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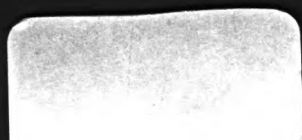
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*Juanita M. Weld*

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v. 1876

HARVARD UNIVERSITY

CATALOGUE.

1876-77.



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PUBLISHED FOR THE UNIVERSITY  
BY CHARLES W. SEVER.

1876.

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## CALENDAR.

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*The meetings of the PRESIDENT AND FELLOWS are held on the second and on the last Monday of every month.*

### 1876.

- Sept. 25, Monday.* Examination for advanced standing in the Medical School.
- Sept. 28, Thursday.* **Academic Year begins** in all departments of the University.
- Sept. 28, 29, Thursday and Friday.* Examination for admission to the Lawrence Scientific School, and to advanced standing in the Law School.
- Sept. 28 - 30, Thursday to Saturday.* Examination for admission to Harvard College.
- Oct. 11, Wednesday.* Stated Meeting of the Board of Overseers.
- Oct. 18, Wednesday.* Stated Meeting of the Academic Council.
- Dec. 1, Friday.* Last day of receiving applications for aid from the Loan Fund.
- Dec. 20, Wednesday.* Stated Meeting of the Academic Council.

RECESS FROM DEC. 24, 1876, to JAN. 6, 1877, BOTH DAYS INCLUDED.

### 1877.

- Jan. 10, Wednesday.* Stated Meeting of the Board of Overseers.
- Feb. 12, Monday.* **Second half-year begins.**
- Feb. 21, Wednesday.* Stated Meeting of the Academic Council.
- March 7, Wednesday.* Last day of receiving applications for Fellowships.
- March 31, Saturday.* Last day of re-engaging College Rooms for 1877-78.
- March 31, Saturday.* Last day of receiving applications of candidates for Second-Year Honors.
- April 11, Wednesday.* Stated Meeting of the Board of Overseers.
- April 17, Tuesday.* Assignment of College Rooms for 1877-78.
- April 18, Wednesday.* Stated Meeting of the Academic Council.
- April 24, Tuesday.* Last day of engaging rooms assigned April 17.
- June 1, Friday.* Last day of receiving applications for Scholarships, or for aid from the Beneficiary Fund. Last day of receiving applications of candidates for Final Honors.

- June 8, Friday.* Last day of receiving names of competitors for the Boylston Prizes for Elocution.
- June 11, Monday.* Examination in the Medical School.
- June 21, Thursday.* Speaking for the Boylston Prizes.
- June 21, Thursday.* Stated Meeting of the Academic Council.
- June 22, Friday.* Seniors' Class Day.
- June 26, Tuesday.* Visitation of the Divinity School.
- June 27, Wednesday.* **Commencement.** Stated Meeting of the Board of Overseers.

**SUMMER VACATION OF THIRTEEN WEEKS, FROM COMMENCEMENT DAY TO SEPTEMBER 26.**

- June 28, Thursday.* Examination for admission to the Law School.
- June 28, 29, Thursday and Friday.* Examination for admission to the Lawrence Scientific School.
- June 28-30, Thursday to Saturday.* Examination for admission to Harvard College.
- July 11, Wednesday.* Annual Meeting of the Board of Overseers.
- Sept. 24, Monday.* Examination for advanced standing in the Medical School.
- Sept. 27, Thursday.* **Academic Year begins** in all departments of the University.
- Sept. 27, Thursday.* Examination for admission to the Law School.
- Sept. 27, 28, Thursday and Friday.* Examination for admission to the Lawrence Scientific School, and to advanced standing in the Law School.
- Sept. 27-29, Thursday to Saturday.* Examination for admission to Harvard College.
- Oct. 10, Wednesday.* Last day of receiving applications for admission to candidacy for the degrees of A.M., PH.D., and S.D.
- Oct. 10, Wednesday.* Reading of Freshmen for the Lee Prizes.
- Oct. 17, Wednesday.* Reading of Sophomores for the Lee Prizes.

# DIRECTORY.

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## IN BOSTON.

The office of the **PRESIDENT AND FELLOWS** is at No. 70 Water Street.  
The office of the **TREASURER** is at No. 70 Water Street.  
The **MEDICAL SCHOOL** is on North Grove Street.  
The office of the **SECRETARY OF THE MEDICAL FACULTY** is at No. 108  
Boylston Street.  
The **DENTAL SCHOOL** is at No. 50 Allen Street.  
The office of the **DEAN OF THE DENTAL FACULTY** is at No. 222 Tremont  
Street.

## IN CAMBRIDGE.

The office of the **PRESIDENT** is at No. 5 University Hall.  
The office of the **DEAN OF THE COLLEGE FACULTY** is at No. 5 University  
Hall.  
The office of the **REGISTRAR OF THE COLLEGE FACULTY** is at No. 5  
University Hall.  
The office of the **SECRETARY** is at No. 5 University Hall.  
The office of the **DEAN OF THE LAW FACULTY** is in Dane Hall.  
The office of the **BURSAR** is in Wadsworth House, Harvard Square.  
The office of the **STEWARD OF THE DINING HALL** is in the north-west  
tower of Memorial Hall.  
The **OBSERVATORY and BOTANIC GARDEN** are on Garden Street.  
The **MUSEUM OF COMPARATIVE ZOÖLOGY** is on Oxford Street.  
The **PEABODY MUSEUM OF AMERICAN ARCHEOLOGY AND ETHNOLOGY**  
is in Boylston Hall.  
**DIVINITY HALL** is reached from Oxford Street or from Divinity Avenue.

## IN JAMAICA PLAIN.

The **BUSSEY INSTITUTION** is in Jamaica Plain. The nearest railroad  
and telegraph station is Forest Hills, on the Boston and Providence  
Railroad.

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## ABBREVIATIONS.

C.	College House.	H'y	Holworthy Hall.
D.	Divinity Hall.	M.	Matthews Hall.
G.	Grays Hall.	S.	Stoughton Hall.
H.	Hollis Hall.	T.	Thayer Hall.
H'ke	Holyoke House.	W.	Weld Hall.

# GOVERNMENT OF THE UNIVERSITY.

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## CORPORATION.\*

### PRESIDENT.

	<b>Chosen</b>
CHARLES WILLIAM ELIOT, LL.D. . . . .	1869

### FELLOWS.

JOHN AMORY LOWELL, LL.D. . . . .	1837
GEORGE PUTNAM, D.D. . . . .	1858
GEORGE TYLER BIGELOW, LL.D. . . . .	1868
FRANCIS BOARDMAN CROWNINSHIELD, A.M. . . . .	1861
FRANCIS PARKMAN, A.M. . . . .	1875

### TREASURER.

EDWARD WILLIAM HOOPER, LL.B. . . . .	1876
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## OVERSEERS.

The PRESIDENT and TREASURER of the University, *ex officio*, and the following persons by election: —

Term expires	{	STEPHEN SALISBURY, LL.D. RICHARD HENRY DANA, LL.D.
1877	{	EDMUND QUINCY, A.M. JAMES ELLIOT CABOT, A.B., LL.B. OLIVER WENDELL HOLMES, A.B., LL.B.
1878	{	EDWARD HAMMOND CLARKE, A.B., M.D. LE BARON RUSSELL, A.B., M.D. ALEXANDER MCKENZIE, A.M., <i>Secretary</i> . DARWIN ERASTUS WARE, A.M., LL.B. GEORGE WASHINGTON COPP NOBLE, A.M.
1879	{	RALPH WALDO EMERSON, LL.D. HENRY LEE, A.M. FRANCIS EDWARD PARKER, A.B., LL.B. JAMES FREEMAN CLARKE, D.D. GEORGE FRISBIE HOAR, LL.D.

\* The legal title of the Corporation is "PRESIDENT AND FELLOWS OF HARVARD COLLEGE."



- 1880 { EBENEZER ROCKWOOD HOAR, LL.D.  
THEODORE LYMAN, A.B., S.B.  
SAMUEL ABBOTT GREEN, A.B., M.D.  
GEORGE OTIS SHATTUCK, A.B., LL.B.  
JOHN LOWELL, LL.D.
- 1881 { CHARLES FRANCIS ADAMS, LL.D., *President*.  
ALEXANDER AGASSIZ, A.B., S.B.  
WILLIAM GOODWIN RUSSELL, LL.B.  
MORRILL WYMAN, A.M., M.D.  
EDWARD EVERETT HALE, A.M.
- 1882 { PHILLIPS BROOKS, D.D.  
MARTIN BRIMMER, A.B.  
WILLIAM CROWNINSHIELD ENDICOTT, A.B.  
HENRY WILLIAM PAINE, LL.D.  
LEVERETT SALTONSTALL, A.M.

## OFFICERS OF INSTRUCTION AND GOVERNMENT.\*

- RESIDENCE.†
- CHARLES WILLIAM ELIOT, LL.D., *PRESIDENT*, 17 Quincy St.
- FREDERIC HENRY HEDGE, D.D., *Professor of German*, 48 North Ave.
- JOHN BARNARD SWETT JACKSON, M.D., *Shattuck Professor of Morbid Anatomy, and Curator of the Anatomical Museum*, 89 Charles St., Boston.
- JOHN LANGDON SIBLEY, A.M., *Librarian*, 9 Phillips Pl.
- ANDREW PRESTON PEABODY, D.D., LL.D., *Preacher to the University, and Plummer Professor of Christian Morals*, 11 Quincy St.
- OLIVER STEARNS, D.D., *Parkman Professor of Theology, and Dean of the Divinity Faculty*, \* 12 Kirkland Pl.
- , *Hollis Professor of Divinity*.
- OLIVER WENDELL HOLMES, M.D., *Parkman Professor of Anatomy*, 296 Beacon St., Boston.
- BENJAMIN PEIRCE, LL.D., *Perkins Professor of Astronomy and Mathematics*, 4 Kirkland Pl.
- ASA GRAY, LL.D., *Fisher Professor of Natural History*, Botanic Garden.
- THOMAS MOTLEY, A.M., *Instructor in Farming*, Jamaica Plain.
- FRANCIS BOWEN, A.M., *Alford Professor of Natural Religion, Moral Philosophy, and Civil Polity*, 9 Follen St.

\* Arranged, with the exception of the President, on the basis of collegiate seniority.

† For Abbreviations, see page 9. The residence is in Cambridge, unless otherwise stated. No residence is given if the officer is absent for the year.

- JOSEPH LOVERING, A.M., *Hollis Professor of Mathematics and Natural Philosophy*, 38 Kirkland St.
- EVANGELINUS APOSTOLIDES SOPHOCLES, LL.D., *University Professor of Ancient, Byzantine, and Modern Greek*, H'y 3.
- HENRY WARREN TORREY, A.M., *McLean Professor of Ancient and Modern History*, 20 Oxford St.
- , *Hersey Professor of Anatomy*.
- HENRY JACOB BIGELOW, M.D., *Professor of Surgery*, 52 Beacon St., Boston.
- JOHN EUGENE TYLER, M.D., *Professor of Mental Diseases*, 7 Newbury St., Boston.
- CHARLES SMITH BRADLEY, LL.D., *Bussey Professor of Law*, 148 Brattle St.
- HENRY LAWRENCE EUSTIS, A.M., *Professor of Engineering, and Dean of the Scientific Faculty*, 29 Kirkland St.
- JAMES RUSSELL LOWELL, D.C.L., LL.D., *Smith Professor of the French and Spanish Languages and Literatures, and Professor of Belles-Lettres*, Elmwood Ave.
- JOSIAH DWIGHT WHITNEY, LL.D., *Sturgis Hooper Professor of Geology*, 12 Oxford St.
- EZRA ABBOT, D.D., LL.D., *Bussey Professor of New Testament Criticism and Interpretation*, 23 Berkeley St.
- STACY BAXTER, *Professor of Elocution*, 13 Tremont Row, Boston.
- CHARLES EDWARD BUCKINGHAM, M.D., *Professor of Obstetrics and Medical Jurisprudence*, 53 Worcester St., Boston.
- HERMANN AUGUST HAGEN, M.D., Ph.D., *Professor of Entomology*, 7 Putnam Ave.
- FRANCIS MINOT, M.D., *Hersey Professor of the Theory and Practice of Physic*, 7 Charles St., Boston.
- WOLCOTT GIBBS, LL.D., *Rumford Professor and Lecturer on the Application of Science to the Useful Arts*, 99 Mt. Vernon St., Boston.
- DANIEL DENISON SLADE, M.D., *Professor of Applied Zoölogy*, Chestnut Hill.
- JOHN PHILLIPS REYNOLDS, M.D., *Instructor in Obstetrics*, 7 Park Sq., Boston.
- FRANCIS JAMES CHILD, Ph.D., *Professor of English*, 67 Kirkland St.
- CALVIN ELLIS, M.D., *Jackson Professor of Clinical Medicine, and Dean of the Medical Faculty*, 114 Boylston St., Boston.
- GEORGE MARTIN LANE, Ph.D., *Pope Professor of Latin*, 31 Quincy St.
- CHARLES ELIOT NORTON, A.M., *Professor of the History of Art*, Kirkland St.
- CHARLES EDWARD HAMLIN, A.M., *Instructor in Geography and Geology*, 11 Mellen St.

- HENRY WILLARD WILLIAMS, M.D., *Professor of Ophthalmology,* 15 Arlington St., Boston.
- THOMAS HENDERSON CHANDLER, A.M., D.M.D., *Professor of Mechanical Dentistry, and Dean of the Dental Faculty,* 222 Tremont St., Boston.
- JOSIAH PARSONS COOKE, A.M., *Erving Professor of Chemistry and Mineralogy,* 25 Quincy St.
- EDWARD JAMES YOUNG, A.M., *Hancock Professor of Hebrew and other Oriental Languages, and Dexter Lecturer on Biblical Literature,* Raymond St.
- JOHN McCRADY, A.B., *Professor of Zoölogy,* 471 Broadway.
- CHARLES CARROLL EVERETT, D.D., *Bussey Professor of Theology,* 53 Garden St.
- CHARLES FRANKLIN DUNBAR, A.B., *Professor of Political Economy, and Dean of the College Faculty,* 14 Highland St.
- WILLIAM WATSON GOODWIN, PH.D., *Eliot Professor of Greek Literature,* 10 Follen St.
- CHRISTOPHER COLUMBUS LANGDELL, LL.D., *Dane Professor of Law, and Dean of the Law Faculty,* H'ke 8.
- FERDINAND BÖCHER, A.M., *Professor of Modern Languages,* 12 Holyoke Pl.
- ADRIEN JACQUINOT, A.B., *Assistant Professor of French,* 58 Mt. Auburn St.
- DAVID WILLIAMS CHEEVER, M.D., *Professor of Clinical Surgery,* 1267 Washington St., Boston.
- OSCAR FAULHABER, PH.D., *Tutor in German,* Exeter, N. H.
- EPHRAIM WHITMAN GURNEY, A.B., *University Professor of History.*
- JAMES BRADLEY THAYER, A.B., LL.B., *Royall Professor of Law,* 37 Quincy St.
- ADAMS SHERMAN HILL, A.B., *Boylston Professor of Rhetoric and Oratory,* 19 Louisburg Sq., Boston.
- JAMES MILLS PEIRCE, A.M., *University Professor of Mathematics, and Secretary of the Academic Council,* M. 47.
- JAMES CLARKE WHITE, M.D., *Professor of Dermatology,* 10 Park Sq., Boston.
- FRANCIS HUMPHREYS STORER, A.M., *Professor of Agricultural Chemistry, and Dean of the Bussey Institution,* Jamaica Plain.
- JAMES BRADSTREET GREENOUGH, A.B., *Assistant Professor of Latin,* 22 Appian Way.
- BENNETT HUBBARD NASH, A.M., *Assistant Professor of Italian and Spanish,* 62 Boylston St., Boston.
- , *Professor of Topographical Engineering.*
- ARTHUR SEARLE, A.M., *Assistant in the Observatory,* 12. Madison St.

- GEORGE TUFTON MOFFATT, M.D., D.M.D., *Pro-  
fessor of Operative Dentistry,* 106 Boylston St., Boston.
- HENRY ADAMS, A.B., *Assistant Professor of History,*  
8 Wadsworth House.
- WILLIAM AUGUSTUS ROGERS, A.M., *Assistant in  
the Observatory,* Observatory.
- ROBERT THAXTER EDES, M.D., *Professor of Ma-  
teria Medica,* 372 Dudley St., Boston.
- WILLIAM EVERETT, PH.D., *Assistant Professor of  
Latin,* Holmes House.
- JOHN CHIPMAN GRAY, A.M., LL.B., *Story Professor  
of Law,* 83 Marlboro' St., Boston.
- CHARLES JOYCE WHITE, A.M., *Assistant Professor  
of Mathematics, and Registrar of the College Faculty,* W. 36.
- JOHN KNOWLES PAINE, A.M., *Professor of Music,* 8 Frisbie Pl.
- GEORGE LINCOLN GOODALE, M.D., *Assistant  
Professor of Vegetable Physiology, and Instructor in  
Botany,* 68 Sparks St.
- , *Professor of Dental Pathology and Thera-  
peutics.*
- HENRY PICKERING BOWDITCH, M.D., *Professor  
of Physiology,* Jamaica Plain.
- WILLIAM COOK, A.B., *Instructor in German,* 25 Appleton St.
- FREDERICK IRVING KNIGHT, M.D., *Instructor in  
Auscultation, Percussion, and Laryngoscopy,* 113 Boylston St., Boston.
- CHARLES BURNHAM PORTER, M.D., *Demonstrator  
of Anatomy, and Instructor in Surgery,* 5 Arlington St., Boston.
- , *Professor of Horticulture.*
- NATHANIEL SOUTHGATE SHALER, S.D., *Pro-  
fessor of Palæontology,* 13 Bow St.
- JOHN FISKE, A.M., *Assistant Librarian,* 4 Berkeley St.
- CLEMENT LAWRENCE SMITH, A.M., *Assistant Pro-  
fessor of Latin,* 64 Sparks St.
- JOHN COLLINS WARREN, M.D., *Instructor in Surgery,*  
58 Beacon St., Boston.
- LUTHER DIMMICK SHEPARD, D.D.S., *Adjunct  
Professor of Operative Dentistry,* 100 Boylston St., Boston.
- NATHANIEL WARE HAWES, *Assistant Professor of  
Operative Dentistry,* 12 Boylston St., Boston.
- REGINALD HEBER FITZ, M.D., *Assistant Professor  
of Pathological Anatomy,* 108 Boylston St., Boston.
- GEORGE HERBERT PALMER, A.M., *Assistant Pro-  
fessor of Philosophy,* 3 Garden St.
- WILLIAM LAMBERT RICHARDSON, A.M., M.D.,  
*Instructor in Clinical Obstetrics,* 76 Boylston St., Boston.

- FRANK EUSTACE ANDERSON, A.M., *Assistant Professor of Greek,* H'y 20.  
 \_\_\_\_\_, *Director of the Observatory, and Phillips Professor of Astronomy, and Professor of Geodesy.*
- JOHN TROWBRIDGE, S.D., *Assistant Professor of Physics,* 18 Sumner St.
- THOMAS DWIGHT, M.D., *Instructor in Histology,* 70 Beacon St., Boston.
- WILLIAM GILSON FARLOW, M.D., *Assistant Professor of Botany,* 6 Park Sq., Boston.
- WILLIAM JAMES, M.D., *Assistant Professor of Physiology,* 20 Quincy St.
- CHARLES LORING JACKSON, A.M., *Assistant Professor of Chemistry,* H'y 11.
- EDWARD STICKNEY WOOD, M.D., *Professor of Chemistry,* 12 Chauncy St.
- JAMES BARR AMES, A.M., LL.B., *Assistant Professor of Law,* C. 5.
- HENRY HARRIS AUBREY BEACH, M.D., *Assistant Demonstrator of Anatomy,* 104 Boylston St., Boston.
- JOHN WILLIAMS WHITE, A.M., *Tutor in Greek,* M. 7.
- HENRY BARKER HILL, A.M., *Assistant Professor of Chemistry,* Hammond St.
- MARSHMAN EDWARD WADSWORTH, A.M., *Instructor in Mathematics and Mineralogy,* 35 Orchard St.
- CHARLES HERBERT MOORE, *Instructor in Free-Hand Drawing and Water Colors.*
- GEORGE ALONZO BARTLETT, *Assistant Professor of German,* Beck Hall.
- CHARLES ALBERT BRACKETT, D.M.D., *Instructor in Dental Therapeutics,* Newport, R. I.
- WILLIAM HERBERT ROLLINS, D.M.D., *Instructor in Dental Pathology,* 1 Mt. Vernon St., Boston.
- WILLIAM ELWOOD BYERLY, PH.D., *Assistant Professor of Mathematics,* W. 7.
- WILLIAM BARKER HILLS, M.D., *Instructor in Chemistry,* Langdon St.
- HENRY PEASE STARBUCK, A.B., *Proctor,* Dolton's Block 18.
- HENRY NATHAN WHEELER, A.M., *Proctor,* T. 7.
- ALFRED WITHINGTON FIELD, A.B., *Proctor,* H'ke 83.
- ALLEN WALTON GOULD, A.B., *Tutor in Latin,* 18 Garden St.
- JAMES GREENLEAF CROSWELL, A.B., *Tutor in Greek,* H. 7.
- SILAS MARCUS MACVANE, A.B., *Instructor in Political Economy,* 12 Remington St.
- JOHN MURDOCH, A.M., *Proctor,* G. 5.

FREEMAN SNOW, A.B., <i>Proctor,</i>	G. 48.
ROBERT WHEELER WILLSON, A.B., <i>Tutor in Physics,</i>	H'ke 6.
ERNEST YOUNG, PH.D., <i>Instructor in History and Roman Law,</i>	Little's Block 18.
GEORGE RUSSELL BRIGGS, A.B., <i>Tutor in Mathe- matics,</i>	61 Kirkland St.
HERBERT LEE HARDING, A.B., LL.B., <i>Proctor,</i>	H. 21.
EDWARD BRUCE HILL, A.B., LL.B., <i>Proctor,</i>	T. 54.
JESSE C IVY, A.B., LL.B., <i>Proctor,</i>	S. 7.
JOHN SIDNEY PATTON, A.B., <i>Proctor,</i>	M. 40.
JOHN HENRY APPLETON, A.B., <i>Proctor,</i>	S. 21.
FRANCIS WINTHROP DEAN, S.B., <i>Tutor in Surveying and Drawing,</i>	Little's Block 5.
WILLIAM HARLOW MELVILLE, A.M., <i>Proctor,</i>	C. 17.
CHARLES WHITMAN WETMORE, A.B., <i>Proctor,</i>	G. 24.

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### ANNUAL APPOINTMENTS FOR 1876-77.

#### Harvard College.

GRENVILLE STANLEY HALL, A.B., <i>Instructor in English,</i>	14 $\frac{1}{2}$ Pearl St.
WILLIAM MORRIS DAVIS, S.B., M.E., <i>Assistant in Geology,</i>	15 Sumner St.
EPHRAIM EMERTON, PH.D., <i>Instructor in History and German,</i>	T. 29.
HENRY CABOT LODGE, PH.D., <i>Instructor in His- tory,</i>	81 Beacon St., Boston.
WALTER FAXON, A.B., S.B., <i>Assistant in the Zoö- logical Laboratory,</i>	7 Sumner St.
WILLIAM POWELL WILSON, <i>Assistant in Botany,</i>	21 North Ave.
CHARLES FREDERIC MABERY, S.B., <i>Assistant in Chemistry,</i>	50 Baldwin St.
BENJAMIN OSGOOD PEIRCE, A.B., <i>Assistant in the Physical Laboratory,</i>	418 Broadway.
HARRY BLAKE HODGES, <i>Assistant in Chemistry,</i>	C. 2.
OSCAR ROLAND JACKSON, A.B., <i>Assistant in the Laboratory of Organic Chemistry,</i>	S. 29.

#### Divinity School.

JAMES FREEMAN CLARKE, D.D., <i>Lecturer on Ethnic Religions,</i>	Jamaica Plain.
HOWARD NICHOLSON BROWN, <i>Instructor in Homi- letics.</i>	Walnut St., Brookline.

**Medical School.**

- GEORGE FREDERIC HOLMES MARKOE, *Instructor*  
*in Materia Medica,* 6 Warren St., Boston.  
 FRANK WINTHROP DRAPER, M.D., *Lecturer on*  
*Hygiene,* 86 Worcester St., Boston.

**CLINICAL INSTRUCTORS.**

- FRANCIS BOOTT GREENOUGH, M.D., *Syphilis,*  
 17 Charles St., Boston.  
 SAMUEL GILBERT WEBBER, M.D., *Diseases of*  
*the Nervous System,* 756 Tremont St., Boston.  
 EDWARD WIGGLESWORTH, M.D., *Syphilis,*  
 108 Boylston St., Boston.  
 CLARENCE JOHN BLAKE, M.D., *Otology,* Hotel Berkeley, Boston.  
 JOHN ORNE GREEN, M.D., *Otology,* 12 Beacon St., Boston.  
 CHARLES PICKERING PUTNAM, M.D., *Diseases*  
*of Children,* 68 Marlboro' St., Boston.  
 JAMES JACKSON PUTNAM, M.D., *Diseases of the*  
*Nervous System,* 63 Marlboro' St., Boston.  
 JOSEPH PEARSON OLIVER, M.D., *Diseases of*  
*Children,* 150 Boylston St., Boston.  
 WILLIAM HENRY BAKER, M.D., *Diseases of*  
*Women,* 24 Worcester Sq., Boston.

**Dental School.**

- IRA ALLEN SALMON, D.D.S., *Lecturer on Operative*  
*Dentistry,* 670 Tremont St., Boston.

**OTHER OFFICERS.**

- ALLEN DANFORTH, A.M., *Bursar,* Wadsworth House 7.  
 JAMES WINTHROP HARRIS, *Secretary,* Francis Ave.  
 AMORY THOMPSON GIBBS, A.M., *Assistant Secre-*  
*tary,* 80 Madison St.  
 CHARLES SPRAGUE SARGENT, A.B., *Director of*  
*the Arnold Arboretum and the Botanic Garden,* Brookline.  
 SERENO WATSON, A.M., *Curator of the Herbarium,* Botanic Garden.  
 JOHN HIMES ARNOLD, *Librarian of the Law School,* 10 Frisbie Pl.  
 THOMAS J KIERNAN, *Assistant in the Library,* 84 Mt. Auburn St.  
 LEONARD WALDO, S.B., *Assistant in the Observatory,* Observatory.  
 ARTHUR GORHAM DAVIS, *Treasurer's Bookkeeper,*  
 70 Water St., Boston.  
 FREDERIC WILLIAM LISTER, *Superintendent of the*  
*Gymnasium,* Fresh Pond Lane.  
 JOHN POND FARMER, *Steward of the Dining Hall,* 29 Mellen St.

*The University comprehends the following departments :—*

**HARVARD COLLEGE, The DIVINITY SCHOOL, The LAW SCHOOL, The MEDICAL SCHOOL, The DENTAL SCHOOL, The LAWRENCE SCIENTIFIC SCHOOL, The BUSSEY INSTITUTION, The OBSERVATORY, The BOTANIC GARDEN AND HERBARIUM, The MUSEUM OF COMPARATIVE ZOOLOGY; and The LIBRARY.**

**The PEABODY MUSEUM OF AMERICAN ARCHÆOLOGY AND ETHNOLOGY is a constituent part of the University ; but its relations to it are affected by certain peculiar provisions.**

**☞ Students in regular standing in any one department of the University are admitted free to the instruction given in any other department, with the exception of exercises carried on in the special laboratories.**



# HARVARD COLLEGE.

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## FACULTY.

- CHARLES W. ELIOT, LL.D., *President.*  
CHARLES F. DUNBAR, A.B., *Dean, and Professor of Political Economy.*  
FREDERIC H. HEDGE, D.D., *Professor of German.*  
ANDREW P. PEABODY, D.D., LL.D., *Professor of Christian Morals.*  
BENJAMIN PEIRCE, LL.D., *Professor of Mathematics.*  
FRANCIS BOWEN, A.M., *Professor of Philosophy.*  
JOSEPH LOVERING, A.M., *Professor of Natural Philosophy.*  
EVANGELINUS A. SOPHOCLES, LL.D., *Professor of Greek.*  
HENRY W. TORREY, A.M., *Professor of History.*  
JAMES R. LOWELL, D.C.L., LL.D., *Professor of Belles-Lettres.*  
FRANCES J. CHILD, PH.D., *Professor of English.*  
GEORGE M. LANE, PH.D., *Professor of Latin.*  
CHARLES E. NORTON, A.M., *Professor of the History of Art.*  
JOSIAH P. COOKE, A.M., *Professor of Chemistry and Mineralogy.*  
WILLIAM W. GOODWIN, PH.D., *Professor of Greek.*  
FERDINAND BÔCHER, A.M., *Professor of Modern Languages.*  
ADRIEN JACQUINOT, A.B., *Assistant Professor of French.*  
OSCAR FAULHABER, PH.D., *Tutor in German.*  
EPHRAIM W. GURNEY, A.B., *Professor of History.*  
ADAMS S. HILL, A.B., *Professor of Rhetoric.*  
JAMES M. PEIRCE, A.M., *Professor of Mathematics.*  
JAMES B. GREENOUGH, A.B., *Assistant Professor of Latin.*  
HENRY ADAMS, A.B., *Assistant Professor of History.*  
WILLIAM EVERETT, PH.D., *Assistant Professor of Latin.*  
CHARLES J. WHITE, A.M., *Assistant Professor of Mathematics, and Registrar.*  
JOHN K. PAINE, A.M., *Professor of Music.*  
GEORGE L. GOODALE, M.D., *Assistant Professor of Botany.*  
CLEMENT L. SMITH, A.M., *Assistant Professor of Latin.*  
GEORGE H. PALMER, A.M., *Assistant Professor of Philosophy.*  
FRANK E. ANDERSON, A.M., *Assistant Professor of Greek.*  
JOHN TROWBRIDGE, S.D., *Assistant Professor of Physics.*  
WILLIAM JAMES, M.D., *Assistant Professor of Physiology.*  
C. LORING JACKSON, A.M., *Assistant Professor of Chemistry.*  
JOHN W. WHITE, A.M., *Tutor in Greek.*

HENRY B. HILL, A.M., *Assistant Professor of Chemistry.*  
 GEORGE A. BARTLETT, *Assistant Professor of German.*  
 WILLIAM E. BYERLY, PH.D., *Assistant Professor of Mathematics.*  
 ALLEN W. GOULD, A.B., *Tutor in Latin.*  
 JAMES G. CROSWELL, A.B., *Tutor in Greek.*  
 ROBERT W. WILLSON, A.B., *Tutor in Physics.*  
 ERNEST YOUNG, PH.D., *Instructor in History and Roman Law.*  
 GEORGE R. BRIGGS, A.B., *Tutor in Mathematics.*

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**PARIETAL COMMITTEE.**

CHARLES J. WHITE, A.M., <i>Chairman,</i>	W. 36.
EVANGELINUS A. SOPHOCLES, LL.D.,	H'y 8.
FRANK E. ANDERSON, A.M.,	H'y 20.
C. LORING JACKSON, A.M.,	H'y 11.
JAMES BARR AMES, A.M.,	C. 5.
JOHN W. WHITE, A.M.,	M. 7.
GEORGE A. BARTLETT,	Beck Hall.
WILLIAM E. BYERLY, PH.D.,	W. 7.
HENRY P. STARBUCK, A.B.,	Dolton's Block 16.
HENRY N. WHEELER, A.M.,	T. 7.
ALFRED W. FIELD, A.B.,	H'ke 33.
EPHRAIM EMERTON, PH.D.,	T. 29.
JAMES G. CROSWELL, A.B.,	H. 7.
JOHN MURDOCH, A.M.,	G. 5.
FREEMAN SNOW, A.B.,	G. 43.
ROBERT W. WILLSON, A.B.,	H'ke 6.
ERNEST YOUNG, PH.D.,	Little's Block 13.
HERBERT L. HARDING, A.B., LL.B.,	H. 21.
EDWARD B. HILL, A.B., LL.B.,	T. 54.
JESSE C IVY, A.B., LL.B.,	S. 7.
JOHN S. PATTON, A.B.,	M. 40.
JOHN H. APPLETON, A.B.,	S. 21.
FRANCIS W. DEAN, S.B.,	Little's Block 5.
WILLIAM H. MELVILLE, A.M.,	C. 17.
CHARLES W. WETMORE, A.B.,	G. 24.

## UNDERGRADUATES.

## Senior Class.

NAME.	RESIDENCE.	ROOM.
Abbott, Grafton St. Loe,	<i>Boston,</i>	10 Holyoke St.
Allen, Gardner Weld,	<i>Cambridge,</i>	H'y 7.
Allinson, Francis Greenleaf, A.B. ( <i>Haverford Coll.</i> ),	<i>Burlington, N. J.,</i>	M. 8.
Amory, Augustine Heard,	<i>Brookline,</i>	M. 86.
Andrews, Walter Scott,	<i>New York, N. Y.</i>	Little's Block 2.
Annan, William Howard,	<i>Baltimore, Md.,</i>	M. 45.
Avann, Robert S.	<i>Brooklyn, O.,</i>	26 Brattle Sq.
Bacon, William Benjamin,	<i>Boston,</i>	G. 46.
Bailey, Hollis Russell,	<i>North Andover,</i>	M. 89.
Baldwin, Jacob Augustus,	<i>Brooklyn, N. Y.,</i>	Little's Block 8.
Baldwin, John Richard,	<i>Lynn,</i>	G. 25.
Barnes, Charles Maynard,	<i>Decatur Ill.,</i>	M. 89.
Barton, Milton Homer,	<i>Cambridge,</i>	14 Dana St.
Bates, Frank Andrews,	<i>New York, N. Y.,</i>	W. 80.
Bates, William Clinton,	<i>Hingham,</i>	C. 1.
Berryhill, Charles Jaudon, PH.B. ( <i>Iowa State Univ.</i> ),	<i>Davenport, Iowa,</i>	14 Ware St.
Bird, Charles Sumner,	<i>East Walpole,</i>	W. 18.
Bond, Amos Lawrence,	<i>West Newton,</i>	M. 29.
Bourne, Jonathan,	<i>New Bedford,</i>	17 Dunster St.
Bowser, Alexander Thomas,	<i>Cambridge,</i>	C. 55.
Brett, John Quincy Adams,	<i>Malden,</i>	G. 87.
Brown, Charles Rufus,	<i>Lowell,</i>	841 Broadway.
Brown, Frederic Tilden,	<i>New York, N. Y.,</i>	H'y 2.
Bruce, Edward Pierson,	<i>Salem,</i>	H'y 9.
Bull, Melville,	<i>Newport, R. I.,</i>	H'y 19.
Burr, Heman Merrick,	<i>Newton,</i>	H'y 17.
Butler, Henry Sigourney,	<i>Madison, Wis.,</i>	C. 48.
Butler, Sigourney,	<i>Quincy,</i>	H'y 22.
Byrne, James Nicholson,	<i>Springfield,</i>	S. 25.
Cadbury, Richard Tapper, A.B. ( <i>Haverford Coll.</i> ),	<i>Philadelphia, Pa.,</i>	7 Shepard St.
Carney, Harry Canaday,	<i>Leavenworth, Kan.,</i>	W. 42.
Cate, Martin Luther,	<i>Cambridge,</i>	22 Concord Ave.
Chesley, Egbert Morse, A.B. ( <i>Acadia Coll.</i> ),	<i>Bridgetown, N. S.,</i>	25 Mt. Auburn St

Clary, Stedman Willard,	<i>Milton,</i>	H. 5.
Cobb, Charles Kane,	<i>Boston,</i>	H'y 5.
Conlan, John,	<i>Cambridge,</i>	C. 13.
Cotton, Henry Ward Beecher,	<i>Charlestown,</i>	S. 20.
Crosby, Matthew Lewis,	<i>Boston,</i>	H'ke 18.
Cunningham, Stanley,	<i>Boston,</i>	H'y 18.
Currier, Charles Gilman,	<i>Boston,</i>	G. 9.
Curtis, Nathaniel,	<i>Boston,</i>	H'y 22.
Cushing Hayward Warren,	<i>Boston,</i>	M. 54.
Cutler, Samuel Newton,	<i>East Somerville,</i>	C. 8.
Cutler, Walter Marshall,	<i>Boston,</i>	H'y 18.
Cutter, Edward Jones,	<i>Boston,</i>	M. 54.
Danforth, Henry Gold,	<i>Rochester, N. Y.,</i>	W. 2.
Davis, Samuel Warren,	<i>West Newton,</i>	M. 29.
Denny, Arthur Briggs,	<i>Boston,</i>	H'y 16.
Dimmock, George,	<i>Cambridge,</i>	S. 1.
Doggett, Frederick Fobes,	<i>Quincy,</i>	C. 1.
Dow, Herbert George, A.B. ( <i>Swarthmore Coll.</i> ),	<i>Brooklyn, N. Y.,</i>	68 Mt. Auburn St.
Drake, Herbert Hamilton,	<i>Newport, R. I.,</i>	H'y 19.
DuFais, John Louis,	<i>New York, N. Y.,</i>	67 Charles St., Bost.
Dunham, Howard Cary,	<i>Riverhead, N. Y.,</i>	S. 16.
Dwyer, Richard Joseph,	<i>Medford,</i>	C. 57.
Eaton, Charles Sedgwick,	<i>Cincinnati, O.,</i>	W. 12.
Eliot, Amory,	<i>Chicopee,</i>	M. 16.
Farnsworth, William,	<i>Boston,</i>	H'y 5.
Fay, Henry Brigham,	<i>Bangor, Me.,</i>	H. 20.
Ferguson, Matthew John,	<i>Woodbury, Ky.</i>	G. 59.
Fuller, Arthur Ossoli,	<i>Cambridge,</i>	H. 28.
Gardner, Charles Jamison, A.B. ( <i>Ohio Wesleyan Univ.</i> ),	<i>Delaware, O.,</i>	D. 24.
Gardner, George Peabody,	<i>Boston,</i>	Little's Block 22.
Gilman, James Ward,	<i>Lowell,</i>	H. 28.
Gooding, Alfred,	<i>Brookline,</i>	H. 6.
Goodrich, Henry,	<i>Pecan Grove, La.,</i>	7 Summer St.
Goodwin, James Wells,	<i>Haverhill,</i>	S. 9.
Gray, Morris,	<i>Boston,</i>	G. 8.
Greenleaf, Robert Willard,	<i>Charlestown,</i>	H. 27.
Hancox, Albert Swan,	<i>Springfield,</i>	4 Holyoke St.
Hapgood, William Frank,	<i>Worcester,</i>	T. 28.
Harriman, Nathan Harding,	<i>Cambridge,</i>	8 Garden St.
Harris, Robert Orr.	<i>East Bridgewater,</i>	T. 11.
Harwood, Herbert Joseph,	<i>Littleton,</i>	H'y 4.
Hastings, Robert Paul,	<i>San Francisco, Cal.,</i>	H'y 21.
Heminway, Truman,	<i>New Rochelle, N. Y.,</i>	H'ke 27.

Herrick, Edwin Hayden,	<i>New York, N. Y.,</i>	H'ke 18.
Hitchcock, James Ripley Wellman,	<i>Fitchburg,</i>	H. 11.
Hodges, William Donnison,	<i>Boston,</i>	W. 21.
Houghton, Henry Oscar,	<i>Cambridge,</i>	800 Main St.
Hovey, George Edward,	<i>Boston Highlands,</i>	M. 26.
Humason, William Lawrence,	<i>New Britain, Conn.,</i>	W. 40.
Hunt, Freeman,	<i>Brooklyn, N. Y.,</i>	T. 5.
Huse, George Wood,	<i>Newburyport,</i>	C. 47.
Jayne, Anselm Helm,	<i>Brandon, Miss.,</i>	H. 81.
Jennison, Samuel Ellery,	<i>Boston,</i>	H'y 10.
Kenefick, Thomas William,	<i>Leominster,</i>	C. 49.
Keys, John Baker,	<i>Cincinnati, O.,</i>	W. 12.
Kimball, Elbridge Gerry,	<i>Boston,</i>	M. 46.
Lamson, Gardner Swift,	<i>Winchester,</i>	M. 51.
Latham, Aaron Hobart,	<i>East Bridgewater,</i>	W. 22.
Leeds, Herbert Corey,	<i>Boston,</i>	H'y 18.
Legate, Burton John,	<i>Leominster,</i>	C. 52.
Leland, Samuel,	<i>Newton Lower Falls,</i>	H. 81.
LeMoyné, Francis Julius,	<i>Chicago, Ill.,</i>	H'ke 42.
Linzee, John Torrey,	<i>Boston,</i>	H'y 17.
Loving, Edwin Nathaniel,	<i>Somerville,</i>	C. 8.
Lowell, Abbott Lawrence,	<i>Brookline,</i>	9 Linden St.
Lowell, John,	<i>Chestnut Hill,</i>	M. 2.
Lynde, Samuel Adams,	<i>Rock Island, Ill.,</i>	W. 11.
Macauley, Thomas,	<i>Woodside, N. J.,</i>	T. 60.
Martin, Edward Sandford,	<i>Auburn, N. Y.,</i>	H'y 4.
Melledge, Robert Job,	<i>Cambridge,</i>	G. 40.
Merriam, Edward Preston,	<i>North Leominster,</i>	C. 45.
Métivier, James,	<i>Cambridge,</i>	16 Shepard St.
Millet, Josiah Byram,	<i>East Bridgewater,</i>	G. 22.
Minot, Robert Sedgwick,	<i>Jamaica Plain,</i>	T. 6.
Morrell, George Dallas,	<i>Philadelphia, Pa.,</i>	H. 16.
Morris, William Radcliff,	<i>Derry, N. H.,</i>	8 Holyoke St.
Morse, Albert Gordon,	<i>Boston,</i>	M. 26.
Morse, Edward Leland,	<i>Boston,</i>	C. 63.
Nash, George Miner,	<i>Abington,</i>	T. 19.
Nichols, Henry Gilman,	<i>Saco, Me.,</i>	S. 10.
O'Callaghan, Daniel John Mitchel,	<i>Salem,</i>	S. 6.
Ogden, George Barnewall,	<i>New York, N. Y.,</i>	H'y 15.
Page, Parker Webster,	<i>Washington, D. C.,</i>	W. 22.
Parker, Edmund Morley,	<i>Cambridge,</i>	G. 40.
Parmenter, William Ellison,	<i>Arlington,</i>	T. 5.
Patton, Jacob Cansler,	<i>Morgantown, N. C.,</i>	M. 40.
Perrin, Arthur,	<i>Cambridge,</i>	87 Chauncy St.
Pierce, Matthew Vassar,	<i>Boston,</i>	H'y 18.

Prior, Charles Edwin,	<i>Melrose,</i>	C. 41.
Richards, John Kelvey, A.B.		
( <i>Swarthmore Coll.</i> ),	<i>Ironton, O.,</i>	68 Mt. Auburn St.
Richardson, Clifford,	<i>Worcester,</i>	H'y 2.
Roberts, Walter Hill,	<i>Charlestown,</i>	C. 7.
Roby, Eben Willard,	<i>Brooklyn, N.Y.,</i>	G. 23.
Rollins, Frank Waldron,	<i>Melrose,</i>	T. 19.
Rountree, George,	<i>Brooklyn, N.Y.,</i>	H. 29.
Rusk, Frank Thomas,	<i>St. Joseph, Mo.,</i>	H. 26.
Russell, William Eustis,	<i>Cambridge,</i>	69 Sparks St.
Ryder, Godfrey,	<i>Medford,</i>	H. 26.
Sargent, Franklin Haven,	<i>Boston,</i>	T. 37.
Sauzade, Robert Sidoine,	<i>Jersey City, N.J.,</i>	H'ke 27.
Sawyer, George Augustus,	<i>Cambridge,</i>	H. 16.
Seamans, William Shepard,	<i>Exeter, N.H.,</i>	H'ke 45.
Sherman, Thomas Foster,	<i>Boston,</i>	T. 17.
Shippen, Charles Carroll,	<i>Baltimore, Md.,</i>	W. 31.
Sloane, Thomas Morrison,	<i>Sandusky, O.,</i>	W. 2.
Smiley, William Henry,	<i>Maplewood,</i>	C. 57.
Smith, Abbot Edes,	<i>Arlington,</i>	14 Kirkland Pl.
Smith, Daniel Elijah,	<i>Lanesville,</i>	C. 32.
Smith, Frank Webster,	<i>Lincoln,</i>	H. 5.
Sprague, Edmund Burke,	<i>Haverhill,</i>	S. 9.
Starr, Benjamin Charles,	<i>Cleveland, O.,</i>	C. 68.
Stetson, Joshua,	<i>Boston,</i>	W. 20.
Stiles, James Arthur,	<i>Fitchburg,</i>	H'ke 47.
Stiles, Maynard French,	<i>Tunbridge, Vt.,</i>	H'ke 47.
Stone, Dexter Lyman,	<i>Wilmington, Vt.,</i>	G. 27.
Stringham, Washington Irving,	<i>Topeka, Kansas,</i>	S. 25.
Strobel, Edward Henry,	<i>Charleston, S.C.,</i>	H. 27.
Swift, Lindsay,	<i>Boston Highlands,</i>	T. 67.
Swift, William Nye,	<i>New Bedford,</i>	H'y 12.
Sykes, Gerrit Smith,	<i>Mercer, Pa.,</i>	C. 53.
Taylor, Frank Hendrickson, A.B.		
( <i>Haverford Coll.</i> ),	<i>Cincinnati, O.,</i>	M. 8.
Taylor, William Reuben,	<i>Jefferson, N.Y.,</i>	W 26.
Thomas, Edward Fuller,	<i>Youngstown, O.,</i>	30 Wendell St.
Tiffany, Francis Buchanan,	<i>West Newton,</i>	W. 49.
Tillinghast, William Hopkins,	<i>New Bedford,</i>	T. 21.
Tower, Augustus Clifford,	<i>Lexington,</i>	H'y 16.
Twitchell, George Pierce,	<i>Keene, N.H.,</i>	H'y 9.
Twombly, William Lance Dow,	<i>Westfield,</i>	100 Mt. Aub'n St.
Tyler, John Ford,	<i>Cambridge,</i>	11 Shepard St.
Underhill, Caleb Brooks,	<i>East Somerville,</i>	C. 37.
Underwood, Charles James,	<i>Boston,</i>	S. 24.

