to pieces on the last lap, and completely lost their heads as they were about to cross the line.—Ed.]

RECENTLY DISCOVERED FRAGMENT OF OLD ENGLISH.



HAN Septembre wyth hys Automme hewes hath adourned ilke tree,

A new classe eche yere assemble at ye porte of M. I. T. Ye classe that came ye year before now mete wyth gret delyghte,

And gaiseth on ye "Freshies" wyth whom the soone wyll fyghte;

Whyle upper classmen stande aloof and loke wyth grete disdeyne

Upon ye pour yonge Freshmen als if the gave hem peyne;

And at ther lyttle blunders ye "byrde" does wyldee rage,

And curses deeplee at hem behynd hire gilded caige.

Next, ye Freshmen scatter and o'er ye towne roam And try to fynde a boardyng hous wyth comforts of a hoam. Whyle other reckles glotons that have ane ove for FESTS1 Gan bravely into that darke joynte that beres the nam of Pryests. Ye fyrst thynge that ye Freshmen lerne (vt takes a month or tuo) Is to fynde ye place wher the belongen on Tiler's tabular-view. Then alle assemble in ye halle and lyst to Lienus2 Fawnce, Who schewes of Froyste and Adams' toles and ther preisses loudly vants. He maks hem buy ye costlee toles and then he is contente (I heerde yt mentioned on ye syde that he gets teen per cente). Agayne ye lyttle Freshmen mete and trye to organise, But ye noisee Sophs prevent hem wyth cheres, and hotes, and cryes. But soone ye Freshies settle downe als wel als the syn able, And lerne to drawe wyth Burrysonne up in ye noisee "stable." At fyrst ve Freshies tremble at ve frowne of Myster B., And all ye yere the try ther beste to work hym for a "C." Ye Freshies play ther lyttle spiels, but alle of hem syn tam Beside ye wilde excitement of ye Freshman-Sophomore game. Some fyne Novembre afternoon ye yonge assistant8 fynds That alle ye men have "cut" except a few "Co-eds" and "grynds." He lokes up at ye silente rome astonished at ye hush, Then sadlee smyles and says, "To-day methinks the have ye rush." And since he's been instructour for but a lyttle whyle, He wendes hys way out to ye gronds wyth mony a plaisant smyle. Alas! howe soone instructours change; 'tis but a lyttle jump: A yere of teching maks a man into a soor-faced chump.

¹ Fests. The proper rendering of this word is doubtful. Context is taken by some to uphold the rendering "feasts," and by others, "fasts."

² Lienus. The penult is accented.

³ Assistant. The last six letters of this word are entirely optional. Meaning remains the same whether they are used or not.

⁴ Grynd. An ancient term of reproach.

Ye South-end gronds are alle astir, a syght to move ye harte; Ye men are clad in garments olde, wyth whych the soone most parte. Ther is a flag pole in ye feld, for whych both classes stryve (But flag poles were a Jonah to ye classe of Ninety-Five). But now a ferefulle dyn is heerd, and loke what now approches,-Ye ryval teames in costums gay, on tuo decrepit coches. Ye gayme soone startes and both sydes chere: ther is a ferefulle dyn; But ye Sophs have brybed ye umpyre, and so the alway wyn. And now ye gayme is over, ther comes a ferefulle hush, And everychon prepares hymselve for ye Freshman-Sophomore rush. Ye Freshmen tak a broste-stock about treis feet in lengthe, And group ye men around yt that have ye gretest strengthe. Ye Sophs then form a phalanx, and mak a bold array: Ah! mony a wretched Freshie wyll lose hys clothes to-day. Ye starte is made; ye Sophs advance wyth military trede; Ye Freshies see hem comyng, and ther hartes are fylled wyth drede. And now the mete wyth ferefulle shook; ye Freshies stande aghaste, For coates, and vestes, and pantaloons the fynde are goyng faste. Ah! mony a valliant Freshie, despouilled of hys apparelle, Wylle sadlee seke hys boardyng hous attyred in a barell. Ye fyght kepes up; from tyme to tyme out from ye crowd is lede A pour maltraited Freshie who sports a broken hede. At length 'tis don, and tyme is called; ye umpyre then commandes That alle keep styl, that he may gan and compte ye ryval hondes. Whan this is don ye conqueryng class marche proudly downe ye streete, And syng ane hymne of victoiree, in voices loude and sweete; Whyle passers-by on Treimounte Streete, astounished at ye noise, Exclayme, "I wonder what cycloun has overwhelmed thes boys. I fere some drede calamitie has com upon ye crowd, For som are hurt, and alle cry out in voices harsh and loude." But ye coppe5 to whom thes words are sayde don't deign to tourn hys nacke, But murmurs softly, "Divil tak him hoodloms from ye Tech." Ye next day, if ye Freshmen win, the alle tak grete peynes To com to schole ye next A. M. alle beryng lyttle ceines. And whan the come back from ye drylle, you heer hem from afar, "Who was yt licked ye Sophomores? Ye Freshmen, 'Rah! Rah! Rah!"

RESULT of a race in the forge shop: He beat the iron in the first heat.

C-Lv-R, '96 (translating): "Dort rang sie mit Heldenkraft nach Fassung,' There she rang with heroic strength for restoratives."

⁵ Coppe. An allotropic form of copper, an old Saxon word for Hibernian.

⁶ Dryll. An early English form of the verb "drill," "to bore."

HEADQUARTERS OF THE

MASSACHUSETTS INSTITUTE OF TECHNOLOGY CORPS OF CADETS,

Boston, April 25, 1893.

TO THE ADJUTANT GENERAL OF THE U. S. ARMY:

Sir,—I have the honor to inform you that the long-contemplated expedition for the military and topographical reconnaissance of the county lying between Lincoln and Concord, has been accomplished. The Faculty of the Massachusetts Institute of Technology were long in realizing the necessity of this expedition; and as I am nominally under their command, I was forced, much against my will, to wait for their permission. This, at last, after much persuasion on my part, was granted, and I pushed the matter through as soon as they would allow.

It was on a rainy, misty day in April that I and a dozen picked men departed from the Boston & Lowell station on a train for Concord. The morn, I flatter myself, was well chosen, for two reasons: the moisture not only concealed our movements from the inhabitants of the country, but also, by causing my men considerable discomfort, added piquancy to our dangerous expedition. On arriving at Lincoln station I gathered my aids around me, and, after haranguing them on the responsibility of their duties and the fame which, in time of war, invariably accrues to those who serve their country well, I dispatched them two by two toward all points of the compass, and betook myself to the crest of a neighboring eminence, to overlook as much as possible of the manœuvres.

On reaching this position, however, I soon realized that the same mist which concealed our movements from the enemy would soon hide my men from me. Then I regretted not procuring a horse, so that I could carry on a more perfect system of espionage over my men. I have, therefore, on account of my inability to be in all places at once, doubts as to the accuracy of some portions of the work.

The two men I dispatched to count the railroad ties between Baker's Bridge and Concord, accomplished their task in so compendious a period that I felt confident their results were inaccurate. I was, however, able to correct them by counting the ties myself from the car window on the way home. Again: the young engineer in boots, whom I dispatched to examine some suspicious-looking hills in the distance, reported the hills out of their proper position, having moved one foot six inches toward the enemy. As the hills were five miles off, I was unable to check this result. The men I sent to determine how near one could approach the Concord River, brought back fair results. As one of them, however, had not only insisted upon wetting his feet, but had actually sat down in the river, I was able to determine the degree of accuracy with which this work had been carried on. The last couple of the party I kept directly under my surveillance, and can vouchsafe for the truth of their report that the pond on

the road to Concord was really deeper than it looked; and that, although one might suppose seaweed to be on the bottom, there was in reality a number of old tin cans.

With these results I beg leave to close my report, and hoping it may find favor with the War Department, and that my services to my country may not be forgotten by the public at large, I am,

Most respectfully yours,



N. B.—The Secretary of War was much pleased with the above report, and it is rumored that the Faculty, in consideration of this fact, have decided to make Military Topography a fixture on the tabular view.



SHE: "George, do you love me for myself or for my father's bank account?"

HE: "Angelina, darling, I love you-er-on your own account."

"RETROSPECTION."

(Pessimists will please read the upper rendering; optimists the lower.)



TECH, as I look back to thee,
My eyes are filled with tears;
I'll ne'er forget the place in which
I spent such { wretched happy } years.

The old professors { sour and cross, }
To whom I did recite,
How { pleased } they'd be when I would fail,
How { sad } when I'd be right.

The Faculty, their { cursed vote }
With { pain I did receive, }
Informing me in { gleeful } tones
That I would { have to leave. }

The things I studied while at Tech,

(Such useless, foolish truck,
(How useful they have been,)

I've used this knowledge { just two many} times;

And each time I got stuck.
(My way in life to win.)

And as I look upon my life,

{ Which is a total wreck, }
 { With fortune at my beck, }

{ I wish that I'd been sent to jail | I bless with all my heart and soul }

{ Before | I entered Tech.

" GRIND," '95.

A POSSIBILITY.

EXAMINATION IN MILITARY TACTICS AND HISTORY.

Answer the first three questions and any two of the remaining ones. The first question counts 50 per cent, the second and third 20 per cent, and each of the others 5 per cent.

- 1. (a) Describe carefully the battle of Wounded Knee, stating who its hero was.
- (b) Which of the following battles had the greatest effect upon the civilized world: Thermopylæ, Waterloo, Gettysburg, Wounded Knee?
- 2. In your opinion what army officer is best fitted to fill the places left vacant by Grant, Sherman, and Sheridan?
- 3. Which of the following costumes is the most elegant: Crinoline, Pajamas, Salvation Army, German Band, First Lieutenant U. S. Artillery?
- 4. If in a battle an officer has a watch shot into his body, which of the following expressions is the more appropriate: "Time flies," or "The watch on the spine?"
- (a) Give a careful account of the principal battles of Cæsar's Gallic Wars, explaining particularly the arrangement of men and movements executed.
- (b) Give the principal terms used in military evolutions by Atilla, the Hun, and describe the Roman system of rifle sharpshooting.
- 6. Give a detailed account of the following battles, criticising and showing where the defeated generals made their mistakes: Marathon, Salamis, Philippi, Sempach, Blenheim, Waterloo, Austerlitz, Solferino, Long Island.
- 7. Where is the greater intelligence required, as President of the United States or as Commandant of the Freshman Battalion? Give reasons for your answer.

May, 1894.

Mr. L-mb-rth, showing class in forging the process of tempering steel: "Now, there goes the yellow, and here comes the purple, and now the blue, and ——"

VOICE, in the rear: "Five on the red."

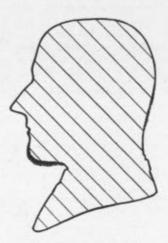


MY FEAR.

I love her more than I can tell,—
But yet my heart is sore.
I have a fear I cannot quell,
That, though she love my presents well,
She loves my absence more.

MR. H-LL-R: "Der Orgel Meister, gentlemen, is a well-known story. Can any one tell its meaning?"

L-R-NG, '94: "The Organ Grinder."



A CROSS SECTION.



KATHERINE: "It was all so sad. He died just a week before they were to be married. She says that she will never marry until she meets him in the next world."

CAROLYN: "Then they will never marry!"
KATHERINE: "Do you really think so?"

CAROLYN: "How could they? It is too hot to make matches where he has gone."

THE IRREPRESSIBLE.



The sun sinks low behind the western hill,

The wintry gust shrieks cold about my sash;

The cresent moon defines the evening's chill,

Before my pane the barren elm boughs crash.

The street is empty, save for one who walks

With stately tread, head up, against the storm.

But who—? Ah yes! I see. A Freshman stalks

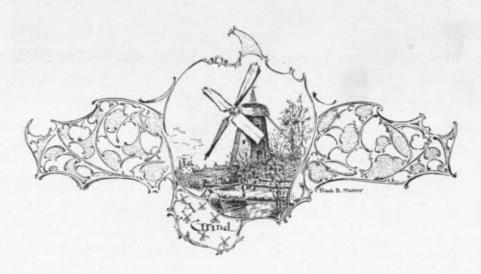
The street, bedecked in all his uniform.

HOW DID IT HAPPEN?

In Physics we were told one day
Of a man struck in the jaw,
And in the light of the stars produced,
His enemy's face he saw.

I thought this joke was very good,
And original, too, forsooth,
Until I chanced on that self-same joke
In a copy of last week's *Truth*.

"GRIND," '95.



"The Lord sends meat,
The Devil cooks—"
But not for Mrs. King.
P. E. Perry '94



Robert S. Sheel.

Quotations.

Words are but pictures, true and false designed.

—"May he live

Longer than I have time to tell his years!

Ever beloved and loving, may his rule be!"—The President.

"Of such a merry, nimble, stirring spirit."-Prof. V-n D--II.

"Deepsighted in intelligences,"—Prof. Cr-fts.

"His fame was great in all the land."-Prof. F-sk-.

"And so I penned
It down, until at last it came to be,
For length and breadth, the bigness which you see."—L-nz-'s Applied Mechanics.

"Knowledge this man prizes best, Seems fantastic to the rest."—W-gg-n, '95.

"His pencil was striking, resistless, and grand."-R. S. Sh-dd.

"I am, sir, a brother of the angle."-Prof. B-rtl-tt.

"I am fearfully and wonderfully made."-F. C. Schm-tz, '95.

"Crust, they say, is the best part of bread, and I have lots of it."—R-st, '95.

"The true beginning of our end."-F. F.

"And as thou drawest, swear horribly."-B-kh-t-r, '95.

"A hapless infant here I roam, Far from my dear maternal home."—R. St-rg-s, '05. "I am nothing if not critical."-H. D-ck-ns-n.

"And still they gazed, and still the wonder grew,
That one small head should carry all he knew."—F. E. M-tth-s, '95.

"Tis distance lends enchantment to the view."-Reflection on last term's subjects.

"He was a scholar, and a ripe and good one."-Prof. Cr-ss.

"O, blessings on his kindly voice, and on his silver hair "-Prof. R-nkl-.

"Happy am I; from care I'm free.
Why ar'n't they all contented like me?"—J. H. G-rd-n-r, '94.

"With the smile that was childlike and bland."-Prof. S-nd-r-ck-r.

"He was in logic a great critic, Profoundly skilled in analytic."—Prof. B--l-y.

"Ever gentle and so gracious.
With all his learning."—Prof. Dr-wn.

"Whatever skeptic could inquire for, For every why he had a wherefore."—Cl-ff-rd.

"The rankest compound of villainous smell that ever offended nostril."—Organic Lab.

"Comb down his hair. Look! look! it stands upright."-Dr-sk-, '95.

"Week in, week out, from morn till night, You can hear his bellows blow."—L-bb-, '95.

"How little space 'twixt man and ape."-C. B-rn-d.

"I cannot tell what the dickens his name is."-Pedro Urquiza Y. Bea.

"In him brain currents near and far, Converged as in a Leyden jar."—H-w-rd, '95.

"When a lady's in the case, You know all other things give place."—Cr-sb-, '96.

"She has an earnest intellect, a perfect thirst of mind."-Miss F. A. W -- d, '95.

"Who thinks too little, and who talks too much."-Ninety-Six.

"A vulgar name for the Devil."-Tadeo Narciso Quevedo.

"A delusion, a mockery and a snare."-The Average Student.

"He who fights and runs away,
May live to fight another day."—Candidate for Condition Exams.

"And I oft have heard defended,

Little said is soonest mended."—Miss B-rth-l-m-zv.

"Would that I had wings; I'd fly."- The Bird.

"You can't know everything about anything unless you know something about everything."—Prof. P--b-dy.

"Who fears to speak of Ninety-Eight?
Who blushes at the name?"—Class of Ninety-Eight.

"I should smile "-Prof. D-w-y.

"If aught my vocal organs should have sound'd,

None but that selfsame song could they redound."—E. H. Cl-pp, '95.

[Thunder and lightning continuing.]

"And back recoiled, he knew not why,

Even at the sound himself had made."—E. C-ll-ns, Jr.

"Cause I's wicked. I is,—I's mighty wicked anyhow.
I can't help it."— W. S. Rh-d-s, '95.

"A terrible man, with a terrible name,—

A name which you all know by sight very well,

But which no one can speak, and no one can spell."—Sch-ntg-n.

"A beard that would make a razor shake, Unless its nerves were strong!"—L-g-n, '95.

"Intelligence and courtesy not always are combined."-Gr-g-r-, '95.

"Long is the way, and hard, that out of hell leads up to light."-Second Year Physics.

"And which was strange, the one so like the other,
As could not be distinguish'd but by names."—H. R. H-dg- and W. R. H-dg-, '96.

"Better late than never."-H. M. Ch-s-, '94.

"Hear it not, Duncan; it is a knell,

That summons thee to heaven or to hell."-Notice: Please see the Secretary at once.

"I am not only witty in myself, but the cause of wit in other men."-L-nngr-n, '95.

"All hell broke lose."-After Physics Lecture.

"He had a roguish twinkle in his eye."-B-xb-, '95.

"Whoever thinks a faultless piece to see,
Thinks what ne'er was, nor is, nor e'er shall be."—Shop Work.

"As crulle his locks as they were laid in presse."-S. K. Cl-pp. '95.

"Look, he's winding up the watch of his wit: By and by it will strike."—Prof. L-nz-.

"One ear it heard, at the other out it went."-Junior at Heat Lecture.

"Your statement is erroneous."-F. M. Gr -- nl-w.

"You may trust him in the dark."-J. S. Sm-s-r, '95.

"The good he scorned,
Stalked off reluctant, like an ill-used ghost,
Not to return; or, if it did, in visits
Like those of angels, short and far between."—H-w-, '9-?

"Some things are of that nature as to make
One's fancy chuckle, while his heart doth ache."—Fourth Year Applied.

"None name thee but to praise."-N. R. Ge-rg-.

"It would talk. Lord, how it talked!"-Prof. C-rr--r.

"Thou art made tongue-tied by authority."-Secretary's Assistant.

"I know you lawyers can, with ease,
Twist words and meanings as you please."—L. D. Br-nd-s.

"I am but a gatherer and disposer of other men's stuff."-Keezer.

"If there be, or ever were, one such,
It's past the size of dreaming."—Bursar.

"Readable as an open book;
And much of easy dignity there lies
In the frank lifting of his cordial eyes."—Prof. B-rt-u.

"With thee conversing, I forget all time."-Prof. B-t-s.

"These things are beyond all use,
And I do fear them."—Heat and Thermo.

"I do present thee with a man of mine, Cunning in music and the mathematics."—Prof. W-lls.

"He is a great observer, and he looks
Quite through the deeds of men "—H. W. T-I-r

"I do not think a truer gentleman
. . . is now alive."—Prof. P-rt-r.

"Talks as familiarly of roaring lions,
As maids of thirteen do of puppy dogs."—Br-gg, '97.

"Though this be madness, yet there's method in it." - Cane Rush.

"I am always in haste, but never in a hurry." -- . D. F-ll-r, '95.

"Here are a few of the unpleasantest
Words that ever blotted paper."—Exam. in Heat.

"Now, infidels, I have you on the hip,"-The Christian Union.

"For Nature had but little clay
Like that of which she moulded him."—Prof. F--nc-.

"Tis said that those who on this earth
Themselves all fun deny,
In heaven will have a pair of wings,
And be exceeding fly."—The Grinds.

"They always talk who never think."-N-y, '95.

"A man he was to all the country (class) dear (\$1.00.)."- Y-d-r, '95.

TECHNOLOGY STATISTICS.



HE 36.1 per cent of Special Students at the Institute is divided among the classes as follows:—

25.4 per cent of the Seniors are Specials.
33.9 per cent of the Juniors are Specials.
44.8 per cent of the Sophomores are Specials.

10.8 per cent of the Freshmen are Specials.

The percentage of Freshmen entering free of conditions is 58.2. The Freshmen upon their entrance averaged 1834 years.

The endowment of the Institute is \$589,800.

President Eliot, of Harvard, was Professor of Chemistry at the Institute from 1875 to 1879.

Course II. has had more graduates than any other Course.

Only two men have been graduated from the course in Geology.

Fifty-seven and five-tenths per cent of the students are residents of Massachusetts.

When the Institute was ten years old, it had ninety graduates.

When still less than thirty, it has graduated more than one thousand students.

Forty-nine students are pursuing a regular five-year course.

Fifty-four per cent of the students live within walking distance of the Institute. Nineteen per cent live in the immediate suburbs.

The students of the Institute travel daily eight thousand seven hundred miles.

Course I. of M. I. T. is that used by the National Commissioner of Education as the Example of a high-grade course in Civil Engineering.

The Technology Libraries contain 30,419 volumes, divided as follows:-

7	The General	Library .	4	2						3,093
1	The Enginee	ring Library	100							4,547
7	The Mining	Library .	1							1,276
1	The Architec	ctural Library				141			,	1,202
1	The Chemic	al Library					12			5,423
7	The Biologic	al Library		-	61					1,423
7	The Physical	Library							100	3,845
7	The Political	Science Libr	ary							6,012
1	The English	Library .						 		1,650
1	The Geologi	cal Library								1,388
1	The Margare	t Cheney Ro	om			.4.	14			560

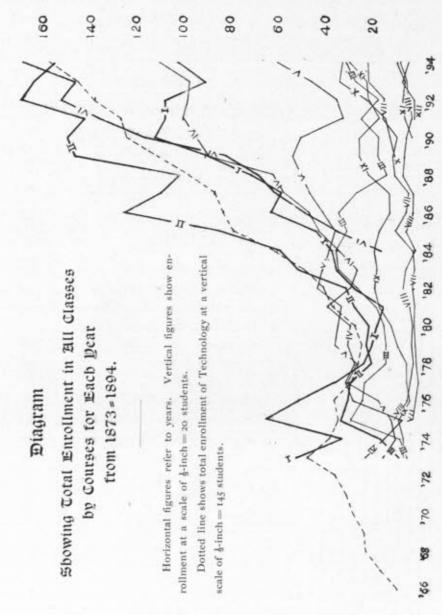
COLLEGE STATISTICS.

ANNUAL.	Olio.	The Bugle.	Liber Brunensis.	Bric-à-Brac.	Columbian.	Cornellian.	Ægis.	Harvard Index.	Epitome.	Stanford 2nod.	Technique.	Syllabus.	Hi-o-Hi.	The Lantern.	Débris.		Onondagan.	Blue and Gold.	Register.	Violet.	Palladium.	Record.	The Comet.	Legenda.	Gulielmensian.	Banner.
OOLORS,	Purple and White.	White.	White and Brown.	Orange and Black.	Blue.	Carnation and White.	Green.	Crimson.	Seal Brown and White.	Cardinal.	Cardinal Red and Gray.	Royal Purple.	Crimson and Gold.	Scarlet and Gray.	Black and Old Gold.	White.	Orange.	Blue and Gold.	Orange.	Violet.	Sky Blue and Maize.	Red and Blue.	Old Gold and Black.	Blue.	Royal Purple.	Blue.
NO. OF NO. OF STUDENTS. INSTRUCTORS.	35	29	19	70	226	151	48	322	35	7.5	144	177	82	70	50	40	57	117	140	66	162	277	70	70	56	- 561
NO. OF STUDENTS.	432	317	299	1092	1491	1752	468	3156	527	925	11.57	2463	1492	807	269	750	777	1561	950	1035	2778	2185	733	755	346	2202
FOUNDED.	1821	1794	1764	1746	1754	1868	6941	1636	9981	1887	1865	1851	1833	1870	1874	1875	1870	1868	1890	1831	1837	1740	1875	1875	1793	1701
LOCATION.	Amherst, Mass.	Brunswick, Me.	Providence, R. I.	Princeton, N. J.	New York, N. Y.	Ithaca, N. Y.	Hanover, N. H.	Cambridge, Mass.	So. Bethlehem, Penn.	Palo Alto, Cal.	Boston, Mass.	Evanston, III.	Oberlin, Obio.	Columbus, Ohio.	Lafayette, Ind.	Northampton, Mass.	Syracuse, N. Y.	Berkeley, Cal.	Chicago, III.	New York, N. Y.	Ann Arbor, Mich.	Philadelphia, Penn.	Nashville, Tenn.	Wellesley, Mass.	Williamstown. Mass.	New Haven, Conn.
NAME.	Амнекsт	Bowdoin	BROWN UNIVERSITY	COLLEGE OF NEW JERSEY	COLUMBIA	CORNELL UNIVERSITY	DARTMOUTH	HARVARD UNIVERSITY	LEHIGH UNIVERSITY	LELAND STANFORD, JR. UNIVERSITY	MASS. INSTITUTE OF TECHNOLOGY	NORTHWESTERN UNIVERSITY	OBERLIN COLLEGE	OHIO STATE UNIVERSITY	PURDUE UNIVERSITY	SMITH	SYRACUSE UNIVERSITY	UNIVERSITY OF CALIFORNIA	UNIVERSITY OF CHICAGO	UNIVERSITY OF CITY OF NEW YORK	UNIVERSITY OF MICHIGAN	UNIVERSITY OF PENNSYLVANIA .	VANDERBILT UNIVERSITY	Wellesley	WILLIAMS	YALE UNIVERSITY

Diagram

Showing Relative Size of Technical Schools or Departments in the United States.

	No.	Name			No. dents.
	15.	Massachusetts Institute Technolo	gy		1157
	14.	Cornell University			767
	13.	Sheffield Scientic School .			601
	12.	Lehigh University		4	505
	11.	Ohio State University			450
	10.	University of Pennsylvania .			386
	9.	Purdue University			378
	8.	University of Wisconsin .			342
10	7.	Lawrence Scientic School .			280
lis	6.	Worcester Polytechnic Institute			245
	5-	Rensselaer Polytechnic Institute			230
7	4-	Leland Stanford, Jr., University			200
1 5	3.	Rose Polytechnic Institute .			130
1 1 4	2.	Vanderbilt University			120
		Tufts			92



SALARIES OF ALUMNI.

				CLA	ss	OF '	84.			CLASS OF '86.									
Courses.	T. G. F.	S. F.	\$500 to \$1000.	\$1000 to \$1500.	\$1500 to \$2000.	\$2000 to \$2500.	\$2500 to \$3000.	Above.	Average.	T. G. F.	S. F.	\$500 to \$1000.	\$1000 to \$1500.	\$1500 to \$2000.	\$2000 to \$2500.	\$2500 to \$3000.	Above,	Average	
1.	5	5			9	1		1	\$3300	9	9		3	3		.1	**	\$1675	
п.	6	4		1	1		1	***	1900	23	16		**	3	1	1	44	2075	
111.	13	6		2		1		3	3200	7	4			1	1.		11	2083	
IV.			**	12					****	1	1		**	***			1.0	1111	
v.	12	9		1		1	1		2100	7	7				-1	1		2500	
VI.	**									10	8			2	1.	1	2	3230	
VII.										1	1				**		**		
VIII.			**			**													
IX.										1	1				1		200	2250	

				CLA	ASS	OF '	88.						CLA	ASS	OF '	90.		
Courses.	T. G. F.	S. F.	\$500 to \$1000.	\$1000 to \$1500.	\$1500 to \$2000.	\$ 2000 to \$2500.	\$2500 to \$3000.	Above.	Average.	T. G. F.	S. F.	\$500 to \$1000.	\$1000 to \$1500.	\$1500 to \$2000.	\$2000 to \$2500.	\$2400 to \$3000.	Above.	Average
- I.	11	8		2	2				\$1500	25	24	1	7	3		1		\$1490
11.	25	20	3	1	7	1	1		1608	27	22	4	1	4		3	40	1604
111.	4	3	**	2	,,			- 12	1250	3	3					1		2700
IV.	5	4		2	44	1	**		1583	5	5	12	- 1	1.2	**	11		1250
v.	10	to		1	3	**	2		2000	13	10	2	2		**	**	SERC	1000
VI.	17	15		2		1		-1	3425	18	15	-6	- 6	4	**	11	**	*1600
VII.	3	3	**	***	- 1				1750	3	2						1.	
VIII.	15	- 1				**				- 2	2	**	144		**	14	11	****
IX.	- 10	7				1			2000	- 6	4	2				11	1.	2000

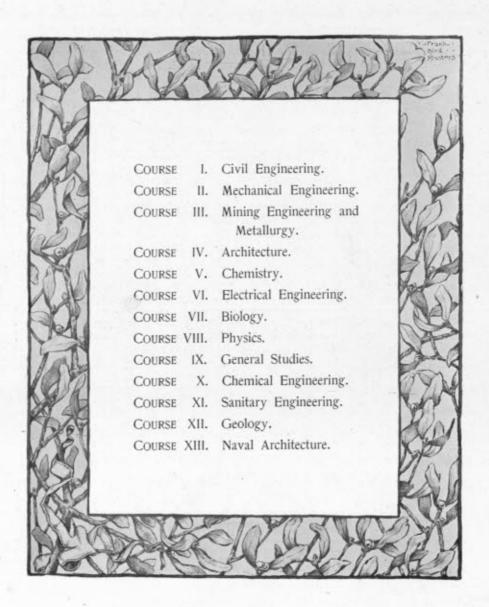
The above table is made up from actual returns received from graduates.

The averages are based only on replies received, and do not therefore represent the exact averages.

T. G. F. - Total Graduated From.

S. F. - Still Following.

9. Russe Lincola



Richard H. Kodge.





NAME.	HOME.	RESIDENCE.
ALDEN, CHARLES HENRY, JR S.B., Mass. Institute of Technology.	Boston	86 Charles St.
Ames, John Worthington	Cambridge	Cambridge.
BARR, LAWRENCE	Boston	275 Marlborough St.
BARTHOLOMEW, ETHEL	Chariton, Iowa	298 Columbus Ave.
BIGELOW, SAMUEL LAWRENCE A.B., Harvard University.	Boston	130 Mt. Vernon St.
BOLAN, HERBERT A	Philadelphia, Penn.	13 Lambert Ave., R.
Bowie, August Jesse, Jr	San Francisco, Cal.	201 Clarendon St.
Brown, Alice Frances, Chem A B., Smith College.	Boston	50 Pinckney St.
Brown, Willard Dalrymple A.B., Harvard University.	Lexington	Lexington.
BURNETT, LEANDER	Ravenswood, Ill	112 Dartmouth St.
CARTER, WILLIAM WOOD S.B., Mass. Institute of Technology.	Boston	110 Dartmouth St.
CHAMBERLAIN, HERBERT WILLIAM B.Sc., Iowa State Agricultural College.	Hudson, Ohio	22 Rutland Sq.
CLAPP, HARRY LINCOLN S.B., Mass, Institute of Technology.	South Boston	18 Atlantic St., S. B.
CLEMENT, HUGH BARRETT		31 Rutland St.
CLUETT, ALBERT EDMUND	Troy, N. Y	92 Pinckney St.
CRAFTS, WALTER NATHAN A.B., Oberlin College.	Oberlin, Ohio	Cambridge.

211.11.01		The state of the s
CRAIGHILL, NATHANIEL RUTHERFORD S.B., Mass. Institute of Technology.		Charlestown, W. Va. 117 Dartmouth St.
CRAWFORD, ANDREW WRIGHT A.B., University of Pennsylvania.	*	Bryn Mawr, Penn 116 Pembroke St.
CUMMINGS, CHARLES KIMBALL A B., Harvard University.	1	Boston 230 Clarendon St.
CURTIS, IDA MAYNARD B.S., Cornell University.	€3	Boston 18 St. Stephen St.
DAY, NATHAN BROWN		Boston 280 Newbury St.
DIAZ, José IGNACIO		Caracas, Venezuela. 5 Allston St.
DIAZ, MANUEL DIONYSIUS A.B., University of Havana.		Havana, Cuba 563 Columbus Ave.
FARQUHAR, ROBERT DAVID	•	Newton Newton.
FITZ GERALD, FRANCIS A. J B.A., Trinity College.		Dublin, Ireland 224 W. Springfield St.
FOSTER, MARY LOUISE		West Roxbury Maple St., W. R.
FURBISH, FREDERIC		Iowa City, Iowa . 362 Columbus Ave.
GARFIELD, ABRAM	*	Mentor, Ohio 89 Charles St.
GAY, CHARLES MERRICK, JR A.B., Harvard University.		Boston 222 Marlborough St.
GOODRICH, CHARLES CROSS A.B., Harvard University.	*	Cambridge Cambridge.
GRAY, AGNES WOODBURY, Chem A. B., Harvard Annex.		Lynn Cambridge.
GREENWOOD, WILLISTON WIRT B C.E., University of Minnesota.	1	Minneapolis, Minn. 806 Tremont St.
HARDON, MARGARET		Newton Newton.
HART, DONALD PURPLE	*	Marietta, Ohio 387 Boylston St.
HITCHCOCK, FREDERICK St. JOHN . B.S., Straight University.		Westfield Cambridgeport.
Hodge, Benjamin	÷	St. Paul, Minn 109 Pinckney St.
HOPKINS, PRESCOTT ANDREWS M.S., Mass. Institute of Technology.		Newburyport 120 Charles St.
Hunt, Samuel Parker	•	Manchester 30 Concord Sq.
INGRAHAM, GEORGE HUNT S B., Mass. Institute of Technology.	٠	New Bedford East Milton.
JONES, GRAHAME	•	Chicago, Ill 468 Boylston St.