Upham, Henry,	<i>Brookline,</i>	H'y 24.
Wakefield, Alley Talbot,	<i>Cambridge,</i>	842 Main St.
Walker, James Wise,	<i>Jamaica Plain,</i>	T. 17.
Wallace, Herbert Ingalls,	<i>Fitchburg,</i>	H'ke 21.
Ward, George Curwin,	<i>Cambridge,</i>	49 Lianæan St.
Warren, Edward Winslow,	<i>Boston,</i>	H'y 10.
Welles, James Howard,	<i>Glastonbury, Conn.,</i>	H'y 21.
Wellington, Edward,	<i>Waltham,</i>	16 Shepard St.
Wells, Benjamin Willis,	<i>Boston,</i>	M. 42.
Wendell, Barrett,	<i>New York, N.Y.,</i>	9 Linden St.
West, Edward Graeff,	<i>Exeter, N.H.,</i>	G. 87.
Wetmore, Sidney,	<i>Brookline,</i>	8 Holyoke St.
Wheeler, Frederick Gridley,	<i>New York, N.Y.,</i>	25 Holyoke St.
Wheeler, Harold,	<i>San Francisco, Cal.,</i>	M. 21.
White, Joseph,	<i>Winchendon,</i>	C. 59.
Whiting, Harold,	<i>Boston Highlands,</i>	T. 8.
Whiting, William Austin,	<i>Boston,</i>	T. 51.
Whitney, Herbert Baker,	<i>Leominster,</i>	H'ke 45.
Wiley, Frederick Jackson,	<i>Detroit, Mich.,</i>	H'ke 38.
Williams, John Bertram,	<i>Cambridge,</i>	T. 51.
Willison, Jasper Nathaniel,	<i>Cumberland, Md.,</i>	25 Holyoke St.
Wiswell, Charles Henry,	<i>Little Falls, N.Y.,</i>	T. 8.
Woodberry, George Edward,	<i>Beverly,</i>	8 Garden St.
Woodman, Edward,	<i>Cambridge,</i>	H'y 7.
Woods, Andrew,	<i>Winchester,</i>	C. 44.
Worthington, Robert Hollister,	<i>Buffalo, N.Y.,</i>	H'ke 1.
Wright, John Russell,	<i>Brookline,</i>	H'y 14.
Young, Reginald Heber,	<i>Cambridge,</i>	Little's Block 18.

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#### Junior Class.

Adams, Charles Thornton,	<i>New York, N.Y.,</i>	T. 25.
Albert, Richard Seabrook,	<i>Baltimore, Md.,</i>	M. 15
Allen, Andrew Hussey,	<i>New York, N.Y.,</i>	W. 54.
Allen, William Ethan,	<i>Worcester,</i>	410 Harvard St.
Allen, William Hall,	<i>Saybrook, Conn.,</i>	H'ke 36.
Allen, Willis Boyd,	<i>Boston,</i>	T. 56.
Apthorp, Harrison Otis,	<i>Cambridge,</i>	17 Putnam Ave.
Attwood, Francis Gilbert,	<i>Jamaica Plain;</i>	Little's Block 24.
Badon, Edward Richardson,	<i>Chicago, Ill.,</i>	S. 30.
Balch, Edwin Swift,	<i>Philadelphia, Pa.,</i>	25 Holyoke St.
Bancroft, William Amos,	<i>Cambridge,</i>	Brewer's Block.
Batchelder, Charles Foster,	<i>Cambridge,</i>	7 Kirkland St.

Bennett, William Zebina,	<i>Montpelier, Vt.,</i>	C. 34.
Billier, Frederic Ogden de,	<i>Yonkers, N. Y.,</i>	H'ke 31.
Binney, Charles Chauncey,	<i>Philadelphia, Pa.,</i>	M. 22.
Blaine, Emmons,	<i>Augusta, Me.,</i>	H'ke 15.
Blair, Lafayette Gilbert,	<i>Cambridge,</i>	C. 51.
Blodgett, Warren Kendall,	<i>Boston,</i>	M. 1.
Bond, Nicolas Penniman,	<i>Baltimore, Md.,</i>	H'ke 31.
Boutelle, George Keely,	<i>Waterville, Me.,</i>	M. 1.
Bradish, Frank Eliot,	<i>Cambridge,</i>	5 Lee St.
Briggs, Daniel Gallup,	<i>Providence, R. I.,</i>	21 Hancock St.
Brigham, Lincoln Forbes,	<i>Salem,</i>	T. 32.
Brown, Arthur Henry,	<i>Cambridge,</i>	C. 51.
Browne, George Henry,	<i>Waltham,</i>	G. 3.
Brune, William Henry,	<i>Baltimore, Md.,</i>	M. 58.
Buck, Howard Mendenhall,	<i>Boston,</i>	Little's Block 8.
Bullard, Stephen,	<i>Boston,</i>	Little's Block 18.
Burdett, Herbert Channing,	<i>Leominster,</i>	C. 49.
Catlin, Charles Abernethy,	<i>New York, N. Y.,</i>	48 Brattle St.
Chamberlain, Eugene Tyler,	<i>Albany, N. Y.,</i>	W. 47.
Chamberlayne, Charles Frederic,	<i>Cambridge,</i>	Sacramento St.
Channing, Edward Perkins,	<i>Brookline,</i>	M. 42.
Cheney, George Locke,	<i>Essex, Conn.,</i>	H'ke 28.
Cobb, Edward Howard,	<i>Abington,</i>	S. 14.
Comey, Charles Rich,	<i>Cambridgeport,</i>	H. 19.
Curtis, Osborne Sargent,	<i>Boston,</i>	52 Brattle St.
Cushing, Arthur Percy,	<i>Boston,</i>	G. 20.
Daniels, Charles,	<i>Grafton, Vt.,</i>	T. 13.
Dean, Louis Bailey,	<i>Taunton,</i>	M. 30.
Doane, Howard Freeman,	<i>Charlestown,</i>	W. 51.
Dorr, Benjamin Humphrey,	<i>Boston,</i>	Dolton's Block 5.
Dunbar, Franklin Asaph,	<i>Cambridge,</i>	G. 4.
Eaton, Harold Bayard,	<i>Boston,</i>	4 Holyoke St.
Ellicott, Edward Somerville,	<i>Boston,</i>	Little's Block 24.
Eltig, Irving,	<i>Poughkeepsie, N. Y.,</i>	Dolton's Block 10.
Ely, Philip Van Rensselaer,	<i>Marquette, Mich.,</i>	H'ke 15.
Eyre, Lincoln Lear,	<i>Newport, R. I.,</i>	Little's Block 19.
Gay, Frederick Lewis,	<i>Boston,</i>	410 Harvard St.
Gleason, Zebina Allston,	<i>Westborough,</i>	H. 17.
Gowen, Caleb Emery,	<i>New York, N. Y.,</i>	M. 4.
Gurnee, Augustus Coe,	<i>Irvington, N. Y.,</i>	H'ke 16.
Hamilton, Charles Albert,	<i>Medford,</i>	S. 18.
Hancock, Lewis,	<i>Austin, Texas,</i>	Little's Block 4.
Harding, Benjamin Fosdick,	<i>Exeter, N. H.,</i>	M. 50.
Harding, John Butterworth,	<i>Philadelphia, Pa.,</i>	M. 50.
Harrington, Charles,	<i>Salem,</i>	W. 9.



Hasbrouck, Melvin,	<i>Poughkeepsie, N. Y.,</i>	Dolton's Block 10.
Hastings, Edward Rogers,	<i>South Weymouth,</i>	Little's Block 4.
Hay, Henry Clinton,	<i>Portland, Me.,</i>	S. 19.
Heffern, Andrew Duff,	<i>Philadelphia, Pa.,</i>	53 Oxford St.
Hewins, Parke Woodbury,	<i>Taunton,</i>	16 Trowbridge St.
Hills, George Wallingford,	<i>Newton,</i>	T. 9.
Holmes, John Russell,	<i>Cincinnati, O.,</i>	19 Hilliard St.
Homans, John,	<i>Boston,</i>	78 Mt. Auburn St.
Hubbard, Charles Wells,	<i>Boston,</i>	M. 41.
Hunt, Edward Browne,	<i>South Sudbury,</i>	T. 67.
Jackson, Ernest,	<i>Boston,</i>	G. 4.
Jacob, Lawrence,	<i>Mamaroneck, N. Y.,</i>	Dolton's Block 17.
Johnson, Benjamin Newhall,	<i>East Saugus,</i>	H'ke 41.
Johnson, Edward Francis,	<i>Woburn,</i>	W. 52.
Johnson, Joseph French,	<i>Aurora, Ill.,</i>	55 North Ave.
Jones, Arthur Mason,	<i>New York, N. Y.,</i>	H'ke 20.
Kessler, Walter,	<i>Indianapolis, Ind.,</i>	M. 16.
Knapp, Philip Coombs,	<i>Lynn,</i>	Dolton's Block 11.
Lanier, Nathan Ryno Smith,	<i>Baltimore, Md.,</i>	727 Cambridge St.
Lawrence, Rosewell Bigelow,	<i>Medford,</i>	S. 18.
LeMoynes, William Murray,	<i>Chicago, Ill.,</i>	H'ke 42.
Littauer, Lucius Nathan,	<i>New York, N. Y.,</i>	M. 4.
Littlefield, George Abner,	<i>Malden,</i>	Malden.
Lombard, Warren Plimpton,	<i>West Newton,</i>	W. 49.
Loring, Augustus Peabody,	<i>Beverly Farms,</i>	10 Appian Way.
Lucas, Clinton William,	<i>Cambridge,</i>	62 Trowbridge St.
McDowell, Henry Burden,	<i>New York, N. Y.,</i>	
McFadon, Robert Dean,	<i>Quincy, Ill.,</i>	Little's Block 19.
McKaye, Henry Goodwin,	<i>Cambridge,</i>	387 Harvard St.
Mason, Charles Jeremiah,	<i>Boston,</i>	52 Brattle St.
Mason, Harry White,	<i>Newton Centre,</i>	M. 60.
Mead, Julian Augustus,	<i>West Acton,</i>	M. 18.
Meinrath, Joseph,	<i>Boston,</i>	T. 62.
Mercur, James Watts,	<i>Towanda, Pa.,</i>	M. 38.
Miles, Jonas Michael,	<i>Fitchburg,</i>	M. 18.
Miller, William Starr,	<i>New York, N. Y.,</i>	Little's Block 15.
Mills, Isaac Bonney,	<i>Boston,</i>	15 Temple St. Boston.
Mills, Ogden,	<i>Millbrae, Cal.</i>	
Montague, Henry Watmough,	<i>Cambridge,</i>	W. 27
Moore, Charles,	<i>Ypsilanti, Mich.,</i>	W. 10.
Moore, Edward Cook,	<i>Yonkers, N. Y.,</i>	410 Harvard St.
Morgan, Alfred Waterman,	<i>New York, N. Y.,</i>	H'y 14.
Morison, John Holmes,	<i>Baltimore, Md.,</i>	H'ke 44.
Morse, Edwin Wilson,	<i>Natick,</i>	M. 30.
Morse, Herbert Floyd Willis,	<i>Portland, Me.,</i>	62 Trowbridge St.

Murray, John Archibald,	<i>New York, N.Y.,</i>	W. 4.
Nash, George William,	<i>Cambridgeport,</i>	68 Pleasant St.
Nash, Henry Sylvester,	<i>Mt. Pleasant, Iowa,</i>	Episc. Theol. Sch.
Nelson, Samuel Newell,	<i>Milford,</i>	8. 2.
Nichols, Edgar Hamilton,	<i>Saco, Me.,</i>	38 Kirkland St.
Ogden, Gouverneur Morris,	<i>New York, N.Y.,</i>	H'y 15.
Oliver, William John,	<i>Cambridgeport,</i>	H. 19.
Osgood, Henry Blanchard,	<i>Boston Highlands,</i>	W. 48.
Otis, Harrison Gray,	<i>Boston,</i>	25 Holyoke St.
Otis, William Sigourney,	<i>Boston,</i>	25 Holyoke St.
Page, Henry Deeley,	<i>Boston,</i>	W. 48.
Parker, Herbert,	<i>Lancaster,</i>	M. 15.
Parker, James,	<i>Boston,</i>	H'ke 10.
Paullin, Daniel Edward,	<i>Quincy, Ill.,</i>	H'ke 14.
Perley, George Halsey,	<i>Ottawa, Canada,</i>	M. 22.
Perry, Arthur Eben,	<i>New Bedford.</i>	
Phillips, William Magruder,	<i>Fort Worth, Texas,</i>	G. 38.
Pickering, John,	<i>Salem,</i>	12 Story St.
Pinney, George Miller,	<i>Cambridge,</i>	12 Story St.
Potter, William Henry,	<i>Boston Highlands,</i>	Episc. Theol. Sch.
Powel, Robert Johnston Hare,	<i>Newport, R. I.,</i>	4 Story St.
Preston, George Hyde,	<i>Buffalo, N. Y.,</i>	M. 27.
Raymer, George Sharp,	<i>Wilton, N. Y.,</i>	W. 10.
Reed, Edward Prescott,	<i>Stow,</i>	C. 38.
Richards, Edward Osgood,	<i>Irrington, N. Y.,</i>	H'ke 4.
Roberts, Herbert Howard,	<i>Charlestown,</i>	C. 7.
Robinson, Warren Merton,	<i>East Taunton,</i>	M. 27.
Rogers, Alfred Harrison,	<i>Kansas City, Mo.,</i>	Little's Block 6.
Sachs, Barney,	<i>New York, N. Y.,</i>	100 Mt. Auburn St.
Sauzade, Thomas Jordan,	<i>Jersey City, N. J.,</i>	M. 12.
Schaefer, William Henry,	<i>Baltimore, Md.,</i>	H. 18.
Shepherd, Samuel,	<i>Rantoul, Ill.,</i>	C. 84.
Sherwood, Arthur Murray,	<i>New York, N. Y.,</i>	H'y 21.
Shorey, Paul,	<i>Chicago, Ill.,</i>	C. 70.
Sibley, Edwin Day,	<i>Charlestown,</i>	C. 28.
Silliman, Wyllis Augustus,	<i>Clarkson, N. Y.,</i>	D. 3.
Slade, James Fulton,	<i>New York, N. Y.,</i>	H'ke 32.
Smyth, Herbert Weir,	<i>Wilmington, Del.,</i>	10 Oxford St.
Sparhawk, Edward Eppes,	<i>Cambridge,</i>	6 Highland Ave.
Spencer, Alfred Warner,	<i>Boston,</i>	410 Harvard St.
Spinney, William Anthony,	<i>Amesbury,</i>	D. 4.
Stearns, George Hermon,	<i>Cleveland, O.,</i>	S. 16.
Stearns, William Oakman,	<i>Newton Centre,</i>	M. 60.
Sturgis, Russell,	<i>Brookline,</i>	G. 48.

Sturtevant, George Eliab,	<i>Charlestown,</i>	H. 18.
Sullivan, William,	<i>Salem,</i>	C. 4.
Taggart, David Arthur,	<i>Goffstown, N.H.,</i>	Little's Block 6.
Tallant, Robert,	<i>San Francisco, Cal.,</i>	T. 52.
Taylor, Frederiek Weston,	<i>East Cambridge,</i>	S. 28.
Taylor, Henry Osborn,	<i>New York, N.Y.,</i>	25 Holyoke St.
Teschemacher, Hubert Engelbert,	<i>San Francisco, Cal.,</i>	M. 85.
Thayer, Frederick Winthrop,	<i>Belmont,</i>	M. 12.
Thayer, Nathaniel Niles,	<i>Boston,</i>	M. 51.
Trail, Charles Bayard,	<i>Frederick, Md.,</i>	M. 88.
Tuckerman, Bayard,	<i>New York, N.Y.,</i>	126 Mt. Auburn St.
Tuckerman, Paul,	<i>New York, N.Y.,</i>	W. 87.
Tufts, James Arthur,	<i>Alstead, N. H.,</i>	19 Hilliard St.
Van Buren, Martin,	<i>Fiskkill, N.Y.,</i>	10 Holyoke St.
Vickery, Herman Frank,	<i>Weymouth,</i>	C. 20.
Vinton, Charles Henry,	<i>Boston,</i>	C. 9.
Warden, Henry Prince,	<i>Kingston,</i>	T. 15.
Waters, Ernest Upton,	<i>Newton,</i>	C. 80.
Welles, Benjamin,	<i>New York, N.Y.,</i>	H'ke 17.
Wetherbee, James Allen,	<i>Boston Highlands,</i>	H'ke 28.
Wheeler, Henry,	<i>Boston,</i>	T. 38.
Whitney, Joseph Cutler,	<i>Boston,</i>	W. 44.
Wiesenfeld, Bernard,	<i>Baltimore, Md.,</i>	Little's Block 21.
Williams, Charles Kilborn,	<i>Rutland, Vt.,</i>	G. 41.
Wood, Henry Austin,	<i>West Upton,</i>	H. 24.
Wood, Stephen Blake,	<i>Arlington,</i>	H. 24.
Worcester, Alfred,	<i>Waltham,</i>	H. 22.
Yates, Gilbert Montaland,	<i>Canajoharis, N.Y.,</i>	T. 13.
Young, Theodore Tripp,	<i>Saco, Me.,</i>	S. 28.

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### Sophomore Class.

Adams, Frank Willis,	<i>Boston,</i>	G. 26.
Aldrich, Albert Clinton,	<i>Boston,</i>	C. 28.
Alger, Horace Chapin,	<i>North Cambridge,</i>	M. 31.
Alley, John Stewart,	<i>Lynn,</i>	T. 10.
Almy, Francis,	<i>New Bedford,</i>	T. 45.
Amen, Harlan Page,	<i>Portsmouth, O.</i>	C. 64.
Andrews, Clement Walker,	<i>Boston,</i>	W. 6.
Anthony, Francis Wayland,	<i>Cambridge,</i>	G. 84.
Arnold, Edmund Aldous,	<i>Newport, R.I.</i>	
Atherton, Edward Herbert,	<i>Worcester,</i>	C. 8.
Austin, William Russell,	<i>Charlestown,</i>	T. 88.

Ayers, George David,	Maplewood,	C. 46.
Bacon, Charles William,	Natick,	H'y 1.
Baldwin, Rollin Carroll,	Somerville,	8 Albion St., Somerville.
Barlow, Peter Townsend,	New York, N. Y.,	T. 57.
Bates, Waldron,	Boston,	Beck Hall 84.
Baylies, Edmund Lincoln,	New York, N. Y.,	W. 46.
Bennett, Samuel Crocker,	Taunton,	T. 84.
Binney, Amos,	Boston,	T. 21.
Bissell, Herbert Porter,	Lockport, N. Y.,	M. 81.
Black, George Ashton,	Gardner,	H. 12.
Blood, Charles Hiram,	Fitchburg,	H'ke 24.
Bonner, John Ellingwood,	Staten Island, N. Y.,	12 Story St.
Bowen, Allyn Hanaberg,	Brooklyn, N. Y.,	378 Harvard St.
Bowen, John Templeton,	Boston,	W. 28.
Brandeis, Albert Simon,	Louisville, Ky.,	M. 88.
Brewster, Charles Osmyn,	Brookfield,	Dolton's Block 7.
Brewster, Frank,	Boston Highlands,	S. 26.
Briggs, Frederic Melancthon,	Brookline,	G. 28.
Brooks, Arthur Anderson,	Worcester,	T. 64.
Brown, Arthur Clarence,	Atol,	H. 12.
Brown, Howard Kinmonth,	Framingham,	T. 22.
Brown, John Augustus,	Exeter, N. H.,	C. 88.
Bryant, Henry Willis,	Chicago, Ill.,	Little's Block 7.
Burlingham, Charles Culp,	St. Louis, Mo.,	G. 51.
Burr, Isaac Tucker,	Newton,	T. 58.
Burrill, George Henry,	Gloversville, N. Y.,	3 Wallace St.
Burrill, Middleton Shoobred,	New York, N. Y.,	H'ke 24.
Butler, Harry,	Portland, Me.,	T. 18.
Cadwell, Warren Cushing,	New Bedford,	T. 45.
Carey, Arthur Astor,	New York, N. Y.,	4 Garden St.
Cary, Walter,	Buffalo, N. Y.,	T. 35.
Casas, William Beltran de las,	Malden,	C. 12.
Case, William Warren,	Columbus, O.,	D. 88.
Chandler, Frederick Emerson,	Boston,	D. 10.
Chapin, Herman,	Brookline,	W. 41.
Churchill, John Maitland Brewer,	Boston,	W. 28.
Clapp, Robert Parker,	Montague,	C. 65.
Cobb, Joseph Pettee,	Abington,	S. 14.
Conant, William Merritt,	Bridgewater,	T. 94.
Conlan, James Francis,	Cambridge,	C. 18.
Cook, George Frederick,	Newton Centre,	G. 11.
Coolidge, John Templeman,	Boston,	W. 15.
Coolidge, William Williamson,	Boston,	H'y 6.
Coverly, George Todd,	Malden,	C. 48.
Cowdin, John Elliot,	New York, N. Y.,	M. 19.

Cox, Wilmot Townsend,	<i>Glen Cove, N. Y.,</i>	M. 55.
Crawford, Frank Lindsay,	<i>New York, N. Y.,</i>	C. 11.
Crocker, Alvah,	<i>Fitchburg,</i>	H'ke 24.
Curtis, Francis George,	<i>Staten Island, N. Y.,</i>	16 Little's Block.
Cushing, Livingston,	<i>Boston,</i>	M. 48.
Cushman, William Baxter,	<i>Cambridge,</i>	862 Main St.
Cutler, George Chalmers,	<i>Bangor, Me.,</i>	H. 20.
Dalzell, John Whitney,	<i>Waltham,</i>	D. 41.
Daniels, Frank Herbert,	<i>Charlestown,</i>	C. 15.
Davis, George Herbert,	<i>Boston,</i>	H'y 8.
Delano, Samuel,	<i>North Cambridge,</i>	9 Chester St.
Denégre, Walter Denis,	<i>New Orleans, La.,</i>	Dolton's Block 6.
Dolloff, George Lyman,	<i>Exeter, N. H.,</i>	C. 60.
Donaldson, Frank,	<i>Baltimore, Md.,</i>	H'ke 48.
Dow, Herbert Baeman,	<i>Woburn,</i>	C. 26.
Dunn, Francis De Maurice,	<i>Northbridge,</i>	C. 18.
Earle, George Howard,	<i>Philadelphia, Pa.,</i>	M. 6.
Edmands, Moses Grant,	<i>Charlestown,</i>	69 Brattle St.
Ellis, Frederick Hamant,	<i>Frammingham,</i>	T. 24.
Ellis, Ralph Waterbury,	<i>Springfield,</i>	C. 11.
Evans, Glendower,	<i>Philadelphia, Pa.,</i>	127 Mt. Auburn St
Faunce, George,	<i>Kingston,</i>	8 Wallace St.
Felton, Edgar Conway,	<i>Philadelphia, Pa.,</i>	W. 50.
French, Henry Banks,	<i>Philadelphia, Pa.,</i>	T. 27.
Friedlander, Thomas Cary,	<i>San Francisco, Cal.,</i>	H'ke 5.
Gage, James Arthur,	<i>Lowell,</i>	D. 42.
Galloupe, Charles William,	<i>Lynn,</i>	T. 55.
Gardiner, James McDonald,	<i>Hackensack, N. J.,</i>	M. 5.
Gilbert, Joseph Thomas,	<i>Milwaukee, Wis.,</i>	G. 12.
Goddard, Warren Norton,	<i>New York, N. Y.,</i>	Beck Hall 1.
Grannis, Hermon Wheaton,	<i>Cleveland, O.,</i>	T. 49.
Hale, Edward,	<i>Northampton,</i>	M. 55.
Hanks, Charles Stedman,	<i>Cambridge,</i>	387 Harvard St
Harding, Lewis Branch,	<i>Allston,</i>	W. 17.
Harlow, William Burt,	<i>Syracuse, N. Y.,</i>	8 Wallace St.
Haskell, Edward Pritchard,	<i>New Bedford,</i>	25 Holyoke St.
Hayes, Charles Edmund,	<i>Boston,</i>	S. 28.
Heard, Richard,	<i>Chelsea,</i>	T. 89.
Henderson, Harold Gould,	<i>Staten Island, N. Y.,</i>	M. 18.
Hewitt, Emrick Benjamin,	<i>Forreston, Ill.,</i>	M. 5.
Hill, William Bancroft,	<i>Temple, N. H.,</i>	8 Wallace St.
Hoadly, George,	<i>Cincinnati, O.,</i>	10 Holyoke St.
Hodgdon, Andrew Hall,	<i>Arlington,</i>	766 Main St.
Hodges, George Clarendon,	<i>Boston,</i>	G. 21.
Holmes, Jabish,	<i>Boston Highlands,</i>	M. 2.

Homer, Thomas Johnston,	<i>Boston Highlands,</i>	T. 50.
Hopkins, Abram Duane,	<i>Somerville,</i>	Boston St., Somerville.
Hoppin, Samuel Howland,	<i>Newport, R. I.,</i>	25 Holyoke St.
Houston, Frank Augustine,	<i>Somerville,</i>	H. 25.
Howard, William DeCreet,	<i>Chicago, Ill.,</i>	H'y 1.
Hubbard, William Hammond,	<i>Chicago, Ill.,</i>	M. 8.
Hudson, Woodward,	<i>Concord,</i>	M. 2.
Huntington, Austin Parks,	<i>Boston,</i>	H'ke 11.
Hutchins, William Everett,	<i>Cambridge,</i>	H. 8.
Hutchinson, Mahlon,	<i>Dixon, Ill.,</i>	M. 32.
Hyde, William De Witt,	<i>Southbridge,</i>	C. 64.
Ives, David Otis,	<i>Salem,</i>	T. 48.
Jackson, George West,	<i>Boston Highlands,</i>	T. 42.
Jacobs, Martin Reiley,	<i>Brownsville, Pa.,</i>	M. 11.
Johnson, Henry Warren,	<i>Woburn,</i>	D. 22.
Keene, Francis Bowler,	<i>Milwaukee, Wis.,</i>	Episc. Theol. Sch.
Kelley, Webster,	<i>Boston,</i>	
Keyes, Prescott,	<i>Concord,</i>	M. 25.
Kidder, Charles Archibald,	<i>Boston,</i>	M. 17.
Kingsbury, Edward Phipps,	<i>Holliston,</i>	860 Main St.
Kinney, Henry Nason,	<i>Boston,</i>	T. 39.
Kitfield, George Albert,	<i>Manchester,</i>	M. 82.
Ladd, John Franklin,	<i>North Cambridge,</i>	H. 8.
Lancaster, Walter Moody,	<i>Lowell,</i>	D. 41.
Lawrence, William Badger,	<i>Medford,</i>	Dolton's Block 12
Lee, Arthur Howard,	<i>Boston Highlands,</i>	T. 86.
Lee, Thomas,	<i>Westport, N. Y.,</i>	T. 68.
Leonard, Frederick Moses,	<i>Easthampton,</i>	M. 83.
LeRoy, Archibald,	<i>New York, N. Y.,</i>	H'ke 18.
LeRoy, Herman Stewart,	<i>New York, N. Y.,</i>	Beck Hall 31.
Lewis, Samuel Kleighton,	<i>Lake Providence, La.,</i>	D. 27.
Lincoln, Charles Sprague,	<i>Boston,</i>	H'y 6.
Lobsitz, Leopold,	<i>Springfield,</i>	D. 37.
Macfarlane, Wallace,	<i>Boston,</i>	C. 61.
Mack, Charles Samuel,	<i>St. Louis, Mo.,</i>	T. 18.
McLennan, Francis,	<i>Montreal, Canada,</i>	80 Mt. Auburn St.
Madden, Henry Edgar,	<i>Chicago, Ill.,</i>	S. 30.
Martin, Francis Coffin,	<i>Boston Highlands,</i>	W. 17.
Mason, Atherton Perry,	<i>Fitchburg,</i>	C. 12.
Mercer, Henry Chapman,	<i>Doylestown, Pa.,</i>	1 Brattle St.
Meyer, George von Lengerke,	<i>Boston,</i>	M. 58.
Miller, George Norton,	<i>New York, N. Y.,</i>	Little's Block 15.
Mitchell, James William,	<i>Boston,</i>	H'y 8.
Monroe, William Ingalls,	<i>Boston Highlands,</i>	W. 1.
Morris, John Gavin,	<i>South Boston,</i>	South Boston.

Motley, George Storer,	<i>Lowell,</i>	W. 32.
Mulligan, Henry Coolidge,	<i>Natick,</i>	H'ke 2.
Newhall, Herbert William,	<i>Lynn,</i>	T. 50.
Nichols, John Loring,	<i>Somerville,</i>	Central St., Somerville.
Nunn, Charles Pierce,	<i>Lexington,</i>	W. 19.
Osgood, Charles Nathan,	<i>Waltham,</i>	Episc. Theol. Sch.
Osgood, George,	<i>Cohasset,</i>	C. 67.
Page, William Elias,	<i>Boston,</i>	410 Harvard St.
Patten, Frank Bartlett,	<i>Longwood,</i>	C. 19.
Perkins, Charles Lawrence,	<i>New York, N.Y.,</i>	T. 57.
Perkins, Edward Clifford,	<i>Boston,</i>	5 Hilliard St.
Perry, Frederick Gardiner,	<i>Boston,</i>	10 Oxford St.
Pew, Charles Hiram,	<i>Gloucester,</i>	T. 10.
Poor, Albert,	<i>North Andover,</i>	H. 4.
Porter, Frank Leslie,	<i>Lawrence,</i>	C. 8.
Powel, Harford Willing Hare,	<i>Newport, R.I.,</i>	4 Story St.
Preble, Wallace,	<i>Portland, Me.,</i>	W. 6.
Prescott, Walter Conway,	<i>Charlestown,</i>	H. 10.
Preston, Thomas Webb,	<i>Boston,</i>	M. 48.
Putnam, Earl Bill,	<i>Waterville, N.Y.,</i>	H'ke 30.
Richardson, William Minard,	<i>Portland, Me.,</i>	T. 16.
Rindge, Frederick Hastings,	<i>Cambridge,</i>	M. 17.
Robinson, Edward,	<i>Boston,</i>	M. 44.
Robinson, Edward Abbot,	<i>Jamaica Plain,</i>	T. 39.
Rose, Hiram Holbrook,	<i>La Porte, Ind.,</i>	4 Holyoke St.
Russell, Thomas,	<i>Boston.</i>	T. 44.
St. John, Charles Elliott,	<i>Worcester,</i>	T. 64.
Sargent, Henry Rufus,	<i>Boston,</i>	M. 57.
Schofield, William,	<i>Dudley,</i>	H. 1.
Schwartz, William Henry,	<i>Bangor, Me.</i>	H. 20.
Shannon, Edward Weston,	<i>Portland, Me.,</i>	W. 8.
Sheafe, William,	<i>Boston,</i>	Beck Hall 21.
Sheldon, George Rumsey,	<i>Brooklyn, N.Y.,</i>	Beck Hall 21.
Shute, Henry Augustus,	<i>Exeter, N.H.,</i>	C. 33.
Simpson, Frank Ernest,	<i>Boston,</i>	W. 16.
Smith, Frederic Warren,	<i>Worcester,</i>	W. 50.
Smith, Willard Everett,	<i>Newtonville,</i>	C. 50.
Snelling, Samuel,	<i>Boston,</i>	25 Holyoke St.
Solger, Parry Kennard,	<i>Washington, D.C.,</i>	T. 55.
Somerby, Samuel Ellsworth,	<i>Boston,</i>	M. 24.
Sprague, Charles Franklin,	<i>Boston,</i>	T. 59.
Stetsori, Hayward,	<i>Bangor, Me.,</i>	M. 49.
Stone, Francis Hathaway,	<i>New Bedford,</i>	Little's Block 23.
Story, Marion Wainwright,	<i>Boston,</i>	Beck Hall 36.

Strong, John Palmer,	<i>St. Joseph, Mo.,</i>	C. 29.
Swayze, Francis Joseph,	<i>Newton, N.J.,</i>	H. 1.
Swift, Jireh,	<i>New Bedford,</i>	G. 18.
Sylvester, William Henry,	<i>Newtonville,</i>	D. 28.
Taff, John Henry,	<i>Charlestown,</i>	H. 10.
Tappan, Herbert,	<i>Boston,</i>	10 Holyoke St.
Tarbell, William Crosswell,	<i>Boston,</i>	M. 56.
Taussig, Frank William,	<i>St. Louis, Mo.,</i>	16 Oxford St.
Temple, Frederic Henry,	<i>Charlestown,</i>	H. 25.
Teschemacher, Arthur Moxen,	<i>San Francisco, Cal.,</i>	M. 35.
Thayer, John Alden,	<i>Worcester,</i>	C. 19.
Thomas, Washington Butcher,	<i>Boston,</i>	Dolton's Block 7.
Thompson, John J,	<i>Philadelphia, Pa.,</i>	G. 52.
Thorp, Joseph Gilbert,	<i>Madison, Wis.,</i>	G. 12:
Townsend, John Joseph,	<i>New York, N.Y.,</i>	48 Brattle St.
Trimble, Walter,	<i>New York, N.Y.,</i>	Beck Hall 41.
Trull, Larkin,	<i>Tewksbury,</i>	W. 8.
Tubbs, Alfred Stewart,	<i>San Francisco, Cal.,</i>	Dolton's Block 1.
Twombly, William Greene,	<i>Cincinnati, O.,</i>	Beck Hall 22.
Underwood, Henry Oliver,	<i>Belmont,</i>	W. 41.
Urquhart, David,	<i>New Orleans, La.,</i>	M. 34.
Van Rensselaer, William Bayard,	<i>Albany, N.Y.,</i>	Beck Hall 81.
Warren, Henry Clarke,	<i>Waltham,</i>	62 Brattle St.
Wells, Charles Luke,	<i>Boston,</i>	G. 47.
Wells, John Walter,	<i>Brookline,</i>	Colchester St., Brookline.
Weston, Edward Stanley,	<i>Salem,</i>	T. 43.
Whitcomb, Silas Merrick,	<i>Chelsea,</i>	Chelsea.
Whiting, Charles Hoover,	<i>Brookline,</i>	H'ke 12.
Williams, Otho Holland,	<i>Baltimore, Md.,</i>	H'ke 85.
Wilton, Richard Thomas,	<i>Cambridge,</i>	C. 29.
Wolff, John Eliot,	<i>Boston,</i>	W. 25.
Wright, James Anderson,	<i>Philadelphia, Pa.,</i>	W. 29.

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#### Freshman Class.

Allen, Charles Noah,	<i>Burlington, Vt.,</i>	53 Oxford St.
Allen, Frederick Hobbs,	<i>Honolulu, H. I.,</i>	M. 28.
Allen, Russell Carpenter,	<i>Cambridge,</i>	5 Garden St.
Alley, William Henry,	<i>Lynn,</i>	W. 14.
Almy, Frederic,	<i>New Bedford,</i>	W. 45.
Andrews, William Shankland,	<i>Syracuse, N.Y.,</i>	6 Appian Way.
Andrews, William Turel,	<i>Boston,</i>	1 Garden St.
Bacon, Robert,	<i>Boston,</i>	W. 48.



Baker, Frank Woods,	<i>Dorchester,</i>	Episc. Theol. Sch.
Baldwin, Henry Cutler,	<i>Somerville,</i>	Albion St., Somerville.
Barbour, William Ransom,	<i>Bangor, Me.,</i>	G. 89.
Barrows, Morton,	<i>Reading,</i>	S. 22.
Barstow, Henry Taylor,	<i>Boston,</i>	H'ke 84.
Bartlett, Nathaniel Cilley,	<i>Haverhill,</i>	T. 28.
Beale, Charles Frederic Tiffany,	<i>Kinderhook, N.Y.,</i>	64 Brattle St.
Bement, Gerard,	<i>Lowell,</i>	841 Broadway.
Billings, Sherrard,	<i>Quincy,</i>	C. 2.
Binney, William,	<i>Providence, R.I.,</i>	T. 41.
Bishop, Robert Roberts,	<i>Newton Centre,</i>	W. 18.
Blair, Charles Benton,	<i>Grand Rapids, Mich.,</i>	718 Cambridge St.
Blanchard, Benjamin Seaver,	<i>Roxbury,</i>	T. 61.
Blodgett, William Tilden,	<i>New York, N.Y.,</i>	4 Garden St.
Bond, Hugh Lennox,	<i>Baltimore, Md.</i>	22 Concord Ave.
Bond, John Charles,	<i>Haverhill,</i>	T. 65.
Brackett, Frank Herbert,	<i>Jamaica Plain,</i>	20 Prescott St.
Bradford, Russell,	<i>Cambridge,</i>	S. 81.
Bradley, Charles Wesley,	<i>Cambridge,</i>	757 Main St.
Breed, Amos Franklin,	<i>Lynn,</i>	W. 14.
Brigham, Clifford,	<i>Salem,</i>	G. 6.
Brigham, Nat Maynard,	<i>Natick,</i>	C. 65.
Brooks, Edward,	<i>Boston,</i>	T. 48.
Brown, Lewis Mayo,	<i>Glen Falls, N.Y.,</i>	104 Mt. Auburn St.
Buckley, Philip Townsend,	<i>South Boston,</i>	27 Swan St., So. Boston.
Burnham, Henry Denison,	<i>Boston,</i>	48 Brattle St.
Butler, George Minot,	<i>Northampton,</i>	H'ke 46.
Butler, Mighells Bachman,	<i>Niagara Falls, N.Y.,</i>	718 Cambridge St.
Cabot, Francis Elliot,	<i>Brookline,</i>	1 Garden St.
Carpenter, Frank Oliver,	<i>Cambridge,</i>	34 Mt. Auburn St.
Carruth, Ignatius Sumner,	<i>Boston,</i>	20 Prescott St.
Chapin, Henry Bainbridge,	<i>Springfield,</i>	T. 4.
Chase, George Thorndike,	<i>Salem,</i>	G. 14.
Churchill, William Christy,	<i>Louisville, Ky.</i>	7 Waterhouse St.
Clark, William Bradford,	<i>Cambridge,</i>	Beck Hall 26.
Clarke, Edward Kane,	<i>San Francisco, Cal.,</i>	W. 42.
Codman, Francis,	<i>Brookline,</i>	10 Appian Way.
Cole, Walter,	<i>Baltimore, Md.,</i>	T. 63.
Collison, Harvey Newton,	<i>Boston,</i>	Boston,
Cummings, Samuel Wells,	<i>Boston,</i>	H'ke 22.
Davis, Charles Stevenson,	<i>Plymouth,</i>	S. 12.
Day, Thomas Chadwick,	<i>Barnstable,</i>	H'ke 26.
Doane, John,	<i>Charlestown,</i>	W. 51.
Dodd, Edwin Merrick,	<i>Worcester,</i>	M. 23.

Dodge, Frank Faden,	Woburn,	G. 15.
Dodge, Pickering,	Cambridge,	10 Mason St.
Doggett, George Newell,	Chicago, Ill.,	2 Holmes Pl.
Duncklee, William Riddle,	Manchester, N.H.,	C. 22.
Dwight, Jonathan,	Madison, N.J.,	14 Dunster St.
Edwards, Pierrepont,	Elizabeth, N.J.,	7 Waterhouse St.
Ellis, Ralph Nicholson,	New York, N.Y.,	10 Holyoke St.
Eustis, Herbert Hall,	Cambridge,	29 Kirkland St.
Everett, Edward,	Boston,	Brattle St.
Fessenden, James Deering,	Portland, Me.,	T. 16.
Field, James Brainerd,	Boston,	T. 14.
Foster, Charles Chauncey,	Cambridge,	17 Kirkland St.
Fowler, Harold North,	Westfield,	C. 62.
French, Henry Gardner,	Boston,	W. 85.
Fuller, Eugene,	Cambridge,	13 Hilliard St.
Gardiner, Frederic Vaughan,	Middletown, Conn.,	Arsenal.
Gardner, Clifford,	Boston,	817 Dartmouth St., Boston.
Gaston, William Alexander	Boston,	G. 32.
Geddes, James,	Brookline,	14 Ware St.
Gest, Joseph Henry,	Cincinnati, O.,	H'ke 37.
Gilbert, Samuel Cotton,	Milwaukee, Wis.,	W. 45.
Gillette, Wilbur Fisk,	Cleveland, O.,	C. 85.
Gilman, John Bradley,	East Medford,	D. 28.
Gooch, William Wallace,	Melrose,	14 Story St.
Grant, Patrick,	Boston,	42 Brattle St.
Greeley, Louis May,	Chicago, Ill.,	D. 6.
Grinnell, William Morton,	New York, N.Y.,	54 Brattle St.
Griswold, George,	New York, N.Y.,	1 Holyoke St.
Guild, Henry Eliot,	Boston,	H. 32.
Hale, Arthur,	Boston Highlands.	
Haley, Charles Merton,	Boston Highlands,	T. 61.
Hall, Arthur Lawrence,	Revere,	C. 66.
Hall, Frederic Bound,	Boston,	D. 12.
Hall, George Webster,	Lawrence,	148 Mt. Auburn St.
Hall, William Dudley,	Bridgeport, Conn.,	44 Mt. Auburn St.
Hanscom, Arthur Lee,	Brooklyn, N.Y.,	9 Phillips Pl.
Harrison, Mitchell,	Philadelphia, Pa.,	T. 81.
Hart, Albert Bushnell,	Cleveland, O.,	D. 14.
Hastings, Edward Holland,	Walpole, N.H.,	H'ke 19.
Hatch, George Baptiste,	Chelsea,	C. 66.
Hawes, Edward Southworth,	Boston,	S. 32.
Hibbard, George Abiah,	Buffalo, N.Y.,	127 Mt. Auburn St.
Hill, Arthur Cyrus,	East Somerville,	7 Felton St.
Hills, William Henry,	Somerville,	7 Felton St.

Hilton, Gustavus Arthur,	<i>Boston Highlands,</i>	M. 14.
Hines, Fletcher Stephen,	<i>Indianapolis, Ind.,</i>	44 Mt. Auburn St.
Hobbs, Charles Austin,	<i>Exeter, N.H.,</i>	C. 60.
Holden, Francis Marion,	<i>Boston,</i>	C. 48.
Hooper, Arthur Wilson,	<i>Boston,</i>	1 Garden St.
Hooper, William,	<i>Boston,</i>	Little's Block 14.
Houston, John Wesley,	<i>Lincoln, Del.,</i>	14 Dunster St.
Howe, James Torrey,	<i>Kenosha, Wis.,</i>	18 Kirkland Pl.
Howell, Rufus King,	<i>New Orleans, La.,</i>	T. 8.
Huidekoper, Frank Colhoon,	<i>Meadville, Pa.,</i>	H'ke 19.
Hurst, Arthur,	<i>Brooklyn, N.Y.,</i>	10 Oxford St.
Hussey, Frederick Daniel,	<i>Lowell,</i>	M. 20.
Jackson, Henry,	<i>Boston,</i>	42 Brattle St.
James, Clarence Gray,	<i>Cambridge,</i>	H'ke 26.
Johnson, Laurence Henry Hitch,	<i>Braintree,</i>	S. 27.
Jones, Henry Champion,	<i>Bangor, Me.,</i>	S. 4.
Jordan, Eben Dyer,	<i>Boston,</i>	20 Prescott St.
Jordan, Frederick Dolbier,	<i>Laurence,</i>	148 Mt. Auburn St.
Joyce, George Frederick,	<i>Brookline,</i>	14 Ware St.
Katzenbach, Peter,	<i>Trenton, N.J.</i>	
Kelley, George Reed,	<i>Haverhill,</i>	T. 28.
Kenneson, Thaddeus Davis,	<i>Andover,</i>	H. 18.
Kent, Percy,	<i>Brooklyn, N.Y.,</i>	G. 45.
Kilburn, Henry Whitman,	<i>Salem,</i>	G. 1.
Kimball, Edmund,	<i>Portland, Me.,</i>	C. 21.
Lamson, John Lamson,	<i>New York, N.Y.,</i>	Little's Block 20.
Lea, Arthur Henry,	<i>Philadelphia, Pa.,</i>	5 Phillips Pl.
Learned, William Pollock,	<i>Pittsfield,</i>	H'ke 7.
Lester, James Louis,	<i>West Newton,</i>	C. 16.
Lord, Daniel Walter,	<i>Malden,</i>	H. 2.
Ludlow, Thomas William,	<i>Yonkers, N.Y.,</i>	4 Story St.
Lum, Edward Harris,	<i>Chatham, N.J.,</i>	14 Dunster St.
Lyman, Gerry Austin,	<i>Boston,</i>	89 Brattle St.
March, Charles Dudley,	<i>Staatsburgh, N.Y.,</i>	52 Brattle St.
Martin, John Laurie,	<i>New York, N.Y.,</i>	102 Mt. Auburn St.
Merrick, Frank Woodard,	<i>Haverhill,</i>	T. 65.
Merrill, George White,	<i>Boston,</i>	404 Columbus Ave., Boston.
Messervy, George Passarow,	<i>Salem,</i>	M. 28.
Miller, Andrew,	<i>Albany, N.Y.,</i>	W. 5.
Miller, George Stow,	<i>Boston,</i>	H. 25.
Minot, Henry Davis,	<i>West Roxbury,</i>	4 Garden St.
Mitchell, John Singleton,	<i>Cambridge,</i>	13 Avon St.
Montague, Frazer Livingston,	<i>Chelsea,</i>	W. 27.
Moors, Arthur Wendell,	<i>Boston,</i>	13 Kirkland Pl.