HOME.

RESIDENCE.

NAME.				HOME. RESIDENCE.
KINNEY, CHARLES NOYES A.C., Drake University.		*		Des Moines, Iowa . 754 Tremont St.
		*		Charleston, S. C 82 Appleton St.
LINCOLN, PELHAM WINSLOW . S.B., Worcester Polytechnic Institute				Worcester 27 St. James Ave.
LOWELL, GUY	25	٠		Boston 40 Commonw'lth Ave.
MAGRUDER, HUGH SISSON A.B., Johns Hopkins University.		٠		Baltimore, Md 471 Columbus Ave
MANN, FRED MAYNARD B.C.E., University of Minnesota.	٠	*		Minneapolis, Minn. 73 Montgomery St.
MARBLE, DWIGHT NEWCOMB . A.B., Centre College.				Owensboro, Ky 66 Chandler St.
McGoodwin, Henry Kerr B.S., Ogden College.	*			Bowling Green, Ky. 16 Durham St,
McSorley, John James A.B., Holy Cross College.				Lowell Lowell. F
NESBIT, ARTHUR FLEMING A.B., Lafayette College.	*	*		Milton, Penn 79 Dartmouth St.
Newbegin, Parker Cleavelan A.B., Bowdoin College.	D			Defiance, Ohio 36 Yarmouth St.
O'CONNELL, DELIA MARIA A.B., Vassar College.			*	Marlboro Marlboro.
PARKER, JOHN HARLESTON A.B., Harvard University.		•		Cambridge Cambridge
PARNALL, WILLIAM E., JR S.B., Michigan Mining School.				Boston , . 89 Appleton St.
PAULI, ROBERT FRIEDRICH Ph.D., University of Göttingen.				Frankfort, Germany. 11 Hanson St.
PHILLIPS, CHARLES ABBOTT. B.S., Northwestern University.				Evanston, Ill 387 Boylston St.
Pulsifer, Louis Warren A.B., Harvard University.	*	٠		Newtonville Newtonville.
Quevedo, Narciso Tadeo B.S., National Institute.				Guatemala, C. A 36 Seattle St., A.
ROETH, ADOLPH GASTON M.D., University of the City of New			•	Boston 176 Harrison Ave
SARGENT, WILLIAM PARKER Ph.B., Yale University.				Chicago, Ill 1 Yarmouth St.
SELFRIDGE, RUSSELL S.B., Mass. Institute of Technology.		*		Washington, D.C. 78 Charles St.
STOSE, GEORGE WILLIS S.B., Mass. Institute of Technology.		2		Pasadena, Cal 6 St. Charles St.
STOUGHTON, BRADLEY	٠	*	*	New Haven, Conn. 96 Charles St.
Sullivan, Michael Aloysius . A.B., Boston College.				Boston 157 W. Brookline St.

NAME.			HOME. RESIDENCE.
Taft, Harrison Southwick B.P., Brown University.		*	Providence, R. I 118 Dartmouth St.
THOMAS, DOUGLAS HAMILTON, JR. A.B., Johns Hopkins University.			Baltimore, Md 1 Willow St.
THOMSON, LUCY DOOLITTLE B.A., Smith College.		*	Belchertown 37 Union Park.
THORNDIKE, HARRY HILL A.B., Harvard University.			Boston 175 Marlborough St.
THORNDIKE, STURGIS HOOPER A.B., Harvard University.		ė	Cambridge Cambridge.
Torossian, Toros Hovhanes B.A., Robert College.			Rustchuk, Bulgaria. 80 Huntington Ave.
VON HOLST, HERMANN VALENTIN A.B., University of Chicago.			Chicago, Ill 164 W. Canton St.
Weil, Isaac		٠	New York, N. Y 38 St. Botolph St.
WENGREN, ELMER LINDBERG A.B., Harvard University.		*	Portland, Me 86 Appleton St.
WESTCOTT, WILLIAM READ A.B., Harvard University.			Cambridge Cambridge.
WESTON, ROBERT SPURR B.S., Amherst College.	÷		Brockton Brockton.
WILLIS, JOHN HOWARD		٠	Boston 49 Chester Sq.
Wolf, Julius Herman B.C.E., Delaware College.		*	Edwardsville, Ill 19 Joy St.
WRIGHT, JAMES HAYDEN	*		Detroit, Mich 39 Union Park.





NAME.	COURSE.	HOME.	RESIDENCE.
ABBOT, CHARLES GREELEY			
ABBOTT, FREDERICK BANCROFT			
ADAMS, RALEIGH BULLARD			
AMES, AZEL, 3D, Φ. B. E	I.	Chelsea	. Chelsea.
Anderson, George Herbert			
Andrews, Edmund Lathrop, Σ.X			
BADGLEY, CHARLES GRAYUM			
BAKER, FRED CHARLES	. II.	Waltham	. Waltham.
BARSTOW, GEORGE EDWARD			
BARTON, HOWARD RITTENHOUSE			
BATES, HARRY REYBURN, A. Y	. V.	Washington, D. C	. Hotel Raymond.
BATSON, WALTER VENNARD	VI.	Allston	. 16 Gordon St., A.
BEACH, CHARLES BURR	. X.	Dubuque, Iowa .	. 71 Rutland St.
BEACH, IRVING EVERETT	V.	Lawrence	. 134 Huntington Ave.
Bean, Norwin Sherwood	VI.	Manchester, N. H.	. 144 W. Newton St.
BENEDICT, VALLETTE LYMAN, Θ. Ξ	. VI.	Boston	. 150 Huntington Ave.
BERRY, HEREFORD	. VI.	North Andover .	. 184 W. Canton St.
BLAKE, SAMUEL HENRY	VI.	Brookline	. 563 Columbus Ave.
BLISS, WALTER DANFORTH, X. Φ.	. IV.	Carson City, Nev.	. 58 Chester Sq.
Boss, Charles Royce, Σ. X			
BOVEY, WILLIAM HOWARD, A. K. E.			
BREED, STEPHEN ALEC	. II.	Lynn	. Lynn.
Brown, Walter Vail	. VI.	Oldtown, Me	. 184 W. Canton St.
BROWN, WILLARD DALRYMPLE, A.B.	. IV.	Lexington	. Lexington.
CARTER, WILLIAM WOOD, S.B	. VI.	Boston	. 110 Dartmouth St.
CASE, WINTHROP TRACY	. II.	Canton Center, C	t. 373 Columbus Ave.

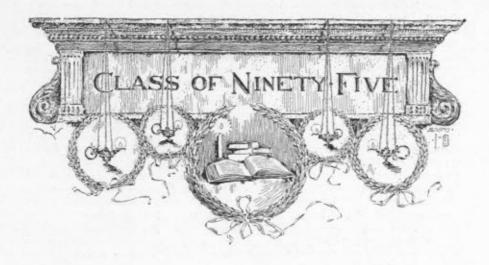
NAME.	COURSE.	HOME.	RESIDENCE.
CHACE, MASON SMITH	. II.	Dorchester	31 Wales St., D.
CHAPMAN, JOHN WINSLOW, JR	. II.	Hyannis	323 Columbus Ave.
CHAPMAN, NATHAN C. W	. II.	Hyannis	323 Columbus Ave.
CHASE, HAROLD MAYSON	. X.	Lowell	563 Columbus Ave.
CHENEY, NATHAN	. II.	Boston	
CLAFLIN, ALAN AVERY	. V.		563 Columbus Ave.
CLAPP, HARRY LINCOLN, S.B			18 Atlantic St., S. B.
CLARK, ARTHUR HENRY, E. A. E.	. VI.	Cedar Rapids, Iowa.	
CLARKE, EDWARD DUTTON, A. V.	. VI.	Buffalo, N. Y	
CLARKE, FRED HAMILTON	. I.	Jamestown, R. I	132 Huntington Ave.
CLEMENT, ARTHUR AUSTIN, A.K.E.	. X.	Chicago, Ill	66 Chester Sq.
CLEMENT, HUGH B., PH.B., S.B.		Hepburn, Ohio	
COOLIDGE, PRESCOTT HILTON .	. I.	So. Framingham .	
COPELAND, HENRY F., A. K. E	. I.	New York, N. Y	
COUSINS, STERLING GREEN	II.	Fortuna, Cal	373 Columbus Ave.
Cox, Frederick Edward, A. T.	. IV.	St. Louis, Mo	52 Chester Sq.
CRAIGHILL, NATHANIEL R., S.B.	. VI.	Charlestown, W.Va.	
CRARY, HORACE ALLEN, A. Y		Sheffield, Penn	
CURTIS, THOMAS PELHAM, A. K. E		Cambridge	
CUTLER, CHARLES HENRY		So. Framingham .	
DALTON, NELSON WAIT		Sandy Hill, N. Y	
DATES, HENRY BALDWIN		New Britain, Conn.	
DAVIES, THEOPHILUS CLIVE, A.K.E		Southport, Eng	
Davis, Leon Keith		West Newton	Marie Control of the
DAVIS, WILLIAM E. JR., X. O.		Englewood, Ill	
DAY, NATHAN BROWN, A.B., O. E		Boston	
DANA, LESLIE, X. Φ		Kirkwood, Mo	
DICKEY, CHARLES WILLIAM, X. 4		Hawaiian Islands .	
DUCKWORTH, HARRY STAFFORD		Lowell	
DU PONT, HENRY BELIN, 4. B. E.		Wilmington, Del	
EATON, EVERETT LAWRENCE .		Needham	COLUMN TO STATE OF THE PROPERTY OF THE PROPERT
Ellis, John	. VI.	Woonsocket, R. I.	
FARNSWORTH, ARTHUR JAY, A.K.E	. VI.	Minneapolis, Minn.	
FERGUSON, JOHN NEIL	. I.	Readville	The state of the s
FOWLE, FREDERICK EUGENE, JR.		Arlington	Arlington.
GALLUP, HARRIET TOOKER		Ledyard, Conn	
GARDNER, HARRY WENTWORTH	. IV.	Jamaica Plain	
GARDNER, JOHN HOWLAND	. II.	New London, Conn.	
GILKEY, ROYAL WALDO		Watertown	
GREENLEAF, LEWIS STONE, A. Y.		Lenox	
HALL, SARAH ABBIE		Roxbury	
HARRISON, BURT SYLVANUS		La Crosse, Wis	
HARWOOD, FREDERICK WM., JR.		Springfield	
HASTINGS, HARRY PAYSON		So. Framingham .	
HAVEN, GEORGE BARTHOLOMEW		Sangerfield, N. Y.	
HEWITT, HERBERT EDMUND, Δ. Υ		Chicago, Ill	
HICKS, EDWIN FRANCIS			325 Columbus Ave.
HILL, WILLIAM REED		Milton	

NAME.	OURSE.	HOME, RESIDENCE.	
HOPEWELL, CHARLES FREDERICK.	VI.	Cambridgeport Cambridgeport.	
HOPKINS, PRESCOTT A., M.S	IV.	Newburyport 120 Charles St.	
HORTON, THEODORE		Coronado, Cal 100 Mt. Vernon St.	
Howes, Clifton Armstrong	VI.	Cambridge Cambridge.	
HULSE, WILLIAM STEWART	VI.	Ft. Wayne, Ind 134 Huntington Ave.	
HUNT, ALBERT FRANCIS, JR	I.	Newburyport 31 Dartmouth St.	
HUNT, EDWARD MARSHALL			
JANVRIN, NED HERBERT	I.	Lexington Lexington	
JANVRIN, WALTER ADAMS		Revere Revere.	
JENSON, JOSEPH	II.		
JOHNSON, CHARLES HERBERT		Jamaica Plain 494 Centre St., J. P.	
JOHNSON, HERBERT EDWARD			
JONES, MILTON FRANK	V.	Natick Natick.	
KENDALL, ALBERT LINCOLN, A. T.		Framingham Framingham	
KIMBALL, JOSEPH HARRIS	XI.		
KING, WILLIAM HERBERT	IX.	Melrose Melrose.	
KINNEY, CHARLES NOYES, A.C		Des Moines, Iowa . 754 Tremont St.	
KIRK, ROBERT HORNER		St. Paul, Minn 19 Union Park.	
KITTREDGE, JOHN WOODMAN	II.	Alnwick, Colo 8 Brookline Ave.	
KNAPP, CHARLES REAY, Σ. X		Louisville, Ky 220 W. Chester Park.	
LACOUNT, HENRY OSGOOD	II.	West Somerville . West Somerville.	
LANE, LUCIUS PAGE	IX.	Boston 623 Tremont St.	
Leiper, George Neville	II.	Philadelphia, Penn. 168 W. Newton St.	
LEONARD, FREDERICK MEEHAN .		Jamaica Plain 165 Green St., J. P.	
LINCOLN, PELHAM WINSLOW, S.B.		Worcester 27 St. James Ave.	
LOCKE, JOHN CALVIN	III.	Lockeford, Cal 298 Columbus Ave.	
LORD, FREDERICK WAITT, O. E		Boston 8 Mt. Vernon St.	
LORING, ROBERT		South Boston 789 Broadway, S. B.	
LOVEJOY, FRANK WILLIAM, D. B. E.		Concord, N. H Hotel Mitchell.	
LOWELL, GUY, A.B	IV.	Boston 40 Commonw'lth Ave.	
LYNCH, PATRICK MAURICE		Holyoke I Yarmouth St.	
MAC CLURE, COLBERT ANDERSON .	IV.	Delphi, Ind 22 Claremont Park.	
MACKAY, ANGUS ROBERT	III.	Montreal, Que 198 Beacon St.	
MAHONY, MARION LUCY	IV.	Chicago, Ill 235 W. Canton St.	
MANN, FRED MAYNARD, B.C.E		Minneapolis, Minn. 73 Montgomery St.	
MAYER, VIRGINIUS AUGUSTUS	VI.	Cincinnati, Ohio . 83 Montgomery St.	
McGoodwin, Henry Kerr, B.S	IV.	Bowling Green, Ky. 16 Durham St.	
McJennett, William Dargon .	X.	Norwich, Conn 49 Rutland St.	
McKenzie, Donald Neil	IV.	Galveston, Tex 527 Columbus Ave.	
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Newhouse, Henry Leopold		Chicago, Ill 7 Holyoke St.	

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Nowell, John Chase	VI.	Reading	
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PARKER, HORATIO NEWTON		Cambridge	
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RIPLEY, HENRY FRANCIS	II.		168 W. Newton St.
ROBBINS, FRANKLIN HENRY		Cambridge	
ROETH, ADOLPH GASTON, M.D., .		Boston	10 1 10 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1
ROGERS, ARTHUR SILAS		Salem	126 Berkeley St.
SARGENT, WILLIAM PARKER, Ph.B.		Chicago, Ill	1 Yarmouth St.
SAVAGE, SILAS ANTHONY, E. A. E		Chelsea	Chelsea.
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HICKEY, WILLIAM JAMES			50 W. Cedar St.
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Le Bosquet, Maurice, A. Y	V.	Haverhill	
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LIBBY, DORVILLE, JR	VI.		l. 117 Appleton St.
LINCOLN, ALFRED VARNUM, JR	II.		. 32 Cordis St., C.
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LONNGREN, JOHN ERIK	IV.	Gloucester	
Low, Frederick Friend	IV.	Somerville	
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Matthes, François Emile	I.		THE STREET STREET, STR
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McManus, James Thomas Reid .	I.		3. 154 Warren Ave. . 34 Claremont Pk.
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Morey, Richard	I.	Sedalia, Mo	. 57 Clarendon St.
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TUCKER, HUGH MERCER			o. 170 W. Canton St.
WAITE, LOREN GLEASON			. Malden.
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Zapf, Alfred Edward, Δ . Υ	. IV.	Freeport, Ill	. 52 Chester Sq.





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ALLEN, WILLIAM HENRY, JR			. 293 Commonw'lthAve.
Ames, William, Jr., D. 4			
Anderson, Wm. Pope, Jr., O. Z			. 29 St. James Ave.
ANDREW, WILLIAM McCORKLE	VI.	Linwood, Ohio .	. 16 Berwick Park.
ATKINS, ERNEST CARLTON	II.	Providence, R. I.	. 193 W. Newton St.
BAILEY, THOMAS WARD	I.	Kingston	. 170 W. Canton St.
BAKENHUS, REUBEN EDWIN		Chicago, Ill	. 170 W. Canton St.
Baldwin, Edward Arthur, 4.B.E.	VI.	Dorchester	. 308 Columbia St., D.
BALDWIN, HENRY SILL, A. K. E	11.	Middletown, Conn	. 5 Concord Sq.
BARBOUR, WILLIAM ERNEST, A. K.E.	VI.	Chicago, Ill	. 66 Chester Sq.
BARKER, EDGAR HARRISON	II	Lawrence	. 45 Upton St.
BARTLETT, FRED. WALDO, A. K. E.		New York, N.Y.	
BATCHELDER, Wm. JENNINGS, Δ. Ψ	. IX.	Jamaica Plain .	. 6 Louisburg Sq.
BATCHELDER, CHAS. EILDERMANN,	VI.	South Boston	. 930 Fourth St., S. B.
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Bell, Stewart Sargent	VI.	Andover	. Andover
BICKNELL, PERCY LINCOLN	. VI	Weymouth	. Weymouth.
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BLACK, MAURICE	II		. 222 W. Newton St.
BLAKE, FRANCIS POLK	III.	New Orleans, La.	
BLISS, GEORGE HENRY	I.	Newburyport .	. 116 Chandler St.
BLODGETT, KINSLEY		Pawtucket, R. I.	
BOLAN, HERBERT A., A.B	VI.	Philadelphia, Penr	n. 13 Lambert Ave., R.
Bonnycastle, Wm. Robinson	VI.	Louisville, Ky	. 221 W. Canton St.

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Bowie, August Jesse, Jr., A.B	VI.	San Francisco, Cal.	
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Breed, Lewis Bazzoni	VI.	Lynn	
Brooks, John Flavel	II.	North Hanover	
Brown, Harry Webster	VI.	Winchester	
BROWNE, HARRY PATRICK	VI.	Houston, Tex	
BURGESS, GEORGE KIMBALL		Newtonville	0.10
BURNETT, LEANDER, B.S		Ravenswood, Ill	
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CAMPBELL, JUSTIN WILLIS		West Roxbury	
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CARY, LOUIS ALEXANDER		Medway	
CHAMBERLIN, HELEN		Wellesley Hills	
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CLARK, FRANK DURBON		Rochester, N. Y	
CLARY, JOSEPH WARD, A. T		Mattapan	
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COBURN, FREDERICK WILLIAM, Σ. X	. IX.	Lowell	220 W. Chester Park.
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COLMAN, WILLARD HENRY	II.	La Crosse, Wis	48 Chandler St.
COMPTON, GEORGE KENNEDY, Z. X.	IV.	Dayton, Ohio	921 Boylston St.
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COOLIDGE, WINTHROP, A. K. E	III.	Chicago, Ill	Brookline.
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CRANE, THOMPSON BAXTER	V.	Quincy	Quincy.
CRAWFORD, ANDREW WRIGHT, A.B.	I.	Bryn Mawr, Penn	116 Pembroke St.
CROCKER, CARL IRA	I.	Portland, Me	Newton.
Crosby, Ralph Worthington .	XIII.	Osterville	90 Berkeley St.
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CUMMINGS, HENRY, JR	IV.	Boston	3 Union Park.
Cushing, Joseph, Jr	IX.	Fitchburg	234 W. Canton St.
Damon, Frederick Whitman		Arlington	
Daniels, Nathan Hagar, Jr		Boston	
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DAVIS, ROBERT ALLEN		Yarmouthport	
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DICKSON, MARSHALL MAR			375 Columbus Ave.
Disston, Henry, Δ . Ψ	V.	Philadelphia, Penn.	6 Louisburg Sq.

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DRISCOLL, JOSEPH		Brookline	Brookline.
DRUM, ALPHONSUS LIGOURI		Ft. Wingate, N. M.	28 Chester Sq.
Dupee, James Alexander	IV.	Dorchester	12 Monadnock St., D.
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EAMES, EDWARD ASHLEY, Χ.Φ	VI.	Buffalo, N. Y	58 Chester Sq.
ELLIOT, RICHARD OLIVER	IX.	Thomaston, Me.	
EMERSON, LOUVILLE EUGENE	VI.	Portland, Me	205 Huntington Ave.
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EYNON, JOHN STUART	VI.	Utica, N. Y	
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Franklin, Joseph, Jr., X.Φ	V.	Kirkwood, Mo	58 Chester Sq.
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GAGE, STEPHEN DE MERRITTE	V.	Bradford	226 W. Canton St.
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GAYLER, JULIUS FREDERICK	IV.	St. Louis, Mo	496 Columbus Ave.
GIBBS, LUCIAN EVERETT	I.	Cambridge	. Cambridge.
GILLESPIE, AMOS EWING	IX.	Colora, Md	50 Appleton St.
GILMAN, HARRY SARGENT, X. 4	III.	Manchester	58 Chester Sq.
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GOODSPEED, GEORGE MARSTON .	V.	Hyde Park	Hyde Park.
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HARDY, ROBERT SAMUEL, Δ. K. E.	VI.		. 18 St. James Ave.
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HARRINGTON, JOSEPH	II.	Xenia, Ohio	
HARTWELL, HIRAM BRITTON		Watertown	
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HASTE, JAMES HENRY	V.	Lawrence	. Lawrence.
14			

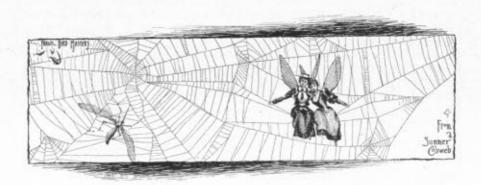
HATCH, GEORGE PARSONS II. West Newton W. Newton. HAWLEY, HARVEY F. I. Baldwinsville, N.Y. 5 Oxford Terrace. HAYWARD, HARRISON WASHBURN X. Hyde Park Hyde Park. HEDGE, HENRY ROGERS IX. Plymouth 15 St. James Ave. HEDGE, WILLIAM RUSSELL IX. Plymouth 15 St. James Ave. HEERMANN, FREDERICK MORSE II. Boston II. Pelham St. HELLMAN, MAX VI. St. Louis, Mo. 38 St. Botolph St. HELLMAN, MAX VI. St. Louis, Mo. 38 St. Botolph St. HENERY, RALPH COOLIDGE IV. Watertown Watertown. HENERY, RALPH COOLIDGE IV. Watertown Watertown. HEWINS, GEORGE SANFORD II. Dedham Dedham. HILDRETH, JOSEPH VIII. Brockton Brockton. HEWINS, GEORGE SANFORD II. Dedham Dedham. HILDRETH, EDWARD THEODORE VI. Los Angeles, Cal. Cambridge. HOUGRS, ARTHUR WEBSTER III. Newton Centre Newton Centre HOISINGTON, EDWIN TILSON I. West Roxbury Garfield Ave., W. R. HOILLANDER, CHARLES EDWIN III. Millis Millis. HOLLIS, WALTER MUNROE VI. Lynn Lynn. HOWARD, PERRY BROOKS II. Gardner Auburndale. HOWARD, PERRY BROOKS II. Grardner Auburndale. HOWLAND, CYRUS CHAPMAN II. HOUSTON, TEVE CHAPMAN II. LEASTANDER CHURCHILL III. HOUSTON, TEVE CHAPMAN II. AUBURN AU	NAME.	COURSE.	HOME.	RESIDENCE.
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HEERMANN, FREDERICK MORSE HELLMAN, MAX VI HELLMAN, MAX VI HENDERSON, JAMES BUIST II. Ludlow 98 Appleton St. HENRY, RALPH COOLIDGE IV. Watertown Watertown. HEERST, JAMES BROWN VI HEWETT, JOSEPH VIII. HEWITS, GEORGE SANFORD I. Dedham Dedham. HILDRETH, EDWARD THEODORE HOIGH, CHARLES EDWIN HOIGH, CHARLES EDWIN HOLLS, WALTER MUNROE VI HOLLS, WALTER MUNROE VI HOWARD, FRANK ALLEN HOWARD, PERRY BROOKS I. Gardner HOWARD, CYRUS CHAPMAN I. New Bedford HOWLAND, CYRUS CHAPMAN II. HOULAND, RICHARD STANLEY, 9, Z HUEY, WILLIAM QUEEN HUER, BINJAMIN, JR., & B. E. VI HUED, CHARLES GILMAN III. HUED, CHARLES GILMAN III. HORDLIS, HORDER HORD, CHARLES HENRY INGELL, HOMER PRESTON III. HORDLIS, HORDER HORD HORD CHARLES HENRY INGELL, HOMER PRESTON III. JAMES, WALTER HERMAN III. JOHNSTON, ROBERT, E. A. E. JONES, THEODORE III. JAMESON, MINOR STORY I. Clinton Cor's, N.Y. 94 Huntington Ave. JONES, HOWARD KIRGSLEY IV. JONES, THEODORE INSLEE VI LORINGELL, EARLES III. HOWARD, ROBERT III. HALLMAN, JAMES WARREN III. JOHNSTON, ROBERT, E. A. E. VI. HORDLO, CHARLES E, B.A. VI. LORINGER, CHARLES E, B.A. VII. HORLOR, CHARLES E, B.A. VII. Charleston, S. C. 82 Appleton St. LEARNY, WILLIAM GARDNER VII. South Boston III. LEARNY, WILLIAM GARDNER VII. LEARNY, WILLIAM GARDNER VII. South Boston III. Combridgeport.			Plymouth	15 St. James Ave.
Hellman, Max . VI St. Louis, Mo. 38 St. Botolph St. Henderson, James Buist II. Ludlow . 98 Appleton St. Henner, Ralph Coollidge IV. Watertown . Watertown. Watertown. Henner, Ralph Coollidge IV. Watertown . Brockton. Brockton. Brockton. Brockton. Dedham .	HEDGE, WILLIAM RUSSELL	. IX.	Plymouth	15 St. James Ave
Hellman, Max . VI St. Louis, Mo. 38 St. Botolph St. Henderson, James Buist II. Ludlow . 98 Appleton St. Henner, Ralph Coollidge IV. Watertown . Watertown. Watertown. Henner, Ralph Coollidge IV. Watertown . Brockton. Brockton. Brockton. Brockton. Dedham .			Boston	11 Pelham St.
HENRY, RALPH COOLIDGE IV. Watertown Watertown. HERBST, JAMES BROWN VI. Kansas City, Mo. 16 Yarmouth St. HEWITS, GEORGE SANFORD I. Dedham Dedham. HILDRETH, EDWARD THEODORE VI. Los Angeles, Cal. Cambridge. HODGES, ARTHUR WEBSTER II. Newton Centre Newton Centre HOISINGTON, EDWIN TILSON I. West Roxbury Garfield Ave., W. R. HOLLAXDER, CHARLES EDWIN II. Millis Millis Millis. HOLLIS, WALTER MUNROE VI. Lynn Lynn. HOWARD, FRANK ALLEN I. Brockton Brockton. HOWARD, PERRY BROOKS I. Gardner Auburndale. HOWE, JOSEPH MILTON I. HOUSTON, EVEN GOOD COLUMBUS AVE. HOWLAND, CYRUS CHAPMAN I. New Bedford 509 Columbus Ave. HOWLAND, CYRUS CHAPMAN II. Easthampton if James St. HULTMAN, EUGENE CHRISTIAN I. Quincy Quincy. HURD, BENJAMIN, JR., 4, B. E. VI. Brookline Brookline. HURD, CHARLES HENRY II. Joliet, III. 140 Chandler St. HYDE, CHARLES HENRY VI. Danvers Danvers. INGALLS, CHARLES HENRY VI. Danvers Danvers. INGALLS, CHARLES HENRY VI. DANVERS DANVES. INGALLS, CHARLES HERNY VI. DANVES. JOHNSON, PAUL FRANKLIN II. Milwaukee, Wis. 193 W. Newton St. JOHNSON, PAUL FRANKLIN III. Milwaukee, Wis. 193 W. Newton St. JOHNSON, ROBERT, E. A. E. X. Harrisburgh, Penn. 527 Columbus Ave. JONES, HOWARD KINGSLEY IV. Erie, Penn. 18 Holyoke St. KENT, WILLIAM ALBERT II. Newburyport 7 Burlington Ave. KILLAM, JAMES WARREN II. Reading Reading. KIMBALL, ELWELL FAIRFIELD II. Newburyport 7 Burlington Ave. KILLAM, JAMES WARREN II. Reading Reading. KIMBALL, ELWELL FAIRFIELD II. Newburyport 7 Burlington Ave. KILLAM, JAMES WARREN II. Reading Reading. KIMBALL, ELWELL FAIRFIELD II. Newburyport 7 Burlington Ave. KILLAM, JAMES WARREN II. Reading Reading. KIMBALL, ELWELL FAIRFIELD II. Newburyport 7 Burlington Ave. KILLAM, JAMES WARREN II. Reading Reading. KIMBALL, ELWELL FAIRFIELD II. Newburyport 7 Burlington Ave. KILLAM, JAMES WARREN II. Newburyport 7 Burlington Ave. KILLAM, JAMES WARREN II. Newburyport 7 Burlington Ave. KILLAM, LEBERT LLOYD, E. A. E. V. Alliance, Ohio 6 W. Newton St. Ext. LAWRENCE, CHARLES E. B.A. VI. Charleston, S. C. 82 Appleton St. LEACH, WILLIAM HENR			St. Louis, Mo	38 St. Botolph St.
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Hewett, Joseph	HENRY, RALPH COOLIDGE	. IV.	Watertown	Watertown.
Hewins, George Sanford . I. Dedham . Dedham. Hildreth, Edward Theodore . VI. Los Angeles, Cal Cambridge. Hodges, Arthur Webster . II. Newton Centre . Newton Centre Hoisington, Edwin Tilson . I. West Roxbury . Garfield Ave., W. R. Hollander, Charles Edwin . II. Millis . Millis. Hollis, Walter Munroe . VI. Lynn . Lynn. Howard, Frank Allen . I. Brockton . Brockton. Howard, Perry Brooks . I. Gardner . Auburndale. Howe, Joseph Milton . I. Houston, Tex 41 Rutland Sq. Howland, Cyrus Chapman . I. New Bedford . 509 Columbus Ave. Howland, Richard Stanley, 0. Z. VI. Providence, R. I 198 Beacon St. Hultman, Eugene Christian . I. Quincy . Quincy. Hurd, Benjamin, Jr., 4. B. E VI. Brookline . Brookline. Hurd, Charles Henry . IX. Joliet, III 140 Chandler St. Hyde, Charles Gilman . XI. Yantic, Conn . 69 Montgomery St. Ingell, Homer Preston . II. Taunton . Taunton. Jacobs, Elbridge Churchill III. Malden . Malden . James, Walter Herman . II. Portsmouth, N. H. 1845 Washington St. Johnson, Paul Franklin . II. Portsmouth, N. H. 1845 Washington Ave. Johnson, Robert, Z. A. E X. Harrisburgh, Penn . 527 Columbus Ave. Johnson, Robert, S. A. E X. Harrisburgh, Penn . 527 Columbus Ave. Jones, Theodore Inslee . VI. Chelsea . Chelsea. Kent, William Albert . I. Washington, D. C. 156 W. Chester Park. Killam, James Warren . II. Reading . Reading. Kimball, Elwell Fairfield . II. Newburyport . 7 Burlington Ave. Killam, James Warren . II. Newburyport . 7 Burlington Ave. Killam, James Warren . II. Newburyport . 7 Burlington Ave. Killam, James Warren . II. Newburyport . 7 Burlington Ave. Killam, James Warren . II. Newburyport . 7 Burlington Ave. Killam, James Warren . II. Newburyport . 7 Burlington Ave. Killam, James Warren . II. Newburyport . 7 Burlington Ave. Killam, James Warren . II. Newburyport . 7 Burlington Ave. Killam, James Warren . II. Newburyport . 7 Burlington Ave. Killam, James Warren . II. Newburyport . 8 Chelsea. Lawrence, Charles E., B.A VI. Charleston, S. C. 82 Appleton St. Lawrence, Charles E., B.A VI.	HERBST, JAMES BROWN	. VI.	Kansas City, Mo	16 Yarmouth St.
HEWINS, GEORGE SANFORD. HILDRETH, EDWARD THEODORE HODGES, ARTHUR WEBSTER. HOSINGTON, EDWIN TILSON HOLLANDER, CHARLES EDWIN HOLLIS, WALTER MURROE VI. Lynn HOWARD, FRANK ALLEN HOWARD, FRANK ALLEN HOWARD, PERRY BROOKS HOWARD, O'RUS CHAPMAN HOWARD, RICHARD STANLEY, 0, 2 HULTMAN, EUGENE CHRISTIAN HULTMAN, EUGENE CHRISTIAN HURD, CHARLES GIMAN XI. Yantic, Conn HORARD HERRY HORD HOWARD, CHARLES HENRY HYDE, CHARLES GHMAN HILDRETH, WILLIAM HOWARD, CONSTRUCT HOWARD, CONSTRUCT HOWARD, RICHARD STANLEY, 0, 2 HULTMAN, EUGENE CHRISTIAN HULTMAN, EUGENE CHRISTIAN HURD, CHARLES HENRY HURD, CHARLES HENRY HYDE, CHARLES HENRY HILDROTH, HERMAN HOWARD, HERMAN HOWARD, HERMAN HILDROTH, HEMAN HOWARD, HERMAN HOUBLE, HERMAN HOWARD, HERMAN HOWARD, HERMAN HO	HEWETT, JOSEPH	.VIII.	Brockton	Brockton.
Hodges, Arthur Webster. II. Newton Centre . Newton Centre Hoisington, Edwin Tilson . I. West Roxbury . Garfield Ave., W. R. Hollander, Charles Edwin . II. Millis			Dedham	Dedham.
HOISINGTON, EDWIN TILSON II. West Roxbury Garfield Ave., W. R. HOLLANDER, CHARLES EDWIN III. Millis Millis. HOLLIS, WALTER MUNROE VI. Lynn Lynn. HOWARD, FRANK ALLEN I. Brockton Brockton. HOWARD, FRANK ALLEN I. Brockton Drockton. HOWARD, PERRY BROOKS I. Gardner Auburndale. HOWE, JOSEPH MILTON I. HOUSTON, TEX. 41 Rutland Sq. HOWLAND, CYRUS CHAPMAN I. New Bedford 509 Columbus Ave. Providence, R. I. 198 Beacon St. HULLY, WILLIAM QUEEN II. Easthampton 16 James St. HULTMAN, EUGENE CHRISTIAN I. Quincy Quincy. HURD, BENJAMIN, JR., 4-B. E. VI. Brookline Brookline. HURD, CHARLES HENRY IX. Joliet, III. 140 Chandler St. Yantic, Conn. 69 Montgomery St. INGALLS, CHARLES GILMAN XI. Yantic, Conn. 69 Montgomery St. INGALLS, CHARLES GILMAN III. Malden Malden. JAMES, ELBRIDGE CHURCHILL III. Malden Malden. JAMES, WALTER HERMAN III. Portsmouth, N. H. 1845 Washington St. JAMESON, MINOR STORY I. Clinton Cor's, N.Y. 94 Huntington Ave. JOHNSTON, ROBERT, E. A. E. X. Harrisburgh, Penn. 527 Columbus Ave. JONES, HOWARD KINGSLEY IV. Erie, Penn. 18 Holyoke St. Chelsea. KENT, WILLIAM ALBERT I. Washington, D. C. 156 W. Chester Park. KILLAM, JAMES WARREN II. Reading Readi	HILDRETH, EDWARD THEODORE	. VI.	Los Angeles, Cal	Cambridge.
HOLLANDER, CHARLES EDWIN II. Millis	Hodges, Arthur Webster	. II.	Newton Centre	Newton Centre
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Hyde, Charles Gilman XI. Yantic, Conn			Brookline	Brookline.
INGALLS, CHARLES HENRY VI. Danvers	HURD, CHARLES HENRY	. IX.		
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PEABODY, FRANCIS RICHARDSON .		Gilead, Me	
Peirce, Vernon Marshall		Boston	
PENNELL, WALTER OTIS		Exeter, N. H	
PERKINS, THOMAS TOUNGE		Lynn	
PIERCE, MYRON EVERETT, Σ. A. E.	I.	Watertown	Watertown.
PILLSBURY, JOEL HORACE	Ι.	Bridgewater	
PINGREE, EDWIN DANIEL	П.	Lawrence	
Poppenhusen, Herman Adolph .		So. Evanston, Ill	
PORTNER, ROBERT FRANCIS		Washington, D. C.	
PRICHARD, EDWARD H., JR		Wyoming, Ohio .	
PRINCE, ELLIS WALDO		Thomaston, Me	
PORTER, RUSSELL WILLIAMS		Springfield, Vt	
PUTNAM, JOHN LUTHER		Houlton, Me	
RAWSON, HARRY DUSTAN		Des Moines, Iowa .	
REES, CARL SAMUEL		Newark, Ohio	22 Yarmouth St.
RICE, HARRY JONATHAN		St. Louis, Mo	
RICHARSON, DANIEL ARTEMAS			161 W. Chester Park.
ROBERTSON, LIONEL OMAR		Jamestown, N. Y.	
ROBINSON, AMOS GEORGE		Vienna, Va	
ROBINSON, ELMER HOLBROOK		Reading	
ROCKWELL, JOHN ARNOLD, JR			69 Montgomery St.
ROGERS, FRANK HENRY		Newburyport	
ROGERSON. JOHN RUSSELL		Mansfield	
ROOT, WILLIAM LACY		Pittsfield	
ROSENGARTEN, FRANCIS ALBERT .		Louisville, Ky	
RUCKGABER, ALBERT FELIX		Brooklyn, N. Y.	
RUNDLET, FREDERICK TAYLOR		Cambridgeport	Cambridgeport.
Russell, Andrew Le Baron, A.T.		Mt. Vernon, Ala	
SAGER, LAWRENCE KINGSLEY		Somerville	Somerville.
SANDERSON, NATHAN HERBERT .		Waltham	
SAWIN, LUTHER ROBINSON		Waltham	Waltham.
SAX, MORITZ	IV.	Cincinnati, Ohio .	215 W. Canton St.
Scovel, John Combs, Jr			375 Columbus Ave.
SEARS, HENRY KENT		Danvers	W + 0
Shepard, Benjamin H., X. Ф.		East Orange, N. J	
SHERMAN, HENRY ARTHUR	III.	Boston	19 Worcester Sq.
SMALLEY, FRANK NEWELL		Westboro	Westboro.
SMITH, CHARLES DOYLE		Brookline	Brookline.
SMITH, FRED HASKELL	X.	Hudson, N. H	Wakefield.
SMITH, HERBERT EDWARDS	IV.		