Morgan, Charles,	<i>New York, N. Y.,</i>	1 Holyoke St.
Morgan, Hicky Hunt,	<i>New Orleans, La.,</i>	M. 20.
Moriarty, Daniel Webster,	<i>Milford,</i>	H. 23.
Morison, Sanford,	<i>Quincy,</i>	C. 2.
Morse, Edward Irving,	<i>Marlboro',</i>	T. 3.
Morss, Charles Henry,	<i>North Andover,</i>	D. 26.
Mould, David,	<i>Montgomery, N. Y.,</i>	14 Dunster St.
Muzzey, Austin Kent,	<i>Cambridge,</i>	T. 47.
Nickerson, Thomas White,	<i>Boston,</i>	1 Garden St.
Norton, Charles Phelps,	<i>Buffalo, N. Y.,</i>	277 Cambridge St.
O'Callaghan, William Francis,	<i>Milford,</i>	H. 23.
O'Keefe, John Aloysius,	<i>Salem,</i>	G. 35.
Opdycke, Leonard Eckstein,	<i>New York, N. Y.,</i>	Beck Hall 43.
Osborn, Charles Marcus,	<i>Rock Island, Ill.,</i>	20 Prescott St.
Parker, Charles Albert,	<i>Boston,</i>	Little's Block 9.
Parker, Frederick Alonzo,	<i>Nashua, N. H.,</i>	10 Church St.
Pellew, William George,	<i>New York, N. Y.,</i>	T. 20.
Pennypacker, James Lane,	<i>Philadelphia, Pa.,</i>	13 Mellen St.
Perry, Arthur,	<i>Westerly, R. I.,</i>	22 Concord Ave.
Perry, George Murdock,	<i>Ashland,</i>	13 Mellen St.
Perry, Herbert Mills,	<i>New Ipswich, N. H.,</i>	C. 31.
Peters, George Gorham,	<i>Boston,</i>	42 Brattle St.
Pew, William Andrews,	<i>Gloucester,</i>	T. 40.
Pilsbury, Ernest Henry,	<i>Lewiston, Me.,</i>	27 Trowbridge St.
Plimpton, Arthur Salem,	<i>Southbridge,</i>	C. 18.
Price, William Carroll,	<i>Pottsville, Pa.,</i>	W. 39.
Price, Wesley Frank,	<i>Lumberton, N. C.,</i>	W. 24.
Quincy, Josiah,	<i>Quincy,</i>	Beck Hall 26.
Rand, Harry Seaton,	<i>North Cambridge,</i>	158 North Ave.
Ranlett, Frederick Jordan,	<i>Auburndale,</i>	C. 39.
Rice, Walter Allen,	<i>Bangor, Me.,</i>	15 Farwell Pl.
Richardson, William King,	<i>Longwood,</i>	78 Mt. Auburn St.
Robbins, Julian Wainwright,	<i>New York, N. Y.,</i>	1 Holyoke St.
Rogers, William Stanton,	<i>Boston,</i>	M. 14.
Roosevelt, Theodore,	<i>New York, N. Y.,</i>	16 Winthrop St.
Russak, Frank, s. b. ( <i>Univ. of New York</i> ),	<i>New York, N. Y.,</i>	127 Mt. Auburn St.
Russell, Eugene Dexter,	<i>Watertown,</i>	410 Harvard St.
Saltonstall, Richard Middlecott,	<i>Chestnut Hill,</i>	10 Oxford St.
Sanger, Chester Franklin,	<i>Cambridge,</i>	36 Arlington St.
Sargent, Leicester,	<i>New York, N. Y.,</i>	H'y 2.
Savage, Henry Wilson,	<i>Boston,</i>	T. 14.
Sawyer, Edward Allen,	<i>Gardner,</i>	G. 7.
Scoville, Louis Phelps,	<i>Chicago, Ill.,</i>	W. 24.

Scribner, Charles Walter,	<i>Plainfield, N.J.,</i>	C. 31.
Seymour, Alfred Wotkins,	<i>Troy, N.Y.,</i>	7 Waterhouse St.
Sharon, Frederick William,	<i>San Francisco, Cal.,</i>	W. 83.
Sharp, William Beverly,	<i>San Francisco, Cal.,</i>	53 Oxford St.
Shaw, Adna Balch,	<i>North Cambridge,</i>	127 North Ave.
Shaw, Henry Russell,	<i>Boston,</i>	1 Garden St.
Sheehan, William Francis,	<i>Milford,</i>	28 Holyoke St.
Shillito, Stewart,	<i>Cincinnati, O.,</i>	W. 29.
Simmons, Thornton Howard,	<i>Boston,</i>	378 Harvard St.
Skinner, Samuel Wiggins,	<i>Cincinnati, O.,</i>	M. 9.
Smith, Frederick Mears,	<i>Cambridge,</i>	1 Chauncy St.
Smith, Walter Allen,	<i>Boston,</i>	G. 30.
Stephens, George Robert,	<i>Detroit, Mich.,</i>	H'ke 25.
Stevens, William Stanford,	<i>Boston,</i>	T. 1.
Stow, Van der Lynn,	<i>San Francisco, Cal.,</i>	19 Church St.
Suire, Frank Overton,	<i>Cincinnati, O.,</i>	M. 9.
Talbott, William Houston,	<i>Indianapolis, Ind.,</i>	25 Holyoke St.
Taussig, Charles Sumner,	<i>St. Louis, Mo.,</i>	16 Oxford St.
Taylor, Arthur,	<i>Yarmouth,</i>	G. 29.
Taylor, William George,	<i>New York, N.Y.,</i>	H. 14.
Tebbets, John Sever,	<i>Boston,</i>	Little's Block 9.
Thomsen, John Jacob,	<i>Baltimore, Md.,</i>	W. 34.
Tiffany, Walter Checkley,	<i>West Newton,</i>	H'ke 44.
Titus, Willett Losee,	<i>Merrimac,</i>	G. 34.
Townsend, Howard,	<i>Albany, N.Y.,</i>	W. 8.
Trimble, Richard,	<i>New York, N.Y.,</i>	Beck Hall 41.
Tupper, Frederic Allison,	<i>Newtonville,</i>	97 Mt. Auburn St.
Turpin, Bradford Strong,	<i>Auburndale,</i>	C. 10.
Wakefield, John Lathrop,	<i>Dedham,</i>	C. 25.
Ware, Charles,	<i>Boston Highlands,</i>	Beck Hall 45.
Ware, Francis Morgan,	<i>Boston,</i>	M. 53.
Warren, Charles Everett,	<i>Boston,</i>	C. 50.
Warren, John Samuel,	<i>Granville, N.Y.,</i>	44 Mt. Auburn St.
Washburn, Charles Grenfill,	<i>Worcester,</i>	G. 38.
Watson, William Livingston,	<i>Utica, N.Y.,</i>	H'ke 30.
Webb, Henry Randall,	<i>Washington, D.C.</i>	38 North Ave.
Weimer, Albert Barnes,	<i>Philadelphia, Pa.,</i>	10 Appian Way.
Weld, Christopher Minot,	<i>Boston,</i>	T. 4.
Welling, Richard Ward Green,	<i>New York, N.Y.,</i>	2 Garden St.
Wheelan, Fairfax Henry,	<i>Santa Rosa, Cal.,</i>	C. 21.
White, Franklin Davis,	<i>Milton,</i>	1 Garden St.
White, William Howard,	<i>Brookline,</i>	14 Ware St.
Whiting, Frederick Erwin,	<i>Cambridge,</i>	8 Cogswell Ave
Wilkinson, Alfred,	<i>Syracuse, N.Y.,</i>	6 Appian Way.

Willard, John Howard,	<i>Newport, R.I.,</i>	12 Putnam Ave.
Winlock, William Crawford,	<i>Cambridge,</i>	Langdon St.
Winsor, Robert,	<i>Winchester,</i>	H'ke 34.
Woodbury, John,	<i>Lynn,</i>	Little's Block 17.
Wyman, Morrill,	<i>Cambridge,</i>	T. 62.

## SUMMARY.

SENIORS . . . . .	192
JUNIORS . . . . .	175
SOPHOMORES . . . . .	222
FRESHMEN . . . . .	232
	821
Total . . . . .	821

## UNMATRICULATED STUDENTS.

Blake, Edward Harward,	<i>Bangor, Me.,</i>	Episc. Theol. Sch.
Denton, Huntington,	<i>Cambridge,</i>	H'ke 4.
Driver, Charles,	<i>Boston Highlands,</i>	W. 39.
Gooding, William Lambert,	<i>Cambridge,</i>	10 Appian Way.
Richardson, Dana Putnam,	<i>North Leominster,</i>	467 Broadway.

# HARVARD COLLEGE.

## ADMISSION.

All candidates for admission to College must be examined in one of the two following Courses of Study, each embracing sixteen subjects, numbered as below. A candidate in either course may, at his option, pass the entire examination at one time, or he may pass a preliminary examination on a part of the course and be examined on the remaining subjects in some subsequent year (not in the same year). But no candidate will be admitted to examination on a part of any subject; and no account will be made of, nor certificate be given for, the preliminary examination, unless the candidate has passed satisfactorily in at least five subjects.

### Course I.

1. *Latin Grammar* (including prosody).
2. *Latin Composition and Latin at sight.* Some passage in prose, not included in the following requisitions, will be given for translation.
3. *Caesar, Sallust, and Ovid.* Caesar, Gallic War, Books I.-IV.; Sallust, Catiline; Ovid, four thousand lines.
4. *Cicero and Virgil.* Cicero, eight orations and the Cato Major; Virgil, Eclogues and the Aeneid, Books I.-VI.
5. *Greek Grammar* (including metres).
6. *Greek Composition* (with the accents).
7. *Greek Prose.* Goodwin and Allen's Greek Reader; or Xenophon's Anabasis, Books I.-IV., and the seventh book of Herodotus.
8. *Greek Poetry.* Homer's Iliad, Books I.-III., omitting the catalogue of ships.
9. *Arithmetic* (including the metric system of weights and measures, together with the use and the rudiments of the theory of logarithms). The examples requiring the use of logarithms at the examination will be adapted to a four-place table.
10. *Algebra* (through quadratic equations).
11. *Plane Geometry* (as much as is contained in the first thirteen chapters of Peirce's Geometry).
12. *Ancient History and Geography.* Greek History, to the death of Alexander; Roman History, to the death of Commodus. Smith's smaller histories of Greece and Rome will serve to indicate the amount of knowledge demanded in history.

13. *Modern and Physical Geography.* The following works will serve to indicate the amount of knowledge demanded in this subject: in modern geography, Guyot's Common School Geography, or Miss Hall's Our World, No. 2; in physical geography, Guyot's Physical Geography, Parts II. and III., or Warren's Physical Geography, the first forty-nine pages.

14. *English Composition.* Each candidate will be required to write a short English Composition, correct in spelling, punctuation, grammar, division by paragraphs, and expression. The subject for 1877 will be taken from one of the following works: Shakspeare's Henry V., Julius Cæsar, or Merchant of Venice; Irving's Sketch Book; Scott's Talisman or Marmion.

15. *French or German.* The translation at sight of easy French prose; or of easy German prose, if the candidate prefer to offer German. Proficiency in elementary grammar, a good pronunciation, or facility in speaking, will be accepted as an offset for some deficiency in translation. No examination in pronunciation is required; but it is recommended that attention be given to pronunciation from the outset. Candidates who offer German in place of French will be required to take French in place of German in their Freshman year.

16. *Physical Science.* Each candidate will be examined in one of the three following subjects, to be selected by himself: (1) Elementary Botany; (2) Rudiments of Physics and of Chemistry; (3) Rudiments of Physics and of Descriptive Astronomy. The following books may serve to show the extent of this requisition: in Botany, Gray's "How Plants Grow;" in Physics, Balfour Stewart's Primer of Physics; in Chemistry, Roscoe's Primer of Chemistry; in Astronomy, Rolfe and Gillet's Hand-Book of the Stars (first 124 pages). Candidates who offer Botany will be required to give evidence that they can analyze simple specimens; and those who offer Physics or Chemistry, that they can perform simple experiments like those described in the Primers referred to above.

### Course II.

1. *Latin Grammar* (including prosody).
2. *Latin Authors.* Caesar, Gallic War, Books I. and II.; Cicero, six orations, and the Cato Major; Virgil, Aeneid, Books I.-VI.
3. *Greek Grammar* (including metres).
4. *Greek Authors.* Goodwin and Allen's Greek Reader, first 111 pages, or Xenophon's Anabasis, Books I.-IV.; Homer's Iliad, Books I. and II., omitting the catalogue of ships.
5. *Arithmetic.* This requisition is the same as No. 9 of Course I.
6. *Elementary Algebra.* This requisition is the same as No. 10 of Course I.



7. *Advanced Algebra*. This subject, with the preceding, is regarded as embracing as much algebra as is contained in the advanced text-books, such as the larger algebras of Todhunter, Loomis, Greenleaf, &c.

8. *Plane Geometry*. This requisition is the same as No. 11 of Course I.

9. *Solid Geometry* (as much as is contained in Peirce's *Geometry*).

10. *Plane Trigonometry* (by the Analytic Method; as much as is contained in the first six chapters of Peirce's *Trigonometry*, or in the large print of the first eight chapters of Chauvenet's *Trigonometry*).

11. *The elements of Plane Analytic Geometry* (as much as is contained in Peck's *Analytic Geometry*, pages 1-151, omitting articles 40-43, 54, 57-61, 72, 74-76, and the more difficult problems).

12. *Ancient History and Geography*; 13. *Modern and Physical Geography*; 14. *English Composition*; 15. *French or German*; 16. *Physical Science*. These requisitions are the same respectively as Nos. 12-16 of Course I.

No partial substitutions or interchanges between Courses I. and II. will be allowed; but candidates are encouraged to present themselves on *both* Courses, or on one of them with additional subjects belonging to the other.

Students who enter College in Course II. may be admitted immediately to elective sections in Mathematics, if they pass the examination with sufficient credit, and must, in any case, substitute elective studies, amounting to four hours a week, in place of the Mathematics of the Freshman year.

At the beginning of the Freshman year, an advanced section in Classics is formed, consisting of those who show the best preparation in Latin and Greek.

An advanced section in Mathematics is also formed, the requirements for which are stated on the next page.

No particular text-book in Grammar is required; but either Allen and Greenough's or Harkness's Latin Grammar, and either Goodwin's or Hadley's Elementary Greek Grammar, will serve to indicate the nature and amount of the grammatical knowledge demanded.

In Latin the following pronunciation is recommended:  $\bar{a}$  as in *father*,  $\bar{\alpha}$  the same sound but shorter;  $\bar{\epsilon}$  like  $\bar{e}$  in *fête*,  $\bar{e}$  as in *set*;  $\bar{\imath}$  as in *machine*,  $\bar{\imath}$  as in *sit*;  $\bar{o}$  as in *hole*,  $\bar{o}$  as in *nor*;  $\bar{u}$  as in *rude*,  $\bar{u}$  as in *put*;  $\bar{j}$  like  $\bar{y}$  in *year*;  $\bar{c}$  and  $\bar{g}$  like Greek  $\kappa$  and  $\gamma$ .

Instructors are requested to teach their pupils, in pronouncing Greek, to use the *Greek accents*; and to give (for example)  $\alpha$  the sound of  $a$  in *father*,  $\eta$  that of  $a$  in *fute*,  $\iota$  that of  $i$  in *machine*, &c.

It is earnestly recommended that the requisitions in Latin and Greek authors be accurately complied with: real equivalents, however, will be accepted; as, for example, Caesar's Gallic War, Books V. and VI., in

place of Sallust's *Catiline*; two additional orations of Cicero in place of the *Cato Major*; the seventh book of the *Aeneid* in place of the *Eclogues*; the last five books of the *Aeneid* in place of Ovid.

In Geometry, students are advised to study some introductory text-book, such as Hill's *First Lessons*, before beginning a systematic course in Geometry.

A set of recent examination papers will be sent to any teacher, on application to the Secretary.

## OPTIONAL EXAMINATIONS.

### THE CLASSICS.

Candidates who present themselves upon Course I. will be at liberty to offer themselves for additional examination upon one or both of the following classical courses:—

#### (1) LATIN.

Livy (two books).

Horace (*Odes* and *Epodes*).

The translation at sight of a passage from the philosophical works of Cicero.

The retranslation of the English of a similar passage into Latin.

#### (2) GREEK.

Plato (*Apology* and *Crito*).

Homer (*Iliad*, Books IV.–VIII, or *Odyssey*, Books IV. and IX.–XII).

Euripides (*Alcestis*), or Homer (*Odyssey*, Books V.–VII).

The translation at sight of a passage from the works of Xenophon.

Translation from English into Greek.

No candidate will be *required* to present himself at these examinations; but those who pass them with high credit, in addition to the other classical examinations of Course I. above, will be admitted, immediately on entering College, to advanced sections in Latin and Greek, or to elective studies either in the Classics or in other departments, in place of the Freshman studies thus anticipated. All those who wish to attain distinction in classical studies, or to graduate with classical honors, are advised to pass these examinations on entering.

### MATHEMATICS.

An advanced section in Mathematics is formed in the Freshman class, consisting of those who receive high marks in the Mathematical subjects required in Course I., and also pass a creditable examination in Advanced Algebra, Plane Trigonometry, and Solid Geometry, as required in Course II. Candidates who do not present Solid Geometry may, however, be admitted to the section, on condition of making up that subject.

The design of this section is not to anticipate the subjects taught in the elective courses, but to afford to students of good ability and preparation a more valuable training and a greater practical command of their Mathematics than they can gain in the ordinary course, and to facilitate the taking of Second-Year Honors in Mathematics at the end of the Sophomore year. It is recommended to those who desire to attain special distinction in Mathematics or Physical Science, and to all who would turn their Mathematical study to the best account.

Freshmen will hereafter be allowed to take elective studies in place of their Mathematics, if they anticipate *all* the Mathematical subjects of the Freshman year, but not otherwise.

#### GERMAN.

Candidates for admission who present French may offer themselves for examination also in German Grammar and the translation of simple German prose; and, upon passing such examination with credit, will be excused from attendance upon the Freshman course in German, but will be obliged to take some elective course in its place.

#### PRESCRIBED STUDIES OF THE SOPHOMORE AND JUNIOR YEARS.

Candidates for admission to the Freshman Class, who are prepared to pass a creditable examination upon any of the prescribed studies of the Sophomore and Junior years (see pages 50-62), may pass such examination at the beginning of the Freshman year, instead of at the beginning of the year in which the study is pursued, and thereby relieve themselves from attendance at the exercises in that study in College.

A principal aim in providing these optional examinations is to encourage teachers to carry the studies of their brighter and more diligent pupils beyond the bare requisitions for admission, in whatever direction taste or opportunity may suggest. Full employment may thus be secured for the most capable student until he is thought mature enough to enter College, while his greater progress in school will make his college course more profitable, by enabling him to take up his studies at a more advanced stage, or to give more time to the studies of his choice.

#### ADVANCED STANDING.

A candidate may be admitted to the Sophomore, Junior, or Senior class, if he appear on examination to be well versed in the following studies:—

1. In the studies required for admission to the Freshman Class.
2. In all the prescribed studies already pursued by the class for which he is offered; and in as many *elective* studies as he would have pursued if he had entered at the beginning of the course, including, if he is offered in Course II., elective studies substituted for the Mathematics of the Freshman year.

All candidates for admission to advanced standing must be examined at the times of the regular examinations for admission, and in conformity with the following rules :—

1. All candidates for admission to advanced standing must first be examined for admission to the Freshman Class ; for this examination they may offer themselves at either the first or the second examination.

2. The examination on the studies of the Freshman, Sophomore, and Junior years, is held *only in the autumn*, at the time of the regular examination for admission.

3. All candidates for admission to advanced standing will assemble with the candidates for admission to the Freshman Class on Thursday, at 8 o'clock A. M., as directed below.

In the case of graduates of other colleges who seek admission to Harvard College, the examination will be directed to ascertaining whether their previous course of study has been sufficiently extensive, and their proficiency in it sufficiently great, to fit them to join the class for which they offer themselves, a minute acquaintance with all the ground they have previously gone over not being essential. Such candidates should bring evidence of their standing at the colleges where they received their degree.

#### TIMES AND PLACES OF EXAMINATION.

Two regular examinations for admission to the *Freshman Class* are held each year ; one at the beginning of the summer vacation, the other at the beginning of the academic year in the autumn.

In 1877, the first examination will be held in Cambridge and in Cincinnati, Ohio, on Thursday, Friday, and Saturday, June 28, 29, and 30 ; and the second, in Cambridge only, on Thursday, Friday, and Saturday, September 27, 28, and 29. For each examination, attendance on the three days is required. Candidates will assemble punctually at 8 o'clock A. M.,—in Cambridge, in Harvard Hall ; in Cincinnati, at some place to be announced in the daily papers of that city.

Candidates who propose to be examined in Cincinnati are requested to send their names to the Secretary of the University before June 15.

Persons who do not intend to enter College will be admitted, on payment of a fee of ten dollars, to the examination at Cincinnati ; and if successful, will receive certificates to that effect.

The *Optional Examinations* will be held at the time of the second examination for admission ; those in Mathematics, at the first examination also.

*No person will be examined for admission to College at any other time than those above specified.*

## ADMISSION WITHOUT MATRICULATION.

In and after the present academic year, the *Elective Courses of Study* in Harvard College will be open to persons *not less than twenty-one years of age*, who shall satisfy the Faculty of their fitness to pursue the particular courses they elect, although they have not passed the usual examination for admission to College, and do not propose to be candidates for the degree of Bachelor of Arts.

A certificate of proficiency will be given, if desired, to any person who, having faithfully pursued his chosen subjects throughout the year, passes the mid-year and June examinations therein, and attains not less than seventy-five per cent of the maximum marks therefor.

The Faculty reserve the right to deprive any student of his privileges at any time, if he abuse or fail to use them.

Persons who propose to avail themselves of this provision will be required to begin their attendance at the beginning of the Academic year. They must present themselves at No. 1 Harvard Hall, on Sept. 27, 1877, at 10 A.M., prepared to furnish testimonials as to their age and character, to indicate the courses of study they wish to pursue, and to demonstrate by examination or otherwise their fitness to attend those courses.

For further information on this subject, address Prof. C. J. WHITE, Registrar, Cambridge, Mass.

## TESTIMONIALS AND BOND.

All candidates for admission are required, before examination, to produce certificates of good moral character; and students from other colleges are required to bring certificates from those colleges of honorable dismissal. *Candidates who divide the examination must produce their testimonials at the time of their final examination for admission.*

Every candidate, if admitted, must furnish to the Bursar a bond for *four hundred dollars*, executed by two bondsmen, one of them a citizen of Massachusetts, as security for the payment of college dues; or, if he prefer, he may make, in place of the bond, a deposit of money with the Bursar for the same purpose.

Unmatriculated Students must file a similar bond for *two hundred dollars*, or make a deposit with the Bursar.

No officer or student of the University will be accepted as bondsman.

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## COURSE OF STUDY FOR THE DEGREE OF BACHELOR OF ARTS.

The course of study to be pursued by a candidate for the Bachelor's degree is made up in part of studies which are prescribed, and pursued by all students alike, and in part of studies selected by the student himself from the various courses of instruction given in the College.

### *PRESCRIBED STUDIES.*

The prescribed studies occupy the whole of the Freshman year and about one-third of the Sophomore and Junior years. In the Senior year only certain written exercises are prescribed.

### *ANTICIPATION OF PRESCRIBED STUDIES.*

The prescribed studies of the Sophomore and Junior years being of an elementary character, students who wish to be relieved from attendance at college exercises in one or more of them will be excused from such attendance, if they pass a satisfactory examination in such study or studies at the beginning of the year in which they would regularly pursue the study or studies in College, or at the time of their examination for admission to College. Studies which are pursued only in the second half-year may also be anticipated in the same way in the middle of the year. *No such examination will be deemed satisfactory, unless the student shall succeed in obtaining at least one-half of the maximum mark.* The mark obtained when the examination is successful will be credited to the student as his mark on the Annual Scale of the study which forms the subject of the examination. Preparation for these examinations can often be made while the student is preparing for College, or in the long vacation, and time may be thus gained for higher courses of study.

Students who intend to present themselves for such examination in any prescribed study for 1877-78 must give notice to the Dean in writing before Sept. 1, 1877.

Information concerning the requirements for passing the examination in any study can be obtained from the instructor in that study.

### *ELECTIVE STUDIES.*

In addition to the prescribed studies, each Sophomore is required to pursue courses, chosen by himself from the elective studies,\* amounting to *ten* exercises a week for the year; each Junior, courses amounting to *twelve* exercises a week; and each Senior, courses amounting to *twelve* exercises a week. Students are at liberty to attend the instruction in as many other subjects as they may have time and taste for pursuing.

In choosing his electives, the student must satisfy his instructors that he is qualified by his previous training to pursue those which he selects.

\* The prescribed Philosophy of the Junior year may be taken as an elective by Sophomores.

With this limitation, all the courses given in the College are open to him in making his choice; but he is strongly recommended to make his choice with great care, under the best advice, and in such a manner that his elective courses from first to last may form a rationally connected whole.

Undergraduates who intend to study Engineering are recommended by the Scientific Faculty to take, as extras, the courses of Drawing and Surveying in the Scientific School; and those who intend to study Medicine are advised by the Medical Faculty to pay special attention to the study of Natural History, Chemistry, Physics, and the French and German languages, while in College.

It will be seen that students who prefer a course like the usual prescribed course of American colleges can perfectly secure it, under this system, by a corresponding choice of studies; while others, who have decided tastes, or think it wiser to concentrate their study on a few subjects, obtain every facility for doing so, and still secure in the briefer prescribed course an acquaintance with the elements of the leading branches of knowledge.

#### THE BACHELOR'S DEGREE.

No student shall be recommended for the degree of Bachelor of Arts until he has attained the minimum mark \* in each of the prescribed studies of the college course and of the prescribed number of elective studies, and has, moreover, obtained at least *one half* of the total maximum mark for the whole course from the time of his admission.

Any student who has not complied with the requisitions for a degree before the end of his college course, may be recommended for a degree in any subsequent year, when he shall have made up all conditions standing against him, and shall have passed all examinations which the Faculty may have required of him on account of his failure to obtain one half of the maximum mark for the whole course. Any such candidate for the degree of Bachelor of Arts may attend the exercises in any department of instruction in the College, on payment of such fees as are required by the Corporation.

Persons recommended for the degree of Bachelor of Arts shall be divided into two classes, — those recommended for an *ordinary* degree, and those recommended for a degree *with distinction*. Those only shall be recommended for a degree *with distinction* whose scholarship for the whole college course entitles them to a part at Commencement.† This distinction shall be indicated in the diploma by the words *cum laude*. — *From the Regulations of the Faculty.*

\* The minimum mark in a *prescribed* study is one-third of the maximum mark; in an *elective* study, two-fifths.

† A part at Commencement is assigned to any student who attains *eighty hundredths* of the maximum mark for the whole college course, or *eighty-seven hundredths* of the maximum mark for the Junior and Senior years combined.

## COURSES OF INSTRUCTION.\*

## I ANCIENT LANGUAGES.

## ELECTIVE COURSES.

## Hebrew.

Hahn's or Theile's *Biblia Hebraica*. — Conant's Gesenius's Grammar. *Three times a week.* PROF. YOUNG.

## Sanskrit.

1. Elements of Sanskrit Grammar. — Hitopadeça (Book I). *Three times a week.* ASST. PROF. GREENOUGH.

2. Comparative Grammar of Sanskrit, Greek, and Latin. *Three times a week.* ASST. PROF. GREENOUGH. (*Not given this year.*)

*Courses 1 and 2 are given alternate years.*

## II THE CLASSICS.

## PRESCRIBED COURSE.

## FRESHMAN YEAR.

Twenty Lectures on Classical Literature. *Once a week.* ASST. PROF. EVERETT.

## ELECTIVE COURSE.

*Greek and Latin Comparative Philology.* Curtius's Greek Grammar. — Papillon's Greek and Latin Inflections. — Peile's Greek and Latin Etymology. *Twice a week.* ASST. PROF. GREENOUGH.

## Greek.

## PRESCRIBED COURSE.

## FRESHMAN YEAR.

Lysias (Select Orations). — Plato (Apology and Crito). — Euripides (one play). — Homer (Odyssey, Books V., VI., VII., IX., and XI). — Goodwin's Greek Moods and Tenses. — Unprepared Translation and Composition. — Selections from Grote's History of Greece to illustrate the authors read.

*The Advanced Sections*, in addition to the above course, will read the Birds or Clouds of Aristophanes, and their exercises in composition will be of a more advanced character.

*Three times a week.* MESSRS. J. W. WHITE and CROSWELL.

\* An exact account of the courses given in 1875-76, together with the numbers of students regularly attending them, may be found on pp. 180-256.



## ELECTIVE COURSES.

1. Aeschylus (Prometheus). — Herodotus (Book I.). — Homer (Iliad), or Aristophanes (one play). *Twice a week.* ASST. PROF. ANDERSON.

2. Sophocles (Oedipus Tyrannus). — Plato (Phaedo). — Introduction to Greek Philosophy. *Twice a week.* ASST. PROF. ANDERSON.

3. Greek Lyric Poetry and Anthology. *Once a week.* ASST. PROF. ANDERSON.

4. Greek Composition (especially for candidates for Second-Year Honors). *Once a week.* ASST. PROF. ANDERSON.

5. Advanced Greek Composition (especially for candidates for Final Honors). *Once a week.* ASST. PROF. ANDERSON.

6. Thucydides (Sicilian Expedition). — Sophocles (Antigone). — Aristophanes (Birds). *Twice a week.* PROF. GOODWIN.

7. Arrian (Anabasis). — Polybius (Selections). *Three times a week.* PROF. SOPHOCLES.

8. Demosthenes (on the Crown), with parts of Aeschines (against Ctesiphon). — Thucydides (parts of Books I., II., and III.). — Athenian History (Times of Pericles and Demosthenes). *Three times a week.* PROF. GOODWIN.

9. Aeschylus (Agamemnon). — Sophocles (Electra). — Aristophanes (Frogs). — Lyric Poets (from Bergk's Anthologia Lyrica). *Twice a week.* PROF. GOODWIN.

*Course 9 is intended for those who wish to read rapidly and have attained some facility in reading.*

10. Ecclesiastical Greek. Justin and Hippolytus. — Lectures on the early Christian sects. *Three times a week.* PROF. SOPHOCLES.

11. Plato (Protagoras and parts of the Republic). — Aristotle (Ethics, Books I.-III. and X.). *Three times a week.* PROF. GOODWIN.

*In Course 11 attention is directed mainly to the subject-matter of the authors read.*

## Latin.

## PRESCRIBED COURSE.

## FRESHMAN YEAR.

Livy (Books XXI., XXII.). — Horace (Odes and Epodes). — Cicero. — Merivale's General History of Rome, Chapters XLII-LIII. — Extemporaneous Translation and Composition.

*The Advanced Sections will read, in addition to the above course, some of Cicero's Letters, and their exercises in composition and extemporaneous translation will be of a more advanced character.*

*Three times a week.* ASST. PROFS. EVERETT and SMITH and MR. GOULD.

## ELECTIVE COURSES.

1. Cicero (Laelius). — Terence. — Horace (Satires). *Twice a week.*  
ASST. PROF. SMITH.

2. Cicero (pro Murena or pro Sestio). — Terence. — Horace (Satires).  
*Twice a week.* ASST. PROF. GREENOUGH.

*Course 2 is similar to Course 1, but more difficult, as the amount read in it is greater, and the instruction is given in part by reading other books at sight.*

3. Tacitus (Agricola). — Juvenal. — Virgil (Georgics). *Twice a week.*  
ASST. PROF. EVERETT.

4. Composition and Extemporaneous Translation (especially for candidates for Second-Year Honors). — Nixon's Parallel Extracts. *Once a week.*  
ASST. PROF. SMITH.

5. *Philosophical Course.* Cicero (Tusculanae Disputationes. — De Natura Deorum. — Academica.). *Twice a week.* ASST. PROF. GREENOUGH.

6. Cicero (De Finibus). — Horace (Epistles). — Persius. *Three times a week.* ASST. PROF. EVERETT. (*Not given this year.*)

7. Advanced Course in Composition and Extemporaneous Translation. *Once a week.* ASST. PROF. EVERETT. (*Not given this year.*)

8. Tacitus. — Suetonius. — Juvenal. *Three times a week.* PROF. LANE.

9. Plautus. — Lucretius. — Cicero. — Catullus. *Three times a week.*  
PROF. LANE.

*Course 9 is adapted for students who have already taken Course 8.*

10. *Latin Inscriptions, Orthography, and Pronunciation.* — Corssen's *Ausprache, Betonung, und Vokalismus.* — Roby's *Latin Grammar.* — Ellis's *Quantitative Pronunciation.* *Once a week.* PROF. LANE. (*Not given this year.*)

*This Course, dealing with some of the recent developments of Latin Grammar, is intended particularly for teachers, and for students purposing to become teachers.*

11. *Elements of Roman Law.* — Institutes of Gaius and of Justinian. *Three times a week.* DR. E. YOUNG.

## III. MODERN LANGUAGES.

## English.

## PRESCRIBED COURSE.

## SOPHOMORE YEAR.

*Rhetoric.* — Campbell's *Philosophy of Rhetoric* (Book II., Chapters i.-vi. — Whately's *Rhetoric* (Part III.). — Herbert Spencer's *Philosophy of Style.* — Hill's *General Rules for Punctuation and the Use of Capital*

Letters.—Abbott's How to Write Clearly. *Twice a week.* PROF. A. S. HILL and MR. HALL.

*Six Themes.* MR. HALL.

#### JUNIOR YEAR.

*Rhetoric.*—Whately's Rhetoric (Part I. and II.).—Lessing's Laocoon. *Two hours a week, second half-year.* PROF. A. S. HILL.

*Six Themes.* PROF. A. S. HILL.

*Four Forensics.* ASST. PROF. PALMER.

#### SENIOR YEAR.

*Four Forensics.* PROF. PEABODY.

*In place of Forensics, Candidates for Honors may substitute an equal number of Theses in their special departments, with the consent of the instructors in those departments.*

#### ELECTIVE COURSES.

1. *English Literature.*—Chaucer.—Bacon.—Milton.—Dryden. *Three times a week.* PROF. CHILD.

2. *English Literature.*—Shakspeare. *Three times a week.* PROF. CHILD.

3. *English.*—Hadley's History of the English Language.—Marsh's Anglo-Saxon Reader.—Selections in Early English Literature.—Lectures. *Twice a week.* PROF. CHILD.

4. *Anglo-Saxon and Early English.*—Beowulf (ed. M. Heyne).—Mätzner's Altenglische Sprachproben. *Three times a week.* PROF. CHILD.

#### German.

##### PRESCRIBED COURSE.

##### FRESHMAN YEAR.

Peissner's Grammar.—Joynes's Otto's Reader.—German Stories.—*Three times a week.* MESSRS. FAULHABER and EMERTON.

##### ELECTIVE COURSES.

1. German Plays and Stories.—Advanced Grammar. *Twice a week, MR. COOK; three times a week, ASST. PROF. BARTLETT.*

*Course 1 may be taken either two or three times a week, the third hour being devoted to Composition.*

2. German Historical Prose. *Three times a week.* ASST. PROF. BARTLETT.

*Course 2 is intended for those students only who wish to read a large amount of German as a preparation for the use of German text-books and other aids in studies of the Junior and Senior years.*

3. Adler's Hand-Book of German Literature. — Schiller's Wallenstein. — Lessing. — German Lyrics. — Composition. *Three times a week.* PROF. HEDGE.

4. Richter. — Goethe (Faust and Aus meinem Leben). — German Lyrics. — Composition. *Three times a week.* PROF. HEDGE.

### French.

#### PRESCRIBED COURSE.

##### FRESHMAN YEAR.

Otto's French Grammar. — Bôcher's Reader. *Three times a week.* ASST. PROF. JACQUINOT.

*This course is required of Freshmen who, at their examination for admission to College, passed on German instead of French.*

#### ELECTIVE COURSES.

1. Exercises in French Syntax and Composition. — Modern French Stories and Plays. *Twice a week.* ASST. PROF. JACQUINOT.

2. Molière. — Racine. — La Fontaine. — Beaumarchais. — Grammar and Composition. *Three times a week.* PROF. BÔCHER.

3. Montaigne. — Corneille. — Molière. — Boileau. — Sainte-Beuve. — French Composition. *Three times a week.* PROF. BÔCHER.

4. Littérature française au XIXème siècle. — Composition and Themes. *Three times a week.* ASST. PROF. JACQUINOT.

5. Old French. — Bartsch's Chrestomathie de l'Ancien Français. — Chanson de Roland. *Three times a week.* PROF. LOWELL.

*Course 4, in three successive years, embraces the French literature of the 17th, 18th, and 19th centuries.*

*Course 1 in French may be taken three times a week; and Courses 2, 3, and 4 may be taken twice a week.*

In addition to the above, a voluntary course in French reading, consisting mainly of exercises in pronunciation, is open to students. It may be attended once, twice, or three times a week. The instruction is given by PROF. BÔCHER.

### Italian.

#### ELECTIVE COURSES.

1. Prose Scelte. — Toscani's Grammar. — Italian Composition. *Twice a week.* ASST. PROF. NASH.

2. Nota's La Fiera. — A. Manzoni. — Tasso. — Italian Composition. *Three times a week.* ASST. PROF. NASH.

3. Early Italian Literature. — Dante. — Petrarca. — Machiavelli. *Three times a week.* PROF. LOWELL.

**Spanish.***ELECTIVE COURSES.*

1. *Gil Blas*. — Spanish Grammar (Josse) and Composition. *Three times a week.* ASST. PROF. NASH.

2. *Moratin (Comedias)*. — *Martinez de la Rosa (Comedias)*. — *Lope de Vega*. — Spanish Composition (Josse's Exercises and Salvá's Grammar). *Three times a week.* ASST. PROF. NASH.

3. *Early Spanish Literature*. — *Cervantes (Don Quixote)*. — *Calderon*. — *Poem of the Cid*. *Three times a week.* PROF. LOWELL.

*A student who elects a Modern Language must study it in that Course which his proficiency fits him to pursue.*

**Romance Philology.**

The Course in the Comparative Philology of the Romance Languages, offered to graduates by Prof. Bôcher, may be taken by properly qualified undergraduates upon obtaining the approval of the Instructor.

**IV. PHILOSOPHY.***PRESCRIBED COURSES.***JUNIOR YEAR.**

*Logic*. — *Jevons's Logic*. *Twice a week for a half-year.* PROF. PEABODY.

*Psychology*. — *Locke's Essay on Human Understanding*. *Twice a week for a half-year.* ASST. PROF. PALMER.

*ELECTIVE COURSES.*

1. *Cartesianism*. — *Descartes*. — *Malebranche*. — *Berkeley*. *Three times a week.* ASST. PROF. PALMER.

2. *Spinoza, Leibnitz, and Kant*. — *Bouillier, Histoire de la Philosophie Cartésienne*. — *Kant's Critique of Pure Reason*. — *Schwegler's History of Modern Philosophy*. — *Lectures on French and German Philosophy*. *Three times a week.* PROF. BOWEN.

3. *German Philosophy of the Present Day*. — *Schopenhauer's Die Welt als Wille und Vorstellung*. — *Hartmann's Philosophie des Unbewussten*. *Three times a week.* PROF. BOWEN.

*Course 3 is open only to students who take or have already taken Course 2.*

4. *Ethics*. — *Hodgson's Theory of Practice*. — *Cicero de Officiis*. — *Lectures*. *Three times a week.* PROF. PEABODY.

5. *Political Economy*. — *J. S. Mill's Political Economy*. — *Financial Legislation of the United States*. *Three times a week.* PROF. DUNBAR.

6. *Advanced Political Economy*. — Cairnes's *Leading Principles of Political Economy*. — McKean's *Condensation of Carey's Social Science*. *Three times a week*. PROF. DUNBAR.

*Any student may take as one of his Sophomore elective studies the prescribed course in Philosophy of the Junior year; and, in his Junior year, in place of the prescribed Philosophy thus anticipated, may take any elective study open to Sophomores or Juniors.*

## V. HISTORY.

### PRESCRIBED COURSE.

#### SOPHOMORE YEAR.

Freeman's *Outlines of General History* (Chapters V.—XIV.). *Twice a week, first half year*. MR. E. YOUNG.

Flanders's *Exposition of the Constitution of the United States*. — Ewald's *The Crown and its Advisers*. *Twice a week, second half-year*. MR. MACVANE.

#### ELECTIVE COURSES.

1. *Later Roman and Early Mediæval History*. *Twice a week*. MR. EMERTON.

2. *The General History of Europe from the Tenth to the Sixteenth Century*. *Three times a week*. MR. E. YOUNG.

3. *Mediæval Institutions*. (Advanced Course.) *Three times a week*. ASST. PROF. ADAMS.

*Course 3 is only for students who take or have taken Course 2.*

4. *History of England to the Seventeenth Century* (Constitutional and Legal). *Three times a week*. ASST. PROF. ADAMS.

5. *Colonial History of America to the year 1789*. *Three times a week*. MR. LODGE.

6. *History of the United States from 1789 to 1840*. *Three times a week*. ASST. PROF. ADAMS.

7. *European History during the Seventeenth Century and first half of the Eighteenth*. *Three times a week*. PROF. TORREY.

8. *European History from the Middle of the Eighteenth Century*. *Three times a week*. PROF. TORREY. (*Not given this year.*)

9. *Diplomatic History and International Law*. *Three times a week*. PROF. TORREY.

*Course 7 is open only to Seniors and Juniors. Course 9 is a graduate course, but is open to such college students as may be deemed qualified to pursue it.*

## VI. MATHEMATICS.

## PRESCRIBED COURSES.

## FRESHMAN YEAR.

1. Solid Geometry (Chauvenet). — Plane Trigonometry (Chauvenet). — Analytic Geometry (Peck). *Three times a week in the first half year and after May 1; twice a week in second half year till May 1.* ASST. PROF. BYERLY and MR. BRIGGS.

2. Algebra (Todhunter). *Once a week till May 1.* ASST. PROF. C. J. WHITE.

*Advanced Sections.* The work done by the Advanced Sections differs from the above in the following particulars: the courses in Trigonometry and Analytic Geometry are of a more advanced character, and for Algebra is substituted a course in Geometric Problems. *Four times a week in the first half year; three times a week in the second half year.* ASST. PROF. BYERLY and MR. BRIGGS.

## ELECTIVE COURSES.

1. Practical Applications of Trigonometry. — Principles of Surveying. — Spherical Trigonometry. — Applications of Spherical Trigonometry to Astronomy and Navigation. *Twice a week.* ASST. PROF. C. J. WHITE.

2. Differential and Integral Calculus; Elementary Course. *Twice a week.* PROF. J. M. PEIRCE.

3. Determinants; Theory of Equations; and other matter supplementary to Course 1. *Twice a week.* PROF. J. M. PEIRCE.

4. Analytic Geometry. Salmon's Conic Sections (Selected Course). *Twice a week.* PROF. J. M. PEIRCE. (*Not given this year.*)

5. Differential and Integral Calculus; Second Course. *Three times a week.* PROF. J. M. PEIRCE.

6. Quaternions. *Twice a week.* PROF. J. M. PEIRCE.

7. Descriptive Geometry and Perspective. *Three times a week.* PROF. EUSTIS.

8. Analytic Mechanics. *Three times a week.* PROF. B. PEIRCE.

9. Quaternions; Second Course. *Three times a week.* PROF. B. PEIRCE.

10. Functions of Complex Variables. *Three times a week.* PROF. J. M. PEIRCE.

*Courses 9 and 10 are graduate courses, but they are open to such undergraduates as obtain special permission to take them. Courses 1-8 are open to such students as are qualified to pursue them, without distinction of class.*

## VII. PHYSICS.

## PRESCRIBED COURSE.

## FRESHMEN YEAR.

Chambers's Matter and Motion. — Goodeve's Mechanics (Selections).  
*Twice a week.* MR. WILLSON.

## ELECTIVE COURSES.

1. Astronomy, Optics, and Acoustics. *Twice a week.* PROF. LOVERING.

*Course 1 may be taken three times a week.*

2. Practical exercises in the Laboratory, including the use of instruments of precision in testing the laws of Mechanics, Acoustics, Optics, Magnetism, and Electricity; and an extended course in Electrical Measurements. *Three times a week.* ASST. PROF. TROWBRIDGE.

3. Mathematical Physics (Thomson and Tait's Elements of Natural Philosophy, Part. 1). *Twice a week.* (*Not given this year.*)

4. Mathematical Physics (Maxwell's Electricity and Magnetism). *Three times a week.* ASST. PROF. TROWBRIDGE.

5. Undulatory Theory of Light. — Electricity and Magnetism. *Three times a week.* PROF. LOVERING.

6. The Spectroscope and its Applications. — Thermodynamics and Thermics, including the applications of Heat. *Three times a week.* PROF. GIBBS.

*Courses 1 and 5 can be pursued only by students who are able to solve readily problems in Algebra and Trigonometry, and Course 5 will in addition require similar familiarity with Analytical Geometry. The same requisitions are made for Course 6, together with some knowledge of the Calculus.*

In addition to the above, a course of one lecture a week through the year, open to Juniors and Sophomores, is given by PROF. LOVERING.

## VIII. CHEMISTRY.

## PRESCRIBED COURSE.

## FRESHMAN YEAR.

Elementary Chemistry (24 Lectures). *Once a week.* PROF. COOKE.

## ELECTIVE COURSES.

1. Descriptive Chemistry (with laboratory work). *Three times a week.* ASST. PROF. JACKSON.

*Course 1 may be taken twice a week.*

2. Determinative Mineralogy and Lithology (with study in the Mineral Cabinet). *Three times a week.* MR. WADSWORTH.

3. Qualitative Analysis and Chemical Philosophy (with laboratory work). *Three times a week.* ASST. PROF. H. B. HILL.



4. Quantitative Analysis (in the Laboratory). *Three times a week.* PROF. COOKE and MR. HODGES.

5. The Carbon Compounds, Theoretical and Experimental (lectures and laboratory work). *Three times a week.* ASST. PROF. H. B. HILL.

6. Advanced Course in Experimental Chemistry (in the Laboratory). *Three times a week.* PROF. COOKE.

7. Crystallography and the Physics of Crystals (with work in the Mineral Cabinet). *Three times a week.* PROF. COOKE.

*Courses 1 and 2 are intended for Sophomores; Courses 3 and 4, for Juniors; Courses 5, 6, and 7, for Seniors.*

## IX. NATURAL HISTORY.

### ELECTIVE COURSES.

1. Physical Geography, Meteorology, and Structural Geology. *Twice a week.* MR. HAMLIN.

2. *Physiological Psychology.*—Herbert Spencer's Principles of Psychology.—Recitations and lectures. *Three times a week.* ASST. PROF. JAMES.

3. Comparative Anatomy and Physiology of Vertebrates. *Three times a week.* ASST. PROF. JAMES.

4. Zoölogy (Radiates and Articulates). *Three times a week.* PROF. MCCRADY.

5. Geology. *Three times a week.* PROF. SHALER.  
*Attendance upon the Summer Course in Geology is accepted instead of the field-work required in Course 5.*

6. Palæontology. *Three times a week.* PROF. SHALER.

7. Zoölogy (Mollusks and Vertebrates). *Three times a week.* PROF. MCCRADY.

8. Elementary Botany. Gray's Structural and Systematic Botany. *Three times a week.* ASST. PROF. GOODALE.

*Twelve lectures on Cryptogamic Botany will be delivered in this Course by ASST. PROF. FARLOW.*

9. Advanced Botany. Loew's Uebungsbuch in der Botanik.—Lectures and Laboratory Practice. *Three times a week.* ASST. PROF. GOODALE.