NAME.	COURSE.	HOME.	RESIDENCE.
SMITH, WILLIAM GRAVES	I.	Mansfield	. Mansfield.
SMYSER, ALBERT ERNEST			. Brookline.
SMYSER, FREDERIC WILLIAM		Brookline	. Brookline.
SMYTH, JOSEPH HILTON		Plymouth	. Plymouth.
SNELL, ELMER ALVIN		Holbrook	. Holbrook,
SNYDER, JOHN LOVETT		St. Louis, Mo	. 170 W. Canton St.
Spence, David Jerome, 0. Z	IX.		. 29 St. James Ave.
STAMP, CHARLES MARCUS		[1] [1] [1] [1] [1] [1] [1] [1] [1] [1]	
STARBUCK, GEORGE FRANKLIN			
STEARNS, WALTER M., Ф. B. E			. Waltham.
STEVENS, HAROLD CONVERSE			
STICKNEY, JOSEPH WHITE		Somersworth, N.H	. 65 Dracut St., D.
STONE, CHARLES HENRY HOWARD,		Newton	. Newton.
STONE, ESTHER			. 4 Oxford Terrace.
STOUGHTON, BRADLEY, PH.B	Ш.	New Haven, Conn	. 96 Charles St.
STRADER, JACOB, JR			. 233 West Canton St.
STRATTON, GEORGE EBER		Shelburne Falls	. Brookline.
STURM, MEYER JOSEPH		Chicago, Ill	. 7 Holyoke St.
STURTEVANT, JOSEPH LEWIS	II.		. Quincy.
SUMNER, GEORGE WILLIAM			. 24 Yarmouth St.
SWANTON, JOHN CAMP	I.		. 224 W. Canton St.
SWEET, ELWOOD PERKINS			. Concord Junction.
TAFT, HARRISON SOUTHWICK, B.P.	XIII.	Providence, R. I.	. 118 Dartmouth St.
TAPPAN, LEWIS HOOPER	II.	Manchester	. 190 W. Brookline St.
THANISCH, FRANK ARTHUR	III.	Jamaica Plain .	. 3305 Wash't'n St., J.P.
THOMAS, DOUGLAS H., JR., A.B.	IV.	Baltimore, Md	. 1 Willow St.
THOMAS, FRANCIS CLARK, Θ. Ξ.	IV.	Oswego, N. Y	. 25 Concord Sq.
THOMAS, WILLIAM HARRISON, JR.		Lowell	. Lowell.
THOMPSON, ALBERT WILLIAM	II.	Lowell	. Lowell.
THOMSON, LUCY DOOLITTLE, B.A.	IV.		. 37 Union Park.
TILLEY, JOHN	VI.	West Troy, N. Y.	. 161 W. Chester Park.
Tower, CLEMENT BATES, JR	V.	Hyde Park	. Hyde Park.
TOZIER, HENRY HARRIS		Haverhill	. Haverhill.
TROUT, CHARLES ELIPHALET		Chicago, Ill	· 754 Tremont St.
TUCKER, CHARLES WILLIAM	V.	North Andover .	. Andover.
TUCKER, FRANK STEVENSON .	V.	Marblehead	. Marblehead.
TUTTLE, MORTON CHASE	II.	Milford, N. H	. Brookline.
Tyler, Lucius Spalding, Σ. X.	II.	Waltham	. Waltham.
UNDERHILL, ARUHUR PERLEY, X. P.	VI.	Springfield	. 58 Chester Sq.
URQUIZA Y BEA, PEDRO, Θ. Ξ	V.		. 6 Westland Ave.
VON HOLST, HERMANN V., A.B.	IV.	Chicago, Ill	. 164 West Canton St.
Vose, Willard Badger	II.	Hyde Park	. Hyde Park.
WALKER, FREDRICK HENRY	II.	Taunton	. Taunton.
WATERBURY, CHARLES DANN			
WATERMAN, HENRY ARTHUR			. Malden.
WAYNE, JACOB LLOYD, 3D	VI.	Cincinnati, Ohio	. 16 Berwick Park.
Wells, Albert Jameson	VI.	Lawrence	. 53 A Dale St., R.
Wengren, Elmer Lindberg, A.B.	IV.	Portland, Me	. 86 Appleton St.

NAME.	COURSE.	HOME.	RESIDENCE.
WENTWORTH, CHARLES AUSTIN	. I.	Haverhill	Haverhill.
WHITAKER, JOHN SANBORN	. VI.	Amsden, Vt	2 Yarmouth St.
WHITING, RALPH SPELMAN, Δ. K.			
WHITNEY, LAMBERT NUTT			
WHITNEY, RICHARD			
WHITTEN, WILLIAM HENRY, JR.			
WILLIS, JOHN HOWARD, A.B			
WISE, SAMUEL FRANCIS			
WOOD, WILLETT AUBREY			
WOODWELL, JULIAN ERNEST .			
WOODYATT, ERNEST, Σ. X			
WYARD, EDWARD SAXON			
Young, Conrad Henry	. II.	Canton, Ohio	134 St. Botolph St.





NAME.	HOME. RESIDENCE.
ABBOTT, JOSEPH WILLIAM ABBERCROMBIE, DANIEL PUTNAM, JR. ADAMS, ZABDIEL BOYLSTON, JR. ALLEN, JOHN TROTT ALLEN, HENRY WALTER, A. Ψ. ALLEN, LESLIE CHAPMAN ATWOOD, FREDERIC SUMNER ATWOOD, THOMAS CLARK AYRES, MILAN VALENTINE BACON, JOHN FAIRBANK BAKER, JAMES TIMOTHY BALDWIN, CHARLES FOWLER, JR. BALLOU, CHARLES RATHBONE BANCROFT, JOSEPH, Θ. Ξ. BANCROFT, WILFRED BARKHOUSE, EDGAR LOUIS BARNES, WARREN HAMMOND BARROWS, BERNARD BASS, ALVA MORRISON BASS, FREDERIC HERBERT BINLEY, WILLIAM, JR. BLACKMER, ARTHUR ELIOT	Manchester, N. H. 62 Chandler St. Turner's Falls . 371 Columbus Ave. Framingham . Framingham. Newton . Newton. Hyde Park . Hyde Park. Acushnet . 293 Columbus Ave. Malden . Malden. Malden . Malden. Newton Centre . Newton Centre. Wellesley . Wellesley. Adams . 221 W. Canton St. Mount Vernon, Ohio. 71 Hancock St. Providence, R. I. 95 Pinckney St. Providence R. I. 17 St. James Ave. Wilmington, Del. 4 Oxford Terrace. Philadelphia, Penn. 4 Oxford Terrace. Louisville, Ky. 38 St. Botolph St. Marlboro . Marlboro. Reading . Reading. Quincy . Quincy. Hyde Park . Hyde Park. Newburyport . Newburyport. Plymouth . Stoughton.
BLAIR, LEWIS VAN DEVENTER	Cincinnati, Ohio 67 Pinckney St.
BLISS, EDWIN PACKARD	Newburyport 27 Telegraph St., S. D.
BLOOD, PERCY ERFORD	Graniteville 827 E. Broadway, S. B.
BOARDMAN FRED CLEVELAND	Natick Natick.
BOOTH, GEORGE HENRY	Poughkeepsie, N. Y 13 Concord Sq.

NAME.		HOME.	RESIDENCE.
BORLAND, HUGH		St. Johnsbury, Vt.	. 221 W. Canton St.
BOWEN, EDGAR CAMPBELL, JR			. 84 Huntington Ave.
BOWEN, RALPH ALBERT		Adams	. 525 Columbus Ave.
Bowers, Allston Rice		Needham	. Needham.
Воур, Јони		North Adams	. 224 W. Canton St.
BRADLEE, CHARLES WALTER		Boston	. 113 Beacon St.
BRADLEY, FRANCIS EDWIN		South Boston	. 499 Broadway, S. B.
Bragg, Franklin Everett		Bangor, Me	. 6 Rutland Sq.
BRAINERD, EDWIN ALPHEUS		Dorchester	. 39 Olney St., D.
BRAMHALL, CHARLES THOMAS	,	Plymouth	. Plymouth.
BREED, CHARLES BLANEY		Lynn	. Lynn.
BUCK, JOHN ELMER		Woburn	. Woburn.
BUCK, WALTER FRENCH		Manchester, N. H.	. 62 Chandler St.
BUFF, LOUIS FRED		Jamaica Plain	. Cheshire St., J. P.
BURDICK, HOWARD HENRY		Hartford, Conn	. 86 Charles St.
BURNHAM, GEORGE		Portland, Me	. 215 Huntington Ave.
BURRILL, NATHAN CARTER		Newburyport	. Newburyport.
Busby, Fred Edward		Adams	. 525 Columbus Ave.
Bush, Walter Meiggs		Concord	
BUTTERWORTH, ELWELL ROBERT .		Somerville	. Somerville.
CAGLE, OSBORNE BARRY		Greenville, S. C	. 21 Stanley St., D.
CALDWELL, ALEXANDER GUYE .		Newburyport	
CAMPBELL, DONALD CHENERY .		Lowell	. 224 W. Canton St.
CAPEN, CARROLL ADAMS		Randolph	. Randolph.
Capron, Seth Alton		Walker	
CARR, JOSEPH LEWIS		Chelsea	. Chelsea.
CARTY, JOHN EDWARD		Roxbury	. 6 Kensington St., R.
CHAPIN, CHARLES JEWETT, X.Ф			. 23 Woodbine St., R.
CLARK, DWIGHT		Boston	
CLARK, HENRY ARCHER			. 134 W. Newton St.
CLARK, JAMES KENNETH		Warren, Penn	. 91 Waltham St.
CLEAVES, EZRA EAMES			. 184 W. Canton St.
COBURN, WALTER SPRAGUE			. 3 Oxford Terrace.
COLEMAN, EZRA ABBOTT			. 193 W. Newton St.
Collins, John Arthur, Jr		Fall River	. 1 Yarmouth St.
Conness, Thornton Davis		Mattapan	. River St., M.
Cook, Joseph Cochran	•		. 16 Codman Park, R.
COTTER, WILLIAM EDWARD		Somerville	
COURTIS, STUART APPLETON			. 45 Mt. Vernon St.
Cowles, Luzerne Simeon		Hartford, Conn	
CRANE, FRED IRVING		Taunton	
CRAVEN, GEORGE WARREN		Bozeman, Mont	
CROCKER, ALLEN SWIFT			
Crocker, Lincoln			. Brookline.
CUMMINGS, ROBERT MILLER			. 1 Linden St., S. B.
CURRIER, CHARLES RICHARDSON .		W	
CURTIS, ARTHUR VINTON			
CUTLER, WILLIAM HENRY		Chicago, Ill	Dunghling

NAME.	HOME.	RESIDENCE.
Daly, Robert Emmett	Roxbury	. 3 Fountain Sq., R.
DANIELL, JERE ROGERS		
DAVIS, ALVAN LAMSON		
DAVIS, HUNTLY WARD	Montreal, Que	. 389 Beacon St.
Delano, Paul Holmes	Kingston	. 109 Marlborough St.
DEMERITT, LEONARD MORSE	Natick	. Natick.
DENISON, ROBERT LINCOLN, A. B. E.	Portland, Me	- 214 Columbus Ave.
DE WOLF, ARTHUR SIMON	Melrose Highlands	. Melrose Highlands.
DIAZ, MANUEL DIONYSIUS, A.B	Havana, Cuba	. 563 Columbus Ave.
Donovan, John Augustine		
DOTEN, ALFRED RUSSELL	Plymouth	. 47 Rutland St.
Dougherty, Proctor Lambert	Cambridge	. Cambridge.
Drew, Albert Thompson	Newburyport	. Newburyport.
DRISCOLL, TIMOTHY JOSEPH		
DUNN, WASHINGTON CHARLES	Lock Haven, Penn.	. 224 W. Canton St.
DU PONT, IRÉNÉE, Φ. B. E	Wilmington, Del.	. 85 Appleton St.
DWYER, JOHN RICHARD	St. Louis, Mo	. 9 Oakdale St., J. P.
EAMES, CHARLES HOLMES	Andover	. Andover.
EATON, WILLIAM WISE	Bridgewater	. Bridgewater.
Edmands, Frederick Lincoln		
Ely, Charles Hardy, Θ , Ξ		. 557 Columbus Ave.
EMERY, EARLE CALDWELL	Bradford, Penn	. 345 Columbus Ave.
ESTABROOK, HERBERT WILLIAM		
EVERETT, FRANK WARREN		. 86 Huntington Ave.
EWEN, MALCOLM FAULKNER		
FAIRBANKS, WILLIAM KENDALL		
FAXON, WILLIAM ALECK		
FEELEY, FRANK GOODRICH		
FERGUSON, EDWARD HUGH		
Ferris, Robert Murray, Jr		
FIELD, DAVID DUDLEY, JR., Θ. Ξ	Stockbridge	. 231 W. Chester Park.
Fiske, George Isaac, Φ. B. E		
Fitz Gibbon, Morris Joseph		
Folsom, Herbert Arthur		. 87 W. Rutland Sq.
Foss, Charles Ether, Σ . X		
Fox, WILLIAM HENRY		
FRANKLIN, ARTHUR IRA		
FRAZIER, CHARLES WELLINGTON		
GARDINER, WILLIAM HOWARD, JR		. 12 Otis Place.
GILBERT, FREDERICK CHESTER		
GLEASON, WALTER AUSTIN		
GOUDEY, FRANK BUDD	Boston	. 117 Pembroke St.
Gowen, Sumner		
GRAHAM, ROBERT CHARLES		
GRAY, OWEN HERRICK		
GRINNELL, OLIVER CROMWELL, JR		
Grosh, Jerome Emil		
GROVER, WILLIAM ALBERT	Lynn	. Lynn.

NAME.	HOME.	RESIDENCE.
HALL, ROBERT GEORGE	Pittsburgh, Penn.	. 221 W. Canton St.
HANKEY, ANTHONY, JR		. 777 Center St., J. P.
HASKINS, CHARLES NELSON		27 Falmouth St.
HASTINGS, CHARLES L		20 Bulfinch St.
HATCH, ISRAEL, JR		Norwell.
HAWKINS, EDGAR MARVIN		. Maple St., W. R.
HAYDEN, LEWIS ANDREWS, Σ. X.	[1] [17]	. Hotel Bartol.
	Roxbury	. 5 Bower St.
HAZARD, WILLIAM ABBOTT		. W. Medford.
그 그 그 가장하다 하는 이 생물은 얼마나 하나 내가 하고싶어 하다 생물을 내려가 되었다.	. Boston	. 96 Hudson St.
HEALY, FREDERICK ELLIOTT	East Providence, R. I	
HEARD, HENRY ROBERT, Δ.Ψ	Boston	20 Louisburg Sq.
HEATHMAN, FRANK BOLTIN		. 3 Oxford Terrace.
Heissler, Edward Rudolph	Chicago, Ill	. 23 Dartmouth St.
HEMMINGS, FREDERICK JOHN	Boston	. 9 Sussex St.
HERING, OSWALD CONSTANTIN .	Newton	. 110 Newbury St.
HILL, GEORGE WILLIAM		. 1 Yarmouth St.
HITCHCOCK, FREDERICK ST. JOHN, B.S.		. Cambridgeport.
HOLMES, JOSEPH HENRY		Milton.
HOOKER, STANLEY AGAR		. 335 Columbus Ave.
Hopkins, Arthur Thomas		. Somerville.
Hosford, Roger Fuller		. 19 Burlington Ave.
	. Woburn	. Woburn.
	Buffalo, N. Y	. 115 St. Botolph St.
HOWARD, SHELDON LEAVITT	. Taunton	. Taunton.
Howe, Frank Irving	. Millis	. 3 Acorn St.
Howes, Benjamin Alfred		. Cambridge.
HUBBARD, CHESTER DIMOCK	. St. Paul, Minn	. 134 W. Newton St.
HUBBARD, JESSE BRANCH		. Brookline.
Humphreys, John Sanford, Δ. Ψ.	. New York, N. Y	. 20 W. Cedar St.
HUMPHREYS, WALTER		. Humphreys Pl., D.
HUNNEWELL, FREDERICK ALLEN .		. No. Cambridge.
HUNT, HARRY BURLEIGH	Brooklyn, N. Y.	. 66 Clarendon St.
HÜRTER, CHARLES SWANBERG		. Hyde Park.
ILSLEY, JOHN PARKER, JR		. 4 Oxford Terrace.
Jennings, Arthur Cook	. Lynn	. Lynn.
JENNINGS, ARTHUR LEWIS	. Deep River, Conn.	. 10 Union Park.
JENSEN, HANS PETER		. 90 Zeigler St., R.
JOHNSON, ERNEST C	. Milwaukee, Wis	. 84 W. Rutland Sq.
Joslin, Herbert Stratton		. 19 St. James Ave.
Keisker, Frank Henry	·	. 94 Huntington Ave.
KELLEY, WILLIAM		. 4 Oxford Terrace.
KIMBERLY, ALBERT ELLIOTT	. Jamaica Plain	
KING, WILLIAM BRAMAN		
Knight, George Horace	. Hudson	
Kramer, Edward Durst	. Dayton, Ohio	
Lamb, Augustus Clark	. Cambridge	
LAMPREY, ERNEST BATCHELDER .	. No. Hampton, N. H	. 21 Marcella St., R.

NAME.	HOME.	RESIDENCE.
Lane, George Mason	Brookline	. Brookline.
LAWLER, GEORGE SHERRIFFS	East Boston	. 259 Webster St., E. B.
LAWLEY, ARTHUR CROSBIE	South Boston	. 60 N St., S. B.
LAWRENCE, PERCY FARNHAM, Δ. K. E.	Bangor, Me	. 6 Rutland Sq.
LEARNED, ERNEST FREEMAN		
LE BARON, FREDERIC N		
LEE, ALEC WILKINS	Wauwatosa, Wis	. 7 Burlington Ave.
LEE, WILLIAM LOUIS	Evanston, Ill	. 196 Dartmouth St.
LEONARD, LOUIS ROUSSY	Dorchester	. 15 Buttonwood St., D.
LOOMIS, HENRY MEECH		
LOUD, RALPH WHITE		
LOVELAND, BENJAMIN ALPHEUS	Chatham	. Chelsea.
LYMAN, HERBERT	Helena, Mont	. 134 St. Botolph St.
MACKAY, GEORGE BAPTIST		
MACOMBER, JOHN RUSSELL		
Maggi, Alfred		
MAGUIRE, THOMAS FRANCIS JAMES .		
Mann, Arthur Hungerford	Nyack, N. Y	. 57 Chandler St.
Manning, Horace, Δ. K. E	Boston	. 645 Boylston St.
MANSFIELD, FRANK ERASTUS	Boston	. 26 Cumberland St.
Mansfield, Stanley Allan	Wakefield	. Wakefield.
Manson, Edmund Sewall, Jr	Scituate	. Scituate.
Manson, John Eaton	North Scituate	. No. Scituate.
MARSHALL, HERMAN WESTON	Brockton	. Brockton.
Mason, Earl Potter	Providence, R. I	. 28 Brimmer St.
McCarthy, Francis Vincent	Peabody	. Peabody.
McCarthy, George Herbert	Dorchester	. Fuller St., D.
McCormick, Edmund Burk		
McElwain, James Franklin	Boston	. 102 Chandler St.
McMillan, John Primrose	Petrolia, Ont	. 476 Shawmut Ave.
MELLEN, GORDON MCKAY		
MILLER, ARTHUR CLARENCE	Danvers	. Danvers.
MONTEITH, ARTHUR DAVID	Dedham	. Dedham.
Moore, Hugh Kelsea		
Moran, George Austin		
Moran, James Girvin	Mansfield	. Mansfield.
Morgan, Carl Leon	Fitchburg	. 234 W. Canton St.
Morrice, Arthur Anderson		. 186 W. Canton St.
MORRISON, WILLIAM WHITNEY		
Morton, Harry Holbrook		. 4 Union Park St.
Motch, Edward Ramond		
MULHALL, HAROLD TOREY	Dorchester	. 9 Laurel St., D.
Munroe, George Sweetser		
NICKERSON, CLARENDON	Bridgeport, Conn.	. 149 Worcester St.
Noble, Howard Agnew, X. Φ	Allegheny, Penn	. 34 Savin St., R.
NORRIS, ALBERT PERLEY	Cambridgeport .	. Cambridgeport.
OLIN, EDWIN READ	Roxbury	. 29 St. James St., R.
ORR, HUGH	Brockton	. Brockton.

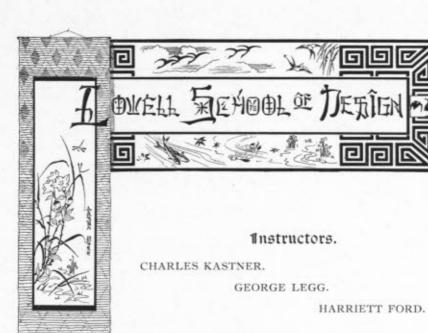
NAME.	HOME.	RESIDENCE.
OSGOOD, EDWIN PUTNAM	Dorchester	. 71 Grampian Way, D.
OSGOOD, FARLEY, S. X		
Osgood, Henry Douglas		
PAGE, WALTER	Boston	. 253 Beacon St.
PARKER, WILLIAM DENISE	Allston	. 13 Pratt St., A.
PARKER, WILL ROGERS	Portsmouth, N. H.	. 93 Thornton St., R.
PARKER, WILLIAM THORNTON, Δ. Ψ.		
PARMENTER, HORACE WELLINGTON .	Waterville, Me	. 171 W. Brookline St.
Parsons, Archibald Livingstone .		
PARSONS, CHESTER HENRY	Marlboro	. Marlboro.
PARSONS, SYDNEY HERBERT	Brighton	. Academy Hill, B.
PARSONS, WILLIS EVERETT	Gloucester	. 226 W. Canton St.
PATTISON, WILLIAM EDSON	Cambridge	. Cambridge.
PETTEE, CHARLES LESLIE WIGHT .	Newtonville	. Newtonville.
PHILLIPS, FRANK NICHOLS	Providence, R. I	. 17 St. James Ave.
PIKE, OTTO SAMUEL	Morris, Conn	. Malden.
Poore, Volney Leroy	New York, N. Y	. Revere.
Pope, Charles Hudson, Jr., 4. B. E.	Rocky Brook, R. I.	. 17 St. James Ave.
PORTNER, EDWARD GEORGE		. 476 Columbus Ave.
POTTER, WILLIAM CHAPMAN, A. K. E.	Chicago, Ill	. 19 Blagden St.
PRATT, GILBERT HOMER		
PRESTON, FRANK HERBERT		
PRIME, HAROLD AUGUSTUS		. 434 Washington St., B.
Pugh, Achilles Henry	Cincinnati, Ohio .	. 71 Cedar St., R.
RANSOME, BERTRAM COLEBY		
RECORDS, FRANCIS BARRY, JR	Arlington Heights	. Arlington Heights.
REED, EDWARD HUTCHINSON		. Norfolk House, R.
REED, WILLIAM EDGAR	Pittsburgh, Penn.	
RICHARDS, LOUIS JEROME		. 69 Montgomery St.
RICHMOND, CHARLES FRANKLIN		
RITCHIE, EDWARD WARREN		. Newton Highlands.
ROAF, EDWARD WALTER		
Robinson, Laforest George		. 33 Blaine Ave., A.
Robinson, Marcellus True	네 발생하면 점점이 됐는데 이번 시간에 살아내지 않다.	
ROLFE, HENRY PETTINGELL		
ROYCE, JAMES CHARLES	Davenport, Ont.	. 127 Pembroke St.
Russell, Walter Basford		. 9 Kearsarge Ave., R.
RUTHERFORD, EUGENE WHITE		
SARGENT, EZEKIEL COLBY		
Sawtelle, Harry Francis		
Sawtelle, William Otis, Δ . K. E	Bangor, Me	. 6 Rutland Sq.
Schuttler, Carl, X. Φ		. 115 St. Botolph St.
Schwartz, David	Boston	
SELLEW, WILLIAM		. 233 W. Canton St.
SEVERANCE, HERBERT ALLEN		
SHARER, CARL WADSWORTH	Philadelphia, Penn.	. Melrose.
SHAW, ALBION WALKER	Portsmouth, N. H.	. Melrose.
SHEPARD, FRANCIS HENRY	mason City, Iowa	. 19 St. James Ave.

NAME.	HOME.	RESIDENCE.
SHUMAN, JESSE WYMAN	Minneapolis, Minn.	25 Cortes St.
SLAVENS, JOHN HEBER	[[[[[[[[[[[[[[[[[[[32 Union Park.
SMITH, CHARLES FRANKLIN	Newport, R. I	43 Chestnut St.
SMITH, JAMES WILFRED	Lawrence	Lawrence.
SMITH, OREN BARRON, JR	Northampton	
SMITH, PERCY MERRIHEW	Rockland	
SMITH, WILLIAM FRANKLIN	No. Cambridge	No. Cambridge.
Snow, Arthur E	St. George, Utah	
Soley, John Cormack	Chelsea	
SPEAR, WALTER EVANS	Lawrence	
Spiess, Arthur	New York, N. Y.	
Spring, Russell Clark	Newton Lower Falls	Newton Lower Falls.
STAPLES, WILLIAM DEERING	Portland, Me	214 Columbus Ave.
STEINER, KLAUS J		5 Oxford Terrace.
STILES, PERCY GOLDTHWAIT	Newtonville	
STRONG, EDWARD FITCH		208 Huntington Ave.
STUDLEY, IRA GUILD	Rockland	
STURTEVANT, EDWARD		
SULLIVAN, MICHAEL ALOYSIUS, A.B.		157 W. Brookline St.
SUMNER, EDWARD ALLEYNE, JR., A. Y.		. 86 Huntington Ave.
SWAN, CHARLES MAYO	A TOTAL STATE OF THE PARTY OF T	
SWAN, RODOLPHUS ASHLEY	New Bedford	. 293 Columbus Ave.
SWEETSER, CHARLES HERBERT		. Wakefield.
Taylor, John		
TEMPLE, JOHN		
TERRY, ROBERT CORNELIUS		. 364 Columbus Ave.
TEWKSBURY, JAMES WINTHROP		
Tone, Jay Erwin		
TRAVIS, WILLIAM WALLACE		. Wellesley Hills.
TRIPP, BENJAMIN CLARK		. 27 Falmouth St.
Underwood, Frank Edward		
Underwood, Frank Elijah		
VAHLKAMP, HENRY RUDOLPH		. 496 Columbus Ave.
Vedder, Enoch Roskranz, Δ. Ψ.		21 St. James Ave.
VIDETO, THEODORE ERNEST		So. Framingham.
VINAL, RALPH SUMNER		
VINTON, THOMAS MACINTIRE, X. 4		. 115 St. Botolph St.
WADLEIGH, GEORGE ROBINSON	Charlestown	
WALDO, GENTRY	St. Louis, Mo	
WALKER, HIRAM CHANDLER		. 128 Huntington Ave.
WALLACE, CHARLES MARMONT		
WALLER, WILLIAM JOHN		
WARREN, CHARLES CLAYTON	Fryeburgh, Me.	. 101 Highland St., R.
WARREN, CHARLES CLATTON		. 86 Appleton St.
WASHBURN, THURLOW		
WATKINS, NORMAN	Roslindale	
Watson, Thomas Augustus		. Weymouth.
WATTS, FRANCIS HENRY		
marro, rancio ilianti		

NAME. HOME. RESIDENCE.