10. Economic Geology. *Twice a week.* PROF. WHITNEY.  
*Course 10 is a graduate course, but is open to such college students as may be qualified to pursue it.*

**X. MUSIC.***ELECTIVE COURSES.*

1. Harmony. *Twice a week.* PROF. PAINE.
2. Counterpoint. *Three times a week.* PROF. PAINE.
3. Canon and Fugue.—Free Thematic Music. *Three times a week.*  
PROF. PAINE.
4. History of Music. *Three times a week.* PROF. PAINE.

*A knowledge of the Major and Minor keys and some proficiency in piano or organ playing is required of students who wish to take Course 1.*

*A knowledge of musical notation and some practical knowledge of vocal and instrumental music is required of students who wish to take Course 4.*

**XI. THE FINE ARTS.***ELECTIVE COURSES.*

1. *Principles of Design in Painting, Sculpture, and Architecture.* Examples in Illumination, Landscape and Figure Painting; and in Pottery, Carving, etc. *Three times a week.* MR. MOORE. (*Not given this year.*)

2. *The History of the Fine Arts of Construction and Design, and their relations to Literature.*—Definitions.—Oriental and Egyptian Art.—Greek Art.—Roman Art.—Mediæval Art.—The Art of the Renaissance in Italy. *Three times a week.* PROF. NORTON.

3. *The Arts of the Age of Pericles.* *Once a week.* PROF. NORTON.

*In Course 2, facility in reading French is required, and ability to read German is of great assistance.*

## HONORS.

SECOND-YEAR HONORS IN THE CLASSICS AND IN  
MATHEMATICS.

These Honors are open to Sophomores and Juniors, and to Seniors who intend to be candidates for Final Honors in some year after graduation ; they are not open to Freshmen, except by special vote of the Faculty. They are awarded by the Faculty, on the recommendation of a special committee of examiners.

I. CLASSICS. — Second-Year Honors are awarded in *the Classics* on two conditions. The first condition is excellence in the classical work of the Freshman year, and in the work of elective classical courses amounting to six hours a week for one year. The second condition consists in passing with distinction a special examination : —

(a) In the translation at sight of passages taken from the less difficult Greek and Latin authors.

(b) In Greek and Latin Prose Composition.

(c) Either in the Philology of the Greek and Latin languages, or in Ancient History.

II. MATHEMATICS. — Second-Year Honors are awarded in *Mathematics* on two conditions. The first condition is distinguished excellence in all the mathematical work of the Freshman year, and in the work of elective mathematical courses amounting to six hours a week for one year.\* The second condition consists in passing with distinction a special examination, partly written and partly oral, which will involve a moderate amount of work additional to that comprised in the regular courses, and may be extended to cover the whole mathematical knowledge of the candidates.

The special examinations are held toward the end of the Academic Year.

No one can be a candidate at graduation for Final Honors in the Classics or in Mathematics who has not previously taken Second-Year Honors in the same department, nor for Final Honors in Ancient Languages who has not previously taken Second-Year Honors in the Classics.

Candidates for Second-Year Honors are required to register their names at the Dean's office as early as *the first of April* of the year in which they present themselves for examination.

\* For candidates in 1877, Courses 2, 3, and 4. are prescribed ; in place of 3 or 4, however, 5, 6, or 7 may be substituted.

In 1876 Second-Year Honors were assigned to the following students:—

IN CLASSICS.

*Class I.*

CHARLES CHAUNCEY BINNEY, *of the Sophomore Class.*  
 CHARLES ALBERT HAMILTON, *of the Sophomore Class.*  
 ERNEST JACKSON, *of the Sophomore Class.*  
 DANIEL JOHN MITCHEL O'CALLAGHAN, *of the Junior Class.*

*Class III.*

ALFRED ELA, *of the Freshman Class.*  
 EDWARD BROWNE HUNT, *of the Sophomore Class.*  
 GEORGE HALSEY PERLEY, *of the Sophomore Class.*  
 GEORGE HERMON STEARNS, *of the Sophomore Class.*  
 FREDERICK JACKSON WILEY, *of the Junior Class.*  
 ROBERT HOLLISTER WORTHINGTON, *of the Junior Class.*

IN MATHEMATICS.

*Class I.*

GERRIT SMITH SYKES, *of the Junior Class.*

*Class II.*

HENRY GOLDMARK, *of the Sophomore Class.*  
 HENRY GOODRICH, *of the Junior Class.*  
 WASHINGTON IRVING STRINGHAM, *of the Junior Class.*

FINAL HONORS.

*Special Honors*, of two grades, may be given at graduation for great proficiency in one or more of the following departments: Ancient Languages, Classics, Modern Languages, Philosophy, History, Mathematics, Physics, Chemistry, Natural History, Music. The department in which honors are awarded, and the grade of the honors, are stated in the diploma.

A candidate for these Honors in any department must satisfy the following requisitions:—

I. He must have passed *with distinction* examinations: (a) on all the prescribed work of the College in that department; (b) on elective courses in that or kindred departments,\* equivalent, if the department

\* The elective courses which candidates for Honors in the several departments are required to take, and those which they are allowed to substitute from other departments, are as follows:—

*Ancient Languages.*—Two courses of Hebrew or two courses of Sanskrit are required; the additional courses must be in Greek or Latin.

*Classics.*—A course in Sanskrit may be substituted for courses of the same number of hours in the Classics.

be Modern Languages, to *nineteen hours* per week for one year; if it be Ancient Languages, Classics, or Mathematics, to *eighteen hours*; if it be History or Natural History, to *seventeen hours*; if it be Physics or Chemistry, to *sixteen hours*; if it be Philosophy or Music, to *fifteen hours*. A candidate for Honors in more than one subject is not allowed, in making up the requisite number of hours, to count any course more than once.

II. If the department be Classics, the candidate must be able to read ordinary Greek and Latin at sight, and to write Greek and Latin prose; if it be Modern Languages, he must be able to read French and German at sight, and to write French and German, and must further offer himself for examination in Italian, Spanish, or English.

III. If the department be Classics or Mathematics, he must have taken Second-Year Honors in the department; if it be Ancient Languages, he must have taken Second-Year Honors in Classics.

IV. Whatever be the department, the candidate must present such theses as may be required of him, and must also, near the close of the Senior year, pass an examination, before a committee of the Faculty, on the subject in which he offers himself for Honors, for the purpose of testing the range and accuracy of his knowledge of it. This examination may be either oral, written, or by experimental work, as the committee shall determine.

Students, who have failed to pass with distinction any of the examinations required for Honors, may, with the consent of the Faculty, make up their deficiencies by passing such additional examinations as may be required of them; but no such permission will be granted for failures occurring after the beginning of the Senior year.

Honors, however, will be given to graduates not entitled to Honors at graduation, who shall have complied with all the requisitions for Honors in any department in some subsequent year.

Every student who desires to be regarded as a candidate for Honors at

*Philosophy.* — Course 11 in Greek may be substituted in place of one elective course in Philosophy.

*History.* — Course 5 or 6 in Philosophy or Course 11 in Latin may be substituted for a course of the same number of hours in History.

*Mathematics.* — Courses 5 and 8, and, in addition, Junior and Senior courses equivalent to twelve hours per week for one year, are required. Course 3 or 4 in Physics will be accepted in place of a two-hour elective course in Mathematics.

*Physics.* — Courses 2, 5, and 6 in Physics, together with Course 2 in Mathematics, are required; the remaining three hours may be taken in Physics, Mathematics, or Chemistry.

*Chemistry.* — Courses amounting to at least twelve hours must be taken in the department of Chemistry; the remaining four hours may be taken in Chemistry, Physics, Mathematics, or Natural History.

*Natural History.* — Course 8 is required of all candidates. Course 2 in Chemistry may be substituted for one course in Natural History.

*Music.* — Candidates must have taken one hour in Acoustics in addition to the fourteen hours in Music.

graduation must register his name at the Dean's office before the *first day of June* in his Junior year.

At Commencement, 1876, Honors were assigned to members of the Graduating Class as follows :—

IN PHILOSOPHY.

EDWARD BROWN LEFAVOUR.  
PHILIPPE BELKNAP MARCOU.  
FREDERIC JESUP STIMSON.  
CHARLES FRANKLIN THWING.

*Highest Honors.*

HENRY THEOPHILUS FINCK.

IN HISTORY.

LOREN GRISWOLD DUBOIS.  
WILLIAM HENRY GOVE.  
FRANCIS CABOT LOWELL.  
WILLIAM HENRY MOODY.

IN PHYSICS.

EDWARD BROWN LAFAVOUR.

*Highest Honors.*

BENJAMIN OSGOOD PEIRCE.

IN CHEMISTRY.

ALONZO LILLY THOMSEN.

## P R I Z E S.



## I. DETURS.

A distribution of books called *Deturs* is made from the income of the Hopkins Foundation, near the beginning of the Academic Year, to meritorious students of one year's standing. *Deturs* are also given to such members of the Junior Class as not having received them in the Sophomore year shall, in the course of that year, make decided improvement in scholarship. Twenty-eight *Deturs* were given in the Sophomore Class, one in the Junior Class, and one in the Senior Class, the last year.

## II. BOWDOIN PRIZE DISSERTATIONS.

Eight Prizes will be assigned from the foundation of James Bowdoin, provided so many dissertations or translations be deemed worthy of prizes by the judges, as follows:—

I. A prize of *one hundred dollars* for the best dissertation by a Resident Graduate of the University, or by a member of the Senior Class of 1876-77, on any of the subjects for dissertations mentioned below.

II. Three prizes of *fifty dollars each* for the best dissertations by members of the Senior or Junior Class of 1877-78, on any of the following subjects:—

1. *A History and Discussion of the Doctrine of Innate Ideas.*
2. *The Lollards.*
3. *The Civil Service of the United States.*
4. *The Revival of Industry after Commercial Crises.*
5. *The Character and Writings of King James the First.*
6. *Macaulay's Place in Literature.*
7. *The Causes of the Decline of Intellectual Activity among the Moham-  
medan Nations.*

III. Two prizes of *fifty dollars each* for the best dissertations or translations, by members of the Senior or Junior Class of 1877-78, on any of the following subjects:—

1. *The Practical Working of the Athenian System of choosing Magistrates  
by Lot.*
2. *The 2d, 8d, 4th, and 5th paragraphs of Grote's History of Greece, Chap-  
ter XXXVIII.,—beginning, "The intense wrath against Athens," and end-  
ing, "which their mismanagement laid open,"—to be freely translated into  
Attic prose.*

3. *Olympia.*
4. *The Origin and Development of Satire among the Romans.*
5. *Xenophon and Germanicus; lives and a parallel, after the manner of Plutarch.*
6. *A Translation into Latin Prose from Prescott's Philip the Second, Vol. II., pp. 157-162: "The route that Alva proposed to take" through "one of the most memorable events of the period;" omitting, however, the long paragraph on pp. 158, 159.*

IV. Two prizes of fifty dollars each for the best dissertations, by members of the Senior or Junior Class of 1877-78, on any of the following subjects:—

1. *What Periods of Rest do Plants require?*
2. *Comparison of Vascular Cryptogams with Phanerogams.*
3. *The Present State of our Knowledge of the Physiology of the Brain.*
4. *Comparison of the Fore and Hind Limbs of Vertebrates.*
5. *Conflict between Physical Science and Geology on the Age of the Earth.*

Dissertations offered by *Seniors of 1876-77* for the first prize *must* be deposited with the Dean on or before Commencement, 1877. All other dissertations (including those offered by Graduates of 1877 who actually continue their residence) for these prizes *must* be deposited with the Dean on or before the *first day of November, 1877*. The title-page *must*, with an assumed name, state the standing of the writer, as Graduate or Undergraduate, and, if the latter, of what class. A sealed letter *must* be sent in at the same time, under cover with the dissertation, containing the true name of the writer, and superscribed with his assumed name.

The dissertations *must* be written upon letter-paper of good quality, of the quarto size, with a margin of not less than one inch at the top and bottom, and on each side, so that, if successful, they may be bound up without injury to the writing. The sheets on which the dissertation is written *must* be securely stitched together.

The dissertations *must* not exceed in length the amount of twenty-five printed pages of the North American Review.

The following persons received prizes in 1876:—

PERCIVAL LOWELL, of the Class of 1876,

For a dissertation on *The Rank of England as a European Power between the Death of Elizabeth and the Death of Anne.*

FRANCIS LEWIS WELLMAN, of the Class of 1876,

For a dissertation on *The Personal History of John Milton.*

THEODORE CHICKERING WILLIAMS, of the Class of 1876,

For a dissertation on *The Poetry of the Nineteenth Century.*

COMMITTEE.—Prof. F. H. Hedge, Hon. G. S. Hillard, Joseph B. Warner, Esq.



GEORGE EDWARD HOVEY, *of the Class of 1877,*

For a dissertation on *Schliemann's Excavations at Troy.*

COMMITTEE.—Prof. W. W. Goodwin, Prof. C. E. Norton, Mr. J. H. Allen.

### III. BOYLSTON PRIZES FOR ELOCUTION.

On the day before Class Day in each year there is a public exhibition and trial of the skill and proficiency of the students of the College in elocution, at which the Boylston Prizes are awarded.

The speakers are not to rehearse their own compositions, but to select pieces in prose or verse from English, Greek, or Latin authors. The selections must be approved by the Boylston Professor of Rhetoric and Oratory. The proportion in English is to be at least two out of three.

The competitors must be graduates of the year, or undergraduates of one of the next two classes; and their names must be entered with the Professor, at the latest, *fourteen days* before Class Day. No applications will be received after that time.

The Corporation, and five gentlemen selected by the Corporation, will act as judges and award the prizes as follows:—

Two First Prizes, of *sixty dollars* each; and three Second Prizes, of *forty-five dollars* each. The First Prizes may be withheld if none of the competitors appear to deserve them.

At this exhibition, no prompting of the speakers will be allowed; and a failure of memory in any one will exclude him from being considered in the assignment of the Prizes.

The following Prizes were assigned June 22, 1876:—

#### FIRST PRIZES.

FRANCIS CABOT LOWELL, *of the Graduating Class.*

FRANCIS LEWIS WELLMAN, *of the Graduating Class.*

#### SECOND PRIZES.

MATTHEW JOHN FERGUSON, *of the present Senior Class.*

EDWARD HENRY STROBEL, *of the present Senior Class.*

JOHN ELLIOTT WETTERBEE, *of the Graduating Class.*

### IV. LEE PRIZES FOR READING.

In 1875, two First Prizes of \$25 each, and five Second Prizes of \$15 each, were awarded to the following Freshmen for excellence in reading aloud English prose:—

#### FIRST PRIZES.

ALBERT POOR.

WILLIAM SCHOFIELD.

## SECOND PRIZES.

LEOPOLD LOBSITZ.  
EDWARD ROBINSON.  
HENRY RUFUS SARGENT.  
FRANCIS JOSEPH SWAZE.  
CHARLES LUKE WELLS.

Early in the year 1877-78, Prizes will be awarded for excellence in reading aloud English prose, as follows:—

I. To Freshmen, Prizes to the amount of \$150; no one to be more than \$50, or less than \$20. Every competitor will be required to read from one of the prose works announced in the requisitions for admission in English composition (p. 42), and also from a book to be announced at the time of the trial.

II. To Sophomores, Prizes to the amount of \$150; no one to be more than \$50, or less than \$20. For these Prizes no one will be allowed to compete who has not received instruction in his Freshman year from the Professor of Elocution.

All Prizes may be withheld, if no competitor appears worthy of a Prize.

## PECUNIARY AID.

The experience of the past warrants the statement that good scholars of high character but slender means are seldom or never obliged to leave College for want of money.

## SCHOLARSHIPS.

One hundred and nine Scholarships have been established in the College, varying in their annual income from forty dollars to three hundred and fifty.

*Saltonstall Scholarships.* Two founded by Mary and Leverett Saltonstall, with an income of one hundred and fifty dollars each.

*Pennoyer Scholarships.* Four from the annuity of William Pennoyer; two of them with an income of one hundred dollars, and two with an income of ninety dollars each.

*Alford Scholarship.* Founded by Joanna Alford, in 1785, with an income of forty dollars.

*Abbot Scholarship.* Founded by persons educated at Phillips Exeter Academy, with an income of one hundred and fifty dollars.

*Scholarship of the Class of 1802.* Founded by the Class of 1802, with an income at present of two hundred and fifty dollars.

*Scholarship of the Class of 1814.* Founded by the Class of 1814, with an income of two hundred dollars.

*Kirkland Scholarship.* Founded by the Class of 1815, with an income at present of two hundred and fifty dollars.

*Scholarship of the Class of 1817.* Founded by the class of 1817, with an income of two hundred dollars.

*Scholarship of the Class of 1835.* Founded by the class of 1835, with an income of one hundred and fifty dollars.

*Shattuck Scholarships.* Twelve from a bequest of Dr. George Cheyne Shattuck, with an income of one hundred and fifty dollars each.

*Walcott Scholarships.* Two from the bequest of Samuel Baker Walcott, with an income of one hundred dollars each.

*Thayer Scholarships.* Twelve founded by John Eliot Thayer, with an income of three hundred dollars each.

*Bowditch Scholarships.* Twenty-three with an income of two hundred and fifty dollars each, founded by a friend of the College.

*Townsend Scholarships.* Six with an income of two hundred and fifty dollars each, founded by Mary P. Townsend.

*Story Scholarship.* Founded by Augustus Story, with an income of one hundred and fifty dollars.

*Scholarship of the Class of 1841.* Founded by the Class of 1841, with an income of about one hundred and twenty-five dollars.

*Gorham Thomas Scholarship.* With an income of two hundred and fifty dollars.

*Bigelow Scholarships.* Three from a bequest of Tyler Bigelow, with an income of two hundred and fifty dollars each.

*Toppan Scholarship.* Founded by Mrs. Ann Toppan, with an income of three hundred dollars.

*Sever Scholarship.* Founded by James Warren Sever, with an income of one hundred and seventy-five dollars.

*Sewall Scholarships.* Two founded by Samuel Sewall, with an income of two hundred and fifty dollars each.

*Hollis Scholarships.* Two founded by Thomas and Nathaniel Hollis, with an income of one hundred and twenty-five dollars each.

*Browne Scholarship.* Founded by William Browne and his descendants.

*Morey Foundation.* From a bequest of George Morey, yielding about five hundred dollars, which may be divided into two Scholarships.

*Matthews Scholarships.* Fifteen founded by Nathan Matthews, with an income of three hundred dollars each.

*Farrar Scholarship.* Founded by Mrs. Eliza Farrar, in memory of Prof. John Farrar, with an income of about three hundred and fifty dollars.

*James Savage Scholarship.* Founded by James Savage, with an income of three hundred dollars.

*Senior Exhibition,* with an income of ninety dollars.

*Benjamin D. Green Scholarship.* Founded by Benjamin D. Green, with an income of one hundred and twenty dollars.

*William Whiting Scholarships.* Two founded by William Whiting, not yet available.

*William Samuel Eliot Scholarship.* Founded by Samuel Eliot, with an income of three hundred dollars.

*Levina Hoar Scholarship.* Founded by Levina Hoar for the town of Lincoln, with an income of two hundred dollars.

*Bassett Scholarships.* Three founded by Francis Bassett, with an income of about one hundred dollars each.

None but those who need assistance are expected to apply for Scholarships; and among applicants the highest scholars on the work of the preceding year have the preference. The assignment of some of the Scholarships, however, is affected by special provisions.

No student who has incurred a serious college censure in the course of the year will be considered a candidate for a Scholarship; nor any student who obtains leave of absence for the year in which the Scholarship would be payable.

Applications from persons who wish to be considered candidates will be received *on or before the first day of June* of each year. The nominations and appointments are made at the end of each academic year, as soon as the scales of rank for the year are prepared; except that the Bigelow Scholarships are awarded by the Corporation to Freshmen soon after their entrance. The successful candidates for other Scholarships receive one-third of the annual income immediately upon the assignment of the Scholarships, one-third in January, and the remaining one-third on the first of April following. The Scholarships for the Senior Class

are assigned before Commencement, as soon as the annual scale for that class can be prepared, and the entire annual income of the Scholarships so assigned is paid immediately.

*Aid from the Beneficiary Funds must be applied for in a separate petition.*

The Scholarships, when voted, are understood to cover the college year just ended; and the enjoyment of a Scholarship for one year will not constitute any title to a second nomination, unless the superiority for which it was originally awarded be fully maintained.

#### BENEFICIARY FUNDS.

Various other bequests and donations to the College have from time to time been made, the income of which is appropriated for the aid of deserving students in narrow circumstances. The annual amount thus appropriated is about seven hundred and fifty dollars, which has usually been distributed in gratuities ranging from fifty to one hundred dollars.

Applications for aid from the Beneficiary Fund are addressed to the Dean, and must be presented to him on or before *the first day of June*, by the student's parent or guardian, or by the student himself if of age. The application should state particularly the circumstances of the case, with the reasons for asking aid.

#### LOAN FUND.

In addition to the Beneficiary Funds above mentioned, there is a Loan Fund, the interest of which, amounting annually to more than two thousand dollars, is lent to meritorious students desirous of receiving it, in sums ranging from fifty to one hundred and fifty dollars. This fund is under the control of a Board of Trustees, in Boston. More than eight thousand dollars have been already added to the principal by reimbursements.

The applications for the Loan Fund should be left with the Dean as early as *the first day of December*.

The Trustees of the Fund request applicants for loans to observe the following rules:—

“1. To address their applications to the Treasurer of the Loan Fund, Hon. John Lowell, Boston, and give them to the Dean.

“2. To set forth their circumstances fully, as they would do on making application to an individual for like aid.

“3. To state what aid they have received, or expect to receive, from the College.

“4. If an applicant is under twenty-one years of age, his application must be accompanied by the written approval of his parent or guardian.”

#### MONITORSHIPS, &c.

Besides the foregoing provisions for the aid of meritorious students, the various monitorships, &c., amount to about twelve hundred dollars a year, which may be considered an addition, to that extent, to the beneficiary means of the College.

## EXPENSES.

The necessary expenses of an UNDERGRADUATE, not including clothing and cost of living in the Summer Vacation, are from \$400 to \$650 a year.

The chief items are the following:—

Instruction, Library, Lecture-room, Gymnasium, &c.,	\$150.00	\$150.00
Rent and care of Room, in the College Buildings		
(with chums) . . . . .	from 80.00	to 100.00
Board for 88 weeks . . . . .	,, 152.00	,, 804.00
Text-books (average) . . . . .	,, 20.00	,, 25.00
Total . . . . .	,, \$352.00	,, \$579.00

The tuition-fees for UNMATRICULATED STUDENTS will be computed at the rate of \$15 for one hour a week of instruction during the Academic Year, up to \$150, the fees covering examinations and certificates. For any laboratory course the fee will be \$150 a year.

Other expenses vary with the economy of each student. Wood and coal ready for use are delivered at the students' rooms, by Cambridge and Brighton dealers, at market prices. The rent of furnished rooms in private houses in the immediate vicinity of the College is from \$75 to \$250 per annum. By going half a mile from the College, the student may get cheaper rooms. The price of board at present is from \$4.00 to \$8.00 a week. Students living in college buildings find their own beds and furniture.

Students joining the Harvard Dining Association can board at Memorial Hall at cost. It is expected that the cost of board per week will be about four dollars and a half.

### COLLEGE BILLS.

The bills containing college charges are made out by the Bursar, and are to be called for at his office. Each bill will contain one-third of the annual charges. The first bill will be ready for delivery December 22, and is to be paid on or before January 12. The second bill will be ready for delivery March 15, and is to be paid on or before April 5. The third bill will be ready for delivery one week before Commencement, and is to be paid on or before October 10; but the third bill of the *Senior year* must be paid at least one day before Commencement. Students who leave College before graduating must pay in full all college bills at the time of leaving.

The Bursar is authorized to make the following deduction from the full year's tuition-fee in Harvard College, in cases of absence during part of the year, without regard to the cause of absence:—

For absence not less than three consecutive months at any time of the year, \$30 to be deducted.

For absence during the whole year, not including the final examinations, \$100 to be deducted.

Students claiming deductions as above must file, at the Bursar's office, a certificate from the Dean as to the fact and duration of absence.

#### ASSIGNMENT OF COLLEGE ROOMS FOR 1877-78.

Students living in College Buildings, who wish to re-engage their present rooms for the Academic Year 1877-78, must sign a new room-agreement at the Bursar's office before April 1. Where only one of two room-mates signs the room-agreement, the name of the other must be given. The whole rent of the room and other room expenses will be charged to the person who signs the room-agreement.

Seniors, and graduates whose connection with the University has not been severed, can re-engage their present rooms or apply for other rooms, for their own occupation only, provided they have decided to pursue their studies in Cambridge during the next year.

On April 2 will be made out a list of college rooms not re-engaged, for which members of the College and of the Scientific School (and graduates as above mentioned) can apply. This list, with blank forms of application, will be given to all who ask for it at the Bursar's office after April 9. No applications will be considered unless made upon these blanks. On April 17, the assignment of rooms will be made by lot, and all applications for rooms must be filed at the Bursar's office before that day. The result of the allotment will be published as soon as possible; and no student will be entitled to the room allotted him, unless the room-agreement shall have been signed at the Bursar's office before April 25.

On April 26 will be made out a descriptive list of rooms available for persons intending to enter College in the summer of 1877, and for graduates intending to pursue their studies at Cambridge, whose connection with the University has been severed. This list, with blank forms of application and price lists, will be ready for delivery from the Bursar's office after May 1. Upon request, the list and blanks will be mailed to any address. The blank application will contain a certificate to be signed, in the case of candidates for admission in 1877, by the instructor of the applicant, stating that the applicant intends to enter Harvard College in the summer of 1877, and specifying the examination (July or September) at which he will apply for admission. No application will be considered in which all the blanks are not duly filled out. On May

15, the allotment will be made; and all applications must be filed at the Bursar's office before that date. Successful applicants will be notified as soon as possible of the result of the allotment, and a blank form of agreement and bond will be forwarded at the same time. The agreement binds the applicant to retain his room for one year, and pay the full rent in case he enters College; and, in case of failure to enter College, to forfeit one quarter's rent, if the Bursar is unable to assign the room to some member of the University. This agreement and bond must be duly executed and filed at the Bursar's office before June 1, or the applicant's rights under the allotment will be lost. No transfer of rooms will be allowed.

Students are advised not to apply for or engage rooms until they have fully decided that they wish to occupy them, as every student who engages a room is required to pay the full year's rent, whether he uses the room or not. No student will acquire by the assignment of a room to him any right to transfer that room to another, or to hold the room in his own name and allow another, except his room-mate, to occupy it; and no such transfer or holding will be permitted. When one of two room-mates retains a room in his name, and the other draws one in the allotment, they will be required to choose which room they will keep, and to surrender the other to the Bursar before April 25.

When the tenant permanently severs his connection with the University, or obtains a leave of absence, or is suspended for the whole of the year, he can, by notifying the Bursar before September 15, cancel his room-agreement. When one of two room-mates cancels his room-agreement as above, the agreement of the other will be cancelled also. The other room-mate will be allowed, by at once signing a new room-agreement, to keep the room originally assigned to the two; but, if he does not at once re-engage it, the Bursar will be at liberty to assign it to other tenants.

After June 1, all rooms unengaged will be disposed of by lot; a list of the rooms to be allotted having been posted conspicuously at least one day. All rooms given up during the summer vacation will be assigned by lot, until September 15, to students who leave their names and addresses at the Bursar's office for that purpose. After September 15, such rooms will be assigned by lot to those who apply in person.

Exchanges of rooms of about equal value will be permitted, when it is satisfactorily shown that such exchanges are not of the nature of a sale. Exchanges will not be valid, unless each party occupies the room standing in his name after the exchange. All exchanges must be made at the Bursar's office before the beginning of the Academic Year, as the full year's rent and all charges for gas and damages will be collected from those to whom the rooms stand charged on the Bursar's books at the beginning of the year.



## PRICES OF COLLEGE ROOMS

1877-78.

In each case the price is for the whole room from the beginning of the Academic Year until the next Commencement, and includes the daily care of the room. Rooms in Divinity Hall are rented to Divinity students for \$5 less than the prices named below.

- \$25. College House, Nos. 13, 35.  
 \$40. Divinity Hall, Nos. 6, 8, 10.  
 \$44. Hollis and Stoughton, Nos. 1, 2, 3, 4, 18, 19, 20.  
 \$45. College House, Nos. 57, 58; Divinity Hall, Nos. 4, 12.  
 \$50. College House, Nos. 22, 44, 66; Divinity Hall, Nos. 2, 3, 11, 14.  
 \$55. Divinity Hall, Nos. 1, 13.  
 \$56. Hollis and Stoughton, Nos. 13, 14, 16.  
 \$60. { Hollis and Stoughton, Nos. 5, 6, 8, 9, 10, 12, 17, 22, 23, 24, 26, 27,  
 28; College House, Nos. 3, 4, 7, 8, 9, 10, 15, 16, 18, 19, 20, 25,  
 26, 27, 28, 30, 31, 32, 37, 38, 39, 40, 41, 42, 46, 48, 50, 52, 54,  
 60, 62, 64, 70; Divinity Hall, Nos. 20, 22, 24, 34, 38; Grays,  
 Nos. 33, 35.  
 \$65. Divinity Hall, Nos. 18, 19, 21, 23, 26, 28, 32, 33, 37, 40, 42; Hollis  
 and Stoughton, Nos. 29, 32.  
 \$70. { College House, Nos. 11, 12, 33, 34, 47, 49, 51, 53, 59, 61, 63, 67,  
 68, 69; Divinity Hall, Nos. 17, 25, 31, 39.  
 Hollis and Stoughton, Nos. 11, 15, 25; 30, 31; College House,  
 \$75. { Nos. 1, 2, 21, 23, 43, 45, 55, 65; Divinity Hall, Nos. 16, 27, 30,  
 41; Grays, Nos. 3, 13, 16, 17, 19, 34, 37, 49, 61; Weld, Nos. 25,  
 26, 52, 53.  
 \$80. Divinity Hall, Nos. 15, 29.  
 \$100. { Grays, Nos. 1, 7, 11, 14, 18, 21, 23, 25, 27, 29, 31, 36, 39, 41, 46;  
 Weld, Nos. 24, 27, 51, 64; Matthews, Nos. 27, 28, 57, 58;  
 Wadsworth House, Nos. 9 and 10, 11 and 12; College House, No.  
 29; Holyoke, No. 45.  
 \$125. Grays, Nos. 2, 9, 16, 22, 26, 30, 40, 47, 50, 52; Matthews, Nos.  
 25, 26, 29, 30, 55, 56, 59, 60; Holyoke, Nos. 1, 2.  
 \$150. { Grays, Nos. 4, 6, 8, 10, 12, 20, 28, 32, 38, 42, 44, 46, 48; Hol-  
 yoke, Nos. 3, 11, 39, 40, 44, 46; Thayer, Nos. 17, 18, 19, 20.  
 Thayer, Nos. 23, 24, 30, 35, 36, 41, 42, 47, 48, 53, 59, 60, 65, 66;  
 \$175. { Weld, Nos. 3, 5, 8, 13, 14, 19, 20, 30, 32, 34, 35, 40, 41, 46, 47;  
 Holyoke, Nos. 12, 28, 29, 34.  
 Thayer, Nos. 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 21,  
 22, 25, 26, 27, 28, 31, 32, 33, 34, 37, 38, 39, 40, 43, 44, 45, 46,  
 49, 50, 51, 52, 55, 56, 57, 58, 61, 62, 63, 64, 67, 68; Matthews,  
 \$200. { Nos. 3, 4, 10, 16, 22, 33, 34, 46, 52; Holyoke, Nos. 7, 17, 18,  
 22, 23, 37, 41, 42, 43, 47; Wadsworth House, Nos. 1 and 2, 3  
 and 4, 5 and 6, 7 and 8, 13.  
 \$225. { Weld, Nos. 4, 6, 9, 12, 15, 18, 21, 22, 23, 31, 33, 39, 42, 45, 48,  
 49, 50; Matthews, Nos. 5, 6, 9, 15, 19, 20, 21, 39, 45, 49, 50,  
 51; Holyoke, Nos. 26, 30, 31, 32, 35, 36.  
 Holworthy, Nos. 1, 2, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17,  
 18, 19, 21, 22, 23, 24; Weld, Nos. 1, 2, 10, 11, 16, 17, 28, 29,  
 \$250. { 37, 38, 43, 44; Matthews, Nos. 1, 2, 8, 13, 14, 23, 24, 31, 32,  
 35, 36, 37, 38, 43, 44; Holyoke, Nos. 4, 9, 10, 13, 14, 15, 20, 21,  
 24, 25, 38.  
 \$275. Matthews, Nos. 53, 54; Holyoke, Nos. 8, 19.  
 \$300. { Matthews, Nos. 11, 12, 17, 18, 41, 42, 47, 48; Holyoke, Nos. 5,  
 16, 27.

# THE DIVINITY SCHOOL.

## FACULTY.

- CHARLES W. ELIOT, LL.D., *President.*  
OLIVER STEARNS, D.D., *Dean, and Parkman Professor of Theology.*  
EZRA ABBOT, D.D., LL.D., *Bussey Professor of New Testament Criticism and Interpretation.*  
EDWARD J. YOUNG, A.M., *Hancock Professor of Hebrew, and Dexter Lecturer on Biblical Literature.*  
CHARLES C. EVERETT, D.D., *Bussey Professor of Theology.*

## OTHER INSTRUCTORS.

- JAMES FREEMAN CLARKE, D.D., *Lecturer on Ethnic Religions.*  
STACY BAXTER, *Professor of Elocution.*  
GEORGE HERBERT PALMER, A.M., *Assistant Professor of Philosophy.*  
HOWARD NICHOLSON BROWN, *Instructor in Homiletics.*  
ERNEST YOUNG, PH.D., *Instructor in History.*

## STUDENTS.

### Resident Graduates.

- |  |                       |        |
|--|-----------------------|--------|
| Christy, Cyrus William, A.B. ( <i>Antioch Coll.</i> ), D.B., | <i>Cambridge.</i>     | D. 29. |
| Cummings, John Osgood, D.B.,                                 | <i>Westford,</i>      | D. 19. |
| Hayward, Edward Farwell,                                     | <i>North Sudbury,</i> | D. 15. |
| Reeby, William Henry, D.B.,                                  | <i>Worcester,</i>     | D. 25. |

### Senior Class.

- |  |                          |         |
|--|--------------------------|---------|
| Hall, Lyman Bronson, A.B. ( <i>Oberlin Coll.</i> ),      | <i>Homestead, Mich.,</i> | D. 2.   |
| Hornbrook, Francis Bickford, A.B. ( <i>Ohio Univ.</i> ), | <i>Weston,</i>           | Weston. |
| Lloyd, William James, A.B.,                              | <i>Cambridge,</i>        | D. 31.  |
| Pratt, John Mason Williams, A.M.,                        | <i>Hyde Park,</i>        | D. 21.  |
| Sinclair, Charles Frederic,                              | <i>Chicago, Ill.,</i>    | D. 30.  |

### Middle Class.

- |   |                            |        |
|---|----------------------------|--------|
| Bodge, George Madison, A.M. ( <i>Bowd. Coll.</i> ), | <i>Stevens Plains, Me.</i> |        |
| Lombard, Charles Parker,                            | <i>Boston,</i>             | D. 16. |
| Maglathlin, Edward Bartlett,                        | <i>Boston,</i>             | D. 39. |
| Meakin, Frederick, A.B. ( <i>Antioch Coll.</i> ),   | <i>Yellow Springs, O.,</i> | D. 17. |
| Osgood, Edmund Quincy Sewall, A.B.,                 | <i>Cohasset,</i>           | C. 67. |

### Junior Class.

- |                                    |                         |        |
|------------------------------------|-------------------------|--------|
| Gustafson, Axel Carl Johan,        | <i>Kägeröd, Sweden,</i> | D. 28. |
| Fenollosa, Ernest Francisco, A.B., | <i>Sulem,</i>           | D. 18. |

Norman, Henry,	<i>Leicester, Eng.,</i>	98 Charles St.,	Boston.
Robinson, Harry William,	<i>Cambridge,</i>	7 Lambert Ave.	
Taylor, David,	<i>Bridgeton, Me.,</i>		D. 32.
Tufts, William Whittemore, A.B.			
( <i>College of New Jersey</i> ),	<i>Cambridge,</i>	21 Mellen St.	
Weston, Samuel Burns, A.B.			
( <i>Antioch Coll.</i> );	<i>Dubuque, Iowa,</i>		D. 13.

**Special Students.**

Brunton, William,	<i>West Randolph, Vt.,</i>	Hanson St.,	Somerville.
Montague, Richard, A.B.	<i>Westboro',</i>		G. 13.

**TERMS OF ADMISSION.**

Candidates for admission to the Divinity School are expected to present themselves on the first day of the academic year. If unknown to the Faculty, they are to produce testimonials of their moral and serious character.

All Bachelors of Arts will be admitted without examination. Other candidates for admission to the full course must have received a good English education, and must also pass an examination in some of the Latin classical authors, and in the Greek text of the Gospels.

Any person competent to pursue to advantage a partial course will be admitted, for a period of not less than one year, simply on producing satisfactory evidence of character and promise. He shall pursue such studies as the Faculty may prescribe; and may receive, on passing satisfactory examinations, a certificate stating the length of time he has studied in the School.

Candidates for admission to an advanced standing must be acquainted with the studies previously pursued by the class which they propose to enter.

**COURSE OF INSTRUCTION.**

The course of instruction comprises Lectures, Recitations, written Essays, and other exercises, on all the subjects usually included in a system of theological Education, embracing, —

- The Hebrew Language;
- The Principles of Criticism and Interpretation;
- The Literature, Canon, and Exegesis of the Old and New Testaments;
- Biblical Archaeology and Geography;
- Natural Religion and the Evidences of Revealed Religion;
- The Philosophy of Religion;
- Systematic Theology;
- Philosophical and Christian Ethics,
- The Ethnic Religions, and the Creeds of Christendom;
- Ecclesiastical History, and the History of Christian Doctrines;
- Church Polity and Administration;

The Composition and Delivery of Sermons ; Liturgies and the offices of Public Worship ; and the duties of the Pastoral Office.

In Elocution, Professor Baxter gives instruction every week.

Devotional services are held daily in the chapel of Divinity Hall ; conference meetings are also regularly held ; both of which are attended by the professors and students. All the members of the School have exercises in the practice of extemporaneous speaking, and the members of the Middle and Senior Classes preach in turn in the chapel.

The students have access to the Divinity Library, which consists of 17,000 volumes ; and also to the College Library, which consists of 160,000.

The Full Course occupies three years, on completing which to the satisfaction of the Faculty students are entitled to the degree of Bachelor of Divinity.

Students may remain, after completing their course, and continue their studies during a fourth year under direction of the Faculty.

The instruction given in the other departments of the University, with the exception of exercises carried on in the special laboratories, is also open, without additional charge, to students of the Divinity School. Those who wish to avail themselves of this privilege must procure from the Dean a certificate of membership in the School.

#### DEGREES.

The Degree of BACHELOR OF DIVINITY will be conferred by the University on those students who shall have pursued a course of Theological Study for at least one year in this School, and who shall pass the required examination. It will also be conferred on former graduates, who shall show that they are qualified for it. Applicants for the degree must, four weeks before Commencement, present their names, with a Theological Thesis, to the Faculty, and must be prepared to be examined at such times as may be appointed by the several professors.

The examination will be both oral and written, —

In the Hebrew, Greek, Latin, and German languages, including translations from portions of the Pentateuch and Psalms, from the New Testament in Greek, from the Vulgate in Latin, and from some standard work of Theology in German ;

In the Literature and Exegesis of the Old and New Testaments ;

In the History of the Church antecedent to the Reformation ;

In the History and Grounds of Opinion in Natural Theology and Christian Doctrine, and in the External and Internal Evidences of Christianity ;

In the Philosophy of Religion ;

In the History of Ethnic Religions ;

In the History and Principles of Moral Science, and the Ethics of Christianity ;

In Homiletics, Liturgies, Church Organization, and Government.

The degree of **MASTER OF ARTS** will be conferred upon persons who, being both Bachelors of Arts and Bachelors of Divinity, shall pursue at the University, for at least one year, an approved course of study in Divinity, and shall pass an examination upon that course. The degree of Bachelor of Divinity must have been given by this University; that of Bachelor of Arts, by this University, or by any institution having an equivalent course of study for the degree of Bachelor of Arts.

Applications for this degree should be addressed to Professor J. M. PEIRCE, Secretary of the Academic Council. For further information, see pages 140-144.

#### PECUNIARY AID.

Pecuniary aid is afforded from various sources.

The income of the Hopkins Fund is awarded by a Board of Trustees to six students, who must need aid, who must have received the degree of A.B. or A.M., and have given evidence of diligent and successful study. The shares will probably amount to at least three hundred and fifty dollars each.

The income of the Williams Fund is awarded by the Society for promoting Theological Education to students, recommended by the Faculty, who comply with the requisitions of that Society. According to the terms of this bequest, the income is to be given to "such indigent students as shall be preparing themselves for the ministry, and shall be deemed most meritorious and worthy of assistance;" and "no student shall be debarred of this charity by reason of not having had a degree at a college, or being educated at any other college, or entertaining any peculiar modes of faith, it being always understood that he must be a Protestant." The annual income of the Williams Fund will allow about one hundred and fifty dollars to each beneficiary; but the sum will vary with the number of candidates.

There are also nine Scholarships established in the School, varying in their annual income from one hundred and twenty-five to two hundred and sixty dollars. They are assigned by the Corporation, on the recommendation of the Faculty, to those students who are deserving, and who need assistance.

These Scholarships are:—

The **CHAPMAN SCHOLARSHIP**, founded by the Rev. George Chapman, with an income of one hundred and forty dollars.

Two **CARY SCHOLARSHIPS**, founded by Thomas Cary, Esq., with an income of one hundred and seventy-five dollars each.

Three **SCHOLARSHIPS ON THE JACKSON FOUNDATION**, founded by Miss Sarah Jackson, with an income of two hundred and sixty dollars each.

The **CLAPP SCHOLARSHIP**, founded by Josiah Clapp, Esq., with an income of one hundred and twenty-five dollars.

The **KENDALL SCHOLARSHIP**, founded on the donation of Miss Nancy Kendall, with an income of one hundred and forty dollars.

The **JONAS H. KENDALL SCHOLARSHIP**, founded by Jonas H. Kendall, Esq., with an income of one hundred and forty dollars.

In some cases, beneficiary aid from more than one of the above sources may be given to a single student.

In special cases, some assistance from other sources may be obtained for students who give promise of usefulness; and all who are qualified to enter upon the regular course, and who faithfully pursue it, may be enabled to meet their necessary expenses.

Applications for scholarships and for pecuniary aid must be addressed in writing to the Dean, before December 1.

The Society for promoting Theological Education in Harvard University, by which the Divinity School was founded, declared in its constitution that the funds of the School should be appropriated "to assist young men of competent talents, pure morals, and piety, in preparing themselves for the Christian ministry;" and it prescribed that "every encouragement be given to the serious, impartial, and unbiassed investigation of Christian truth, and that no assent to the peculiarities of any denomination of Christians shall be required either of the Instructors or Students."

#### BONDS AND EXPENSES.

Students are required to reside in or near Divinity Hall. Each student must give a bond in the sum of two hundred dollars, signed by two bondsmen, one of whom must be a citizen of Massachusetts, for the payment of term-bills; or, in place of a bond, deposit with the Bursar a sum of money sufficient for the payment of all dues to the University. A copy of the class-books, with the exception of the Hebrew and Greek Scriptures, will be furnished on loan.

The chief items of expense for the year are:—

For rent and care of room . . . . .	\$60.00
For tuition . . . . .	50.00
For board at \$3.75 a week . . . . .	142.50
For fuel . . . . .	25.00
	\$277.50

To which are to be added the expenses of washing and gas.

The price of rooms in Divinity Hall varies, according to their situation and desirableness, from \$40 to \$75 per year.

Each room is supplied with a bedstead, mattress, bureau, and table. Stoves and other furniture must be provided by the occupant. Washing is done for seventy-five cents per dozen pieces. It is probable that the price of board will not much exceed three dollars and a half per week at the Club which has been formed among the students. The price in boarding-houses varies from five to eight dollars per week.

# THE LAW SCHOOL.

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## FACULTY.

CHARLES W. ELIOT, LL.D., *President.*

CHRISTOPHER C. LANGDELL, LL.D., *Dean, and Dane Professor of Law.*

CHARLES S. BRADLEY, LL.D., *Bussey Professor of Law.*

JAMES B. THAYER, LL.B., *Royall Professor of Law.*

JOHN C. GRAY, A.M., *Story Professor of Law.*

JAMES BARR AMES, A.M., *Assistant Professor of Law.*

---

JOHN HIMES ARNOLD, *Librarian.*

## STUDENTS.

### Resident Bachelors of Laws.

NAME.	RESIDENCE.	ROOM.
Elliot, William Henry, A.B., LL.B.,	<i>Keene, N.H.,</i>	Boston.
Harding, Herbert Lee, A.B., LL.B.,	<i>Boston,</i>	H. 21.
Hill, Edward Bruce, A.B., LL.B.,	<i>Worcester,</i>	T. 54.
Ivy, Jesse C, A.B., LL.B.,	<i>Gainesville, Ala.,</i>	S. 7.
McMillan, William Gordon, A.B.,		
LL.B.	<i>New York, N.Y.,</i>	127 Mt. Auburn St.
Stevens, Charles Frank, LL.B.,	<i>Worcester,</i>	404 Harvard St.

### Second Year's Students.

Andrews, Morton Davis,	<i>Bristol, R.I.,</i>	64 Brattle St.
Appleton, John Henry, A.B.,	<i>Cambridge,</i>	S. 21.
Austin, Henry,	<i>Boston,</i>	404 Harvard St.
Blaney, George Andrew, A.B.,	<i>Woburn,</i>	C. 40.
Bowman, Franklin Blanchard,	<i>East St. Louis, Ill.,</i>	28 Dunster St.
Brandeis, Louis Dembitz,	<i>Louisville, Ky.,</i>	18 Avon St.
Buck, Henry Hall, A.B.,	<i>Boston,</i>	5 Wadsworth House.
Clark, Henry Alden, A.B.,	<i>Cambridge,</i>	11 Wadsworth House.
Cochran, Andrew McConnell Jan- uary, A.B. ( <i>Centre Coll., Ky.</i> ),	<i>Maysville, Ky.,</i>	80 Mt. Auburn St.
Cunningham, Frederick, A.B.,	<i>Boston,</i>	25 Holyoke St.
Curry, William,	<i>Windsor, N.S.,</i>	5 Church St.
Dana, Richard Henry, A.B.,	<i>Boston,</i>	8 Wadsworth House.
Darling, Charles Ross, A.B. ( <i>Am- herst Coll.</i> ),	<i>Boston,</i>	26 Ash St.

Davis, Benjamin Wood, A.B.		
( <i>Yale Coll.</i> ),	<i>Cincinnati, O.</i> ,	28 Dunster St.
Dodge, Edward Sherman, A.B.,	<i>Cambridge</i> ,	72 Sparks St.
Douglas, Walter Bond, A.B.		
( <i>Westminster Coll., Mo.</i> ),	<i>Brunswick, Mo.</i> ,	18 Avon St.
Dudley, Warren Preston,	<i>Cambridge</i> ,	17 Dunster St.
Eaton, Abijah H.,	<i>St. John, N.B.</i> ,	86 North Ave.
Ellis, Arthur Blake, A.B.,	<i>Boston</i> ,	106 Marlboro St., Boston.
Emmons, Arthur Brewster, PH.D.		
( <i>University of Leipsic</i> ),	<i>Boston</i> ,	8 Mt. Vernon Pl., Boston.
Foulkes, Franklin Pierce, A.B.,	<i>Toledo, O.</i> ,	H'ke 29.
Fox, William Henry, A.B.		
( <i>Univ. of Mich.</i> ),	<i>Detroit, Mich.</i> ,	13 Kirkland St.
Gammans, George Gordon, A.B.,	<i>Newton Centre</i> ,	H. 30.
Gano, William Beriah,	<i>Dallas, Texas</i> ,	13 Avon St.
Gerry, Elbridge, A.B. ( <i>Bowdoin</i>		
<i>Coll.</i> ),	<i>Portland, Me.</i> ,	80 Mt. Auburn St.
Gillett, Frederic Huntington, A.B.		
( <i>Amherst Coll.</i> ),	<i>Westfield</i> ,	14 Ware St.
Gove, William Henry, A.B.,	<i>Lynn</i> .	S. 5.
Gray, Reginald, A.B.,	<i>Boston</i> ,	6 North Ave.
Groesbeck, Telford, A.B. ( <i>Prince-</i>		
<i>ton Coll.</i> ),	<i>Cincinnati, O.</i> ,	10 Oxford St.
Gusdorf, Samson,	<i>Fremont, O.</i> ,	22 Mt. Auburn St.
Hanna, James Ross, A.B. ( <i>Mon-</i>		
<i>mouth Coll., Ill.</i> ),	<i>Monmouth, Ill.</i> ,	63 Oxford St.
Hayes, Birchard Austin, B.L. ( <i>Corn-</i>		
<i>ell Univ.</i> ),	<i>Fremont, O.</i> ,	22 Mt. Auburn St.
Hoyt, James Humphrey, A.B.		
( <i>Brown Univ.</i> ),	<i>Cleveland, O.</i> ,	127 Mt. Auburn St.
Judkins, William Tyson,	<i>Cincinnati, O.</i> ,	10 Oxford St.
Kearns, John,	<i>Boston</i> ,	948 Harrison Ave.
Keener, William Albert, A.B.		
( <i>Emory Coll.</i> ),	<i>Augusta, Ga.</i> ,	63 Oxford St.
Komura, Jutaro,	<i>Obi, Japan</i> ,	46 Trowbridge St.
Lawrence, Abbott, A.B.,	<i>Boston</i> ,	9 Linden St.
Livermore, Edward E.,	<i>Eastport, Me.</i> ,	158 Mt. Auburn St.
Long, Victor Hugo, LL.B. ( <i>Cin-</i>		
<i>cinnati Coll.</i> ),	<i>Cincinnati, O.</i> ,	26 Mt. Auburn St.
Lyman, George Hinckley, A.B.,	<i>Boston</i> ,	9 Linden St.
McDivitt, Thomas Corkhill,	<i>Mt. Pleasant, Iowa</i> ,	44 Holyoke St.
McGinness, Geo. Washington,	<i>Cambridge</i> ,	239 Cambridge St.
Monsarrat, James Melville,	<i>Honolulu, Hawaiian Is.</i> ,	713 Cambridge St.
Myler, John Thomas,	<i>Allegheny City, Pa.</i> ,	28 Dunster St.
Norcross, Grenville Howland, A.B.,	<i>Boston</i> ,	9 Commonwealth Ave., Bost.



Patton, John Sidney, A.B.,	Cambridge,	M. 40.
Pierce, Edward Peter,	Fitchburg,	H'ke 39.
Prior, Emory Albert, B.S. ( <i>Buchtel Coll.</i> ),	Cuyahoga Falls, O.,	13 Avon St.
Richards, William Reuben, A.B.,	Boston,	14 Plympton St.
Ritchie, James Johnston,	Annapolis, N.S.,	13 Remington St.
Starbuck, Henry Pease, A.B.,	Nantucket,	Dolton Block 16.
Stauffer, Isaac Hull, A.B. ( <i>Mt. St. Mary's Coll.</i> ),	New Orleans, La.	6 North Ave.
Thayer, Albert Smith, A.B.,	Worcester,	M. 45.
Thayer, Eugene Van Rensselaer,	Boston,	25 Holyoke St.
Thayer, Hollis, A.B.,	Boston,	G. 42.
Thompson, Joseph Alfred,	Princeton, Ill.,	1 Revere St.
Tuttle, William Harrison, A.B. ( <i>Williams Coll.</i> ),	Arlington,	14 Ware St.
Voris, Edwin Francis, A.B. ( <i>Buchtel Coll.</i> ),	Akron, O.	13 Avon St.
Warren, Samuel Dennis, A.B.,	Boston,	19 Hilliard St.
Webster, Henry Seymour, A.B. ( <i>Yale Coll.</i> ),	Quincy, Ill.,	80 Wendell St.
Wetmore, Charles Whitman, A.B.,	Marquette, Mich.,	G. 24.
White, Albert Scott, A.B. ( <i>Wesley Coll.</i> ),	St. John, N.B.,	25 Mt. Auburn St.
Wilson, Frank,	Orleans,	S. 18.
Wilson, William Power,	Boston,	14 Plympton St.

## First Year's Students.

Aldrich, Harry Leprelate, A.B. ( <i>Brown Univ.</i> ),	Providence, R.I.,	17 Kirkland St.
Alger, Alpheus Brown, A.B.,	Cambridge,	Mt. Vernon St.
Armstrong, Henry Eliot,	New York, N.Y.,	10 Frisbie Pl.
Aston, Eugene Nelson, A.B.,	Springfield,	C. 27.
Barrett, Henry Hudson, A.B.,	Malden,	H'y 23.
Barrows, Charles Henry, A.B.,	Springfield,	H. 9.
Bartlett, Frederick Carew Smythe, A.B.,	New Bedford,	17 Dunster St.
Beach, Morgan W.,	Forestville, Conn.,	60 Mt. Auburn St.
Bell, Victor B.,	Kansas City, Mo.,	717 Cambridge St.
Bicknell, Edward, A.B.,	Boston,	48 Somerset St., Boston.
Blandy, Frederic Addison, A.B.,	Zanesville, O.,	W. 88.
Botume, John Franklin, A.B.,	Stoneham,	T. 46.
Bowditch, Alfred, A.B.,	Jamaica Plain,	M. 87.
Bradford, George Hillard, A.B.,	Boston Highlands,	39 Brattle St.
Bradley, William Mason, A.B.,	Bucksport, Me.,	W. 23.

Brandau, Charles,	<i>Baltimore, Md.</i>	28 Dunster St.
Brownlow, William Albert, A.B.,	<i>Cambridge,</i>	16 Perry St.
Campbell, Charles Macalester,	<i>Philadelphia, Pa.,</i>	22 Mt. Auburn St.
Campbell, John Lloyd,	<i>Olney, Ill.,</i>	28 Dunster St.
Casey, Albert William,	<i>New Bedford,</i>	Newton Highlands.
Congdon, Isaac Edward, A.B. ( <i>Cornell Coll., Iowa,</i> )	<i>Omaha, Neb.,</i>	56 Mt. Auburn St.
Croswell, Simon Greenleaf, A.B.,	<i>Cambridge,</i>	19 Ash St.
Cumming, Allan Percy,	<i>Paris, France,</i>	717 Cambridge St.
Cumming, George Miller, A.B.,	<i>Pottsville, Pa.,</i>	890 Main St.
Curtis, Benjamin Robbins, A.B.,	<i>Boston,</i>	52 Brattle St.
Cutler, Walter Salisbury,	<i>Albany, N. Y.,</i>	62 Brattle St.
Cushing, William Erastus, A. B. ( <i>Western Reserve Coll.,</i> )	<i>Cleveland, O.,</i>	10 Frisbie Pl.
Davis, Harry Edgar, A.B. ( <i>Coll. of New Jersey,</i> )	<i>Washington, D. C.,</i>	100 Mt. Auburn St.
Du Bois, Loren Griswold, A.B.	<i>New York, N. Y.,</i>	22 Church St.
Duff, William Frederic, A.B.,	<i>Dedham,</i>	W. 23.
Eaton, Amasa Mason,	<i>Providence, R. I.,</i>	42 Garden St.
Emmons, Willis Talmon,	<i>Saco, Me.,</i>	69 Brattle St.
Fessenden, Oliver Griswold,	<i>Stamford, Conn.,</i>	106 Inman St.
Fisher, Williamson,	<i>Woodstock, N. B.,</i>	88 Mt. Auburn St.
Fiske, Andrew, A. B.,	<i>Boston,</i>	62 Brattle St.
Gale, Allan Murray,	<i>New Haven, Conn.,</i>	887 Harvard St.
Galvin, John Edward,	<i>South Boston,</i>	116 Gold St., South Boston.
Gardiner, Robert Hallowell, A.B.,	<i>Brookline,</i>	M. 36.
Goettinger, John Spurlock,	<i>Berlin, Prussia,</i>	20 Dunster St.
Grant, Robert, PH. D.,	<i>Boston,</i>	5 Linden St.
Green, Herbert, A. B.,	<i>Brooklyn, N. Y.,</i>	22 Church St.
Hains, James Brooks, A. B. ( <i>Wabash Coll.,</i> )	<i>New Albany, Ind.,</i>	105 Inman St.
Hannah, James Ambrose,	<i>Woodstock, N. B.,</i>	88 Mt. Auburn St.
Harding, Emor Herbert, A. B.,	<i>Boston,</i>	8 Holyoke St.
Hartshorne, Charles Robinson, A. B. ( <i>Haverford, Coll.,</i> )	<i>Brighton, Md.,</i>	84 Mt. Auburn St.
Heisler, Henry Egbert,	<i>Wilmington, Del.,</i>	18 Mt. Auburn St.
Herrmann, James, S. B. ( <i>Santa Clara Coll.,</i> )	<i>San Francisco, Cal.</i>	10 Frisbie Pl.
Hobart, George Burnap, A. B.,	<i>East Bridgewater.</i>	30 Mt. Auburn St.
Howland, Henry, A. B., PH. D. ( <i>Univ. of Heidelberg,</i> )	<i>Newton,</i>	1 Wadsworth.
Hull, Walter Cluett,	<i>Poughkeepsie, N. Y.,</i>	60 Mt. Auburn St.
Ilsley, James Keeler, A. B. ( <i>Univ. of Michigan,</i> )	<i>Milwaukee, Wis.,</i>	11 Sumner St.
Jones, John Richard,	<i>Olyphant, Pa.,</i>	717 Cambridge St.

Kaneko, Nao Tsgu,	<i>Fukuoka, Japan,</i>	46 Trowbridge St.
Kingsbury, Edward Martin, A.B.,	<i>Grafton,</i>	30 Mt. Auburn St.
Kinney, Guy Worth, A.B. ( <i>West- ern Reserve Coll.</i> ),	<i>Cleveland, O.,</i>	10 Frisbie Pl.
Lee, Eliot Cabot, A.B.,	<i>Boston,</i>	G. 44.
McDaniel, Samuel Walton,	<i>Cambridge,</i>	69 Dana St.
McInerney, George Valentine,	<i>Kingston, N.B.,</i>	88 Mt. Auburn St.
McKelleget, Richard Joseph,	<i>Cambridge,</i>	267 Cambridge St.
Maddux, Lafayette Jackson, A.B. ( <i>Pacific Methodist Coll.</i> ),	<i>Fulton Station, Cal.,</i>	4 Centre St.
Mahin, Frank Webster,	<i>Muscatine, Iowa,</i>	10 Mellen St.
Malone, Richard, A.B. ( <i>Mt. St. Mary's Coll.</i> ),	<i>Philadelphia, Pa.,</i>	16 Trowbridge St.
May, George,	<i>Baltimore, Md.,</i>	5 Linden St.
Maxwell, William Gray,	<i>Amsterdam, N.Y.,</i>	404 Harvard St.
Minot, Francis, A.B.,	<i>West Roxbury,</i>	89 Brattle St.
Moody, William Henry, A.B.,	<i>Haverhill,</i>	20 Dunster St.
Morawetz, Victor,	<i>Baltimore, Md.,</i>	33 Bow St.
Morrison, John Henry,	<i>Lowell,</i>	80 Mt. Auburn St.
Naphen, Henry Francis,	<i>South Boston,</i>	552 E. 7th St., So. Boston.
Nickerson, Geo. Augustus, A.B.,	<i>Jamaica Plain,</i>	10 Holyoke St.
O'Callaghan, James Sullivan, A.B.,	<i>Salem,</i>	S. 6.
O'Sullivan, Thomas,	<i>Boston,</i>	2040 Washington St., Boston.
Oterson, James Fred Jotham,	<i>Nashua, N.H.,</i>	1 Elmer St.
Oxley, James Macdonald, A.B. ( <i>Dalhousie Coll.</i> ),	<i>Halifax, N.S.,</i>	5 Church St.
Parlin, Frank Herbert, A.M. ( <i>Col- by Univ.</i> ),	<i>Hallowell, Me.,</i>	4 Austin Pl.
Parmenter, William Hale,	<i>Athol,</i>	60 Mt. Auburn St.
Park, Willis Francis, P.H.B. ( <i>Mt. Union Coll.</i> ),	<i>Mt. Union, O.,</i>	67 Dana St.
Patterson, Robert Wilson, A.B. ( <i>Coll. of New Jersey</i> ),	<i>Philadelphia, Pa.,</i>	100 Mt. Auburn St.
Perrin, William McBride, A.B. ( <i>Wash. &amp; Jeff. Coll.</i> ),	<i>Independence, Pa.,</i>	16 Oxford St.
Plimpton, George Arthur, A.B. ( <i>Amherst Coll.</i> ),	<i>Walpole,</i>	44 Holyoke St.
Preble, William Pitt, A.B.,	<i>Portland, Me.,</i>	64 Brattle St.
Read, Burton Seaman,	<i>Dorchester, N.B.,</i>	48 Holyoke St.
Reed, Warren Augustus, A.B.,	<i>Boston,</i>	22 Hancock St.
Reynolds, Ethan Allen,	<i>South Bend, Ind.,</i>	404 Harvard St.
Rice, Hugh Bernard,	<i>San Antonio, Texas,</i>	28 Dunster St.
Richardson, Homer Bartlett, A.B.,	<i>Boston,</i>	1 Little's Block.
Ricketson, Elisha Thornton,	<i>New Bedford,</i>	Boston.
Ritchie, George,	<i>Halifax, N.S.,</i>	18 Remington St.

Rivers, George Robert Russell,	<i>Boston,</i>	17 Dunster St.
A.B.,		
Roberts, Frank Willard,	<i>Biddeford, Me.,</i>	69 Brattle St.
Robinson, Edward Ames, A.B.		
( <i>Iowa Wesleyan Univ.</i> ),	<i>Mt. Pleasant, Iowa,</i>	44 Holyoke St.
Ryerson, Martin Antoine,	<i>Chicago, Ill.,</i>	82 Beck Hall.
Seligman, David Theodore, A.B.,	<i>New York, N.Y.,</i>	10 Oxford St.
Shea, Daniel Joseph,	<i>Boston,</i>	133 Charles St., Boston.
Silver, Thomas Hammond, A.B.,	<i>Wellsville, O.,</i>	64 Brattle St.
Smith, Henry St. John, A.B.,	<i>Portland, Me.,</i>	5 Linden St.
Sohier, William Davies,	<i>Boston,</i>	5 Park Sq., Boston.
Soto, Rómulo M. F., A.B. ( <i>Santa Clara Coll.</i> ),	<i>Santa Rita, Cal.,</i>	10 Frisbie Pl.
Stiles, Harry Gibbons,	<i>Allentown, Pa.,</i>	10 Mellen St.
Stimson, Frederic Jesup, A.B.,	<i>Dedham,</i>	890 Main St.
Swinington, Frederick George,		
A.B. ( <i>Middlebury Coll.</i> ),	<i>Leicester Vt.,</i>	108 Inman St.
Talbot, Thomas Lincoln, A.B.,	<i>Portland, Me.,</i>	39 Brattle St.
Tillotson, Tilghman,	<i>Boston,</i>	19 Carver St., Boston.
Tupper, Frederick Simon,	<i>Bakersfield, Vt.,</i>	26 Mt. Auburn St.
Turtle, William,	<i>Cheshire,</i>	4 Centre St.
Todd, William Frederic	<i>St. Stephen, N.B.,</i>	60 Brattle St.
Van Slyck, Cyrus Manchester,		
A.B. ( <i>Brown Univ.</i> ),	<i>Providence, R.I.,</i>	211 Harvard St.
Ware, Charles Eliot, A.B.,	<i>Fitchburg,</i>	H. 15.
Ware, John Allen,	<i>Flanagan's Mills, Texas,</i>	C. 42.
Watson, James,	<i>Trevilian's, Va.,</i>	18 Mt. Auburn St.
Watson, William Morgan, A.B.		
( <i>Wash. &amp; Jeff. Coll.</i> ),	<i>Washington, Pa.,</i>	16 Oxford St.
Weld, William Fletcher, A.B.,	<i>Nahant,</i>	M. 43.
Wheeler, Edwin Oscar,	<i>San Francisco, Cal.,</i>	85 Brattle St.
Wigglesworth, George, A.M.,	<i>Boston,</i>	H. 21.
Winslow, John Flack, A.B.,	<i>Cincinnati, O.,</i>	25 Holyoke St.
Zearing, William,	<i>Chicago, Ill.,</i>	Prospect House.

### Summary.

RESIDENT BACHELORS OF LAWS . . . . .	6
SECOND-YEAR STUDENTS . . . . .	65
FIRST-YEAR STUDENTS . . . . .	116
	187
Total . . . . .	187

# THE LAW SCHOOL.

## COURSE OF INSTRUCTION.

The design of this School is to afford such a training in the fundamental principles of English and American Law as will constitute the best preparation for the practice of the profession in any place where that system of law prevails. With this view, the course of study, which is designed to occupy the Student two full years, will comprise the following subjects :—

### FIRST YEAR.

#### REQUIRED SUBJECTS.

1. Real Property. PROF. GRAY. *Two hours a week.*
2. Contracts. ASST. PROF. AMES. *Three hours a week.*
3. Torts. ASST. PROF. AMES. *Three hours a week.*
4. Criminal Law and Criminal Procedure. PROF. THAYER. *One hour a week.*
5. Civil Procedure at Common Law. PROF. LANGDELL. *One hour a week.*

### SECOND YEAR.

#### REQUIRED SUBJECTS.

1. Evidence. PROF. THAYER. *Two hours a week.*
2. Jurisdiction and Procedure in Equity. PROF. LANGDELL. *Three hours a week.*

#### ELECTIVE SUBJECTS.

1. Real Property. PROF. GRAY. *One hour a week.*
2. Civil Procedure at Common Law. PROF. LANGDELL. *One hour a week.*
3. Civil Procedure under the New York Code. PROF. LANGDELL. *One hour a week.*
4. Trusts, Mortgages, and other Titles in Equity. PROF. BRADLEY. *Two hours a week.*
5. Sales of Personal Property. PROF. THAYER. *One hour a week.*
6. Corporations and Partnership. PROF. BRADLEY. *Two hours a week.*
7. Bills of Exchange and Promissory Notes. ASST. PROF. AMES. *One hour a week.*
8. Agency and Carriers. PROF. GRAY. *One hour a week.*

Every candidate for a degree will be required to take in the second year at least five hours a week in the elective subjects in addition to the two required subjects.

### ADMISSIONS, EXAMINATIONS, AND DEGREES.

At the beginning of the academic year 1877-78, and thereafter, graduates of colleges will be admitted as candidates for a degree, without examination, upon producing their diplomas; candidates for a degree who are not graduates of colleges will be admitted only upon passing a satisfactory examination in the following subjects:—

1. **LATIN.** Candidates will be required to translate (without the aid of grammar or dictionary) passages selected from one or more of the following books: Caesar's Commentaries, Cicero's Select Orations, and the Aeneid of Virgil.

2. **BLACKSTONE'S COMMENTARIES** (exclusive of editors' notes).

Proficiency in French, representing an amount of preparatory work equivalent to that demanded of those who offer Latin, will be accepted as a substitute for the requisition in the latter language. Candidates will be required to translate (without the aid of grammar or dictionary) passages from standard French prose authors, and also to render passages of easy English prose into French.

The Faculty will, at their discretion, permit some other language to be substituted for Latin or French, but a satisfactory examination in some language other than English will be required in all cases. The examinations will be in writing, and in judging the work of the candidates attention will be paid to spelling, punctuation, grammar, and expression.

Two examinations for admission will be held each year: one at the beginning of the summer vacation, the other at the beginning of the academic year, in the autumn.

In 1877, the first examination will be held on Thursday, June 28, at Cambridge and at Cincinnati, Ohio; and the second, on Thursday, Sept. 27, at Cambridge only. For each examination, candidates will assemble at 9 A.M.,—in Cambridge, in Dane Hall; in Cincinnati, in some place to be announced in the daily papers of that city. Candidates who are allowed to substitute some other language for Latin or French, will be examined in such language at the second examination only. *No person will be examined at any other time or place than those above specified.*

Applicants will be required, before examination, to produce certificates of good moral character.

The Faculty will accept the degree of Bachelor of Science, or other degree of similar import, instead of the degree of Bachelor of Arts, when satisfied that it represents an amount of linguistic training equal to that required of those who offer themselves for examination.

Admission to advanced standing will be allowed only upon an examination, which will be held at the beginning of the academic year, and will require of the candidates a thorough knowledge of the following books:—

Washburn on Real Property (Book I., Chapters 1 to 5 inclusive, 10 to

12 inclusive, and Chapter 14; also, the whole of Book II., except Chapter 3); Langdell's Cases on Contracts, Vol. I.; Ames's Cases on Torts, Parts I.-II.;\* Blackstone's Commentaries, Book IV.; Greenleaf on Evidence, Part V.; Ames's Cases on Pleading.\* The examination is by printed questions, which the candidates answer in writing in the presence of the examiner.

Candidates for advanced standing will also be required to pass the examination for admission as above set forth, unless they have received a degree which entitles them to admission without examination.

The examination for admission to advanced standing for the year 1877-78 will be held at Dane Hall, on Thursday and Friday, September 27, 28, beginning at 9 A. M. on Thursday. No applicant will be examined at any other time.

Persons who are not candidates for a degree may, upon producing certificates of good moral character, enter the School at any time without examination, and avail themselves of its advantages in whatever manner and to whatever extent they see fit.

All persons who, while members of the School, shall pass a satisfactory examination in course, in one or more subjects, will be entitled to a certificate, stating the length of time they have been members of the School, and specifying the subjects in which they have passed such examination.

The degree of Bachelor of Laws will be conferred upon students who, having been in the School during the whole course of two years, shall have passed satisfactory examinations at the end of the first year in the subjects of that year, and at the end of the second year in the two required subjects of that year, and in the requisite number of elective subjects; and also upon those who, having been admitted one year in advance, shall have been in the School one year, and have passed satisfactory examinations at the end of the year in the two required subjects of the second year, and in the requisite number of elective subjects; provided that no degree will be conferred until the candidate shall have attained the age of twenty-one years.

The degree of Master of Arts will be conferred upon persons who, being both Bachelors of Arts and Bachelors of Laws, shall pursue at the University, for at least one year, an approved course of study in Law, and shall pass an examination upon that course. The degree of Bachelor of Laws must have been given by this University; that of Bachelor of Arts, either by this University or by an institution having an equivalent course of study for the degree of Bachelor of Arts. Applications for this degree should be addressed to Professor J. M. Peirce, *Secretary of the Academic Council*. For further information, see pages 140-144.

\* To be obtained at the University Bookstore, Cambridge, Mass.

### LENGTHENING OF THE COURSE OF INSTRUCTION.

The Faculty will add a third year to the course of instruction at the beginning of the academic year 1879-80; and all students who enter the School at the beginning of the academic year 1877-78, or afterwards, will be required to pass a satisfactory examination in the entire course of three years as a condition of receiving the degree of LL.B. They will also be required to be members of the school during at least two years out of the three. Those who cannot remain more than two years will be advised to enter at the beginning of the course, and remain during the first and second years, and be absent during the third year, returning for the final examinations in June of their third year.

### FEEES AND EXPENSES.

The fee for the first and second years that a student is a member of the School is \$150 a year; for any subsequent year (until the academic year 1879-80), \$50. The fee for the examination for the degree of Master of Arts is \$30.

There are no *extra* charges in the School.

The other expenses of a student for an academic year may be estimated as follows:—

Rent and care of a furnished room . . .	\$75 to \$150
Board for thirty-eight weeks . . . . .	152 „ 304
Fuel and Lights . . . . .	20 „ 25
Text-Books . . . . .	20 „ 25
	<hr/>
	\$267 to \$504

Students who are willing to go a mile from the School can get cheaper rooms. Board at cost can be obtained by members of the Law School at Memorial Hall. It is expected that the cost per week will not much exceed four dollars and a half. Applications for seats should be made at the hall to J. R. Hodge, Auditor, from whom full information can be obtained.

Law School bills are payable in each year on January 12, April 5, and October 10. Each bill will contain one-third of the annual charges. All candidates for degrees must pay the third bill at least one week before Commencement; and when a student permanently severs his connection with the School his whole bill becomes payable at once.

Any student who leaves the School during the year must give immediate notice thereof, in writing, to the Dean; otherwise he will be charged the tuition-fee for the entire year.

Every student must file a bond with the Bursar in the sum of \$200, signed by two bondsmen, one of whom must be a citizen of Massachusetts, for the payment of dues to the University; or, instead of filing a bond, he may pay his tuition-fee for the year in advance, and deposit \$50



with the Bursar upon his entrance, and at the beginning of each subsequent academic year, to be retained until the end of the academic year and then to be accounted for. No officer or student of the University will be accepted as bondsman. Law students who live in college rooms or board at Memorial Hall must file the same bond as undergraduates (\$400), or pay rent for the year in advance, and deposit \$200 with the Bursar as security for the payment of their board. All persons living in college rooms are subject to the regulations of the Parietal Committee, in the same manner as undergraduates.

#### LIBRARY, READING-ROOM, LAW-CLUBS, Etc.

The Law Library is one of the most complete and extensive in America; and among libraries belonging to law schools it has no rival. In the department of Civil and Foreign Law, it is believed to stand at the head of all libraries in America. Within the last six years, it has received very extensive and important additions, nearly five thousand volumes having been added, and more than twenty-five thousand dollars having been expended in the purchase of books and in binding, since September 1, 1870. The students also have the full and free use of the University Library, containing one hundred and sixty thousand volumes. The Law Library is kept in Dane Hall, and is open day and evening for the use of students during the entire academic year. In the same building (which is devoted exclusively to the use of the school) all the exercises of the school are conducted. In a room adjoining the library is a Reading Room containing newspapers and periodicals, and under the control of the students. Nearly every member of the School belongs to one or more Law Clubs. These clubs, numbering about twelve in all, generally consist of about ten or twelve members each, and meet once a week for the argument and decision of moot cases. The cases are invariably pleaded by the counsel in the first instance, and the questions argued and decided are such as are raised by the pleadings. The students are resident in Cambridge, and the work of the School constitutes their chief occupation and interest. Questions relating to their common pursuit are constantly the subject of conversation and discussion among the members of the School, and the stimulating and invigorating effect of this constant social intercourse among a large body of educated and highly trained young men cannot be over-estimated.

#### SCHOLARSHIPS.

Four Bussey Scholarships and four University Scholarships, of the annual value of one hundred and fifty dollars each, have been established in the Law School. They are assigned at the beginning of each academic year to meritorious students standing in need of such assistance, who have been in the school the whole of the preceding year, and propose

to remain in it the whole of the ensuing year. The award is made by the Corporation on the recommendation of the Faculty. One-third of the annual value of the Scholarships is paid at the time of the award, one-third on the first of January, and one-third on the first of April. Applications for these Scholarships must be made in writing to the Dean by the first of June.

#### INSTRUCTION IN OTHER DEPARTMENTS OF THE UNIVERSITY.

The instruction given in the other departments of the University, with the exception of exercises carried on in the special laboratories, is also open, without additional charge, to Students of the Law School. Among the numerous courses of instruction in Harvard College (more than one hundred in all), those upon Roman Law, Political Economy, and History, are particularly suitable for law students; but many other courses, as those upon English Literature, Modern Languages, Philosophy, and Physical Science, may be useful to students whose previous opportunities have been limited. Those who wish to avail themselves of these privileges must procure from the Dean a certificate of membership of the school.

For further information, address John H. Arnold, Librarian, Cambridge, Mass.

# THE LAWRENCE SCIENTIFIC SCHOOL.

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## FACULTY.

- CHARLES W. ELIOT, LL.D., *President.*  
HENRY L. EUSTIS, A.M., *Dean, and Professor of Engineering.*  
BENJAMIN PEIRCE, LL.D., *Professor of Mathematics.*  
ASA GRAY, LL.D., *Professor of Natural History.*  
WOLCOTT GIBBS, LL.D., *Professor of Physics.*  
—— ———, *Professor of Astronomy.*  
CHARLES E. HAMLIN, A.M., *Instructor in Geography and Geology.*  
JOSIAH P. COOKE, A.M., *Professor of Chemistry and Mineralogy.*  
JOHN McCRADY, A.B., *Professor of Zoölogy.*  
ADRIEN JACQUINOT, A.B., *Assistant Professor of French.*  
JAMES M. PEIRCE, A.M., *Professor of Mathematics.*  
—— ———, *Professor of Topographical Engineering.*  
GEORGE L. GOODALE, M.D., *Assistant Professor of Vegetable Physi-  
ology, and Instructor in Botany.*  
NATHANIEL S. SHALER, S.D., *Professor of Palæontology.*  
JOHN TROWBRIDGE, S.D., *Assistant Professor of Physics.*  
C. LORING JACKSON, A.M., *Assistant Professor of Chemistry.*  
HENRY B. HILL, A.M., *Assistant Professor of Chemistry.*  
M. E. WADSWORTH, A.M., *Instructor in Mathematics and Mineralogy.*  
CHARLES H. MOORE, *Instructor in Free-hand Drawing.*  
FRANCIS W. DEAN, S.B., *Tutor in Surveying and Drawing.*

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- WILLIAM M. DAVIS, S.B., M.E., *Assistant in Geology.*  
WALTER FAXON, A.B., S.B., *Assistant in Zoölogy.*  
CHARLES F. MABERY, S.B., *Assistant in Chemistry.*  
HARRY B. HODGES, *Assistant in Chemistry.*  
OSCAR R. JACKSON, A.B., *Assistant in Chemistry.*  
BENJAMIN O. PEIRCE, A.B., *Assistant in Physics.*  
W. P. WILSON, *Assistant in Botany.*

## STUDENTS.

NOTE.—The Roman numerals indicate courses as follows: I., Civil and Topographical Engineering; III., Chemistry; IV., Natural History; V., Mathematics, Physics, and Astronomy.

## Fourth Year.

NAMES.	COURSE.	RESIDENCE.	ROOM.
Bell, William Haywood,	I.	Newburg, N. Y.,	Dolton's Block 4.
Faucon, Gorham Palfrey, A.B.	I.	Milton,	G. 10.
Hinckley, Howard,	I.	Philadelphia, Pa.	Little's Block 16.
Hodgkins, William Candler,	I.	Boston,	S. 8.
Jennings, James Hennen,	I.	Cambridge,	C. 58.
Livermore, Joseph Perkins, A.B.,	I.	Cambridge,	24 North Ave.
Lowell, James Duane,	I.	Schenectady, N. Y.,	Wadsworth 11.
Wolf, William Frederick,	I.	Lexington, Ky.,	60 Mt. Auburn St.

## Third Year.

Davis, Charles Henry,	IV.	Somerville,	W. 9.
Goldmark, Henry,	I.	Brooklyn, N. Y.,	T. 58.
White, John Fleming, S.B. (Waynesburg College),	III.	Cambridge,	Wadsw. House 9.

## Second Year.

Christie, Alexander Smythe,	V.	Mankato, Minn.,	15 Mt. Auburn St.
Lovering, George Gay,	I.	Somerville,	Somerville.
Plummer, Leander Allen,	I.	New Bedford,	Little's Block 23.
Squibb, Edward Hamilton,	IV.	Brooklyn, N. Y.,	22 Concord Ave.
Stebbins, James Hervey,	III.	Paris, France,	M. 8.
Wilson, William Powell,	IV.	Cambridge,	21 North Ave.
Woodward, Lemuel Fox,	IV.	Worcester,	D. 1.

## First Year.

Barton, Charles Sumner,	I.	Worcester,	M. 10.
Chamberlin, Frederick Dean,	IV.	Boston Highlands,	H'ke 9.
Cutler, Joseph Gore,	I.	Cambridge,	723 Cambridge St.
Redding, Joseph Deighn,	IV.	San Francisco, Cal.,	467 Broadway.

## Special Students.

Alden, William Lindley,	III.	Bangor, Me.,	317 Harvard St.
Burr, Charles Henry,	III.	Jamaica Plain,	G. 86.
Cory, Charles Barney,	IV.	Boston,	Beck Hall 82.
Garratt, Allan Vinal, TEACHER'S,		Boston,	Boston.
Owen, Edward Baldwin,	III.	Stockbridge,	54 Brattle St.
Watson, John M'Cully,	III.	Pittsburg, Pa.,	Winthrop Sq.
Young, Alfred Prentice,	IV.	Bombay, E. Indies,	14 Ware St.

# THE SCIENTIFIC SCHOOL.

## COURSES OF INSTRUCTION.

This School offers the following complete courses of instruction in the various departments of Science:—

First, the courses designed to meet the needs of the graduates of High Schools and Academies who desire a practical education in Civil and Topographical Engineering, in Mining Engineering, in Chemistry, in Natural History, or in Mathematics, Physics, and Astronomy. Graduates of Colleges should be able to enter these courses one or two years in advance. Secondly, the Teachers' courses, intended especially for those who have been or who are preparing to be teachers, and designed to qualify such persons in the modern methods of teaching science by observation and experiment. Thirdly, the higher instruction in science designed for candidates for the degree of Doctor of Science, and other advanced students.

In these courses a lecture is counted as an hour of laboratory work. A recitation for which a lesson is prepared counts for three hours' laboratory work. From each student at least forty-five hours' work is expected each week.

### I. COURSE OF FOUR YEARS IN CIVIL AND TOPOGRAPHICAL ENGINEERING.

#### FIRST YEAR.

*Spherical Trigonometry and Analytic Geometry.* Chauvenet's and Church's with additional examples. Five times a week. MR. WADSWORTH.

*Descriptive Geometry and Perspective.* Church's. Three times a week. PROF. EUSTIS.

*Elementary Physics.* One lecture a week. PROF. LOVERING.

*Elementary Chemistry.* One lecture a week from November 1 throughout the year. PROF. COOKE.

*Free-hand and Water-color Drawing.* Four hours a week. MR. MOORE.

*Surveying, Plotting, and Topographical Drawing.* Gillespie's treatise, with field and laboratory practice. Seven hours a week. MR. DEAN.

*Mechanical Drawing.* Six hours a week. MR. DEAN.

*French.* Otto's French Grammar. Bôcher's Reader. Three times a week. ASST. PROF. JACQUINOT.

#### SECOND YEAR.

*Differential and Integral Calculus.* Church's, with numerous additional examples. Five times a week. MR. WADSWORTH.

*Elementary Physics.* One lecture a week. PROF. LOVERING.

*Elementary Chemistry.* Two lectures, one recitation, and three hours' laboratory practice a week. ASST. PROF. JACKSON.

*French.* Modern French Stories and Plays. Twice a week. ASST. PROF. JACQUINOT.

*German.* Peissner's or Whitney's Grammar; Otto's Reader, or Plate's German Studies. Three times a week. MR. COOK.

*Mechanical Drawing.* Six hours a week. MR. DEAN.

*Levelling, Topographical Drawing, and Henck's Field-book.* Six hours a week. MR. DEAN.

#### THIRD YEAR.

*Mechanics.* Weisbach's Mechanics; Wood's Bridges and Roofs. Five times a week. PROF. EUSTIS.

*Experimental Physics.* Three times a week. ASST. PROF. TROWBRIDGE.

*Determinative Mineralogy and Lithology (with study in the Mineral Cabinet).* Three times a week. MR. WADSWORTH.

*Physical Geography, Meteorology, and Structural Geology.* Twice a week. MR. HAMLIN.

*German Prose.* Scientific Authors. Twice a week. MR. HODGES.

*Mechanical Drawing.* Four hours a week. MR. DEAN.

#### FOURTH YEAR.

*Applied Mechanics and Constructive Engineering.* Building Materials, and their applications in Railroads, Canals, Bridges, &c. Graphical Statics. Hydraulics. Discussions of existing structures and working out of projects. Rankine's Applied Mechanics and Rankine's Civil Engineering. Five times a week. PROF. EUSTIS.

*Applications of Descriptive Geometry to Masonry and Stone-cutting.* Lectures and Drawing. PROF. EUSTIS.

*Heat and its Applications.* Lectures and recitations. Three times a week. PROF. GIBBS.

*Economic Geology.* Twice a week. PROF. WHITNEY.

*Practical Astronomy and Geodesy (at the Observatory).* Three times a week.

*Preparation of Thesis.*

#### REMARKS.

In the department of Surveying, instruction is given from a text-book and from notes by the instructor. Instruction is given in the field during one year, at least three times a week in lessons of two and three hours each, in which examples of the various methods of surveying and taking notes are practised. Students are required to work up their surveys and make plots of their work. They are required to learn to use all kinds of instruments now used by engineers, and to understand the principles of their construction and adjustment.

In the department of Topographical Engineering, students are required to use the level and take notes, to make profiles, to calculate excavation and embankment, to level for contour lines and make the necessary calculations, and to plot the lines. They are required to make a map representing mountainous country (by "hatchings") with rivers and shore line.

Instruction is given in deducing formulæ for railroad curves, both circular and parabolic. Examples for calculation are given, and actual curves are laid out in the field.

In the department of Mechanical Drawing, each student is required to hand in one neatly finished example of each of the following drawings; viz., one plan, elevation, and section, with dimensions, shaded with lines; one example of isometric drawing with shades and shadows, shaded with a brush and colored; one example of perspective drawing with shades and shadows, shaded with a brush and colored. These drawings are to be of considerable difficulty and embrace the use of conventional colors, and, with those previously mentioned, form specimens of each kind of drawing. While these are required, others are recommended and expected.

Students who complete this course, pass the required examinations, and present a thesis, receive the degree of Civil Engineer, and are prepared to enter on the practice of their profession.

## II. COURSE IN MINING ENGINEERING.

The full course, prescribed for candidates for the degree of Mining Engineer, occupies four years, the first three of which are identical, as regards the subjects of instruction and the order thereof, with the first three years of the Civil Engineering course. The subjects of instruction during the fourth year of the course are as follows: Geology; Economic Geology and the Phenomena of Veins; Mining Machinery and the Exploitation of Mines; General and Practical Metallurgy; Assaying; Working up, Plotting, and Writing out notes of summer excursions.

From time to time opportunities will be offered to the students, by excursions with the Professors, of becoming practically acquainted with astronomical and geodetic work, as also with the method of making geological surveys, and with mining and metallurgic operations.

## III. COURSE OF FOUR YEARS IN CHEMISTRY.

### FIRST YEAR.

*Descriptive Chemistry with Laboratory Practice.* Two lectures, one recitation, and three hours' laboratory practice a week. ASST. PROF. JACKSON.

*Descriptive Geometry and Perspective.* Church's. Three times a week. PROF. EUSTIS.

*Mechanical Drawing.* Three hours a week. MR. DEAN.

*Elementary Physics.* One lecture a week. PROF. LOVERING.

*French.* Otto's French Grammar. Bôcher's Reader. Three times a week. ASST. PROF. JACQUINOT.

*German.* Peissner's or Whitney's Grammar; Otto's Reader, or Plate's German Studies. Three times a week. MR. COOK.

### SECOND YEAR.

*Qualitative Analysis and Chemical Philosophy (with laboratory work).* Nine hours a week. ASST. PROF. HILL.

*Technological Chemistry.* Three times a week. Recitations and excursions to chemical works. MR. HODGES.

*Physics.* One lecture a week. PROF. LOVERING.

*Astronomy, Optics, and Acoustics.* Twice a week. PROF. LOVERING.

*Determinative Mineralogy and Lithology (with study in the Mineral Cabinet).* Three times a week. MR. WADSWORTH.

*German Prose.* Scientific Authors. Twice a week. MR. HODGES.

#### THIRD YEAR.

*Quantitative Analysis.* Laboratory work. Eighteen hours a week. PROF. COOKE and MR. HODGES.

*Experimental Physics.* Three times a week. ASST. PROF. TROWBRIDGE.

*Physical Geography, Meteorology, and Structural Geology.* Twice a week. MR. HAMLIN.

*Chemical Physics, including determination of Specific Gravity of Vapors and Gas Analysis.* Nine hours a week.

*Elementary Botany.* Twice a week. ASST. PROF. GOODALE.

#### FOURTH YEAR.

*Organic Chemistry, including Preparation of Chemical Products.* Lectures and laboratory work. Three times a week. ASST. PROF. HILL.

*Economic Geology.* Twice a week. PROF. WHITNEY.

*Photography; Practical Instruction.*

*Laboratory Work.* Eighteen hours a week in preparation of thesis.

This course is intended for students preparing to become practical chemists or teachers of the science.

Students who complete this course, pass the required examinations, and present a thesis, receive the degree of Bachelor of Science.

### IV. COURSE OF FOUR YEARS IN NATURAL HISTORY.

#### FIRST YEAR.

*Required.*

*Descriptive Chemistry (with laboratory work).* Three times a week. ASST. PROF. JACKSON.

*Physics.* One lecture a week. PROF. LOVERING.

*Determinative Mineralogy and Lithology (with study in the Mineral Cabinet).* Three times a week. MR. WADSWORTH.

*Elementary Botany.* Twice a week. ASST. PROF. GOODALE.

*German.* Peissner's or Whitney's Grammar. Otto's Reader, or Plate's German Studies. Three times a week. MR. COOK.

*French.* Otto's French Grammar. Bôcher's Reader. Three times a week. ASST. PROF. JACQUINOT.

*Mechanical Drawing.* Three hours a week. MR. DEAN.

#### SECOND YEAR.

*Required.*

*Physical Geography, Meteorology, and Structural Geology.* Twice a week. MR. HAMLIN.



*Physics.* One lecture a week. PROF. LOVERING.

*Experimental Physics.* Three times a week. ASST. PROF. TROWBRIDGE.

*Comparative Anatomy and Physiology of Vertebrates.* Three times a week.  
ASST. PROF. JAMES.

*German Prose.* Scientific Authors. Twice a week. MR. HODGES.

*Exercises in French Syntax and Composition.* Modern French Stories and Plays. Twice a week. ASST. PROF. JACQUINOT.

*Elective.*

(One of the following subjects must be taken).

*Advanced Botany.* Three times a week. ASST. PROF. GOODALE.

*Qualitative Analysis and Chemical Philosophy (with laboratory work).* Nine hours a week. ASST. PROF. HILL.

*Geology.* Three times a week. Lectures, with laboratory and field work. PROF. SHALER.

*Physiological Psychology.* Three times a week. ASST. PROF. JAMES.

THIRD YEAR.

*Systematic Botany.* Three times a week. ASST. PROF. GOODALE.

*Zoology (General Morphology: Protozoa, Radiata, Articulata).* Lectures and laboratory work. Three times a week. PROF. MCCRADY.

*Paleontology.* Lectures and laboratory work. Three times a week.  
PROF. SHALER.

*Economic Geology.* Twice a week. PROF. WHITNEY.

*Quantitative Analysis (in the laboratory).* Three times a week. PROF. COOKE and MR. HODGES.

*Practical Applications of Trigonometry.* Principles of Surveying. Twice a week. ASST. PROF. WHITE.

FOURTH YEAR.

*Elective.*

(Each student must elect forty-five hours of laboratory work, or its equivalent.)

*Agricultural Chemistry.* Three times a week at the Bussey Institution.  
PROF. STORER.

*Vegetable Physiology.* Experimental. Three times a week. ASST. PROF. GOODALE.

*Cryptogamic Botany.* Three times a week at the Bussey Institution.  
ASST. PROF. FARLOW.

*Zoology (General Morphology: Mollusca, Vertebrata).* Lectures and laboratory work. Three times a week. PROF. MCCRADY.

*Geology.* Three times a week. PROF. SHALER.

One-half of the time during the fourth year is to be given to the preparation of a thesis based on original work in one of the departments of Natural History.

Students who complete this course, pass the required examinations, and present a thesis, receive the degree of Bachelor of Science.

## V. COURSE OF FOUR YEARS IN MATHEMATICS, PHYSICS, AND ASTRONOMY.

### FIRST YEAR.

*Practical Applications of Trigonometry. Principles of Surveying. Spherical Trigonometry. Applications of Spherical Trigonometry to Astronomy and Navigation.* Twice a week. ASST. PROF. WHITE.

*Differential and Integral Calculus.* Elementary course. Twice a week. PROF. J. M. PEIRCE.

*Physics.* Chambers's Matter and Motion; Goodeve's Mechanics. Twice a week. MR. WILLSON.

*Descriptive Geometry and Perspective.* Three times a week. PROF. EUSTIS.

*French.* Otto's French Grammar. Bôcher's Reader. Three times a week. ASST. PROF. JACQUINOT.