WENTWORTH, EDWIN FRANCIS .	Waltham Waltham.
WEYMOUTH, THOMAS ROTE	Lock Haven, Penn 224 W. Canton St.
WHITCOMB, FRANCIS EDWIN, JR	Waverly Waverly.
WHITON, DAVID THOMAS	Hingham Centre Hingham Centre.
WOOD, WILLIAM REMINGTON	Providence, R. I 17 St. James Ave.
WOODMAN, ALPHEUS GRANT	Essex 4 Union Park St.
WOODMAN, GEORGE MADDOCK	Essex 4 Union Park St.
WOODWORTH, EDWARD HAROLD .	Newtonville Newtonville.
WORCESTER, HENRY ELWYNNE .	Dorchester 9 Lombard St., D.
WIUCHET, ROBERT GROVE	Dayton, Ohio 127 Pembroke St.
WYATT, WILLIAM A	Norwalk, Conn 202 W. Canton St.





Students.

NAME.	HOME.	RESIDENCE.
ABRAMSON, MAUDE LIZZIE	Roxbury	. 49 Waverley St., R.
Adams, Alice Eliza	Auburndale	. Auburndale.
BARRETT, FRANCES STANTON	Roxbury	. 10 Laurel St., R.
BASSETT, SARA WARE	Newton	. Newton.
BATHRICK, RALPH WARD	Chelsea	. Chelsea.
BIRNBAUM, SAMUEL	Allston	. 60 N. Beacon St., A.
Burns, John Todd	Leominster	. Leominster.
Byram, Joseph Robinson, Jr	Boston	. 61 Chester Sq.
Byrne, Blanche Gertrude		
Casanova, Anna		
CUMMINGS, MARTHA WINSHIP	Boston	· 545 Shawmut Ave.
CUTLER, ALBERTA ALLISON	Roxbury	. 23 Delle Ave., R.
DAMON, EDWARD LESTER	Reading	. Reading.
DANIELS, EMMA LOUISE	Roxbury	. 21 Dorr St., R.
FAXON, EFFIE INEZ	Cambridge	. Cambridge.
FELIX, MARIE RENÉE	Auburndale	. Auburndale.
FIELD, CORA LINDSEY	Boston	. 561 Columbus Ave.

NAME.	HOME.	RESIDENCE.
GALE, ALICE WELLINGTON	Lynn	, Lynn.
HAGERTY, ELIZABETH MONICA	Boston	. 39 E. Brookline St.
HALL, CLARENCE ALLEN		
HANSCOMB, ARTHUR PHILLIP		
HARRINGTON, MILDRED ELLA	Boston	. 176 W. Canton St.
HEATH, MARIAN	Hyde Park	
HOWARD, CLARA ANTOINETTE	Somerville	. Somerville.
INGALLS, GRACE MAI	Boston	. 18 Chester Sq.
Kales, Anna Maria		. 73 Pinckney St.
LAVERS, WILLIAM EVERETT		. 3114 Washington St.
LEGG, ANNIE MARIE	Roxbury	. 150-в Blue Hill Ave., R.
LÉVY, SARA	Boston	. 29 Greenwich Park.
LIBBEY, HORATIO AYRES	Melrose	. Melrose.
LINSCOTT, GRACE ISABEL	Gloucester	. Gloucester.
MANNING, HELENE	Cambridge	. Cambridge.
MARTELL, HARRIET	Somerville	
MOONEY, GERTRUDE	Cambridge	
Mosman, Austin Reynolds	Jamaica Plain	. 5 Lamartine St., J. P.
Moxon, Lela Oxley	Atlantic	. Atlantic.
NAGLE, EVELYN	Boston	13 Cortes St.
PARSONS, EVELYN MAY	Saugus	Saugus.
PATTERSON, BERTHA MAI	Boston	46 St. Stephens St.
PIERSON, GERTRUDE ELISE		
RENAUD, ALBERTINA MARIE	Boston	136 Chandler St.
Saugez, Alphonse		11 Isabella St.
Schloss, Rosa	Boston	197 W. Newton St.

Total number of Students, 43.



ABBREVIATIONS.

In all the foregoing lists, for residence addresses in suburban portions of Boston the following abbreviations are used:—

Α			v			4	7						-	Allston.
В														Brighton.
C	.4.													Charlestown.
D														Dorchester.
														East Boston.
J. P	2	÷				Ġ.			-	्र	v		7	Jamaica Plain.
м					3.							*		Mattapan.
N		4							4					Neponset.
S. B														South Boston.
														Roxbury.
Ros				1							ě			Roslindale.
W. R.		į,		. "										West Roxbury.



YOUNG WOMEN STUDYING AT ECHHOLOGY.

BARLOW, MARY			-					Chemistry.
BEAN, ELIZABETH WHEELER .								Biology.
BOLAND, MARY A								Biology, Chemistry.
Brown, Alice Frances, A.B								Chemistry.
CHAMBERLIN, HELEN								Architecture.
CHAPIN, MABEL HUIDEKOPER .								Physics.
CHEEVER, ADELINE HAVEN				10				English.
CHEEVER, HELEN								Political Science.
CHEEVER, MARION			k			8		English, Political Science.
CURTIS, IDA MAYNARD, B.S		43				2		Chemistry.
DAVIS, GERTRUDE PAINE	Ÿ.							Physics.
DOWD, ELIZABETH GERTRUDE .					e.	4		Chemistry, Language, Physics.
FISHER, BESSIE FLORETTE				-			2	Geology.
FITTS, ADA MARY						0		Biology.
FOSTER, MARY LOUISE, A.B								Chemistry.
GAINES, BESSIE VENABLE							*	Biology, Chemistry.
GATES, HATTIE LAWRENCE								Biology, Chemistry, Language.
GRAY, AGNES WOODBURY, A.B.							*	Chemistry.
HALL, SARAH ABBIE								Physics.
HENDON, MARGARET, S.B		*				*		Architecture.
HIBBARD, ANN		+						Chemistry.
HOUGH, ELISABETH ELEANOR .	4	4						Biology.
JOYCE, EDITH KINSLEY	ż		٠		4		2	Biology, Chemistry.
KIMBALL, ADDIE				4			ø	Biology.
LANDER, RUTH ELLA	·		Ç		Ç			Biology.
LEWIS, MARION	Ž.			i.			2	Architecture.
Locke, Harriet Frances								Architecture.
Lysaght, Bella Bernadette								Biology.
MAHONEY, MARION LUCY								
MELLYN, MARY CATHERINE								
MILLER, SARAH ELIZABETH								
Molloy, Annie Genevieve .								

Geology. Morse, Abbie Eleanor NORRIS, GRACE ADELAIDE Biology. Electrical Engineering. O'CONNELL, DELIA MARIA, A.B. General Studies. O'HARA, ANNA FANNIE Biology. PLUMMER, LAURA SUSANNA Chemistry, Language, Physics. PRESCOTT, ALICE BEARDSLEE Stone, Esther Architecture. Biology. Architecture. THOMSON, LUCY DOOLITTLE, B.A.





IN:MEMORIAM:

EDWARD AVERY TOWLE,

Class of Ninety-Five.

CHARLES DOYLE SMITH,

Class of Ninety-Six.

MELVIN WADLEIGH,

Class of Ninety-Six.

JOHN EATON MANSON,

Class of Ninety-Seven.



Summary of the School of Industrial Science.

BY STATES.

Alabama	2	Missouri
Arkanas	1	Montana
California	15	Nebraska
Colorado	5	Nevada
Connecticut	30	New Hampshire 3
Delaware	4	New Jersey
District of Columbia	7	New Mexico
Florida	3	New York 5
Georgia	3	Ohio 4
Idaho	1	Oregon
Illinois	39	Pennsylvania 3
Indiana	6	Rhode Island 3
Iowa	13	South Carolina
Kansas	1	Tennessee
Kentucky		Texas
Louisiana	3	Utah
Maine	36	Vermont
Maryland		Virginia
Massachusetts	665	Washington
Michigan	7	West Virginia
Minnesota		Wisconsin

Summary of the School of Industrial Science.

BY FOREIGN COUNTRIES.

Belgium	1 50 1		103			\times	7.5	4	1	Japan .	*	75	*	61.	8		(*)	*			1
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		Т	hts	1	in	Sch	100	1 of	Industr	ial Science						1	157	,			

Summary of the Bebool of Industrial Beience.

BY COURSES

TOTAL		01	91		12	9			, I	ř					809		346	
SPECIAL.		29	65	13	77	29	33	17	3	20	ea	3	10	69	298		36	
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REGULAR.		78	16	22	50	39	141	4	10	19	31	IO	es	œ	511		310	
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SOPHOMORE.	œ	33	50	1.2	20	14	89	69	4	6	90	4	1	4	207			
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10R.	o's	10	91	9	29	e4	1-	ī	T	1	1	1	1	1	8		Freshmen	
JUNIOR.	œ	53	37	9	14	13	38	I	3	uo.	10	m	74	+	158			
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SENIOR.	œ.	23	31	+	91	1.2	35	1	3	10	13	60	1	1	146			
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		I.	11.	III.	IV.	٧.	VI.	VII.	VIII.	IX.	X.	NI.	XII.	CIII.				
		COURSE >																

THDEX.

											PAGE
ALUMNI ASSOCIATIONS			14		FS:	27	12.1		99		117
ALUMNI SALARIES											213
Ambition (Poem)								-	36		159
Answers to Correspondent	s .									13	185
ARCHITECT'S DREAM, THE .					63		4		5.6	411	170
ARCHITECTURAL SKETCH CLAS											123
ARCHITECTURAL SOCIETY .								10			92
ARCHITECTURAL DINNER .			0.2		200	93		0.7	174	2.5	120
Assembly, Technology .										4.0	112
Athletics									9		133
ATHLETIC CLUB											135
ATHLETIC EDITORIAL				7.7				1.0	54	400	
ATHLETIC TEAM				100				12		10	136
											0.
Baker's Dozen, The				2.5		7.		1.5		13	84
Banjo Club							8				100
Base Ball			-					100			153
BASE BALL TEAM, NINETY-FI			*		4.7						154
Base Ball Team, Ninety-Si			25	2.5	* *	*0		3.5		***	155
BATTALION, THE M. I. T					*					25	121
BIOLOGICAL SOCIETY					*				(4)	9.0	95
Bohemian Supper of M. I. '	Г. А	. S.	*	200	* 1	*		31	30	1	120
CALENDAR			10		400	36		12	200	ν.	6
CHRISTIAN UNION			D.V	1140				0.7	10.0		124
CIVIL ENGINEERING SOCIETY						,	1		133		90
CLASS DAY			1		30					2	114
CLASS HISTORIES			919		75			39	67	100	31
COMMENCEMENT EXERCISES .					* ::		12	157			115
CONTENTS						-	10	-			4
Co-operative Society, The				23		333		94	416	40	108
COPYRIGHT			334	0.00	9.6	4		1.0	400	100	2
CORPORATION, THE									-		8
CORPS OF CADETS											121
Correspondents, Answers	TO.	92	204	1.7	4.	5	10	254	20	20	185
Courses, The									800		214
Course Foot Ball Teams o							18		13		150
Course Foot Ball Teams o							1.	34			151
CROSS, LIFE OF PROFESSOR C					*		14		107	90	161
Cross, Portrait of Profess											160

														PAGE
DEDICATION .				84	33						3	-2	12	3
DELTA SIGMA													3	88
DER DEUTSCHE	VEREI	N	19		63			2.6		*1		1.67		III
DER SCHWITZVER	EIN	:0		20		1		92		50		3	7.5	127
ELECTORAL COM	MITTE	E			CONTR	× :			170		* 3			125
ELECTRICAL ENG	INEER	ING	Soci	ETY					1		9	2	7.	94
EMERY TESTING	MACE	HNE.	Тн	e (Po	em)	V.								173
ENROLLMENT BY	Cour	RSES.	189	3-1894					100	200	40	100	0.8	212
ETA SIGMA MU					***									86
EXAMINATION IN														199
EXETER CLUB							$\langle \hat{\mathbf{x}} \rangle$	12	060	*	ϵ			77
FACULTY, THE				7.47	28				122	23	30	9	174	10
FOOT BALL ASSO				29			18	59	0.00	¥.	90	100	108	143
FOOT BALL COUL														150
FOOT BALL COUL	RSE T	EAMS	s of	NINE	TY-I	OUR		1				100	33	151
FOOT BALL, SUM	MARY	OF	GAM	ES			5.0	374	100				27	144
FOOT BALL TEAM	I ANI	Pic	TURE	6	***			2.4	200				2.4	142
FOOT BALL TEAM	d OF	NINE	TY-S	EVEN									9	148
FOOT BALL TEAM	M OF	NINE	TY-S	Six	9									146
FRATERNITIES			0.4	4.1										53
Fraternity of	Chi I	Phi												61
Fraternity of	Delta	Kar	ра Е	psilor	n	9								63
Fraternity of									23		4	24		59
Fraternity of	Delta	Uns	ilon						107					65
Fraternity of														67
Fraternity of									- 33			- 6		69
Fraternity of												116		55
Fraternity of	Thet	a Xi						0.4		¥0	-			57
Fraternities,											8			10.75
Fraternity, S	umma	rv												72
FRENCH CLUB							1		200					
FRONTISPIECE		9							51			erted		
GENERAL F. A.	WALE	ER'S	Мп	ITARY	r C	REER			140	40			7,20	24
GEOLOGICAL SOC	LETY									40		2.00		96
GERMAN CLUB					3									111
GLEE CLUB .									6.5			2.0	100	98
GLEE AND BANJO	CLU	в. Т	ECH	OLOG	Y									102
GOVERNMENT AN	D INS	TRU	CTIO	N. OF	FICE	RS O	Ρ.							7
GRADUATION EX														115
GRADUATES, ROI														
GREETING .												100		5
GRINDS						Ŷ.				ં				175
GAIADO	52						82	3.7	-					-13
HAMMER AND TO	ONGS	*		•					*:			11	***	76
HISTORICAL SKE	TCH C	F TI	CHN	IQUE	4									28
HISTORY OF NIN	ETY-I	IVE						- 2		4	14	1.0		39

												PAGE
HISTORY OF NINETY-FOUR				1						2.5	1.7	33
HISTORY OF NINETY-SEVEN	v .	0					-					5/20/6
HISTORY OF NINETY-SIX	* 1	$^{\circ}$			*		*	4		*01	*	45
IDYL OF COURSE II							- 25	25		*::		186
INDOOR WINTER MEETING	Тнп	RTEE	NTH	30				1				139
IN MEMORIAM	. *								0.00	40		253
INSTITUTE COMMITTEE .		14		0.45	93		34	C+		* 1		106
Instructors, Other .	*:											19
JUNIOR DINNER, THE .	53	9	-		20	20		1		13		118
JUNIOR'S DREAM, THE .								$(\bar{x}$		*		188
KEY TO CLASS PICTURE	92	4						29	40	*	343	37
K. O. S												78
K ₂ S									23			74
												917
L'AVENIR	¥.,								6.7	4		110
LECTURES FOR THE CURRI				+ 1		98			60	93		23
Local Societies				*:3			2.8	*	53	25		73
LOWELL SCHOOL OF DESIG	3N								*			247
MIDSUMMER'S DREAM (Po	em)	¥	7		27				23			172
MILITARY CAREER OF GET	NERAL	F.	A. W	ALK	ER							24
MILITARY TACTICS, EXAM	INATIO	ON I	Ν.	53				1.0	*	25		199
MILITARY TOPOGRAPHY												196
Miscellaneous			34			1	-		* 1			105
Missing Word Contest						3.9			¥.	35	3.0	190
Mondamin Club			100	*		0.5			30			7.5
Musical Organizations			100			2			- 55			97
New Books		4			*	1	12				34	192
NEW ENGLAND CHAMPION				*	*	1.5	100	- 5				137
NINETY-FIVE BASE BALL	TEAM										-	154
NINETY-FIVE COURSE FOO	T BAI	LL T	EAMS		়	14		23				150
NINETY-FIVE, PHOTOGRAV	URE O	F C	LASS	7		1.4	34		ins	ertec	i at	36
NINETY-FIVE, HISTORY OF			2.7	*3		0.5		100			9.8	39
NINETY-FOUR COURSE FOO	от Ва	LL	ГЕАМ	S								151
NINETY-FOUR, HISTORY O	F.								*			33
NINETY-SEVEN FOOT BALL	L ELE	VEN		4.7	100	116		800				149
NINETY-SEVEN FOOT BALL	. Pict	TURE			1.0	12	0.00	***		1.0		148
NINETY-SEVEN, HISTORY	OF		- 33								1	49
NINETY-SIX BASE BALL T	EAM				1		930	80	30		0.0	155
NINETY-SIX FOOT BALL E	LEVE	N	83	*	336	313		*0		136	50	147
NINETY-SIX FOOT BALL P								-				146
NINETY-SIX, HISTORY OF		1							0			4.5
NINETY-SIX QUARTETTE				*	36				\propto	18		103
NORTON, TRIBUTE TO PRO					24	2		*	25	12		157
Officers of Governmen	T ANI	IN C	STRUC	TIO	Ν.		100	**	96	126	3.1	7
ON TREMONT STREET (Po												