*German.* Peissner's or Whitney's Grammar; Otto's Reader, or Plate's German Studies. Three times a week. MR. COOK.

### SECOND YEAR.

*Analytic Geometry (Salmon's Conic Sections).* Selected course. Twice a week. PROF. J. M. PEIRCE.

*Determinants; Theory of Equations; and other matter supplementary to the first course in the Calculus.* Twice a week. PROF. J. M. PEIRCE.

*Astronomy, Optics, and Acoustics.* Twice a week. PROF. LOVERING.

*Elementary Chemistry, with Laboratory Practice.* Two lectures, one recitation, and three hours' laboratory practice. ASST. PROF. JACKSON.

*German Prose.* Scientific Authors. Twice a week. MR. HODGES.

### THIRD YEAR.

*Differential and Integral Calculus.* Second course. Three times a week. PROF. J. M. PEIRCE.

*Practical Astronomy (at the Observatory).* Three times a week.

*Practical exercises in the Laboratory, including the use of instruments of precision in testing the laws of Mechanics, Acoustics, Optics, Magnetism, and Electricity; and an extended course in Electrical Measurements.* Three times a week. ASST. PROF. TROWBRIDGE.

*Undulatory Theory of Light. Electricity and Magnetism.* Three times a week. PROF. LOVERING.

### FOURTH YEAR.

*Mathematical Physics (Maxwell's Electricity and Magnetism).* Three times a week. ASST. PROF. TROWBRIDGE.

*The Spectroscope and its Applications. Thermodynamics and Thermics, including the applications of Heat.* Three times a week. PROF. GIBBS.

Other electives, three times a week.

*Preparation of Thesis.* Six hours a week.

The course may be varied to meet the wants of students.

Students who complete this course, pass the required examinations, and present a thesis, receive the degree of Bachelor of Science.

### THE TEACHERS' COURSES.

1. A one year's course of study in the elements of NATURAL HISTORY, CHEMISTRY, and PHYSICS, including any of the following subjects: Physical Geography and Elementary Geology; General Chemistry and Qualitative Analysis; Mineralogy; Physics; Botany; Comparative Anatomy and Physiology; Zoölogy.

This course is flexible and comprehensive: the instruction is mainly given in the laboratories and museums of the University, and is of the most practical character, every student being taught to make experiments and study specimens himself.

Botanical instruction is given at the botanical laboratory. Dissecting and compound microscopes are provided for students, and the garden and greenhouses afford ample material for the practical study of the science. All work is under the direct supervision of Assistant Professors Goodale and Farlow.

Similar facilities are afforded for the study of Zoölogy, Comparative Anatomy and Physiology, Geology, and Palæontology, at the laboratories of the Museum of Comparative Zoölogy, and of Mineralogy at the Mineral Cabinet. The instruction in Experimental Chemistry and Physics is given in the laboratories, and the students are shown the best methods of illustrating experimentally the principles of these sciences.

2. Special courses in Botany, Chemistry, Mineralogy, and Geology, are given during the vacation to teachers and others who are unable to attend during term time.

### INSTRUCTION FOR CANDIDATES FOR THE DOCTOR'S DEGREE, AND OTHER ADVANCED STUDENTS.

Instruction for advanced students can be obtained in any of the following subjects: PHYSICS, CHEMISTRY, PHYSIOLOGY, ZOÖLOGY, BOTANY, and MATHEMATICS.

Professor Gibbs receives special students in Heat, and a part of the subject of Light, at the Rumford Laboratory; Assistant Professor Trowbridge receives special students in Physics at the Laboratory in Lawrence Hall; Professor Cooke receives special students in Inorganic Chemistry and Mineralogy, Assistant Professors Jackson and Hill in Organic Chemistry, at the laboratories in Boylston Hall; Professors Hagen and McCrady, and Messrs. Pourtales and Allen receive special students in Zoölogy, Professors Whitney and Shaler in Geology, and Professor Shaler in Palæontology, at the Museum of Comparative Zoölogy. Professor Bowditch receives special students at the Physiological Laboratory of the Medical School. Assistant Professor Goodale receives

special students in Botany at the Botanic Garden and Herbarium. Professors Benjamin Peirce and James M. Peirce receive special students in Mathematics.

The opportunities for advanced students in all branches of Natural History, and in Physics, Chemistry, Astronomy, and Mathematics, are very great. The Museum of Comparative Zoölogy contains a Zoölogical and a Geological and Palæontological Laboratory, in addition to the work-rooms of the different departments, to which the most advanced students are admitted in charge of the assistants. The Library at the Museum contains about 12,000 volumes. The Botanical department has a thoroughly furnished laboratory, garden, and greenhouse, and its library and herbarium are the largest in America. The Chemical department has three laboratories, one accommodating one hundred students, and devoted to experimental chemistry and qualitative analysis; a second, expressly fitted up for quantitative analysis; and a third for organic chemistry. The Physical department has two laboratories, one under the charge of the Rumford Professor, Dr. Gibbs, for investigations in Heat and Light; the other in charge of Assistant Professor Trowbridge, provided with the most recent apparatus for electrical measurements and other instruments of precision, affording ample means for investigating physical phenomena in general.

The course of instruction open at the Observatory to students belonging to the Scientific School includes all the branches of Practical Astronomy and Geodesy. The progress which any student can make in these subjects must of course depend upon the amount of time at his disposal.

The course of study is arranged as follows :—

1. Determination of clock errors and of terrestrial longitudes. This includes the comparison of timepieces by electrical and other methods; the use of the portable transit instrument in the meridian, with or without electric registering apparatus; the reduction of the observations thus made, and the application to the results of the method of least squares.
2. Determination of terrestrial latitudes by the zenith telescope and equivalent instruments.
3. The use of the sextant in determinations of time, latitude, etc.
4. The use of the transit instrument out of the meridian, in the prime vertical, etc.

The above subjects are probably sufficient to occupy all the available time of ordinary students; but those who can do more will be instructed in any branch of practical or theoretical astronomy which they may select.

The Observatory is provided with portable transit instruments, field observatories, and all other apparatus required in carrying out the above programme. Instruction is given by the Director and his assistants

Before beginning, the student should have a thorough knowledge of the use of logarithms, and should be qualified to compute from any of the formulæ of algebra or trigonometry.

#### ADMISSION.

Candidates for admission to any one of the regular courses in Engineering, Chemistry, Natural History, or Mathematics, Physics, and Astronomy, will be examined in the following subjects:—

**MODERN GEOGRAPHY.**—Miss Hall's *Our World*, No. 2.

**ENGLISH COMPOSITION.**—Each candidate will be required to write a short English Composition, correct in spelling, punctuation, grammar, and expression. The subject will be taken from one of the following works: Shakspeare's *Tempest*, *Julius Caesar*, or *Merchant of Venice*; Goldsmith's *Vicar of Wakefield*; Scott's *Waverley* or *Marmion*.

**LATIN.**—Four books of *Caesar's Commentaries*, and four books of the *Aeneid* of *Virgil*, or their equivalents; *Latin Grammar*, as much as is contained in either *Allen's* or *Harkness's Elementary Latin Grammar*.

**FRENCH or GERMAN.**—The translation at sight of easy prose.

**ARITHMETIC**, including the metric system of weights and measures, and the use of logarithms.

**ALGEBRA.**—As much as is contained in the *Complete School Algebra* of *Olney*, or the *Elementary Algebra* of *Greenleaf*, *Loomis*, or *Robinson*.

**ELEMENTARY GEOMETRY.**—The first five books of *Chauvenet's Geometry*.

**PLANE AND ANALYTIC TRIGONOMETRY.**—The large print of the first eight chapters of *Chauvenet's Trigonometry*.

*For the Course in Engineering.*—In addition to the above requisitions, candidates who propose to take the course in Engineering will be examined in

**ALGEBRA**, as much as is contained in the larger works of *Olney*, *Robinson*, *Todhunter*, or *Greenleaf*;

**SOLID GEOMETRY**, the last four books of *Chauvenet's Geometry*.

*For the Course in Chemistry.*—Besides the general requisitions, candidates who propose to take the course in Chemistry will be examined in

**ELEMENTARY DESCRIPTIVE CHEMISTRY**, as much as is contained in *Nichols's* abridgment of *Eliot and Storer's Manual*;

**ELEMENTARY PHYSICS**, as much as is contained in *Balfour Stewart's Lessons in Elementary Physics*.

*For the Course in Mathematics, Physics, and Astronomy.*—In addition to the requisitions of the Engineering course, candidates will be examined in

**ANALYTIC GEOMETRY**, as much as is contained in *Peck's Treatise*;

**PHYSICS**, as much as is contained in *Balfour Stewart's Lessons in Elementary Physics*.

Every candidate for admission to advanced standing will be further examined in all the studies already pursued by the Class for which he offers himself.

Graduates of Harvard College who have sustained a satisfactory examination while in College on the subjects of the first and second years of the Engineering course, except Drawing and Surveying, will be admitted to the third year of that course. Undergraduates who intend to study Engineering are recommended by the Scientific Faculty to take, as extras, the courses of Drawing and Surveying in the Scientific School; but these subjects may be made up in the third and fourth years.

In all the courses of the Scientific School, the successful study of any subject in College will be taken as an equivalent for the same subject in the Scientific School.

Examinations for admission will be held at Lawrence Hall on Thursday, Friday, and Saturday, June 28, 29, and 30, and on Thursday, Friday, and Saturday, September 27, 28, and 29, 1877, beginning at 8 A. M. The June examinations will also be held at Cincinnati. Those offering themselves at the June examination, and finding themselves deficient in a portion of the mathematics, can get systematic instruction in these subjects at Cambridge during the long summer vacation.

There is no examination for admission to the Teachers' Courses.

Students of regular standing in the Scientific School may attend the exercises in any other department of the University free, excepting the exercises in the special laboratories.

#### **Additional requirements in 1878.**

For admission to all the courses there will be required in 1878, in addition to the above requisitions:—

PHYSICS, as much as is contained in Balfour Stewart's Lessons in Elementary Physics.

CHEMISTRY, as much as is contained in Nichols's abridgment of Eliot and Storer's Manual.

#### **DEGREES.**

The degree of CIVIL ENGINEER, or MINING ENGINEER, will be conferred upon students who have completed the prescribed courses of study in civil and topographical or mining engineering, sustained the necessary examinations, and presented a thesis.

The degree of BACHELOR OF SCIENCE may be conferred upon any student, who, having attended the School for at least one year, and completed the prescribed course of studies in one or more departments, shall have passed a satisfactory public examination and presented a thesis. The department or departments in which the student has been examined, and his grade of merit, will be specified in the Diploma.

The three grades of the degree are *cum laude*, *magna cum laude*, *summa cum laude*.

The requisitions for the degree of DOCTOR OF SCIENCE are stated on page 141.

#### SCHOLARSHIPS.

Four University Scholarships, of the annual value of one hundred and fifty dollars each, have been established in the Scientific School. They are assigned at the beginning of each academic year to meritorious students standing in need of such assistance, who have been in the School the whole of the preceding year, and propose to remain in it the whole of the ensuing year. The award is made by the Corporation on the recommendation of the Faculty. One-third of the annual value of the Scholarships is paid at the time of the award, one-third about the first of January, and one-third about the first of April, following. Applications for these Scholarships must be addressed in writing to the Dean by the first of June.

#### FEES AND EXPENSES.

The tuition fee for the academic year in any of the above departments or courses is \$150.

The tuition fees for candidates for the degree of Doctor of Science are stated on page 143.

The other expenses of a student for an academic year may be estimated as follows:—

Room . . . . .	from \$30 to \$100
Board for thirty-eight weeks . . . . .	„ 152 „ 304
Books . . . . .	„ 20 „ 25
Fuel and lights . . . . .	„ 15 „ 35
Washing . . . . .	„ 19 „ 38
	—————
Total . . . . .	„ \$236 „ \$502

Any student who leaves the school during the year must give immediate notice thereof, in writing, to the Dean; otherwise he will be charged the tuition fee for the entire year.

Students in the Scientific School may obtain rooms in the College buildings by applying to the Bursar, either by mail or in person. They may also join the Harvard Dining Association, and board at cost at Memorial Hall.

Students in Chemistry are supplied with all needed apparatus, but are required to restore it in as good condition as when received. They are charged for all damage or breakage, and also from ten to thirty dollars per annum for chemicals and use of apparatus.

Students in Engineering provide their own drawing materials.

The Gymnasium is open to all members of the University, without extra charge.

All students admitted to the Lawrence Scientific School must furnish satisfactory evidence of good moral character; give bonds in the sum of \$200, signed by two bondsmen, one of whom must be a citizen of Massachusetts, for the payment of all dues to the University; and register their names with the Dean of the Faculty of the School. Instead of filing a bond, a student may deposit with the Bursar such a sum of money as may be deemed sufficient to secure the payment of all dues to the University.

Students engaging College rooms, or boarding at Memorial Hall, will be required to file the same bond as undergraduates of the College (\$400), or to pay rent for the year in advance, and deposit the sum of \$200 as security for the payment of their board; and they hold the rooms subject to the regulations of the Parietal Committee, in the same manner as if they were undergraduates.

No officer or student of the University will be accepted as bondsman.

For further information, apply to J. W. HARRIS, Secretary.



# THE ASTRONOMICAL OBSERVATORY.

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## FACULTY.

CHARLES W. ELIOT, LL.D., *President.*

———, *Director of the Observatory.*

## ASSISTANTS.

ARTHUR SEARLE, A.M.

WILLIAM A. ROGERS, A.M.

LEONARD WALDO, S.B.

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## OBJECTS AND COURSE OF INSTRUCTION.

THE objects of the Observatory are to furnish accurate and systematic observations of the heavenly bodies for the advancement of Astronomical Science, to co-operate in Geodetical and Nautical Surveys, to contribute to the improvements of Tables useful in Navigation, and, in general, to promote the progress of knowledge in Astronomy and the kindred sciences. To aid in effecting these objects, provision is made for publishing the Observations and the Director's Reports, and for increasing the Library.

*Practical Astronomy and the Use of Astronomical Instruments*, including the Spectroscope, will be taught by the Director of the Observatory, and by his Assistants.

### *Text-Books and Works for Reference and Reading.*

Herschel's *Outlines of Astronomy.*

Grant's *History of Physical Astronomy.*

Gauss's *Theoria Motus Corporum Coelestium.*

Gauss's *Theoria Combinationis Observationum Erroribus Minimis Obnoxiae.*

Chauvenet's *Manual of Spherical and Practical Astronomy.*

Olbers's *Methode, die Bahn eines Cometen zu berechnen.* Edited by Encke.

Watson's *Theoretical Astronomy.*

The fees for instruction may be agreed upon with the Director.

# THE MEDICAL SCHOOL.

BOSTON.

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THE plan of study in this school was radically changed in 1871. Instruction is given by lectures, recitations, clinical teaching, and practical exercises uniformly distributed throughout the academic year. The year begins on the Thursday following the last Wednesday in September,\* and ends on the last Wednesday in June. It is divided into two equal terms, with a recess of one week between them. There is also a recess of one week at Christmas. The second term begins Monday, February 12, 1877. Either of these two terms is more than equivalent to the former "Winter Session," as regards the amount and character of the instruction.

The course of instruction has been greatly enlarged, so as to extend over three years, and has been so arranged as to carry the student progressively and systematically from one subject to another, in a just and natural order.

In the subjects of anatomy, histology, chemistry, and pathological anatomy, laboratory work is substituted for, or added to, the usual didactic lectures, and is as much required of every student as attendance at lectures and recitations.

Instead of the customary oral examination for the degree of Doctor of Medicine, held at the end of the three years' period of study, a series of written examinations on all the main subjects of medical instruction has been distributed for regular students through the whole three years. Every candidate for the degree must pass a satisfactory examination in every one of the principal departments of medical instruction at some time during his period of study.

Members of any one department of Harvard University have a right to attend lectures and recitations in any other department without paying additional fees. Students in the Medical School, who wish to avail themselves of this opportunity of pursuing scientific or other studies, may do so without loss of time counted as medical study, to such extent and in such manner as the Medical Faculty shall in each case prescribe. Undergraduates intending to study medicine are advised to pay special attention to the study of Natural History, Chemistry, Physics, and the French and German languages, while in college.

\* That the time of study shall count as a full term, students must present themselves within the first week of the term.

**FACULTY.**

- CHARLES W. ELIOT, LL.D., *President.*  
 CALVIN ELLIS, M.D., *Dean, and Jackson Professor of Clinical Medicine.*  
 JOHN B. S. JACKSON, M.D., *Shattuck Professor of Morbid Anatomy,  
 and Curator of the Anatomical Museum.*  
 OLIVER W. HOLMES, M.D., *Parkman Professor of Anatomy.*  
 HENRY J. BIGELOW, M.D., *Professor of Surgery.*  
 JOHN E. TYLER, M.D., *Professor of Mental Diseases.*  
 CHARLES E. BUCKINGHAM, M.D., *Professor of Obstetrics and  
 Medical Jurisprudence.*  
 FRANCIS MINOT, M.D., *Hersey Professor of the Theory and Practice of  
 Physic.*  
 JOHN P. REYNOLDS, M.D., *Instructor in Obstetrics.*  
 HENRY W. WILLIAMS, M.D., *Professor of Ophthalmology.*  
 DAVID W. CHEEVER, M.D., *Professor of Clinical Surgery.*  
 JAMES C. WHITE, M.D., *Professor of Dermatology.*  
 ROBERT T. EDES, M.D., *Professor of Materia Medica.*  
 HENRY P. BOWDITCH, M.D., *Professor of Physiology.*  
 FREDERICK I. KNIGHT, M.D., *Instructor in Percussion, Auscultation,  
 and Laryngoscopy.*  
 CHARLES B. PORTER, M.D., *Demonstrator of Anatomy and Instructor  
 in Surgery.*  
 JOHN C. WARREN, M.D., *Instructor in Surgery.*  
 REGINALD H. FITZ, M.D., *Assistant Professor of Pathological Anatomy.*  
 WILLIAM L. RICHARDSON, M.D., *Instructor in Clinical Obstetrics.*  
 THOMAS DWIGHT, M.D., *Instructor in Histology.*  
 EDWARD S. WOOD, M.D., *Professor of Chemistry.*  
 HENRY H. A. BEACH, M.D., *Assistant Demonstrator of Anatomy.*  
 WILLIAM B. HILLS, M.D., *Instructor in Chemistry.*

**OTHER INSTRUCTORS.**

- GEORGE F. H. MARKOE, *Instructor in Materia Medica.*  
 FRANK W. DRAPER, M.D., *Lecturer on Hygiene.*

The following gentlemen will give special clinical instruction:—

- FRANCIS B. GREENOUGH, M.D., and EDWARD WIGGLES-  
 WORTH, M.D., *in Syphilis.*  
 JOHN O. GREEN, M.D., and C. J. BLAKE, M.D., *in Otology.*  
 WILLIAM H. BAKER, M.D., *in Diseases of Women.*  
 CHARLES P. PUTNAM, M.D., and JOSEPH P. OLIVER, M.D.,  
*in Diseases of Children.*  
 SAMUEL G. WEBBER, M.D., and JAMES J. PUTNAM, M.D.,  
*in Diseases of the Nervous System.*

## STUDENTS.

## Course for Graduates.

Hodges, Edward Francis, M.D. ( <i>Georgetown, D.C.</i> ),	<i>Boston.</i>
Kemp, Edwin Augustine, M.D. ( <i>Univ. of Vt.</i> ),	<i>Enfield.</i>
Loring, Robert Pearmain, M.D.,	<i>Newton.</i>
Maxwell, Warren Brown, M.D. ( <i>Dart. Coll.</i> ),	<i>Wells, Me.</i>
Prescott, Benjamin Taylor, M.D. ( <i>Dart. Coll.</i> ),	<i>Boston.</i>
Tilden, George Horton, M.D.,	<i>Boston.</i>
White, Robert, M.D.,	<i>Boston.</i>
Wright, Thomas Russell, M.D. ( <i>Univ. of Ga.</i> ),	<i>Augusta, Ga.</i>

## Third Class.

Avery, Alonzo Moffitt,	<i>Galena, Ill.</i>
Ballou, Charles Olney,	<i>Providence, R.I.</i>
Bancroft, Charles Parker, A.B.,	<i>Concord, N.H.</i>
Bancroft, Winfred Baxter, A.B. ( <i>Amherst Coll.</i> ),	<i>Boston.</i>
Booth, Edward Chauncey, A.B.,	<i>Somerville.</i>
Brannan, John Winters, A.B.,	<i>Cincinnati, O.</i>
Bryant, John, A.B.,	<i>Boston.</i>
Clark, Charles Edward, A.B. ( <i>Bowd. Coll.</i> ),	<i>Boston.</i>
Collins, George Lewis, PH.B. ( <i>Brown Univ.</i> ),	<i>Providence, R.I.</i>
Cummings, Edwin Francis,	<i>Taunton.</i>
Daniels, Edwin Alfred,	<i>Newton.</i>
Deming, William Nelson,	<i>Providence, R.I.</i>
Dwight, James, A.B.,	<i>Boston.</i>
Elliot, John Wheelock, A.B.	<i>Keene, N.H.</i>
Ellis, Edward Dyer, A.B. ( <i>Middlebury Coll.</i> ),	<i>Fairhaven, Vt.</i>
Fairbanks, Charles Albert, S.B. ( <i>Dart. Coll.</i> ),	<i>Dover, N.H.</i>
Farlow, John Woodford, A.B.,	<i>Newton.</i>
Fitz, Samuel Eaton, A.B.,	<i>Boston.</i>
Foster, Charles,	<i>Boston.</i>
Foster, James Richards,	<i>N. Attleboro'.</i>
French, Samuel William, A.B.,	<i>Boston.</i>
Gannett, William Whitworth, A.B.,	<i>Cambridge.</i>
Geary, John Chapman,	<i>Boston.</i>
Green, Charles Montraville, A.B.,	<i>Boston.</i>
Greenwood, Sewell Elliott,	<i>Hubbardston.</i>
Hamilton, Albinus Otis,	<i>Newton.</i>
Harrington, John Richard,	<i>Cranston, R.I.</i>
Holbrook, Uriah Hopkins, A.B. ( <i>Brown Univ.</i> ),	<i>Providence, R.I.</i>
Hunt, William Otis,	<i>Newtonville,</i>
Hunt, Willis Henry,	<i>Providence, R.I.</i>
Johnson, John Waldo,	<i>Framingham.</i>

Kelley, George Wallace,	<i>Boston.</i>
Kilby, Henry Sherman, A.B.,	<i>Boston.</i>
Leland, George Adams, A.B. ( <i>Amherst Coll.</i> ),	<i>Boston.</i>
Mason, William Castein, A.B.,	<i>Bangor, Me.</i>
Mathewson, Charles Brenton, A.B. ( <i>Brown Univ.</i> ),	<i>E. Greenwich, R.I.</i>
Mills, George Westgate, S.B. ( <i>Mass. Agric. Coll.</i> ),	<i>Medford.</i>
Minot, James Jackson, A.B.,	<i>Boston.</i>
Morse, Henry Lee, A.B.,	<i>Boston.</i>
Moseley, William Oxnard, A.B.,	<i>Boston.</i>
Peters, Edward Dyer,	<i>Boston.</i>
Rand, Alfred, A.B.,	<i>Boston.</i>
Read, George Mumford,	<i>Providence, R.I.</i>
Shaw, Thomas Pierpont, A.M., LL.B.,	<i>Lowell.</i>
Smith, Frederick Arnold,	<i>Springfield.</i>
Smith, Sheffield,	<i>N. Providence, R.I.</i>
Souther, William Towle, A.B. ( <i>Yale Coll.</i> ),	<i>Worcester.</i>
Swift, John Baker, A.M. ( <i>Amherst Coll.</i> ),	<i>Boston.</i>
Tuttle, George Thomas, A.B. ( <i>Dart. Coll.</i> ),	<i>Jynn.</i>
Walker, Charles Rumford, A.B. ( <i>Yule Coll.</i> ),	<i>Concord, N.H.</i>
Walton, Alfred,	<i>Boston.</i>
White, Luther Robinson, A.B. ( <i>Bates Coll.</i> ),	<i>Lewiston, Me.</i>
White, William Robbins, A.B. ( <i>Dart. Coll.</i> ),	<i>Cuwendish, Vt.</i>
Whittemore, Fred Webster,	<i>Cambridge.</i>
Williams, Francis Henry, S.B. ( <i>Mass. Inst. Tech.</i> ),	<i>Boston.</i>
Woodward, Samuel Bayard, A.B.,	<i>Worcester.</i>

**Second Class.**

Abeles, Edward,	<i>Leavenworth, Kans.</i>
Ambrose, George Booth,	<i>Chelsea.</i>
Bacon, Jonas Edward, A.B.,	<i>Woburn.</i>
Bennett, Luther William,	<i>Boston.</i>
Bowditch, Vincent Yardley, A.B.,	<i>Boston.</i>
Broughton Henry White, A.B.,	<i>Jamacia Plain.</i>
Bullard, William Norton, A.B.,	<i>Boston.</i>
Burns, Robert,	<i>Lancaster, N.H.</i>
Burrell, Herbert Leslie,	<i>Boston.</i>
Carvelle, Henry de Wolfe,	<i>Boston.</i>
Chisholm, Adam Stuart Muir,	<i>Newtonville.</i>
Curley, John Patrick,	<i>Newport, R.I.</i>
Donovan, Samuel Magner,	<i>Boston.</i>
Dougherty, James Joseph,	<i>Lowell.</i>
Emerson, William Carroll, A.B.,	<i>Haverhill.</i>
Faden, Andrew Clarence,	<i>Boston.</i>
Ferris, Edward Mortimer, A.B.,	<i>Brookline.</i>

Field, Charles Elmer, A.B. ( <i>Brown Univ.</i> ),	<i>Brockton.</i>
Fuller, Frank Boutelle, A.B. ( <i>Bates Coll.</i> ),	<i>Wilton, Me.</i>
Galvin, George William,	<i>Boston.</i>
Gregg, John Argeloe,	<i>Somerville.</i>
Haddock, Charles Whitney,	<i>Beverly.</i>
Ham, Otis French,	<i>Belmont.</i>
Hayward, George Griswold,	<i>Milton.</i>
Holmes, Walter Hamlin, A.B. ( <i>Bowd. Coll.</i> ),	<i>Calais, Me.</i>
Howard, Arthur Chadwick,	<i>Boston.</i>
Hun, Henry, PH.B. ( <i>Sheffield Scientific School</i> ),	<i>Albany, N.Y.</i>
Johnson, William Louis,	<i>Cambridge.</i>
Keene, George Frederick, A.B. ( <i>Brown Univ.</i> ),	<i>Providence, R.I.</i>
Kelly, William Philip,	<i>Boston.</i>
McCarty, James Joseph,	<i>Lowell.</i>
Mixter, Samuel Jason, S.B. ( <i>Mass. Inst. Tech.</i> ),	<i>Boston.</i>
Peavey, George Arthur,	<i>Moultonboro', N.H.</i>
Phipps, Walter Andrus,	<i>Hopkinton.</i>
Platt, Walter Brewster, PH.B. ( <i>Yale Coll.</i> ),	<i>Waterbury, Conn.</i>
Plimpton, Lewis Henry, A.B.,	<i>Walpole.</i>
Prince, Morton Henry, A.B.,	<i>Boston.</i>
Rix, Frank Reader, A.B.,	<i>Lowell.</i>
Rollins, William Hubert, D.M.D.,	<i>Brookline.</i>
Sawyer, William Brewster, A.B. ( <i>Amherst Coll.</i> ),	<i>Easthampton.</i>
Seymour, William Wotkyns, A.B. ( <i>Yale Coll.</i> ),	<i>Troy, N.Y.</i>
Smith, George Edward,	<i>Zanesville, O.</i>
Smith, Jonathan Jason,	<i>Somerville.</i>
Stockwell, Charles Bliss, A.B. ( <i>Olivet Coll.</i> ),	<i>Port Huron, Mich.</i>
Viles, Clarence Albertus,	<i>Lowell.</i>
Watson, Francis Sedgwick, A.B.,	<i>Milton.</i>
West, George Webb, A.B.,	<i>Salem.</i>
Wheeler, John Brooks, A.B. ( <i>Univ. of Vt.</i> ),	<i>Burlington, Vt.</i>
Williams, Harold, A.B.,	<i>Brookline.</i>
Woodman, Walter, A.B.,	<i>Cambridge.</i>
Wyman, Samuel Edwin, A.B.,	<i>Arlington.</i>

**First Class.**

Abbott, Charles Edward,	<i>Andover.</i>
Allen, Dudley Peter, A.B. ( <i>Oberlin Coll.</i> ),	<i>Oberlin, O.</i>
Batchelder, George Henry Clement,	<i>Newburyport.</i>
Battey, Henry Halcy,	<i>Rome, Ga.</i>
Bean, Charles Edwin,	<i>Chelsea.</i>
Blandy, Henry Johnson, A.B.,	<i>Zanesville, O.</i>
Bowers, Walter Prentice,	<i>Clinton.</i>
Bradley, Daniel Webster, A.B. ( <i>Dart. Coll.</i> ),	<i>Fryeburg, Me.</i>

Brown, Page,	<i>San Francisco, Cal.</i>
Broyer, Constant,	<i>Melbourne, Australia.</i>
Bullard, James Hovey, A.B.,	<i>Holliston.</i>
Carter, George Joseph,	<i>Boston.</i>
Chapman, Charles Bates,	<i>Worcester.</i>
Clarke, Samuel Bartlett,	<i>Salem.</i>
Cleaves, James Edwin, A.B.,	<i>Medford.</i>
Clement, George Colburn,	<i>Boston.</i>
Clifford, Arthur, A.B.,	<i>New Bedford.</i>
Comey, Perley Pierce,	<i>Worcester.</i>
Curran, William Henry,	<i>Marlboro'.</i>
Davis, William, A.B.,	<i>Plymouth.</i>
Dixon, Robert Brewer,	<i>Damariscotta, Me.</i>
Drew, Frank Haynes,	<i>Boston.</i>
Durell, Thomas Moulton,	<i>Somerville.</i>
Dyer, Willard Knowlton,	<i>Boston.</i>
Eaton, Wyllis Gilbert, A.B. ( <i>Dart. Coll.</i> ),	<i>Lowell.</i>
Eldridge, George Homans, A.B.,	<i>Boston.</i>
Englesby, Leverett Francis, A.B. ( <i>Univ. of Vt.</i> ),	<i>Boston.</i>
Ernst, Harold Clarence, A.B.,	<i>Boston.</i>
Fenno, Henry Marshall,	<i>Somerville.</i>
Fraser, Donald Allan,	<i>Boston.</i>
Fuller, Franklin Davis,	<i>Norwich, Conn.</i>
Fuller, Fred, A.B. ( <i>Colby Univ.</i> ),	<i>Boston.</i>
Gardner, Guy Hubbard.	<i>Winchester.</i>
Garrigan, Thomas James,	<i>Worcester.</i>
Grandin, Egbert Henry, A.B.,	<i>New-York City.</i>
Grout, Charles Henry,	<i>Worcester.</i>
Hall, David Graham,	<i>Boston.</i>
Hall, Newbert Jackson,	<i>Boston.</i>
Harmon, Samuel Tappan,	<i>Boston.</i>
Hartley, Richard Cook Borden,	<i>Fall River.</i>
Hill, Charles Edwin, A.B. ( <i>Yale Coll.</i> ),	<i>E. Killingly, Conn.</i>
Hinds, Francis Edward,	<i>Boston.</i>
Holbrook, William Edward, A.B. ( <i>Amherst Coll.</i> ),	<i>Palmer.</i>
Hooker, Charles Parker,	<i>Springfield.</i>
Hooper, Horace Nathaniel, A.B.,	<i>Boston.</i>
Jaques, Henry Percy, A.B.,	<i>Boston.</i>
Johnson, Frederick William, A.B. ( <i>Amherst Coll.</i> ),	<i>Bradford.</i>
Keating, James Edward,	<i>Milford.</i>
Keating, Thomas Francis, A.B. ( <i>Holy Cross Coll.</i> ),	<i>Portland, Me.</i>
Kibbey, William Beckford,	<i>Washington, D.C.</i>
Kyle, Flavill Winslow,	<i>Boston.</i>
Larrabee, Walter Willis,	<i>Boston.</i>

Leonard, Henry Fiske,	<i>Southbridge.</i>
Mallett, Charles Howard,	<i>Bath, Me.</i>
Manton, Walter Porter,	<i>Boston.</i>
Meador, Charles Eugene,	<i>Cambridge.</i>
Monks, George Howard, A.B.,	<i>Boston.</i>
Montgomery, Frank, A.B. ( <i>Yale Coll.</i> ),	<i>New-York City.</i>
Mudge, Henry Sanford, A.B.,	<i>Boston.</i>
Mullen, Francis Henry,	<i>Boston.</i>
Noble, Arthur Green,	<i>Boston.</i>
Noonan, Michael Charles,	<i>Lowell.</i>
Noyes, Charles Henry,	<i>Gardner.</i>
Noyes, Ernest Henry, A.B. ( <i>Bowd. Coll.</i> ),	<i>Newburyport.</i>
O'Brien, John Joseph,	<i>Worcester.</i>
Osman, Charles Franklin,	<i>Boston.</i>
Otis, Walter Joseph,	<i>Chicago, Ill.</i>
Parker, Theodore Edson,	<i>Lowell.</i>
Parsons, Azariah Worthington,	<i>Somerville.</i>
Peckham, Cyrus Tracy, A.B.,	<i>Ledyard, Conn.</i>
Penteado, José Bonifacio Leite,	<i>San Paulo, Brazil.</i>
Perkins, Thomas Lyman,	<i>Salem.</i>
Perry, Eben Greely,	<i>Boston.</i>
Pomroy, Herbert Jason,	<i>Providence, R.I.</i>
Price, Russel Clarence,	<i>Waukegan, Ill.</i>
Randall, James Munroe,	<i>Woburn.</i>
Robbins, Elliot Daniel,	<i>Springfield.</i>
Rogers, Gorham Davis,	<i>Newbury.</i>
Ruddock, Edward Josiah, A.B. ( <i>Amherst Coll.</i> ),	<i>Greenfield.</i>
Sampson, Frederic Albert,	<i>Lawrence.</i>
Scoboria, Charles Quantic,	<i>N. Somerville.</i>
Scully, Francis Patrick,	<i>Medford.</i>
Shepstone, James Albert,	<i>Gardner.</i>
Shores, Erwin Isaac,	<i>Suffield, Conn.</i>
Simmons, William Turner,	<i>Boston.</i>
Smith, Thomas Perkins, A.B. ( <i>Bates Coll.</i> ),	<i>Ashland, N.H.</i>
Sprague, William Lawrence, A.B.,	<i>Boston.</i>
Standish, Myles, A.B. ( <i>Bowd. Coll.</i> ),	<i>Cambridge.</i>
Stanton, Jere Edmund,	<i>Boston.</i>
Stetson, Edwin Flye,	<i>Damariscotta, Me.</i>
Stevens, John Cornell,	<i>New York, N.Y.</i>
Strong, Charles Pratt, A.B.,	<i>E. Bridgewater.</i>
Sullivan, Dennis Aloysius,	<i>Lawrence.</i>
Swarts, Gardner Taber,	<i>Providence, R.I.</i>
Terry, Herbert, S.B. ( <i>Cornell Univ.</i> ),	<i>Fairhaven.</i>
Thompson, Joseph Marshall,	<i>Providence, R.I.</i>



Upton, William Clark,	<i>Waukegan, Ill.</i>
Wade, Edric Allan,	<i>Laurence.</i>
Walton, George Lincoln, A.B.,	<i>Westfield.</i>
Warren, Franklin Cooley,	<i>Boston.</i>
Warren, Lewis Jonathan, A.B. ( <i>Yale Coll.</i> ),	<i>Killingly, Conn.</i>
Warren, Louis Raymond,	<i>Terre Haute, Ind.</i>
Warren, Nathan Alonzo,	<i>Worcester.</i>
Webber, Frederick Ward,	<i>Cambridge.</i>
Weld, Charles Goddard,	<i>Boston.</i>
Whitcombe, Charles Reed, A.B. ( <i>Williams Coll.</i> ),	<i>Cambridge.</i>
Wolcott, Willard,	<i>Hartford, Conn.</i>
Woodward, Josiah Nichols,	<i>Pepperell.</i>
Yenetchi, Henry Ainsworth,	<i>Charlestown.</i>
Young, Charles William Fenelon,	<i>Cambridge,</i>
Young, John Francis.	<i>Boston.</i>

SUMMARY.

GRADUATES' COURSE . . . . .	8
THIRD CLASS . . . . .	56
SECOND CLASS . . . . .	51
FIRST CLASS . . . . .	111
	<hr/>
TOTAL . . . . .	226

# THE MEDICAL SCHOOL.

## REQUISITES FOR ADMISSION.

All students seeking admission to the Medical School must present a degree in Letters or Science from a recognized college or scientific school, or pass an examination, in June or September, in the following subjects:—

1. **LATIN.** The translation of easy Latin prose. French or German will be accepted, however, as a substitute for Latin.

2. **PHYSICS.** Candidates will be required to show such a knowledge of this subject as may be obtained from Balfour Stewart's elementary works on Physics.

The examinations will be conducted in writing; and, in judging the work of the candidate, the spelling, grammar, and construction will be considered.

Graduates in medicine will not be required to pass this examination on joining the school.

## DIVISION OF STUDIES.

*First year.*—Anatomy, Physiology, and General Chemistry.\*

*Second year.*—Medical Chemistry, Materia Medica, Pathological Anatomy, Clinical Medicine, and Clinical Surgery.

*Third year.*—Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery.

## COURSE OF INSTRUCTION.

The following methods of instruction are adopted in the several departments:—

*Anatomy.*—Lectures; various practical exercises, including abundant dissection under the direction of the Demonstrator; recitations from text-books; histology.

*Physiology.*—Lectures, recitations, and practical demonstrations in the laboratory. To students of the second and third classes, opportunities are given for original investigations in the laboratory.

*Chemistry* is taught mainly by practical work in the laboratory, the student having his own desk and apparatus. General Chemistry and qualitative analysis are taught during the first year. Beside the laboratory work, there is a lecture and a recitation every week. In the second year, medical chemistry is taught by lectures and laboratory work.

\* Any student who shall have previously passed in the Undergraduate Department or Scientific School of Harvard University an examination in General Chemistry (including qualitative analysis) will be exempt from examination in this branch, and may pursue the study of Medical Chemistry during his first year.

*Pathological Anatomy* is taught by lectures, recitations, and practical instruction in pathological histology. The collection of the Warren Anatomical Museum is used to illustrate the lectures, and many morbid specimens are shown in a fresh state. Students also receive practical instruction in the method of making autopsies, to which they are admitted at both hospitals. Special classes in pathological histology, including the diagnosis of tumors, are formed for those who are provided with a microscope. Such students are required to prepare the various objects. The school possesses a number of microscopes for the use of those students whose means will not permit the purchase of an instrument.

*Materia Medica and Therapeutics.* — *Materia Medica* is taught by lectures and practical demonstrations. *Therapeutics*, or the physiological action of drugs and their application to disease, is taught in the third year by lectures.

*The Theory and Practice of Medicine.* — Lectures, recitations, and hospital visits.

*Clinical Medicine.* — Daily instruction is given in this department by hospital visits and other exercises. Students are furnished with cases for personal examination, and are called upon to report them before the class, where they are criticised. These examinations are held both in the wards and in the amphitheatre. Another exercise, known as the "Clinical Conference," affords an opportunity for more thorough preparation of cases, more time being allowed for their study. The full written report of a case is read by the student who has examined it. It is afterwards criticised by the class, by the Professor of Clinical Medicine, and other teachers in the school. In addition to this, a regular course of supplementary instruction is given in Auscultation and Percussion, and in Laryngoscopy, which affords students an abundant opportunity for acquiring a thoroughly practical knowledge of these methods of exploration.

*Surgery.* — Lectures and recitations. There are also courses on Surgical Anatomy, Minor Surgery, Surgical Histology, Bandaging, and Operative Surgery. In the latter, students of the third class are supplied with material for repeating the usual surgical operations.

Instruction in Clinical Surgery is given at the Massachusetts General Hospital and City Hospital throughout the year, as follows: —

**FIRST TERM.** — Clinical Lectures on cases, per week, 2; Surgical Visits in the hospital wards, per week, 3; public operating days, per week, 2. Per week, 7.

**SECOND TERM.** — Clinical Lectures on cases, per week, 1; Surgical Visits in the hospital wards, per week, 3; public operating days, per week, 3. Per week, 7.

The Professor of Clinical Surgery holds an exercise twice a week, in winter, at the City Hospital.

Clinical Surgery is there taught, in two ways: 1st, by bedside exami-

nations of the students in the hospital wards; 2d, by a surgical conference, at which the advanced students make a full report of a surgical case in writing, which is then criticised by their fellow-students, and by the Professor. The case is completed, whenever practicable, by an exhibition of, or operation on, the patient, — on the spot.

*Obstetrics.* — Lectures and recitations. Students are instructed in the usual operations on the manikin, and will have opportunities to take charge of cases of midwifery in their third year. A course of operative midwifery, with practical illustrations on the cadaver, is given.

*Diseases of Women and Children.* — Lectures and Clinical Instruction.

*Mental Diseases.* — Lectures.

*Ophthalmology.* — A complete course is delivered upon the diseases of the eye, including clinical instruction and the use of the ophthalmoscope.

*Dermatology* is taught by lectures and clinical illustrations. The large number of out-patients at the Massachusetts General Hospital furnishes ample opportunities for illustration.

*Syphilis.* — Recitations and clinical instruction.

*Otology.* — Lectures and clinical instruction.

*Laryngoscopy, Auscultation, and Percussion.* — Lectures and Demonstrations.

*Diseases of the Nervous System.* — Lectures and Demonstrations.

*Hygiene.* — Lectures.

#### TEXT-BOOKS.

The following works are recommended as text-books and for collateral reading:—

##### *Text-Books.*

##### *Collateral Reading.*

#### ANATOMY.

Gray, Wilson, Leidy.

Hodges's Practical Dissections.

Holden's Manual.

Quain (Edition of 1867).

Holden's Osteology.

Stricker's Manual of Histology.

Frey's Microscopic Technology.

Tyson's Cell Doctrine.

#### PHYSIOLOGY.

Dalton's Human Physiology.

Carpenter's Principles of Human Physiology.

Kirkes's Hand-book of Physiology.

Huxley's Elementary Lessons in Physiology.

Pavy on Food and Dietetics.

Hermann, Grundriss der Physiologie der Menschen.

Fick, Compendium der Physiologie.

Fick, Medicinische Physik.

Sanderson's Hand-book for the Physiological Laboratory.

Flint's Physiology of Man.

#### GENERAL CHEMISTRY.

Bloxam's Chemistry.

Galloway's Qualitative Analysis.

Miller's Elements of Chemistry.

## MEDICAL CHEMISTRY.

- |                               |  |
|-------------------------------|--|
| Harley on Urine.              | Ralfe, Outlines of Physiological Chemistry.                    |
| Reese's Manual of Toxicology. | Gorup-Besanez, Physiologische Chemie.                          |
|                               | Neubauer und Vogel, Analyse des Harns.                         |
|                               | Taylor on Poisons.   |
|                               | Tardieu, Étude médico-légale et clinique sur l'Empoisonnement. |

## MATERIA MEDICA.

- |                             |                             |
|-----------------------------|-----------------------------|
| Parrish's Pharmacy.         | United States Dispensatory. |
| United States Pharmacopœia. |                             |

## PATHOLOGICAL ANATOMY.

- |   |   |
|---|---|
| Wagner's Manual of General Pathology.                         | Virchow's Cellular Pathology.                   |
| Jones and Sieveking's Pathological Anatomy (Payne's edition). | Rindfleisch's Pathological Histology.           |
|   | Wilks's Pathological Anatomy (Moxon's edition). |
|   | Delafield's Post-Mortem Examinations.           |

## THERAPEUTICS.

- |   |                                |
|---|--------------------------------|
| H. C. Wood's Therapeutics.                | Ringer's Therapeutics.         |
| Stillé's Therapeutics and Materia Medica. | Notlinagel, Arzneimittellehre. |

## OBSTETRICS.

- |                                  |                      |
|----------------------------------|----------------------|
| Leishman's System of Midwifery.  | Cazeaux's Midwifery. |
| Schroeder's Manual of Midwifery. |                      |

## THEORY AND PRACTICE.

- |                               |                                |
|-------------------------------|--------------------------------|
| Flint's Practice of Medicine. | Reynold's System of Medicine.  |
| Da Costa's Medical Diagnosis. | Aitken's Science and Practice. |

## SURGERY.

- |                                |   |
|--------------------------------|---|
| Bryant's Practice of Surgery.  | Heath's Minor Surgery and Bandaging.      |
| Billroth's Surgical Pathology. | Bellamy on Surgical Anatomy.              |
|                                | Guérin, Éléments de Chirurgie Opératoire. |
|                                | Holme's System of Surgery.                |
|                                | Cooper's Surgical Dictionary (1872).      |

The tabular views on the following pages will illustrate the distribution of studies throughout the year :—

## FIRST TERM, 1876-77.

## FIRST YEAR.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Histology, till Jan.	Laboratory.	Laboratory.	Histology, till Jan.	Laboratory.	Laboratory.
10	Histology, till Jan.	Laboratory.	Laboratory.	Histology, till Jan.	Chemistry. R.	Physiology. R.
11	Physiology. L.	Physiology. L.	Chemistry. L.	Laboratory.	Physiology. L.	
12	Laboratory.	Laboratory.	Laboratory.	Laboratory.	Laboratory.	Museum.
1	Last 11 w'ks, Anatomy. L.	Anatomy. L.	Anat. R. first 8 weeks. Anat. L. last 11 weeks.	Anatomy. L.	Anatomy. R.	
5	Prac. Anat. after Jan. 1.	Prac. Anat. after Jan. 1.	Prac. Anat. after Jan. 1.	Prac. Anat. after Jan. 1.	Prac. Anat. after Jan. 1.	

The Assistant Demonstrator will be in the dissecting-room every day at 9 A.M., when not engaged with the Professor of Anatomy.