										PAGE
Oriella Polka	3.4						in	serte	d at	158
OTHER FRATERNITIES REPRESENTE	D.									71
OTHER OFFICERS OF INSTRUCTION										19
OUTDOOR SPRING MEETING .				*		3.4		$\widetilde{\mathcal{H}}_{i}^{i}$		138
Рні Карра						54			100	82
PHOTOGRAPHIC SOCIETY, THE .	204					579				109
Pi Kappa									-	80
Possibility, A				Ç.			13			199
Professional Societies	1.4	- 20	43	4	100	52		200	7.0	89
PROFESSOR C. R. CROSS, LIFE OF	-				-		1.4			161
PROFESSOR L. M. NORTON, TRIBUT								- 6	- 9	157
PROFESSOR R. H. RICHARDS, LIFE										167
Professors						-54				11
Publications . :					20					129
	13	55%	500	-70		100	3555	59	56	
QUARTERLY, TECHNOLOGY	100	17.0	0.00	*		2.4		400		132
QUARTETTE, NINETY-SIX								- 22		103
QUOTATIONS										203
RECENTLY DISCOVERED FRAGMENT	OF (OLD I	ENGL	ISH		10	237	233		194
RECORDS, TECHNOLOGY						95		- 3	- 0	141
RETROSPECTION						10			1	198
RICHARDS, LIFE OF PROFESSOR .							1000	W.1	4	167
RICHARDS, PORTRAIT OF PROFESSOR				- 23			0.59	- 33		166
RIVERVIEW CLUB, THE				80		36	60	.5		81
ROLL OF GRADUATE STUDENTS .	-					C)	200	40		216
ROLL OF STUDENTS						110		- 01	- 1	215
ROLL OF NINETY-FIVE						1	2.			225
ROLL OF NINETY-FOUR		54	100	20	10		-	-		220
ROLL OF NINETY-SEVEN			-							239
ROLL OF NINETY-SIX					Ž.					231
NOLE OF MINETI-DIA	97			- 5					- 5	231
SALARIES OF ALUMNI										213
SALARIES OF ALUMNI			100/2					- 23		128
Commence						04	3.	127	47	126
SKETCH CLASS, THE ARCHITECTURA	I.		200		v.					123
SOCIETY OF ARTS, THE	W					\$		0.733	- 18	107
SPRING MEETING, ANNUAL OUTDOOR									- 88	138
STATISTICS, COLLEGE				10	2		-		-	210
STATISTICS, TECHNOLOGY				***	*					200
STUDENTS, ROLL OF						*	2	333		
		150					10		- 55	215
SUMMARIES OF POINTS	. *.				*	100	9.0			140
SUMMARY OF FOOT BALL GAMES SUMMARY OF ROLL OF STUDENTS	*		3.7	50	*	*				144
				50		*	13			254
SUMMARY BY COUNTRIES					4.3	-				255
SUMMARY BY COURSES	*				*					256
SUMMARY BY STATES			*		*.7	(*)	$\{ f_i \}$	17	100	254
Summer Schools							175	0.25	5.0	122

											PAGE
TECH, THE							72	1	2		131
TECHNICAL INSTITUTIONS, RELAT	TIVE	SIZE	s of					4	20	75	211
TECHNIQUE, BOARD OF EDITORS								394	062	87	130
TECHNIQUE, ELECTORAL COMMIT							,				125
TECHNIQUE, HISTORICAL SKETCH					20						28
TECHNOLOGY ASSEMBLY .					93		100	100	47		112
TECHNOLOGY AT THE FAIR .		CA.	100	6	165						164
TECHNOLOGY GLEE AND BANJO (CLUE	1		3					20		102
TECHNOLOGY PUBLICATIONS .								1			129
TECHNOLOGY QUARTERLY .		12	2.5	40	4.0			14	4.5		132
TECHNOLOGY RECORDS											141
TECHNOLOGY STATISTICS .	Ÿ					0					209
TECHNOLOGY ZOO, THE .	Sc.	14		601			28		4.	(6)	79
TENNIS ASSOCIATION, THE .									**		152
TITLE PAGE											3
TRACK TEAM		9				,					136
TRIBUTE TO PROFESSOR NORTON									•	*	157
VARSITY CREW, THE				12	v		¥		8	10	193
VARSITY FOOT BALL ELEVEN						\times			50		142
WALKER, GENERAL F. A., PHOT	OGR	AVUR	E OF		20			inse	rted	at	3
WALKER GENERAL, F. A., MILIT	CARY	CAL	REER	OF	200	14.		15	5.10		24
WARNING TO GRINDS								-			184
WINTER MEETING, THIRTEENTH									2		139
YOUNG WOMEN STUDYING AT TH	ie I	NSTIT	TUTE			Ų.	:				251
YE END			140				0.	0.0	-		262



Gorgia Lorsning. Fruritta f. Bassett Pauline L Buettner (94) Frances & Hutt. (94)
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											PAGE
ABENDROTH & ROOT MANUFA	CTURI	NG C	0.					1000			46
ALTENEDER, THEO. & SONS .								100			14
AMERICAN STEAM GAUGE CO.				2.2	4.1	100		136.0			24
Andrew, John, & Son Co	P.				40						48
ATLANTIC WORKS							10				38
BARNES & DUNKLEE		- 1									15
Besse, P. & J		34	34	2.5	4						50
BLAKE, THE GEO. F. MANF'G								0.00	**		30
BOSTON & ALBANY R.R						15		20	- 23		35
BOSTON & MAINE R.R		- 1				¥.	12		.5		41
Brooks Bros	ν.		204	0.00				-			5
Brooks & Co., Walter C			0.00								10
BRUNSWICK HOTEL							12				15
Buff & Berger							1.5	- 14			20
CHANDLER & BARBER											34
CHICKERING, ELMER										- 3	13
CLAYTON AIR COMPRESSOR Co								9.5	10	- 61	21
CONTINENTAL CLOTHING CO.										100	18
CORDAGE (BRAIDED) S. C. W.		102						0.0	500	112	31
CRAWFORD SHOE						13				- 9	6
CROSBY STEAM GAGE AND VA	LVE C	o.			-			040			23
DAMRELL & UPHAM											9
DEANE STEAM PUMP COMPANY								8500	37		27
FAIRBANKS SCALE CO								100			30
FISHER GOVERNOR CO		-		-	2						21
FORD & Co					*.						42
FORT WAYNE ELECTRIC CO						0				- 8	34
FRANKLIN, ALBERT B							8				20
FREELAND, LOOMIS & Co						0			*		18
FROST & ADAMS								100			9
GREENE ENGINE					ē.	3				- 8	31
GUILD & GARRISON			-								-
GUILD, HENRY & SON									1.19		29
GRAND TRUNK R.R		4	*				*				
GRAND UNION HOTEL		- 0				÷			•		45
HANCOCK INSPIRATOR CO									*		42
HELIOTYPE PRINTING CO							*	13	*		33
Hollings, R. & Co		- 5	10	- 10					- 5		14
JENKINS BROS., VALVES .			-0				7.2			-	37
JENKINS DROS., VALVES						٠	1				29
JESSOP, WILLIAM, & SONS .					*	*					
LESSOP, WILLIAM, & SONS .											46

													PAGE
Keezer, Max Kendall, Edward, & : Lake, J. H. & D		,	4				14.5	9.			×		18
KENDALL, EDWARD, &	Son												25
Lake, J. H. & D													32
LEONARD & ELLIS		-		4	020				3.4				20
LEONARD & ELLIS LIDGERWOOD MANUFACT	TURI	NG C	co.										46
LITTLEFIELD, J. C.								3					17
LLOYD, ANDREW J.		2											38
Maclachlan, A. D.						95				**:			15
MASSACHUSETTS INSTIT	UTE	OF T	ECH	COLC	GY					*:1			11
MOORE, ALEXANDER	7							2					18
Moore, Alexander Newman, J. F.					200	v		10		27			42
New Process Twist D	RILL	Co.							1000	**			47
NEW YORK & NEW ENG	GLAN	D R	R.										27
New York & New End Nickerson, C. J													14
OTTO GAS ENGINE								9.4		Va.			30
OTTO GAS ENGINE OVERMAN WHEEL CO.													37
Pond's Extract .			2										50
PRENTICE, L. H., Co.				1000				4				-	26
PRESBREY STOVE LININ										-			47
PRIEST, C. M	-	***			- 89		- 10					9	10
PROVIDENCE STEAM EN	GINE	Co			- 20	- 0							31
PROVIDENCE STEAM EN PULSOMETER STEAM PU	MP	Co											43
RAND DRILL CO					- 0								39
REVERSIBLE COLLAR C	0.	13						933	- 39		- 12		21
RHODE ISLAND TOOL C			8			-			1		-		34
ROBERTS IRON WORKS											-		29
ROCHESTER LAMP Co.							10			- 61	100		12
Rope	8	8		- 33	97		8			\$		- 0	31
SAMSON CORDAGE WOR													31
SASH CORD (BRAIDED)	S	C W	7.										31
Sash Cord (Braided) Schafer & Budenberg		· ,,			- 51		10				÷		43
SPENCER A H		16				- 3							22
Spencer, A. H Star Brass Manufact	UDIN	en C		*									22
STARRETT, L. S	UKL		0.	*							*	117	32
STONE & WEBSTER				. 33						8			32
STURTEVANT, B. F., Co										ů.			25
THAYER, MCNEIL & H													
									*				38
VACUUM OIL CO	-			- 63	*		-						15
VENDOME					OPAT								8
Walpole Dye and Ch													
WEIR STOVE CO	EMI	CAL	Co.	*	*	- 3		1		3			
WEIR STOVE CO			i.	•									47
WESTON ELECTRIC INS WETHERBEE, J. O.	TRUM	MENT	Co.		4			* 1	*				46
WETHERBEE, J. O.			*	*				*		*	1		42
WILKINSON, A. J., & C WINDOW LINES (BRAIL	.0.			. 7:)2	3.5		*			35		28 31
WINDOW LINES (BRAIL	DED)	5. (. W.					*					31
WOOD, FRANK .				*		9*		*			(4		49
WOODS, S. A. MACHIN	1 38	O.									100		26



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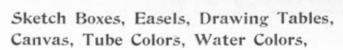
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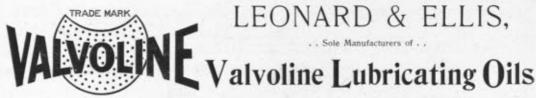
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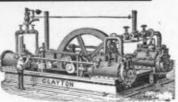
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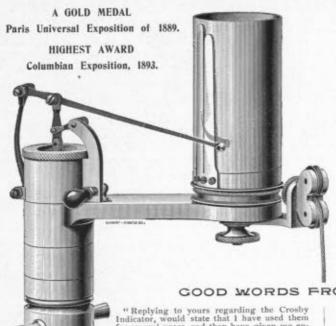
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Yours truly,

E. D. LEAVITT, JR., Consulting Engineer.

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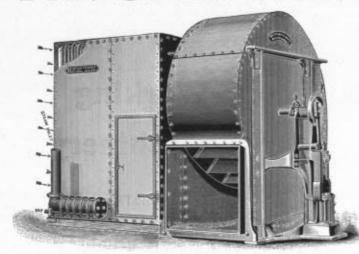
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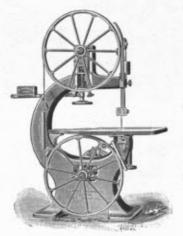
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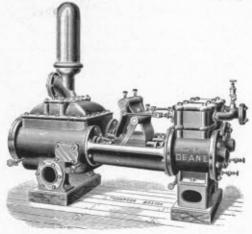
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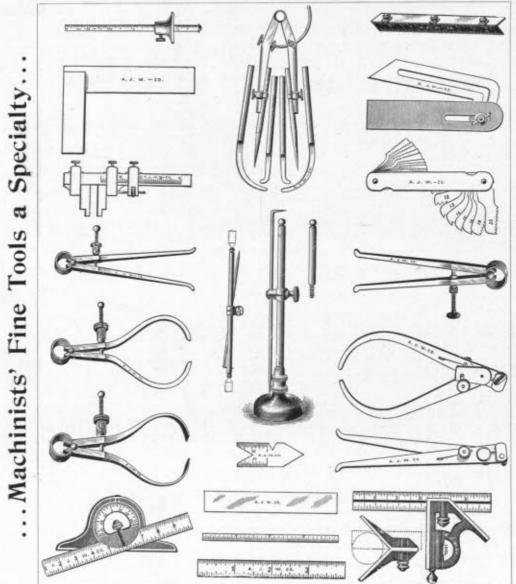
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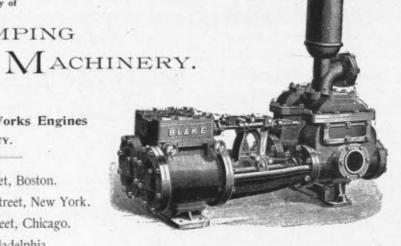
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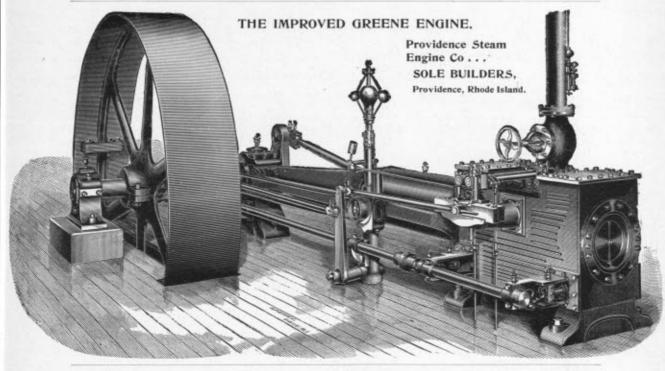
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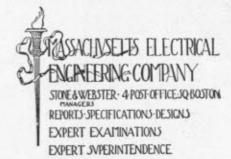
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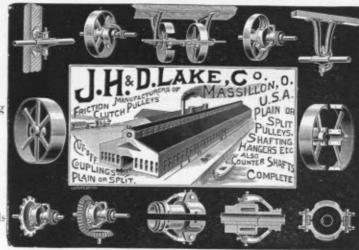
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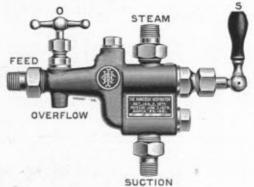
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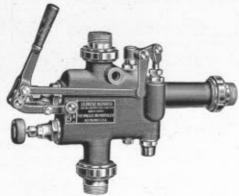
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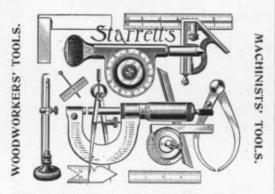
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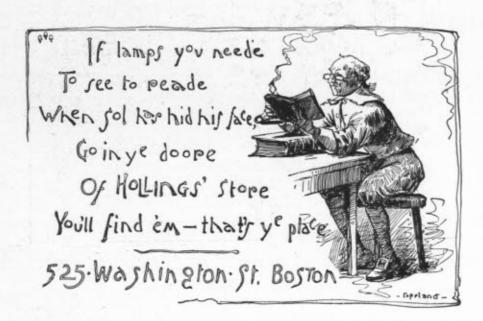
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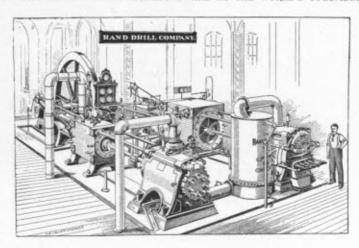
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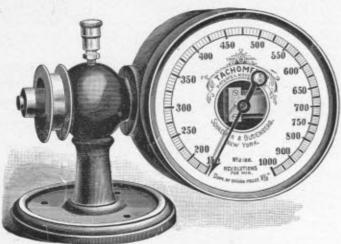
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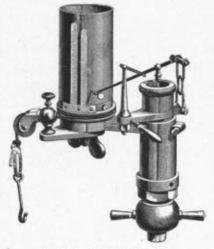
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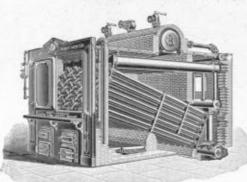
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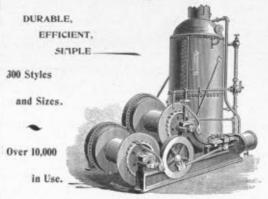
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