## SECOND YEAR.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	M. G. H. Med. Vis.	B. C. H. Med. Visit. Bost. Disp.	Clin. Med. L.	M. G. H. Med. Visit	Boston Dispensary.	
10	Path. Anat. L. Aus. & Per.	Clin. Surg. L. After Dec. 1. Aus. & Per.	Aus. & Per.	Aus. & Per.	B. C. H. Surg. Visit. Aus. & Per.	M. G. H. Surg. Visit. Aus. & Per.
11	Clin. Surg. L.				B. C. H. Op.	M. G. H. Op.
12		Chemistry. L.		Materia Medica.	Chemistry. R.	Museum.
3	Path. Hist.	Path. Anat. R.	Path. Anat. L.	Path. Hist.	Prac. Anat. R.	
4			Surgery. R.	Clin. Con.		
5	Prac. Anat. till Jan. 1.	Prac. Anat. till Jan. 1.	Prac. Anat. till Jan. 1.	Prac. Anat. till Jan. 1.	Prac. Anat. till Jan. 1.	

## THIRD YEAR.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	M. G. H. Med. Visit. Eye and Ear Infirmary.	B. C. H. Med. Visit. Bost. Disp.	Clinical Medicine. L.	M. G. H. Med. Vis. Eye and Ear Infirmary.	B. C. H. Ophthal and Otology. Bost. Disp.	Diseases of Nervous Sys.
10	Theo. and Prac. L.	Clin. Surg. L. after Dec. 1.	Dermatol. Clinical.	Theo. and Prac. L.	B. C. H. Surg. Visit.	M. G. H. Surg. Visit. Diseases of Children.
11	Clin. Surg. L.		Surgery. L.	Surgery. L.	B. C. H. Op Diseases of Children.	M. G. H. Op.
12	Obstetrics. L.	Till Dec. Surgery L. After Dec 1. Diseases of Nerv. Sys.	Obstetrics. L.	Obstetrics. R.	Veneral Diseases.	Museum.
3		Theo. and Prac. R.		Ophthal.	Theo. and Prac. R.	
4	Therap. L.	Dermatol. L.	Therap. R.	Clin. Con.	Therap. L.	

## SECOND TERM, 1876.

## FIRST YEAR.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Laboratory.	Laboratory.	Laboratory.	Laboratory.	Laboratory.	Laboratory.
10	Laboratory.	Embryology in May.	Laboratory.	Embryology in May.	Chemistry. R.	Physiology. R.
11	Chemistry. L.	Physiology. Conf.	Physiology. L.	Laboratory.	Physiology. L.	
1	Anatomy. L. till May.	Anat. L. or R. till May.	Laboratory.	Anatomy. L. till May.	Anatomy. R. till May.	Museum.
3	Laboratory.	Laboratory.	Laboratory.	Laboratory.	Laboratory.	
5	Prac. Anat. till May.	Prac. Anat. till May.	Prac. Anat. till May.	Prac. Anat. till May.	Prac. Anat. till May.	

The assistant Demonstrator will be in the dissecting-room every day at 9 A.M., when not engaged by the Professor of Anatomy.

## SECOND YEAR.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	M. G. H. Med. Visits.	B. C. H. Med. Visit. Bost. Disp.	Mat. Med.	Mat. Med.	B. C. H. Bost. Disp.	Clin. Med.
10	Clin. Med. Aus. & Per.*	B. C. H. Clin. Surg. till April 1. After Ap. 1, Med. Visit. Aus. & Per.	M. G. H. Surg. Vis. Aus. & Per.	M. G. H. Med. Visit. Aus. & Per.	B. C. H. Surg. Visit. Aus. & Per.	M. G. H. Surg. Visit. Aus. & Per.
11	Path. Anat. L.		M. G. H. Op. Reg. Anat. after Ap. 1.	Path. Anat. L.	B. C. H. Op.	M. G. H. Op.
12	Surg. Conf. till April 1. Regional Anat. after April 1.	Chemistry. L.	Chemistry. R.	M. G. H. Surg. Con.		Museum.
3	Path. Hist.	Path. Anat. R.	Surgery. R.	Path. Hist.	Path. Anat. R.	
4			Clin. Conf.			

## THIRD YEAR.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	M. G. H. Med. Visit. Eye and Ear Infirmary.	B. C. H. Med. Visit. Bost. Disp.	Dermatol. Clinical.	Ophthal. L. Diseases of Nerv. Sys.	B. C. H. Ophthal. Clin. Otol. Eye and Ear Infirmary.	
10	Clin. Med.	B. C. H. Clin. Surg. till April 1. After Ap. 1, Med. Vis.	M. G. H. Surg. Vis.	M. G. H. Med. Vis.	B. C. H. Surg. Visit. Bost. Disp.	M. G. H. Surg. Visit.
11	Theo. and Prac. L.		M. G. H. Op.	Theo. and Prac. L.	B. C. H. Op.	M. G. H. Op.
12	Surg. Con. till April 1.	Diseases of Nervous Sys.	Obstetrics. L.	Ment. Dis. till May 1.		Museum.
3	Therap. R.	Theo. and Prac. R.		Hygiene after Ap. 15.	Theo. and Prac. R.	
4	Therap. L.	Dermatology	Clin. Con.	Obstetrics. R.	Therap. L.	Veneral Diseases, after Ap. 15.

\* During the early part of the term, a practical course in Laryngoscopy will be substituted for this exercise.



## CLINICAL ADVANTAGES.

The Medical department of the University is established in Boston, in order to secure those advantages for Clinical Instruction and for the study of Practical Anatomy which are found only in large cities.

There are Hospital visits or operations daily.

*The Massachusetts General Hospital.*—During the past year 1,989 patients were treated in the wards, and 16,998 in the out-patient departments. Patients are received from all parts of the United States and the Provinces, and are visited by the students with the attending physicians and surgeons. The opportunities for becoming acquainted with general surgery are very great. Operations are numerous, and are performed in the amphitheatre, which is provided with seats for 400 persons. Clinics in the following special branches have been established in connection with the out-patient department: Dermatology, Laryngoscopy, Electro-therapeutics.

The Hospital is adjacent to the Medical College, and its wards are open to the students on four days in the week.

*The City Hospital.*—During the past year, 3,421 cases were treated in its wards, and 9,413 in its various out-patient departments. The Medical wards always contain many cases of acute diseases, and changes are taking place constantly. The opportunities for seeing fractures, injuries, and traumatic cases of all kinds, are excellent, since, on an average, 800 street accidents are yearly treated. Surgical operations are performed in the amphitheatre. These include general surgical, and also ophthalmic, operations. Diseases of the eye, the ear, and the skin are largely treated in the out-patient department. Clinical instruction is given by the physicians and surgeons twice a week.

In these two Hospitals the facilities for witnessing Operative Surgery are unsurpassed. Twice a week in the first term, and three times a week in the second term, operations are performed in the presence of the class. The number of these operations is large, reaching nearly *two thousand* a year. The variety is great; embracing every surgical disease and injury, including the surgical operations on the eye and ear.

*The Massachusetts Charitable Eye and Ear Infirmary.*—The eight thousand patients annually treated at this institution present every variety of disease of the ear and eye, and supply a large number of operations.

*The Marine Hospital at Chelsea* receives from the shipping of the port a large number of patients, who furnish examples of the diseases of foreign countries, and of distant parts of the United States. Many cases of venereal disease in its various forms are treated annually.

*The Boston Dispensary.*—Forty-one thousand patients were treated at this Public Charity during the past year. Students have excellent opportunities to see minor surgery, and many of the diseases of children, and to practise auscultation and percussion.

*Hospital Appointments.* — From eighteen to twenty students are selected annually for House Officers of the various Hospitals. Appointments to the Boston Lying-in Hospital are for a term of three months.

#### EXAMINATIONS.

The regular examinations are held in the following order:—

*At the end of the first year:* Anatomy, Physiology, and General Chemistry.\*

*At the end of the second year:* Medical Chemistry, Materia Medica, and Pathological Anatomy.

*At the end of the third year:* Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery.

The regular examinations are held at the end of each year in June; and a week before the opening of the School in September, on the studies of the preceding year.†

No student shall be allowed to anticipate the examinations in the regular course of studies of his year, except by special permission of the Faculty. No student shall be allowed to present himself for examination in any branch, without notifying the Dean by letter that he intends to do so, one month before the time when the examination is to be held.

The examinations are conducted mainly in writing. For specimens of the latest examination papers, see pp. 286-89. No student will receive his degree until he has passed a satisfactory examination in all the above-mentioned subjects, and presented a certificate from the Demonstrator of Anatomy that he has satisfactorily dissected the three parts of the body. Those who fail in any subject may present themselves in that subject again at the next regular examination. The regular examinations for the year 1876-77 will begin June 11th and September 24th.

#### DIVISION OF STUDENTS.

Students are divided into three classes, according to their time of study and proficiency.

Students may be admitted to advanced standing in the regular course; but all who apply for admission into the second or third year's class must pass an examination at the beginning of the year in the branches already pursued by the class to which they seek admission, and furnish a satisfactory ‡ certificate of time spent in medical studies. No student shall advance with his class, or be admitted to advanced standing, until he has passed the required examination in the studies of the year, or a majority of them; nor shall he become a member of the third class until he has passed all the examinations of the first, in addition to a majority of those of the second, year.

\* See foot-note on page 116.

† The June examination is for those only who are members of the School at the time, and for those entitled to apply for the degree.

‡ Certificates from teachers who practise any peculiar or exclusive system of medicine are not accepted.

Students who do not intend to offer themselves for a degree will, however, be received at any part of the course for one term or more.

Any student may obtain, without an examination, a certificate of his period of connection with the School.

#### REQUIREMENTS FOR A DEGREE.

Every candidate must be twenty-one years of age, and of good moral character; must give evidence of having studied medicine three full years; have spent at least one continuous year at this School; have presented a satisfactory thesis; and have passed the required examinations.

Theses of conspicuous merit are mentioned by title or read at the University Commencement.

The degree of Master of Arts is open to graduates of the School, who are also Bachelors of Arts, and who pursue an approved course of study in Medicine for at least one year after taking the degree of Doctor of Medicine.

#### LIBRARIES.

The library at the Medical College is open to the student on the deposit of five dollars, to be refunded to him when he may desire, after returning all books.

The College Library at Cambridge is open to the students of the Medical School.

The Boston Public Library, which contains a large collection of medical books, may also be used by students recommended by the Dean.

#### BOYLSTON MEDICAL SOCIETY.

This society, composed of medical students, meets at stated intervals for the discussion of medical topics, and is presided over by a physician selected by the members. Prizes, in money or books, are awarded annually to the writers of essays judged worthy of such distinction by a committee of physicians selected for that purpose by the society.

#### FEEES AND EXPENSES.

For matriculation, five dollars; for a year, two hundred dollars (if in two payments, at the first, one hundred and twenty dollars; at the second, eighty dollars); for one term alone, one hundred and twenty dollars; for graduation, thirty dollars. Of students who do not pay in advance, a bond for \$300, executed by two sufficient bondsmen, one of whom must be a citizen of Massachusetts, is required. A copy of such bond will be sent on application to the Secretary of the Faculty. To students depositing these bonds, term-bills will be presented a week before the end of the first term, to be paid within two weeks; and also one week or more before Commencement, to be paid on or before the beginning of the next academic year. Such students shall be held

responsible for the payment of fees until they shall have notified the Dean of their intention to withdraw from the School, and have received their bond from the Treasurer. No degree can be conferred till all dues to the School are discharged. The student's general expenses may be reduced, in accordance with his means, to the standard which prevails in other cities. The janitor of the Medical College will always have a list of boarding-houses in the vicinity of the college building, varying in their rate of charges from five to ten dollars a week.

#### PECUNIARY AID.

Four yearly scholarships have been established, of the value of \$200 each, open to meritorious students who have been at the School for one or two years. Only those needing assistance are expected to apply, and from such those holding the highest rank will have the preference.

Assistants to the Professors of Physiology and Chemistry are annually appointed from such deserving students as need aid. Students holding these positions are exempt from the payment of the fee for tuition during their term of service.

Students on joining the school must enter their names with the Secretary of the faculty.

#### COURSE OF STUDY FOR GRADUATES.

For the purpose of affording to those who are already graduates in medicine additional facilities for pursuing clinical, laboratory, and other studies, for which they had not previously found leisure, in such subjects as may specially interest them, and as a substitute in part for the opportunities heretofore sought for in Europe, the Faculty have established a post-graduate course, of which the following is a programme:—

*Histology.*—The various methods of examining the different tissues are employed, and opportunities for original research are offered. Fee twenty dollars per term.

*Physiology.*—Opportunities for original investigation in the Physiological laboratory. Fee thirty dollars per term.

*Medical Chemistry.*—Practical instruction in the Chemical laboratory in the analysis of the urine and other animal fluids in health and disease, and of poisons; examination of blood stains and other objects connected with medico-legal investigations, with the application of the microscope to these processes. General analysis, also, if desired. Laboratory fee thirty dollars per term.

*Pathological Anatomy.*—Practical instruction in Pathological Histology and the examination of specimens in the Microscopical laboratory; and opportunity for witnessing and making autopsies. Fee twenty dollars per term.

*Surgery.*—A practical course of operative surgery, and instruction

in the application of bandages and apparatus. Fee twenty-five dollars per term.

*Auscultation, Percussion, and Laryngoscopy* practically taught, and diseases of the larynx demonstrated by the aid of the oxyhydrogen light. Fee twenty dollars per term.

*Ophthalmology*.—Clinical instruction, lectures on diseases of the eye, and demonstrations of the methods of performing operations. Exercises in the use of the ophthalmoscope. Fee twenty-five dollars per term.

*Otology*.—Lectures and clinical instruction on diseases of the ear. Fee fifteen dollars per term.

*Dermatology*.—Clinical instruction in diseases of the skin, illustrated by patients in this department of the Massachusetts General Hospital Lectures. Fee twenty-five dollars per term.

*Syphilis*.—Clinical instruction at the Boston Dispensary and the Marine Hospital. (Second term.) Fee fifteen dollars.

*Psychological Medicine*.—Lectures on mental diseases. (Second term.) Fee five dollars.

*Diseases of the Nervous System*.—Practical illustrations of the application of various forms of electricity. Lectures. Fee fifteen dollars per term.

*Gynæcology*.—Clinical instruction in diseases of women. Fee ten dollars.

*Obstetrics*.—Cases supplied. A course of operative midwifery. Fee ten dollars.

Those pursuing this course may elect the studies to which they will give their attention, and allot the time they will devote to each. They will be exempt, unless at their option, from examinations, and may obtain a certificate of attendance on this course of advanced study. On payment of the full fee for the course, they will have the privilege of attending any of the other exercises of the Medical School, the use of its laboratories and library, and all other rights accorded by the University.


Graduates of other medical schools may obtain the degree of M.D. at this University after a year's study in the graduates' course. The required examinations may be passed in such order as is desired, but only at the stated seasons.

The fee for a year is . . . . .	\$200
„ for one term . . . . .	120

For any of the special courses, such fees as are above specified.

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For further information or catalogues, address DR. R. H. FITZ, *Secretary*, 108 Boylston Street, Boston, Mass.

 The Medical College is on North Grove Street, Boston.

# THE DENTAL SCHOOL.

BOSTON.



## FACULTY.

- CHARLES W. ELIOT, LL.D., *President.*  
THOMAS H. CHANDLER, D.M.D., *Dean, and Professor of Mechanical Dentistry.*  
OLIVER W. HOLMES, M.D., *Professor of Anatomy.*  
HENRY J. BIGELOW, M.D., *Professor of Surgery.*  
—— ———, *Professor of Dental Pathology and Therapeutics.*  
GEORGE T. MOFFATT, M.D., D.M.D., *Professor of Operative Dentistry.*  
HENRY P. BOWDITCH, M.D., *Professor of Physiology.*  
CHARLES B. PORTER, M.D., *Demonstrator of Practical Anatomy.*  
LUTHER D. SHEPARD, D.D.S., *Adjunct Professor of Operative Dentistry.*  
NATHANIEL W. HAWES, *Assistant Professor of Operative Dentistry.*  
EDWARD S. WOOD, M.D., *Professor of Chemistry.*  
CHARLES A. BRACKETT, D.M.D., *Instructor in Dental Therapeutics.*  
WILLIAM HERBERT ROLLINS, D.M.D., *Instructor in Dental Pathology.*

## OTHER INSTRUCTORS.

- IRA A. SALMON, D.D.S., *Lecturer on Operative Dentistry.*  
CHARLES WILSON, D.M.D., *Demonstrator in charge.*  
GEORGE F. GRANT, D.M.D., *Demonstrator in Mechanical Dentistry.*

## STUDENTS.

NAME.	RESIDENCE.
Ayer, Frederick Eugene,	<i>Lawrence.</i>
Banfield, Frederic Eugene,	<i>Boston.</i>
Bouvé, Allston Gray,	<i>Boston.</i>
Briggs, Edward Cornelius,	<i>Lawrence.</i>
Bright, Joseph Mason,	<i>Bangor, Me.</i>
Currier, Walter Bryant,	<i>Newburyport.</i>
Dunkel, Henry Francis,	<i>Boston.</i>
Gillingham, Thomas Clarence,	<i>Boston.</i>
Glover, William Liddiatt,	<i>Boston.</i>
Hamilton, Charles,	<i>Wrentham.</i>
Hamilton, Harry Fairfield,	<i>Saco, Me.</i>
Hitchcock, Charles Hollis,	<i>Newton.</i>
Hitchcock, Edward Bigelow,	<i>Newton.</i>

Page, Washburn Eddy,	Charlestown.
Perrin, Frank,	Boston.
Rand, Manning Kennard,	Boston.
Seabury, Frederick Wheaton,	Providence, R.I.
Sheffield, Lucius Tracy,	New London, Conn.
Stack, Richard Theodore, M.D. (Dublin),	Mullaghmore, Omagh, Ireland.
Whitten, Daniel Frank,	South Boston.
Williams, Frank Herbert,	Boston.
Woodward, Herbert Chauncey,	West Roxbury.

The Dental Department of the University is established in Boston, in order to secure in connection with the Medical Department those advantages for Clinical Instruction which are found only in large cities.

Instruction in this School is given throughout the academic year, by lectures, recitations, clinical teaching, and practical exercises, uniformly distributed. The year begins on the Thursday following the last Wednesday in September, and ends on the last Wednesday in June. It is divided into equal terms, with a recess of one week between them. There is also a recess of one week at Christmas. The course of instruction is progressive, and extends over two years, the teaching of one year not being repeated in the next.

It is the object of the Faculty to present a complete course of instruction in the theory and practice of Dentistry; and, for this purpose, a well appointed laboratory and infirmary are provided, and such arrangements made as insure an ample supply of patients. Clinical Instruction is given by the professors; and, under the direction of demonstrators, patients are assigned to the students, insuring to all opportunity of operating at the chair, and becoming by actual practice familiar with all the operations demanded of the dentist.

The Infirmary, which is a department of the Massachusetts General Hospital, remains open, and the Demonstrator is in attendance, daily, throughout the year, offering to students unsurpassed facilities for acquiring practical knowledge and manipulative dexterity. Upwards of eight thousand operations have been performed upon seventy-two hundred patients the past year.

Students have access to the hospitals of the city; to the dissecting room, library, and museum of the Medical College; and also, *without additional charge, to the instruction given in any other department of the University, with the exception of exercises carried on in the special laboratories.*

### COURSE OF INSTRUCTION.

The following are the methods of study adopted in the various departments:—

*Anatomy.*—Lectures, largely illustrated by the anatomical preparations and models of the Warren Museum, and by an extensive series of

colored drawings and diagrams; various practical exercises, including abundant dissection under the direction of the Demonstrator; recitations from text-books; histology.

*Physiology.*—Lectures, recitations, and practical demonstrations in the laboratory. A new physiological laboratory has been fitted up, which is under the supervision of an able teacher, who devotes his whole time to this department.

*Chemistry* is taught mainly by practical work in the laboratory, the student having his own desk and apparatus. General chemistry and qualitative analysis are taught during the first year. Besides the laboratory work, there is a lecture and recitation every week.

*Surgery.*—Lectures and recitations. The surgical lectures are illustrated by a magnificent collection of colored drawings, and by recent and morbid specimens. All the new and approved surgical instruments and apparatus are exhibited, and their use explained. In addition to operations on the living subject at the hospitals, operative surgery is taught, and operations are performed upon the dead body, as a part of the illustrations of the surgical lectures. A course of lectures in oral surgery will be given during the winter.

Instruction in clinical surgery is given at the Massachusetts General Hospital and City Hospital every week.

*Surgical Pathology.*—Lectures embracing the subjects of shock, inflammation, repair, suppuration, ulceration, mortification, embolism, pyaemia, erysipelas, and tetanus.

*Operative Dentistry.*—The instruction in this department is both didactic and practical. The professor and assistants endeavor to demonstrate all known methods of performing operations upon the teeth and other tissues involved.

The treatment of irregularities, origin and treatment of decay, materials used for filling teeth, the most improved instruments used in operating, &c., are appropriately treated of. Clinics are held at the Infirmary, and every available means used to make the student practically acquainted with all the modern improvements of this important branch of dental science.

*Dental Pathology.*—Lectures and recitations upon the anatomy and pathology of the teeth and surrounding tissues. Instruction for the preparation and examination of microscopical sections of the dental tissues will be given to those students who have microscopes.

*Dental Therapeutics.*—The instruction from this chair embraces the application of the general principles of medicine to the specialty of dentistry, with a consideration of sensitive dentine, caries, pulpitis, periodontitis, alveolar abscess, gingivitis, necrosis, and other diseased conditions of the dental and contiguous tissues, with reference to their treatment and the therapeutical agents used therefor.

*Mechanical Dentistry.*—Lectures and practical work in the laboratory;



the manner in which mineral teeth are constructed, the principles and method of carving and furnace-work, and all compounds used for artificial teeth; also, metallurgy, and the manner in which gold and silver plates are prepared and adapted to the mouth; the use of rubber and other articles as bases. It is the aim of the professor to teach not only the mere mechanical processes of dentistry, but that combination of art with mechanism which enables the practitioner to effect so much in restoring the symmetry of the face, and usefulness of the teeth, where they have been lost or impaired by accident or disease.

#### EXAMINATIONS.

The examinations will be held in the following order, viz.:—

At the end of the first year, anatomy, including dissection, physiology and general chemistry. A certificate from the Demonstrator of Anatomy will be required of each student, that he has satisfactorily dissected the three parts of the body.

At the end of the second year, dental pathology, including a knowledge of gestation and diseases of women so far as they affect the mouth and throat, dental materia medica and therapeutics, oral surgery and surgical pathology, operative and mechanical dentistry. The examinations in operative and mechanical dentistry will include actual operations, and the preparation of specimens of mechanical dentistry.

#### REQUISITIONS FOR THE DEGREE.

The degree of Doctor of Dental Medicine (*Dentariæ Medicinæ Doctor*) may be conferred upon each candidate of adult age, and of good moral character; who must give evidence of having studied medicine or dentistry three full years, at least one continuous year of which must have been spent at this School. He must also have presented a satisfactory thesis, passed all the required examinations, and convinced the Professors of Operative and Mechanical Dentistry of his ability to meet satisfactorily the requirements of his art.

He must also deposit with the Dean, to be placed in the Museum of the College, a specimen of mechanical dentistry, or of practical or pathological anatomy, prepared during the course under the eye of the instructor.

Students may be admitted to advanced standing upon passing a satisfactory examination in a majority of the studies already pursued by the class; but no student shall advance with his class, or be admitted to advanced standing, until he has passed such examination, neither does admission to advanced standing diminish the time (three years) to be spent in professional studies.

The regular examinations are held at the end of each year in June; and for advanced standing, on the studies of the preceding year, a week before the opening of the School in September.

There is also an examination in February, in the studies of the preceding term, for those who apply to enter the School at that time, and for those who have failed in some previous examination.

No student will be allowed to anticipate the examinations in the regular course of studies of his year, except by special permission of the Faculty. Students intending to present themselves for examination, must notify the Dean by letter of such intention, two weeks before the time when the examination is to be held.

The examinations are conducted in writing. No student will receive his degree until he has passed a satisfactory examination in all the above-mentioned subjects, and presented a certificate from the Demonstrator of Anatomy that he has satisfactorily dissected the three parts of the body. Those who fail in any subject may present themselves in that subject again at the next regular examination. The regular examinations for the year 1876-77 will begin February 5, June 11, and September 24.

The work in the operative and mechanical infirmaries will go on throughout the course; but no student will be permitted to operate at the chair until he has by observation and practice on extracted teeth satisfied the professor of his fitness.

The Faculty recommend young men who propose to take the degree to spend the whole of the required term of three years of study in the school. But those who wish to spend but two of the three years in the school are earnestly advised to pass their first year of study, before entering, under the direction of a *competent* private instructor.

#### LIBRARIES.

The Library at the Medical College is open to the student on the deposit of five dollars, to be refunded to him upon returning all books.

The College Library, at Cambridge, is open to students.

The Boston Public Library is also open to all students.

#### FEEES.

There shall be no fees for matriculation, for the diploma, nor for the demonstrators. For the first year a student is a member of the school, the fee shall be \$200, in two payments of \$120 and \$80, at the beginning of each term; for the second year \$150, in two payments of \$100 and \$50, at the beginning of each term; for any subsequent year, \$50, payable at the beginning of the year.

Of students *who do not pay in advance*, a bond for \$300 executed by two sufficient bondsmen, one of whom must be a citizen of Massachusetts, is required. A copy of such bond will be sent, on application to the Dean of the faculty. To students depositing these bonds, term-bills will be presented a week before the end of the first term, to be paid within two weeks; and also one week or more before Commencement, to be paid on or before the beginning of the next academic year. Such students shall be held responsible for the payment of fees until they shall

have notified the Dean of their intention to withdraw from the School, and have received their bond from the Treasurer. No degree can be conferred till all dues to the School are discharged.

The student's expenses may be reduced, in accordance with his means, to the standard which prevails in other cities. The janitor will advise students in the selection of boarding places; and will always have a list of such as are in the vicinity of the college buildings, varying in their rates of charges.

Students on joining the school must enter their names with the Dean of the Faculty.

TEXT-BOOKS.

Gray's, or Quain's Anatomy.	Harris's Principles and Practice.
Dalton's Physiology (6th edition).	Wedl's Pathology of the Teeth
Bloxam's Chemistry.	Tomes's Dental Surgery.
Galloway's Qualitative Analysis.	Garretson's Oral Surgery.
Bryant's Surgery.	Dunglison's Medical Dictionary.
Billroth's Surgical Pathology.	Carpenter's Principles of Human
Taft's Operative Dentistry.	Physiology.
Richardson's Mechanical Dentistry.	

DAILY ORDER OF EXERCISES, WINTER TERM, 1876-77.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	M. Dent. L.	Dent. Pat. L.	Laboratory.	Laboratory.	Laboratory.	Laboratory.
10	Laboratory	Laboratory.	Laboratory.		Chem. R.	Phys. R.
10½				Every other week Dent. Ther.		
11	Physiology. L.	Physiology. L.	1st year Chem. L. 2d year Surg. L.		Physiology. L.	Operations. M. G. H.
12		2d year Surg. L.				
1	Anat. Lec. last 11 w'ks.	Anatomy. Lec.	Ana. R. 1st 8 w'ks. Lec. last 11 w'ks.	Anatomy. Lec.	Anatomy. Lec.	
2	Infirmary.	Infirmary.	Infirmary.	Infirmary.	Infirmary.	
4	Op. Dent. L. or Clinic.	Op. Dent. L. or Clinic.	Op. Dent. L. or Clinic.	Op. Dent. L. or Clinic.	Op. Dent. L. or Clinic.	

The Demonstrator of Anatomy will be present in the Dissecting-Room every afternoon.

Chemistry daily in Chemical Laboratory.

The Demonstrator in charge will be present in the Laboratory every forenoon, and in the Infirmary every afternoon.

# THE BUSSEY INSTITUTION,

## JAMAICA PLAIN.

### A SCHOOL OF AGRICULTURE AND HORTICULTURE.

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#### INSTRUCTORS.

THOMAS MOTLEY, A.M., *Instructor in Farming.*

DANIEL D. SLADE, M.D., *Professor of Applied Zoölogy.*

FRANCIS H. STORER, A.M., *Dean and Professor of Agricultural Chemistry.*

—————, *Professor of Horticulture.*

WILLIAM G. FARLOW, M.D., *Assistant Professor of Botany.*

—————, *Instructor in Entomology.*

J. ANDREW HENSHAW, A.M., } *Assistants in the Laboratory of Agricultural*  
DAVID S. LEWIS, } *Chemistry.*

BYRON D. HALSTED, S.B., *Assistant in Cryptogamic Botany.*

#### STUDENTS.

Chaplin, Stewart . . . . . *Boston.*

Halsted, Byron David, S.B. (*Agricultural Coll. of Michigan*) *Jamaica Plain.*

Hemenway, Augustus, A.B. . . . . *Boston.*

Kedzie, Robert Fairchild, S.M. (*Agricultural Coll. of Mich.*) *Jamaica Plain.*

Sears, Frederic Richard, A.B. . . . . *Boston.*

Weld, Clifford Read . . . . . *Roxbury.*

The School of Agriculture and Horticulture, established in execution of the Trusts created by the will of Benjamin Bussey, gives thorough instruction in Agriculture, Useful and Ornamental Gardening, and Stock Raising. It is intended for the following classes of persons:—

1. Young men who intend to become practical farmers, gardeners, florists, or landscape gardeners.
2. Young men who will naturally be called upon to manage large estates, or who would make, when thoroughly trained, good stewards or overseers of gentlemen's estates.
3. Persons who wish to familiarize themselves with some special branch of agriculture, horticulture, botany, or applied zoölogy.

The Bussey Institution is situated near the village of Jamaica Plain, about five miles south-west of the centre of Boston, and close to the Forest Hills station on the Boston and Providence Railroad. Students may live either in the immediate vicinity of the School, or in Boston proper, or in some one of the neighboring villages upon the line of the railroad.

The academic year begins on the Thursday following the last Wednesday in September, and ends on the last Wednesday in June, with a recess from December 24th to January 6th, inclusive.

## INSTRUCTION.

*Theory and Practice of Farming* . . . . . MR. MOTLEY.

Preparation and care of manure and composts. Breeding and care of neat stock, with special reference to the dairy. Breeding of horses and swine. Preparation of the ground for root crops, hay, and grain. The sowing and planting of different seeds and roots for farm use. Use of ploughs, harrows, and seed-sowers. Harvesting of hay and grain. Use of mowing machines, hay-tedders, horse-rakes, &c. Examination of agricultural implements. Farm accounts.

*Horticulture* \* . . . . . ——— ———

Propagation of Plants: the methods of practising it, and the principles on which they rest. Propagation by seed; by cuttings; by layers; by budding, grafting, and inarching. Methods of obtaining new varieties of fruits, flowers, and vegetables. Horticultural glass-houses, their construction and management. The flower garden;—perennial flowering shrubs and trees; bedding plants; foliage plants; the rose; the lily; the rhododendron; the azalea; the gladiolus, &c. The fruit garden;—the strawberry, raspberry, peach, grape, apple, pear, &c. Nurseries and their management. Manual practice of horticultural operations.

*Agricultural Chemistry* . . . . . PROF. STOREE.

Soil, air, and water in their relations to the plant. The food of plants;—manures, general and special. Chemical principles of tillage, irrigation, systems of rotation, and of special crops and farms. The food of animals; simple and mixed rations. Discussion of the values of different kinds of fodders, of the means of determining fodder values, and of the methods of using fodders to the best advantage.

*Applied Zoology* . . . . . PROF. SLADE.

The anatomy and physiology of domestic animals. Their proper management in health and disease. Epidemics,—their nature, progress, mode of introduction, and proper treatment.

*Botany* . . . . . ASST. PROF. FARLOW.

Vegetable anatomy, particularly the microscopic study of woods. Rudiments of cryptogamic botany. Fungi, especially those injurious to vegetation. Special investigations of the diseases of plants will be pursued; and, so far as possible, answers will be given to inquiries on this subject from any part of the country, provided they be accompanied with suitable material for examination.

\* This professorship is vacant at present.

*Entomology.\** . . . . .

Habits or economy, anatomy, and transformations of insects; their embryonic development, and their relations to the surrounding world. Means of controlling or keeping in check the increase of injurious species. Systems of classification. Collection and preservation of specimens.

*Quantitative Analysis* (for students who have had laboratory practice in qualitative analysis) . . . . . PROF. STORER.

Laboratory practice. Methods of analyzing rocks, manures, plants, milk, &c., and of investigating problems in agricultural chemistry.

Instruction is given by lectures and recitations, and by practical exercises in the laboratories; every student being taught to observe phenomena, to make experiments, and to study specimens for himself. The aim of the teachers is to give the student a just idea of the principles upon which the arts of agriculture and horticulture depend; to teach him how to make intelligent use of the stores of scientific literature which relate to these arts; and to enable him to put a proper estimate upon those kinds of evidence which are obtained by experiments and by the observation of natural objects. Examinations are held steadily to test the student's proficiency.

The courses above described are given in one year, so that they may be profitably pursued by young men of ability and judgment who cannot afford to spare much time for advanced study.

## REQUISITIONS FOR ADMISSION AND GRADUATION.

Candidates for admission must be at least seventeen years of age, and must present testimonials of good moral character. No formal examination will be required of them; but each student must satisfy the instructors of his ability and of his intention to profit by the teachings of the School. Young men who may feel unprepared to pursue the foregoing courses of instruction can pass one year at the Lawrence Scientific School, in Cambridge, which provides elementary courses of instruction in Chemistry, Physics, Biology, Physical Geography, Geology, Meteorology, Drawing, French, and German.

Candidates for the degree of the Bussey Institution in Agriculture or Horticulture must take this preliminary course of one year at the Lawrence Scientific School, or prove by examinations that they possess an equivalent amount of knowledge. They must, furthermore, on completion of the stated courses above described, devote a year to advanced study at the Bussey Institution, and to practical research in Agriculture or Horticulture, or in Botany, Anatomy, or Chemistry as applied to those arts; and must satisfy the instructors, by passing examinations, that they have acquired a thorough knowledge of the subjects taught at the School.

\* This instructorship is vacant at present.

Candidates for a degree are expected to pursue with equal diligence all the subjects above described; but the advanced studies of the final year may be varied, at the discretion of the instructors, in accordance with the student's aims and purposes.

Students who are not candidates for a degree may, upon producing certificates of good moral character, join the School at any time, without examination, to pursue any special course or courses of instruction which they are qualified to pursue with advantage. Botanical students will be received in the summer vacation, also, for laboratory work in algæ, fungi, or vegetable anatomy. Students interested in tree culture have the opportunity of seeing the raising of trees in great variety for the Arnold Arboretum.

#### BOND OR DEPOSIT.

Every student, when admitted, must give a bond, in the sum of \$200, to pay all charges accruing under the laws and customs of the University. The bond must be executed by two bondsmen, who must be satisfactory to the Treasurer, and one of whom must be a citizen of Massachusetts. Instead of filing a bond, a student may pay his tuition fee for the year in advance, and deposit such a sum of money, not exceeding \$50, as may be deemed sufficient to secure the payment of other school dues. Special students will pay the tuition-fees in advance at the Treasurer's office, No. 70 Water Street, Boston, or to Prof. F. H. Storer, Dean, at the Bussey Institution.

#### FEES AND EXPENSES.

The regular fee for the academic year will be \$150; for half or any less fraction of a year, \$75; for any fraction of a year greater than one-half, the fee for the whole year will be charged. The fee for any special course of instruction is \$40 for the year, excepting laboratory instruction in Botany (including the stated instruction in Botany above described), or in Quantitative Analysis (including the course on Agricultural Chemistry), for either of which the fee will be \$150 for the year.

The tuition-fees will be freely remitted to poor and meritorious students.

The other expenses of a student for an academic year may be estimated as follows:—

Room . . . . .	\$30.00 to \$100.00
Board for 38 weeks . . . . .	183.00 to 304.00
Text Books . . . . .	20.00 to 25.00
Fuel and Lights . . . . .	25.00 to 35.00
Washing . . . . .	19.00 to 38.00
	\$227.00 to \$502.00

The Curtis collection of fungi, and Assistant Professor Farlow's private cryptogamic collections, are kept at the Bussey Institution, to facilitate the systematic study of fungi and algæ. These collections will be accessible to the public on application to Assistant Professor Farlow.

## THE MASTER'S AND DOCTORS' DEGREES.

### CANDIDATES FOR THE DEGREE OF A.M.

NAME.	RESIDENCE.
Beatley, James Augustus, A.B. 1873,	Chelsea.
Boutell, Henry Sherman, A.B. 1876,	10 Oxford St.
Christy, Cyrus William, A.B. ( <i>Antioch Coll.</i> ) 1860, D.B. 1875,	D. 29.
Culbreth, Richard Smith, A.B. 1876,	Episc. Theol. School.
Derby, Samuel Carroll, A.B. 1866,	D. 13.
Elliott, William Henry, A.B. 1872, LL.B. 1876,	Boston.
Greener, Richard Theodore, A.B. 1870,	Columbia, S. C.
Harding, Herbert Lee, A.B. 1874, LL.B. 1876,	H. 21.
Hill, Edward Bruce, A.B. 1874, LL.B. 1876,	T. 54.
Hinkley, Holmes, A.B. 1876.	
Ivy, Jesse C, A.B. 1874, LL.B. 1876,	S. 7.
Lefavour, Edward Brown, A.B. 1876,	H. 8.
McMillan, William Gordon, A.B. 1874, LL.B. 1876,	127 Mt. Auburn St.
Sampson, Alden, A.B. 1876,	T. 66.
Stone, Charles Wellington, A.B. 1874,	C. 69.
Sturges, Stephen Perry, A.B. ( <i>Cornell Univ.</i> ) 1876,	21 Staniford St., Boston.
Tilden, George Horton, A.B. 1872, M.D. 1876,	105 Charles St., Boston.
Wait, Lucien Augustus, A.B. 1870,	Cornell Univ., N. Y.
Wambaugh, Eugene Miley, A.B. 1876,	S. 17.
Witherle, Charles Bryant, A.B. 1876,	11 Bulfinch St., Boston.

### CANDIDATES FOR THE DEGREE OF Ph.D.

Bartlett, Franklin, A.B. 1869,	<i>History.</i>	New York, N.Y.
Benton, Edward Raymond, A.B. 1875.	<i>Natural History.</i>	G. 50.
Birge, Edward Asahel, A.B. ( <i>Williams Coll.</i> ) 1873,	<i>Natural History.</i>	713 Camb. St.
Fenollosa, Ernest Francisco, A.B. 1874,	<i>Philosophy.</i>	D. 18.
Gooch, Frank Austin, A.B. 1872,	<i>Physics.</i>	2 Mt. Auburn St.
Hall, Grenville Stanley, A.B. ( <i>Williams Coll.</i> ) 1867,	<i>Philosophy.</i>	14 $\frac{1}{2}$ Pearl St.



Hooper, Franklin William, A.B. 1875,	<i>Natural History.</i>	W. 24.
Hooper, William Robert, A.B. 1871, D.B. ( <i>Episc. Theol. Sch.</i> ) 1875,	<i>History.</i>	Nantucket.
Hubbard, Henry Guernsey, A.B. 1873,	<i>Natural History.</i>	Detroit, Mich.
Lowery, Woodbury, A.M. 1876,	<i>Physics.</i>	127 Mt. Auburn St.
Melville, William Harlow, A.M. 1876,	<i>Physics.</i>	S. 22.
Peirce, Benjamin Osgood, A.B. 1876,	<i>Mathematics.</i>	413 Broadway.
Perrin, Marshall Livingston, A.M. 1876,	<i>Physics.</i>	M. 59.
Ross, Denman Waldo, A.B. 1875,	<i>History.</i>	24 Craigie St.
Seward, Josiah Lafayette, A.B. 1868, D.B. 1874,	<i>History.</i>	Lowell.
Snow, Freeman, A.B. 1873,	<i>History.</i>	G. 43.
Turner, Samuel Epes, A.B. 1869,	<i>History.</i>	Baltimore, Md.
Tyng, Theodosius Stevens, A.B. ( <i>Ken- yon Coll.</i> ) 1869, D.B. ( <i>Episc. Theol. Sch.</i> ) 1874,	<i>Philosophy.</i>	5 White St.
Wadsworth, Marshman Edward, A.M. 1874,	<i>Natural History.</i>	35 Orchard St.
White, John Williams, A.B. ( <i>Ohio Wes- leyan Univ.</i> ) 1868,	<i>Philology.</i>	M. 7.

**CANDIDATES FOR THE DEGREE OF S.D.**

Brooks, Henry Arnold, S.B. ( <i>Dartmouth Coll.</i> ) 1875,	<i>Mathematics.</i>	D. 20.
Faxon, Walter, A.B. 1871, S.B. 1872.	<i>Natural History.</i>	7 Sumner St.
Halsted, Byron David, S.B. ( <i>Agr. Coll. Mich.</i> ) 1871,	<i>Natural History.</i>	Jamaica Plain.
Sharpless, Isaac, S.B. 1873,	<i>Mathematics and Physics.</i>	Haverford College, Pa.
Waldo, Leonard, S.B. ( <i>Marietta Coll.</i> ) 1872,	<i>Mathematics and Astronomy.</i>	Observatory.

**HOLDERS OF FELLOWSHIPS.**

*Harris Fellowship.*

Jesse Walter Fewkes, A.B. 1875.

*Graduates' Scholarship.*

*Parker Fellowships.*

Frank Austin Gooch, A.B. 1872.

William Gardner Hale, A.B. 1870.

William Mackintire Salter, D.B. 1876.

*Kirkland Fellowship.*

Giorgio Anacleto Corrado Bendelari, A.B. 1874.

**RESIDENT GRADUATES NOT CANDIDATES FOR A  
DEGREE.**

Brown, George Willard, A.B.,	G. 50.
Campbell, William Taylor, A.B.,	36 Lee St.
Dole, Nathan Haskell, A.B.,	D. 34.
Hodges, Nathaniel Dana Carlile, A.B.,	404 Harvard St.
Laughlin, James Laurence, PH.D.,	8 Mason St.
Mann, Benjamin Pickman, A.B.,	19 Follen St.
Marston, William Staples, A.B.,	M. 47.
Merrill, Nathan Frederick, S.B. ( <i>Mass. Inst. Tech.</i> ), PH.D. ( <i>Univ. of Zurich</i> ),	M. 10.
Richardson, Ambrose Crosby, A.B.,	60 Mt. Auburn St.

**CANDIDATES ADMITTED TO DEGREES AT COM-  
MENCEMENT, 1876.**

*A.M.*

William Silsbee Fenollosa, A.B., 1875.  
 Charles Abner Ham, A.B., 1878.  
 Eliot Lord, A.B., 1873.  
 Woodbury Lowery, A.B., 1875.  
 William Harlow Melville, A.B., 1875.  
 John Murdoch, A.B., 1873.  
 Marshall Livingston Perrin, A.B., 1874.

*Ph.D.*

Lucius Henry Buckingham, A.B., 1851, *Philology*.  
 Robert Grant, A.B., 1873, *Philology*.  
 James Laurence Laughlin, A.B., 1873, *History*.  
 Henry Cabot Lodge, A.B., 1871, *History*.  
 Ernest Young, A.B., 1873, *History*.

*S.D.*

Nathaniel Southgate Shaler, S.B., 1862, *Geology and Zoology*.

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**THE DEGREES OF MASTER OF ARTS, DOCTOR OF  
PHILOSOPHY, AND DOCTOR OF SCIENCE.**

These degrees are conferred on candidates recommended by the Academic Council, — a body composed of the President, Professors, Assistant Professors, and Adjunct Professors of the University. They are conferred upon examination only, and in conformity with the following rules: —

The Degrees of Master of Arts and Doctor of Philosophy are open to Bachelors of Arts of Harvard College, and to Bachelors of Arts of other Colleges who shall have satisfied the College Faculty, by examination,

that the course of study for which they received the Bachelor's Degree is equivalent to that for which the Bachelor's Degree is given in Harvard College, or shall have passed such additional examinations as that Faculty may prescribe.

The Degree of Doctor of Science is open to Bachelors of Science of Harvard University, and to Bachelors of Science and Bachelors of Philosophy of other institutions who shall have satisfied the Faculty of the Lawrence Scientific School, by examination, that the course of study for which they received the Bachelor's Degree is equivalent to that for which the Degree is given in Harvard University, or shall have passed such additional examinations as that Faculty may prescribe.

The Academic Council will recommend for the Degree of Doctor of Philosophy candidates otherwise properly qualified, who, after taking the Bachelor's Degree, shall pursue at Harvard University for two years a course of liberal study, approved by the Council, in any one of the following departments, — Philology, Philosophy, History, Political Science, Mathematics, Physics, Natural History, or Music, — shall pass a thorough examination on that course, and shall present a satisfactory thesis.

The Academic Council will recommend for the Degree of Doctor of Science candidates otherwise properly qualified, who, after taking their Bachelor's Degree, shall reside at least two years at the University, and pursue during three years a course of scientific study, embracing at least two subjects, and approved by the Council; and shall pass a thorough examination upon that course, showing in one of the subjects special attainments; and shall also make some contribution to science, or some special scientific investigation: provided, however, that a course of study of two years only shall suffice for candidates who are both Bachelors of Arts and Bachelors of Science of Harvard University.

The Academic Council will recommend for the Degree of Master of Arts candidates otherwise properly qualified, who, after taking the Bachelor's Degree, shall pursue for at least one year at the University a course of liberal study approved by the Council, and shall pass a thorough examination on that course.

The Academic Council will also recommend for the Degree of Master of Arts candidates otherwise properly qualified, who shall pursue at the University for at least one year, after taking the Degree of Bachelor of Laws, Bachelor of Divinity, or Doctor of Medicine in Harvard University, a course of study in Law, Theology, or Medicine approved by the Council, and shall pass a thorough examination on that course.

In special cases, the Academic Council is authorized to remit the requisition of residence at the University to Bachelors of Arts or Science of Harvard University.

Any one who wishes to be a candidate for one of these Degrees must apply in writing to Professor J. M. Peirce, *Secretary of the Academic Council*, stating explicitly in his application his present qualifications,

and the course of study which he intends to offer; naming also the year in which he desires to be examined, the period of his past or purposed residence at the University, and his post-office address.

The meetings of the Academic Council are held on the third Wednesdays of October, December, February, and April, and the Thursday before Commencement. Applications can only be considered at these meetings, and, in order to be considered, must be in the hands of the Secretary *one week before the date of the meeting*. The examinations will be held at times appointed by the Council, near the end of the academic year. Candidates are liable to be called on for examination as early as the second Monday in May.

#### INSTRUCTION OPEN TO GRADUATES.

The following courses are offered to Graduates:—

1. *Sanskrit*. ASST. PROF. GREENOUGH.
2. *Greek Composition*. ASST. PROF. ANDERSON.
3. *Pindar*. PROF. SOPHOCLES.
4. *Greek*. PROF. GOODWIN will give such instruction as may be desired in Plato, Aristotle, Thucydides, or the Attic Orators.
5. *Ethics*. Some of Cicero's Ethical and Philosophical writings. PROF. PEABODY.
6. *Philosophy*. PROF. BOWEN will meet students of Philosophy, and will also lecture on the History of Philosophy.
7. *Diplomatic History and Public International Law*. Three times a week. PROF. TORREY.
8. *Early English Institutions*. ASST. PROF. ADAMS.
9. *Political Economy*. PROF. DUNBAR will meet graduates for conference and instruction in Political Economy.
10. *English*. PROF. CHILD will meet graduates for conference and instruction in such parts of English Literature as they may be studying.
11. *Modern English Literature*. PROF. A. S. HILL.
12. *Comparative Philology of the Romance Languages*. PROF. BÔCHER.
13. *Art*. PROF. NORTON will meet graduates for instruction in the history of Greek and Mediæval Art.
14. *Middle High German*. MR. WILLIAM COOK.
15. *Quaternions (Second Course)*. Three times a week. PROF. B. PEIRCE.
16. *Functions of Complex Variables*. Three times a week. PROF. J. M. PEIRCE.
17. *The relations between Physiology and Psychology*. Three times a week. ASST. PROF. JAMES.
18. *Physics*. Advanced students are admitted to the laboratories of PROF. GIBBS and ASST. PROF. TROWBRIDGE, where they are encouraged and helped to make new researches.
19. *Chemistry*. Advanced students are admitted to the laboratories in Boylston Hall, and guided in their work by PROF. COOKE and ASST. PROFS. JACKSON and H. B. HILL.

20. *Botany.* In the laboratory at the Botanic Garden, instruction is given to advanced students by ASST. PROFS. GOODALE and FARLOW.

21. *Zoölogy.* PROFS. MCCREADY, SHALER, and HAGEN receive advanced students at the Museum of Comparative Zoölogy. The Assistants in the various departments of the Museum also give instruction to advanced students.

22. *Physiology.* Advanced students are received in the physiological laboratory (in Boston) in charge of PROF. BOWDITCH.

23. *Geology.* PROF. WHITNEY will receive advanced students at the Museum of Comparative Zoölogy.

24. *Music.* PROF. PAINÉ will meet graduates for advanced instruction in musical theory and composition.

All the elective courses of study in Harvard College are open to Bachelors of Arts of any college, on the payment of certain fees. The lists of elective courses for each academic year are issued in April of the preceding academic year, and may be had on application to Mr. J. W. Harris, *Secretary*. The list for the current year is given on pages 50-60.

#### FEEES AND BONDS.

The fees to be paid by Bachelors of Arts or Science who receive instruction as candidates for the Degree of Master of Arts, Doctor of Philosophy, or Doctor of Science, or who attend lectures or recitations without being members of any professional school, are as follows:—

For not more than three hours of instruction a week . . .	\$50.00 a year.
For more than three, but not more than six hours of instruction a week . . . . .	\$90.00 a year.
For more than six hours of instruction a week . . . . .	\$120.00 a year.
For a year's instruction in any of the laboratories, or in the Museum of Comparative Zoölogy . . . . .	\$150.00

These fees are payable as follows: One-third, January 12; one-third, April 5; and one-third, October 10; but the last third must be paid at least one day before Commencement by those who are about to receive degrees.

Every candidate for the Degree of Master of Arts, Doctor of Philosophy, or Doctor of Science, whether resident or not, must hereafter pay at least the minimum fee of \$50 a year to the University, unless he pays a fee as a member of a professional school; but this rule does not apply to those who were already candidates at the time of its adoption (March 1, 1875).

The fees to be paid for examination are as follows:—

For the examination for the Degree of Master of Arts . . . . .	\$30.00
For the examination for the Degree of Doctor of Philosophy . . .	\$60.00
For the examination for the Degree of Doctor of Science . . . . .	\$60.00

There is no additional charge for the right to use the Library. The fees for instruction, but not those for examination, will be remitted to meritorious students who need such help.

Graduates of the University, or of other collegiate institutions, desirous of pursuing their studies at Cambridge without any guidance, may enjoy the use of the Library on the payment of five dollars a year; but residence on these terms will not be accepted as residence qualifying for the Degree of Master of Arts, Doctor of Philosophy, or Doctor of Science.

All Bachelors of Arts, Science, or Philosophy, studying at the University, must give bonds in the sum of \$200, signed by two bondsmen, one of whom must be a citizen of Massachusetts, for the payment of all dues to the University; but, instead of filing a bond, any student who prefers so to do may pay his fees for the whole year in advance, and deposit with the Bursar such a sum of money as may be deemed sufficient to secure payment of all other dues to the University.

#### REGISTRATION. — ROOMS.

No person can be admitted to instruction in any department of the University of which he is not a member, unless he present to the instructor a certificate of registration, signed by the Dean of that department, and naming the course or courses he purposes to attend.

For information in regard to rooms, see page 78.

#### FELLOWSHIPS.

The HARRIS FELLOWSHIP has an endowment of ten thousand dollars, the yearly income of which is to be applied under the following conditions, established by the founder: —

“That this income be given to some Graduate of acknowledged excellence in one or more departments of literature or science (but not necessarily of the highest college rank), for one or more years; that the recipient satisfy the Corporation of his need of such aid, and his purpose to make the most of it; that residence at Cambridge be required, unless excused for substantial reasons, and that marriage be a disqualification; that studies for the professions of law, theology, or medicine be excluded from the studies of the recipient, and that the Corporation be authorized to make such other restrictions and conditions as in its judgment will best secure from the recipient his entire devotion to accurate scholarship or the higher branches of science.”

THE GRADUATES'S SCHOLARSHIP has an endowment of twenty thousand dollars, the income of which is to be used in accordance with the following directions, given by the founder: —

“. . . For the encouragement and attainment of a higher, broader, and more thorough scholarship than is required or expected of Under-

graduates, in all sound literature and learning, except science strictly so called, . . . .

"1. I direct that the Corporation, from time to time, shall select from the Senior Class the member whom, from his natural gifts, attainments, and general character, intellectual and moral, they, after consultation with the Faculty of the College, shall deem best fitted to attain the object contemplated by this donation, and shall offer to him from said income and profits an annual grant of money upon the following conditions, viz. : —

"That he shall reside at Cambridge, and shall faithfully devote his time and thoughts to the pursuit of such branches and courses of study as he, with the approbation of the Corporation, may select. That, whilst a recipient of this grant, he shall engage in no studies designed to prepare him for a special profession, nor in any other business or occupation except that of a Proctor of the College; or an occasional examiner of some of the classes, at the request of the Corporation. That, from time to time, he shall be subject to be called upon to give such evidence of his fidelity and proficiency as the Corporation may require, and especially to write essays and dissertations upon such subjects, within the circle of his studies, as they shall designate, and these, when completed, shall be at their disposal.

"2. I direct that the grant shall be from year to year, and that the amount thereof, in the first instance, shall not exceed the sum of eight hundred dollars. . . ."

**PARKER FELLOWSHIPS.** — Three Fellowships of the annual value of \$1,000 each have been created from the income of the bequest of John Parker, Jr. These Fellowships may be held by Graduates of Harvard College, or of any other department of the University, for a term not exceeding three years in any case. Appointments to these Fellowships will be made annually by the President and Fellows of Harvard College, ordinarily upon recommendation of the Academic Council, at or about Commencement in each year; but the appointments so made must receive, under the provisions of the founder's will, the approval of the Governor and Chief Justice of the Commonwealth of Massachusetts and the President of the American Academy of Arts and Sciences. The holder of a Parker Fellowship must devote himself to some special course of study approved by the Academic Council; he is restricted, during his tenure of the Fellowship, from pursuing the usual studies preparatory to a profession (but not necessarily from higher professional studies), and from occupation in teaching or active business; he is liable to be called upon from time to time to give satisfactory evidence of his fidelity and proficiency; and he is liable to lose his appointment, by vote of the President and Fellows, whenever the evidence of his fidelity and proficiency shall be unsatisfactory to the Academic Council, or whenever

he may become for any reason unfit, in the opinion of the President and Fellows, to hold a Fellowship.

The object of Mr. Parker's bequest is to provide the most thorough education possible for persons who possess uncommon powers in any department of knowledge, or who give promise of developing such powers, but who have not at command the means of paying for a prolonged and costly training. Incumbents of these Fellowships may study abroad, if they prefer.

**THE JOHN THORNTON KIRKLAND FELLOWSHIP.**—This Fellowship, having an endowment of about eleven thousand dollars, has been established with the gift of George Bancroft, LL.D. The incumbent of this Fellowship must, as a rule, have resided at least three years at the University as a member either of the College or of one of the Schools. The Fellowship may be held for three years, and no longer; but the appointment must be renewed from year to year, on evidence that the incumbent is fulfilling the purpose of the endowment. It may be awarded to "any young person likely to distinguish himself in either of the learned professions, or in any branch of Science, or in Architecture, Sculpture, Painting, Music, or Letters." The appointment to this Fellowship is made annually by the President and Fellows, on recommendation of the Academic Council, at or about Commencement in each year. The incumbent may study abroad, if he prefer.

Applications for the Parker and Kirkland Fellowships must be sent to Professor J. M. Peirce, *Secretary of the Academic Council*, on or before the first Wednesday in March. An application made by a person who is for the first time a candidate should specify his qualifications and the course of study to which he wishes to devote himself. An application by an incumbent for the renewal of the appointment should be a report upon the work which he has already done while a Fellow, and a sketch of that which he purposes to do. Applications for the Harris Fellowship and the Graduates' Scholarship must be sent to the *Dean of the College Faculty*, on or before the first Wednesday in March.



EVENING READINGS  
IN ANCIENT AND MODERN CLASSICS.

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Readings in ancient and modern classics, consisting mainly of translation, with rapid exposition, will be open to all members of the University, three evenings in the week, from October till April.

The Readings will be given this year on Tuesday, Wednesday, and Thursday evenings, in Harvard Hall, at 7½ o'clock, beginning Tuesday, October 10.

*Greek Plays and Plato*, by PROF. GOODWIN.

*Homer*, by ASST. PROF. PALMER.

*Lucretius*, by ASST. PROF. EVERETT.

*Latin Plays*, by ASST. PROF. GREENOUGH.

*Cervantes*, by PROF. LOWELL.

*Dante*, by PROF. NORTON.

*Molière*, by PROF. BÔCHER.

*Chaucer and Shakspeare*, by PROF. CHILD.

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*Lectures on German Literature*, by PROF. HEDGE.

THE MUSEUM OF COMPARATIVE ZOÖLOGY  
AT HARVARD COLLEGE.

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**FACULTY.**

CHARLES W. ELIOT, LL.D., *President.*  
ALEXANDER AGASSIZ, A.B., S.B., *Curator.*  
JOSIAH D. WHITNEY, LL.D., *Secretary.*  
JOHN B. S. JACKSON, M.D.  
THEODORE LYMAN, A.B., S.B.

**OFFICERS.**

ALEXANDER AGASSIZ, A.B., S.B., *Curator.*  
JOSIAH D. WHITNEY, LL.D., *Sturgis Hooper Professor of Geology.*  
HERMANN A. HAGEN, M.D., PH.D., *Professor of Entomology.*  
JOHN McCRADY, A.B., *Professor of Zoölogy.*  
NATHANIEL S. SHALER, S.D., *Professor of Palæontology.*  
L. F. POURTALÈS, *Keeper.*  
WILLIAM JAMES, M.D., *Assistant Professor of Physiology and Comparative Anatomy.*  
THEODORE LYMAN, A.B., S.B., *Assistant in Zoölogy.*  
JOHN GOULD ANTHONY, *Assistant in Conchology.*  
CHARLES E. HAMLIN, A.M., *Assistant in Conchology and Palæontology.*  
JOEL ASAPH ALLEN, *Assistant in Ornithology.*  
F. W. PUTNAM, A.M., *Assistant in Ichthyology.*  
WALTER FAXON, A.B., S.B., *Assistant in Zoölogical Laboratory.*  
S. W. GARMAN, *in charge of Reptiles.*  
WILLIAM M. DAVIS, JR., *Assistant in Geological Laboratory.*  
PAULUS ROETTER, *Artist.*

This institution was founded in 1859, and placed under the direction of a special Board of Trustees. By an act of the Legislature dated March 18, 1876, the Trustees of the Museum were authorized to transfer to the President and Fellows of Harvard College all the property in their hands. In April, 1876, articles of agreement were drawn up between the Trustees of the Museum and the President and Fellows, and the property was conveyed in accordance with the act of the Legislature.

The Museum is under the management of a Faculty, who nominate the Curator and appoint the Assistants.

The Curator is charged with the direction of the scientific and educational interests of the Museum, as well as of its relations to the public. The Natural History collections of Harvard College, with the exception of the Herbarium and the Mineralogical collections, are placed in the Museum building.

The collections, so far as arranged in the part of the building already erected, are open to visitors every day from 9 A.M. till 5 P.M., except Sundays.

The courses of instruction in Natural History, numbered 3, 4, 5, 6, 7, and 10 (see p. 59), are given at the Museum, in the Zoölogical and Geological Laboratories, under the direction of Professor Whitney, Dr. James, and Professors McCrady and Shaler. Professors Whitney, Hagen, Shaler, and McCrady, and Messrs. Pourtalès, Hamlin, and Allen, receive special students in their respective departments at the Museum.

THE PEABODY MUSEUM  
OF  
AMERICAN ARCHÆOLOGY AND ETHNOLOGY.

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TRUSTEES.

ROBERT CHARLES WINTHROP, LL.D., *Chairman.*  
CHARLES FRANCIS ADAMS, LL.D.  
STEPHEN SALISBURY, LL.D., *Treasurer.*  
ASA GRAY, LL.D.  
HENRY WHEATLAND, M.D., *Secretary.*  
THOMAS TRACY BOUVÉ, A.M.  
THEODORE LYMAN, A.B., S.B.

---

FREDERICK WARD PUTNAM, A.M., *Curator.*

IN the original Instrument of Trust, the Founder has assigned to the Trustees three distinct duties : —

1. The forming and preserving of collections.
2. The nomination of a professor, who shall have charge of the collections, and deliver lectures on subjects connected with them; the said professor being appointed by the President and Fellows of Harvard College.
3. The erection of a building for a Museum.

The building is now in process of erection. No professor having been appointed, the income from the fund for his support has thus far been appropriated, in accordance with the directions of the Founder, to the care and increase of the collections.

Large collections pertaining to the Archæology and Ethnology of the aboriginal races of America, as well as of the Old World, have been made, and are arranged for exhibition in Boylston Hall. The Museum is open to visitors every day in term-time.

# THE EPISCOPAL THEOLOGICAL SCHOOL.

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## OFFICERS.

### BOARD OF TRUSTEES.

EDWARD S. RAND, A.M., *President.*  
ROBERT C. WINTHROP, LL.D.  
JOHN P. PUTNAM, A.M., LL.B., *Secretary.*  
AMOS A. LAWRENCE, A.M., *Treasurer.*  
JAMES S. AMORY, A.M.

### BOARD OF VISITORS.

RT. REV. BENJAMIN H. PADDOCK, D.D., *Ex officio President.*  
REV. A. H. VINTON, D.D.  
REV. E. M. P. WELLS, D.D.  
REV. WILLIAM R. HUNTINGTON, D.D.  
ROBERT M. MASON.  
GEORGE C. SHATTUCK, A.M., M.D.  
JOHN A. BURNHAM, A.M.

### FACULTY.

REV. GEORGE Z. GRAY, D.D., *Dean, and Professor of Homiletics and Pastoral Care.*  
REV. FRANCIS WHARTON, D.D., LL.D., *Professor of Evidences, Ecclesiastical Polity, and Liturgies.*  
REV. P. H. STEENSTRA, A.M., *Professor of Biblical Study and Exegesis.*  
REV. A. V. G. ALLEN, A.B., *Professor of Sacred and Church History.*  
REV. GEORGE Z. GRAY, D.D., *Acting-Professor of Systematic Divinity.*

Eminent clergy from abroad lecture, and preach in the chapel, from time to time, according to announcements duly made in the church papers and otherwise.

### STUDENTS.

#### Senior Class.

Baker, Walter, A.B.	Dorchester.
Carver, Alexander Burton,	Philadelphia, Pa.
Gould, Edwin Walter, A.M. ( <i>Brown University</i> ),	Boston.
Haynes, Henry Harrison, A.B.	Tilton, N.H.
Osgood, George Endicott,	Waltham.

Rose, John Taylor, A.B. ( <i>St. Stephen's College</i> ),	<i>Lafayette, Ind.</i>
Saltonstall, Lindall Winthrop,	<i>New York, N. Y.</i>
Welwood, John Cornwell, A.B. ( <i>Wesleyan University</i> ),	<i>Brooklyn, N. Y.</i>

**Middle Class.**

Barrington, Arthur Henry, A.B.	<i>Woburn.</i>
Kidner, Reuben, A.B.	<i>Cambridge.</i>

**Junior Class.**

Potter, Silas Allen, A.B.	<i>Boston Highlands.</i>
Gibbs, Emory Blake,*	<i>Cambridge.</i>

**SPECIAL COURSE.**

Hill, Rev. Howard F., A.M. ( <i>Dartmouth College</i> ),	<i>Ashland, N. H.</i>
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**CONDITIONS OF ADMISSION.**

All candidates for orders in the Protestant Episcopal Church, with full literary qualifications, according to Canon, are received.

Also, all other persons who bring evidence of proper moral and religious character, and of qualifications for usefulness in the Christian ministry, provided they have a college diploma, or pass an equivalent examination.

Students from other Theological Schools are admitted *ad eundem*.

**EXPENSES.**

Tuition, room-rent, and furniture are granted free by the Institution; also, the use of text-books to those unable to buy them. Fuel and lights are, for the present, granted upon written application for such aid. Board costs about four dollars per week. The Church-Education Societies aid such students as provide proper testimonials.

**TERM TIME, &c.**

The annual term opens on the fourth Wednesday of September, and closes with Commencement, the third Wednesday in June. Vacations: between the close and opening of the terms, as above; from December 22d to January 4th; from the Saturday before Passion Week to Easter Tuesday, inclusive.

The Students of Harvard University are invited to the large, free chapel of this school, where special provision is made for their accommodation. Pastoral attention, of any kind, is also gladly extended when desired.

For any details or information, address the Dean, at 108 Brattle St., Cambridge.

\* Partial Course.

## LIBRARIES.

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THE principal Library belonging to the University is at Cambridge, and is known as the College Library. This Library, which is kept in Gore Hall, is for the use of the whole University. Books may be taken out by all students of the University who have given bonds, and by all graduates of the University on giving bonds and paying an annual fee of \$5. The Library may be consulted by all persons, whether connected with the University or not. In term-time (excepting the days of Thanksgiving, Christmas, New Year, Fast Day, and Class Day), it is open on every week-day from 9 till 5 o'clock, or till sunset when that is before 5. In the vacation, it is open every week-day from 9 till 2 o'clock; but books are not given out till after the annual examination, which is commonly made within about a fortnight after Commencement.

The Libraries connected with the different Schools of the University are for the especial use of the Schools, and placed in the buildings where the Schools are kept.

The total number of books in the Libraries of the University is, in round numbers, as follows:—

College Library . . . . .	160,000
Library at the Botanical Garden . . . . .	4,000
Library at the Divinity School . . . . .	17,000
Law Library in Dane Hall . . . . .	16,000
Libraries in the Lawrence Scientific School . . . . .	8,000
Library at the Medical School . . . . .	2,000
Agricultural Library at the Bussey Institution . . . . .	2,000
Library at the Museum of Comparative Zoölogy . . . . .	12,000
Phillips Library at the Observatory . . . . .	3,000
	<hr/>
	219,000

## SUMMER COURSES OF INSTRUCTION

IN

## CHEMISTRY, BOTANY, AND GEOLOGY.

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### CHEMISTRY.

The course of instruction in Qualitative Analysis and General Chemistry was given by Mr. Mabery in Boylston Hall during the summer of 1876. The laboratory was open all day, five days in the week, from July 6 to August 17.

Qualitative Analysis was taught by lectures and laboratory instruction. The amount of laboratory work done by each person was nearly equal to that done by the average college student during the academic year, because of the long laboratory hours, and the continuous application of each person to this single subject.

The instruction in General Chemistry consisted of laboratory exercises, and lectures on the elementary principles of chemical philosophy.

### STUDENTS.

Carhart, Henry Smith, A.M. (*Wesleyan Univ.*), *Professor of Physics, Northwestern Univ., Ill.*

Curtis, Henry Russell, *Student, Mass. Institute of Technology.*

Dawson, Sarah M., *South Boston.*

Folsom, Charles Follen, A.M., M.D., *Physician, Boston.*

Goodwin, Edward Jasper, A.B. (*Bates Coll.*), *Teacher in Farmington High School, N.H.*

Hale, Albert C. A.M. (*Univ. of Rochester*), *Vice-Principal of Jersey City High School, N.J.*

Jackson, Frank, *Student, Mass. Institute of Technology.*

Knight, William H., A.M. (*Middlebury Coll.*), *Principal of Hyde Park High School.*

Lloyd, Mrs. Franklin, *Teacher, Philadelphia, Pa.*

Patch, Emerette Ophelia, *Assistant in Girls' High School, Boston.*

Reed, Mary, *Teacher of Physical Science, Philadelphia, Pa.*

Sharpless, Isaac, S.B., *Professor of Mathematics, Haverford College, Pa.*

Vose, James E., *Teacher in Cushing Academy, Ashburnham.*

Winston, Lucy, *Cambridge.*

Worthington, Mrs. Ruth A., *Principal of Springfield Seminary, Ohio.*



In 1877, courses of instruction will probably be given in

1. General Chemistry and Qualitative Analysis ;

2. Quantitative Analysis ;

3. Determinative Mineralogy and Crystallography ;

beginning on July 6, and continuing six weeks. Application for places in the laboratories may be addressed to J. W. Harris, Secretary. The fee for any one of these courses is \$25, not including breakage. Circulars describing the courses will be ready by Feb. 1, 1877.

### BOTANY.

Two courses of instruction in Botany were given during the summer of 1876.

The instruction in Phænogamic Botany was conducted by Assistant Professor Goodale at the Botanic Garden of the University. The lectures were followed daily by practical dissections and demonstrations in the laboratory. All requisite appliances and abundant material for examination were furnished every student.

The course in Cryptogamic Botany was given by Assistant Professor Farlow at Wood's Hole, Mass. This laboratory at the seashore was supplied with every needed facility for the study of fungi and marine algæ.

#### STUDENTS IN PHÆNOGAMIC BOTANY.

Armstrong, Clara Jennette, *Teacher in State Normal School, Winona, Minn.*

Arnold, Mary B., *Assistant in High School, Springfield, Ohio.*

Bailey, William Whitman, *PH.B. (Brown Univ.), Teacher of Botany, Providence, R.I.*

Barber, Laird Howard, *A.M. (Lafayette Coll.), Principal of High School, Mauch Chunk, Pa.*

Brown, Martin Ames, *Teacher in Northfield High School.*

Davis, Emma Carter, *Teacher, Cleveland, Ohio.*

Garratt, Allan Vinal, *Student, Mass. Institute of Technology.*

Hallowell, Susan Maria, *A.M. (Colby Univ.), Instructor in Wellesley College.*

Hard, Elvene Curtis, *Teacher, Cleveland, Ohio.*

Hughes, Lemira Wilmarth, *Teacher, Cleveland, Ohio.*

Ireland, Catharine Innes, *Principal of Private School, Boston.*

Jackson, Lidian Emerson, *Boston.*

Keeler, Harriet Louise, *Teacher, Cleveland, Ohio.*

Locke, Mrs. Abby Anna, *Teacher, Boston.*

Minns, Susan, *Boston.*

Montgomery, Stewart, *A.M. (Hamilton Coll.), Professor of Natural Sciences, Olivet College, Mich.*

Owen, Elizabeth Sampson, *Teacher, Cambridge.*

Parsons, Katharine, *Cambridge.*

- Perley, Eliza Jane, A.M. (*Maine Wesleyan Seminary*), *Unity, Me.*  
 Plummer, Evelyn Elizabeth, *Assistant in Phillips School, Boston.*  
 Schneider, Laura A., *Teacher, Orange.*  
 Snyder, Eliza Caroline, *Principal of Private School, Philadelphia, Pa.*  
 Upton, Francis Robbins, S.B. (*Bowdoin Coll.*), *Special Student, Coll. of New Jersey.*  
 Walker, Marie Louisa, *Teacher, Washington, D.C.*  
 Watson, Rosa Bolles, *East Windsor, Conn.*  
 Whidden, Henry Rolfe, *Fisherville, N.H.*

#### STUDENTS IN CRYPTOGAMIC BOTANY.

- Dudley, William Russell, S.M. (*Cornell Univ.*), *Instructor in Botany, Cornell University, N.Y.*  
 Spalding, Volney M., A.B. (*Univ. of Michigan*), *Instructor in Botany and Zoology, University of Michigan.*

The corresponding courses for 1877 will begin on July 6, and continue six weeks.

The course in Phænogamic Botany will be given in the Botanical Laboratory, Cambridge, and will be conducted by Assistant Professor Goodale. Particular attention will be given to Morphology and Physiology. The greenhouses and garden of the University afford ample facilities for illustrating the subjects of Structural and Systematic Botany.

Course II., in Cryptogamic Botany, by Assistant Professor Farlow, will be given at some locality upon the seashore, not at present determined. Instruction will be given in Algæ and Fungi, in the laboratory, and by the aid of microscopes provided by the College. Applications for places in the laboratory should be made to Dr. W. G. Farlow, Bussey Institution, Jamaica Plain, Mass., on or before June 1.

Fee for each course, \$25.

For further information, or for an outline sketch of either course, application may be made to the respective instructors.

#### GEOLOGY.

The second session of the Summer School of Geology was held at Camp Harvard, Cumberland Gap, Kentucky, at the junction of the lines of that state with Tennessee and Virginia. By the invitation of the Governor of Kentucky, the instruction was, to a certain extent, given in connection with the work of the geological survey of that State. The camp was under the immediate supervision of the Professor of Palæontology, and the instruction was given by him, with the assistance of William M. Davis, S.B., Assistant in Geology, and the following gentlemen: Professor Safford, State Geologist of Tennessee, Assistants Lucian Carr, A. R. Crandall, Phillips N. Moore, C. Norwood, L. H. Smith, and Carl

Schenk of the Kentucky Survey. The teaching was by excursions, lectures, and assigned field-work. The fee was \$50; the board, \$4.50 per week.

The next term of the School will begin on July 6, at Cambridge, and will be continued for six weeks. Excursions will be made to the Connecticut Valley, the Berkshire Hills, and the eastern part of New York. After the close of the school, until October 1, students who desire to do so may continue their studies under the direction of the Superintendent of the School. Applications may be made for circulars, giving an outline sketch of the course, after Dec. 1, 1876.

#### STUDENTS.

- Bourne, Jonathan,, *Senior Class of Harvard College.*  
Brown, Frederick Tilden, *Senior Class of Harvard College.*  
Byram, William Henry, *Senior Class of Rensselaer Polytechnic Institute, Troy, N. Y.*  
Cheney, Lucius H., *Principal of State Normal School, Cape Girardeau, Mo.*  
Diller, Joseph Silas, *Teacher in State Normal School, Westfield, Mass.*  
Dimmock, George, *Senior Class of Harvard College.*  
Eldridge, George Homans, A.B., *Student in Harvard Medical School.*  
Goffe, James Riddle, *Principal of High School, La Porte, Ind.*  
Matthews, Albert, *Pupil in Mr. Noble's School, Boston.*  
Phillips, Francis Clifford, *Professor in Western University of Pennsylvania, Pittsburgh, Pa.*  
Robinson, Albert Richard, *Superintendent of Public Schools, Maywood, Ill.*  
Sharp, Solomon Zook, *Principal of Normal Department, Maryville College, Tenn.*  
Slade, James Fulton, *Junior Class of Harvard College.*  
Smith, Middleton, *Pupil Assistant in State Normal School, Westfield, Mass.*  
Stone, George Hapgood, A.B. (*Wesleyan Univ.*), *Professor in Maine Wesleyan Seminary.*  
Young, Alfred Prentice, *Assistant Superintendent of Revenue Survey, Bombay, India.*

## EXAMINATIONS FOR WOMEN.

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These Examinations were held for the first time in 1874, in Boston. In 1877, they will be held simultaneously in Cambridge, New York, and Cincinnati, in the first and second weeks of June. The examinations are of two grades: I. A general or preliminary examination; II. An advanced examination, for those who have passed the preliminary examination.

### I. PRELIMINARY EXAMINATION.

The Preliminary Examination embraces the following subjects: English, French, Physical Geography, either Elementary Botany or Elementary Physics, Arithmetic, Algebra through quadratic equations, Plane Geometry, History, and any one of the three languages, — German, Latin, and Greek.

This examination can be taken as a whole only by young women who are at least seventeen years old. It may, however, at the option of the candidate, be divided between two years; and, in this case, the minimum age of admission is sixteen years. No candidate will, in any case, be admitted to examination on a part of any subject; and no account will be made of a partial examination, unless the candidate has passed satisfactorily in at least three subjects. If the candidate passes in three or more subjects, the results of the partial examination will be recorded by the University; but no certificate will be given until the whole examination has been passed. Candidates who divide the Preliminary Examination will be expected to attain a somewhat higher degree of excellence than those who present the nine subjects at once.

### II. ADVANCED EXAMINATION.

The Advanced Examination is for young women who have passed the Preliminary Examination, and who are not less than eighteen years old. It is divided into five sections, in one or more of which the candidate may present herself. These sections are as follows: —

1. *Languages.* Candidates may offer any two of the following languages: English, French, German, Italian, Latin, Greek.
2. *Physical Science.* Candidates may offer any two of the following subjects: Chemistry, Physics, Botany, Mineralogy, Geology.
3. *Mathematics.* Candidates must present Solid Geometry, Algebra, Logarithms, and Plane Trigonometry, and one of the three following

subjects: Analytic Geometry, Mechanics, Spherical Trigonometry and Astronomy.

4. *History.* In 1877, candidates may offer either of the two following subjects: (1) The History of Continental Europe during the period of the Reformation, 1517-1648; (2) English and American History from 1688 to the end of the eighteenth century.

5. *Philosophy.* Candidates may offer any three of the following subjects: Mental Philosophy, Moral Philosophy, Logic, Rhetoric, Political Economy.

## FORMS OF CERTIFICATES TO BE GIVEN BY THE UNIVERSITY.

### HARVARD UNIVERSITY.

#### PRELIMINARY EXAMINATION FOR WOMEN.

A—B— has passed (passed with distinction) (passed with the highest distinction) the Preliminary Examination, held at —, on the — of —, 187 , under the direction of the Faculty of Harvard College, and is entitled to proceed to the Advanced Examination.

— — —  
*President.*

CAMBRIDGE, Aug. 1, 187 .

### HARVARD UNIVERSITY.

#### ADVANCED EXAMINATION FOR WOMEN.

A—B—, having duly passed the Preliminary Examination on the — of —, 187 , has been admitted to the Advanced Examination in the section (sections) of —, and has passed (passed with distinction) (passed with the highest distinction) the prescribed examinations in —, held at —, under the direction of the Faculty of Harvard College, on the — of —, 187 .

— — —  
*President.*

CAMBRIDGE, Aug. 1, 187 .

Notice of intention to be candidates must be sent to the Secretary of the Woman's Education Association, 94 Chestnut Street, Boston, or to the Secretary of the New York Local Committee, 60 Fifth Avenue, New York, before April 1, 1877.

Candidates for the Preliminary Examination must specify which of the elective studies (Botany or Physics, and German, Latin, or Greek) they

will take. Candidates for the Advanced Examination must specify which section and which subjects they elect.

Exact notice of the place of the examination, and also of the time (day and hour), will be sent to all candidates on April 15, 1877.

The Preliminary Examination will cover parts of two weeks. Less time will be required for the Advanced Examination, according to the number of subjects chosen.

The fee for the Preliminary Examination, including certificate, will be *fifteen dollars*.

The fee for the Advanced Examination will be *ten dollars*.

The Woman's Education Association and the New York Local Committee will provide board and lodging at moderate cost for those who need such accommodation.

Young women in narrow circumstances will be aided in meeting the cost of these examinations. Applicants for such aid should address the Secretary of the Education Association or the Secretary of the Local Committee, stating their circumstances fully, — the amount of help they need, the kind of assistance they would prefer, whether a remission of fees, a loan, or gratuitous board and lodging during the examination, — and enclosing certificates of scholarship and character from their teachers.

If an applicant is under twenty-one years of age, her application must be accompanied by the written approval of her parent or guardian.

A pamphlet has been printed containing full lists of books and specimen examination-papers. Copies will be forwarded to any address upon the receipt of twenty-five cents, and any further information that may be desired will be gladly furnished, by the Secretary of the Woman's Education Association, 94 Chestnut Street, Boston, Mass., or by the Secretary of the New York Local Committee, 60 Fifth Avenue, New York.

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The following candidates received certificates in 1876 : —

PRELIMINARY EXAMINATION.

Adelaide Baker . . . . .	<i>Lowell.</i>
Mabel Huidekoper Chapin . . . . .	<i>Brookline.</i>
Cornelia Lyman Warren . . . . .	<i>Boston.</i>

## GENERAL SUMMARY.

PRESIDENT AND FELLOWS . . . . .	7	
OVERSEERS . . . . .		82

**TEACHERS: —**

Professors . . . . .	51	
Assistant Professors . . . . .	21	
Lecturers . . . . .	8	
Tutors . . . . .	7	
Instructors . . . . .	30	
Assistants . . . . .	12	

Whole number of Teachers . . . . . ——— 124

LIBRARIANS, PROCTORS, AND OTHER OFFICERS . . . . .		24
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**COLLEGE STUDENTS: —**

Senior Class . . . . .	192	
Junior Class . . . . .	175	
Sophomore Class . . . . .	222	
Freshman Class . . . . .	232	
	—————	821
Unmatriculated Students . . . . .		5

**DIVINITY STUDENTS: —**

Resident Graduates . . . . .	4	
Senior Class . . . . .	5	
Middle Class . . . . .	5	
Junior Class . . . . .	7	
Special Students . . . . .	2	
	—————	23

**LAW STUDENTS: —**

Resident Bachelors of Law . . . . .	6	
Second-Year Students . . . . .	65	
First-Year Students . . . . .	116	
	—————	187

**SCIENTIFIC STUDENTS:—**

Fourth-Year Students . . . . .	8	
Third-Year Students . . . . .	8	
Second-Year Students . . . . .	7	
First-Year Students . . . . .	4	
Special Students . . . . .	7	
		29

**MEDICAL STUDENTS:—**

Doctors of Medicine . . . . .	8	
Third-Year Students . . . . .	56	
Second-Year Students . . . . .	51	
First-Year Students . . . . .	111	
		226

**DENTAL STUDENTS . . . . .** 22

**BUSSEY INSTITUTION . . . . .** 6

**CANDIDATES FOR HIGHER DEGREES . . . . .** 45

**HOLDERS OF FELLOWSHIPS . . . . .** 5

**OTHER RESIDENT GRADUATES . . . . .** 9

1878

Deduct for names inserted more than once . . . . . 8

1870

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**SUMMER COURSES OF INSTRUCTION:—**

Students in Chemistry . . . . .	15	
Students in Botany . . . . .	28	
Students in Geology . . . . .	16	
		59

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**EPISCOPAL THEOLOGICAL STUDENTS:—**

Senior Class . . . . .	8	
Middle Class . . . . .	2	
Junior Class . . . . .	2	
Special Course . . . . .	1	
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**EXAMINATION PAPERS.**

**THE FOLLOWING COLLECTION OF UNIVERSITY EXAMINATION PAPERS  
INCLUDES : —**

- (1) *The Papers for Admission to Harvard College, June, 1876.*
- (2) *A large portion of the Final, and some of the Special, Examination Papers of the College for 1875-76, together with a full statement of the Courses of Instruction given during the year. The examinations were held in June, and the time allowed was three hours, except where otherwise indicated.*
- (3) *Examination Papers on the studies of the Junior and Middle Classes in the Divinity School, 1875-76.*
- (4) *The Examination Papers on the studies of the First Year in the Law School, June, 1876.*
- (5) *Examination Papers for Admission to the Lawrence Scientific School, June, 1876.*
- (6) *The Examination Papers on the studies of the Third Year in the Medical School, June, 1876.*

*The College Examination Papers are arranged under the following heads : I. Ancient Languages ; II. The Classics ; III. Modern Languages ; IV. Philosophy ; V. History ; VI. Mathematics ; VII. Physics ; VIII. Chemistry ; IX. Natural History ; X. Music ; XI. The Fine Arts.*

*The College Examinations held during the year by authority of the Faculty are either Special or Final. Under Special Examinations are included all examinations held at various times on portions of the year's work in the several courses of instruction. Final Examinations are those which are held in each study at the close of the year's work upon that study ; they cover the entire ground passed over in the study during the year. The Final Examinations are held at the end of the Academic Year in June, except in a few cases in which the course of study for the year is completed at the end of the first half-year in February.*

*The Papers set for Second-Year Honors in the Classics and in Mathematics, and for Final Honors in the Classics, will be found under those heads respectively. The Examinations for Final Honors, except in the Classics and in Mathematics, are oral, and are conducted by committees consisting in each case of the instructors of the Department.*

# HARVARD COLLEGE.

## EXAMINATIONS FOR ADMISSION.

June, 1876.

### GREEK GRAMMAR.

1. Give Accusative and Vocative singular, and Genitive and Dative plural, of *δικαστής*, *γίγας*, *λέων*, *βασιλεύς*, *παῖς*, and *γλυκύς*.
2. Decline the Greek words for *one*, *three*, and *both*. Decline *τις* in the singular, and *οὗτος* in the plural.
3. Explain the formation of these words, giving the meaning of root and ending: *ἡδέως*, *παιδίον*, *χρυσίος*, *ἀληθεύω*.
4. Give a synopsis of the Aorist Active of *λείπω*, and all the participles of *τίθημι*.
5. Where are these verbs made, and from what Present Indicatives: *ἠρώτων*, *τιθεῖσι*, *μαθών*, *ἐξόν*, *ἀφείναι*?
6. What case or cases regularly follow: *κατηγορέω* (*I accuse*); *χράομαι* (*I use*); *ἀποδείκνυμι* (*I appoint*)?
7. Translate *ὁ Σωκράτης (ἐστὶ) σοφός* — *ὁ αὐτὸς Σωκράτης (ἐστὶ) σοφός* — *αὐτὸς ὁ Σωκράτης (ἐστὶ) σοφός*.
8. What time, relatively to the main verb, does the Infinitive express in the following phrases: *φησὶν ἐλθεῖν*; *βούλεται ἐλθεῖν*; *δεῖ τοῦτο ποιῆσαι*?

### GREEK COMPOSITION.

[Do A if you can; if not, do B; but do not do both.]

#### A.

1. When Clearchus saw the messengers<sup>1</sup> he asked<sup>2</sup> (them) what they wished:
  2. And they said that they came for the purpose of making a truce,<sup>3</sup> being empowered<sup>4</sup> to announce the King's (terms)<sup>5</sup> to the Greeks;
  3. And that they would lead them (to a place) whence<sup>6</sup> they could obtain [*have*] supplies,<sup>7</sup> if there should be a truce.
  4. And after hearing the King's (terms), Clearchus asked if the truce would extend [*be*] to all;
  5. And they said, "To all, until your (terms) shall be announced to the King."
- <sup>1</sup> ἄγγελος, ἀγγέλλω.    <sup>2</sup> ἐρωτάω.    <sup>3</sup> σπονδῆ, σπένδειν.    <sup>4</sup> ἱκανός.    <sup>5</sup> τὰ παρὰ βασιλέως.    <sup>6</sup> ὅθεν.    <sup>7</sup> ἐπιτήδεια.

## B.

1 If we should send arms to the general, we think he would be grateful to us.

2 He seized the soldier, declaring he would inflict punishment on him for his cowardice.

3. He said most of the soldiers would have crossed, if the enemy had not hindered.

4. I fear that it will be necessary for me to go with the generals, in order to see Menon.

5. He used to delay in each city until I arrived.

## GREEK PROSE.

N. B. Those who offer the Greek Reader will take 2, 3, 4. Those who offer four books of the Anabasis and the Seventh Book of Herodotus will take 1, 2, 5. Candidates in Course II. will take 1 and 2, or 2 and 3.

## 1. TRANSLATE:—

Πρὸς ταῦτα μεταστάντες οἱ Ἕλληνες ἐβουλευόντο καὶ ἀπεκρίναντο Κλέαρχος δ' ἔλεγεν. Ἡμεῖς ὅτε συνήλθομεν ὡς βασιλεῖ πολεμήσοιτες, ὅτε ἐπορευόμεθα ἐπὶ βασιλέα· ἀλλὰ πολλὰς προφάσεις Κύρος εὗρισκεν, ὡς καὶ σὺ ἐὺ οἶσθα, ἵνα ὑμᾶς τε ἀπαρασκευάστους λάβοι καὶ ἡμᾶς ἐνθάδε ἀναγάγοι. Ἐπεὶ μέντοι ἤδη ἐωρῶμεν αὐτὸν ἐν δεινῷ ὄντα, ἡσχύνθημεν καὶ θεοὺς καὶ ἀνθρώπους προδοῦναι αὐτὸν, ἐν τῷ πρόσθεν χρόνῳ παρέχοντες ἡμᾶς αὐτοὺς εὖ ποιεῖν. ἐπεὶ δὲ Κύρος τέθνηκεν, ὅτε βασιλεῖ ἀντιποιούμεθα τῆς ἀρχῆς, οὗτ' ἔστιν ὄτου ἕνεκα βουλοίμεθ' ἂν τὴν βασιλείῳς χάραν κακῶς ποιεῖν.

ANAB. II. iii. 21-28.

Explain the tense of *πολεμήσοιτες* and the case of *βασιλεῖ* (line 2); construction of *πρόσθεν* (line 6), of *ὄντα* (line 6), of *ποιεῖν* (line 7), and of *ὄτου* (line 8).

## 2. TRANSLATE:—

Ἀκούσας δὲ Ξενοφῶν ἔλεγεν ὅτι ὀρθῶς ἠ' τιῶντο, καὶ αὐτὸ τὸ ἔργον αὐτοῖς μαρτυροῖη. Ἄλλ' ἐγὼ, ἔφη, ἠναγκάσθην διώκειν, ἐπειδὴ ἐώρων ἡμᾶς ἐν τῷ μένειν κακῶς μὲν πάσχοντας, ἀντιποιεῖν δ' οὐδὲν δυναμένους. Ἐπειδὴ δὲ ἐδιώκομεν, ἀληθῆ, ἔφη, ὑμεῖς λέγετε. κακῶς μὲν γὰρ ποιεῖν οὐδὲν μᾶλλον ἐδυνάμεθα τοὺς πολεμίους, ἀνεχωροῦμεν δὲ πάνυ χαλεπῶς. Τοῖς οὖν θεοῖς χάρις ὅτι οὐ σὺν πολλῇ βλάβῃ ἀλλὰ σὺν ὀλίγοις ἤλθοι' ὥστε βλάψαι μὲν μὴ μεγάλα, δηλώσαι δὲ ὧν δεόμεθα.

ANAB. III. iii. 12-14.

In what voice, mood, and tense, and from what verbs, are *ἠτιῶντο*, *ἐώρων*, *ἐδυνάμεθα*, and *ἀνεχωροῦμεν*? Explain the construction of *μαρτυροῖη*, *μένειν*, *πάσχοντας*, and *δηλώσαι*, and the case of *πολεμίους* and of *ὧν* (last line).

## 3. TRANSLATE:—

Καὶ πρῶτον μὲν αὐτῶν ἐσκόπει, πότερὰ ποτε νομίσαντες ἱκανῶς ἤδη τὰν θρόπινα εἶδέναι, ἔρχονται ἐπὶ τὸ περὶ τῶν τοιούτων φροντίζειν, ἢ τὰ μὲν ἀνθρώπινα παρέντες, τὰ δαιμόνια δὲ σκοποῦντες, ἠγούνται τὰ προσήκοντα πράττειν. ἐθαύμαζε δὲ εἰ μὴ φανερὸν αὐταῖς ἔστιν, ὅτι ταῦτα οὐ δυνατόν ἐστιν ἀνθρώποις εὐρεῖν· ἐπεὶ καὶ τοὺς μέγιστον φρονούντας ἐπὶ τῷ περὶ τούτων λέγειν οὐ ταῦτὰ δοξάζειν ἀλλήλοισι, ἀλλὰ τοῖς μαινομένοις ὁμοίως διακεισθαι πρὸς ἀλλήλους.

MEMOR. I. i. 12, 18.

Explain the case of *αὐτῶν* (first line) and of *μαινομένοις*, and the construction of *φροντίζειν*. In what voice and tense, and from what verb, is *παρέντες*? how is its meaning here related to that of the simple verb?

## 4. TRANSLATE :—

Ἵς δὲ σφι διετέτακτο καὶ τὰ σφάγια ἐγίνετο καλὰ, ἐνθαῦτα ὡς ἀπείθησαν οἱ Ἀθηναῖοι, δρόμῳ ἴεντο ἐς τοὺς βαρβάρους. ἦσαν δὲ στάδιοι οὐκ ἐλάσσονες τῷ μεταίχιμιον αὐτῶν ἢ ἡκτώ. οἱ δὲ Πέρσαι δρέοντες δρόμῳ ἐπιόντας, παρεσκευάζοντο ὡς δεξόμενοι· μανίην τε τοῖσι Ἀθηναίοισι ἐπέφερον καὶ πάγχυ ὀλεθρίην, δρέοντες αὐτοὺς ὀλίγους, καὶ τούτους δρόμῳ ἐπειγομένους, ὅτε Ἴππου ὑπαρχούσης σφι οὐτε τοξευμάτων. ταῦτα μὲν νυν οἱ βάρβαροι κατείκαζον Ἀθηναῖοι δὲ, ἐπεὶ τε ἀθροοὶ προσέμιξαν τοῖσι βαρβάροισι, ἐμάχοντο ἀξίως λόγου. πρῶτοι μὲν γὰρ Ἑλλήνων πάντων τῶν ἡμεῖς ἴδμεν δρόμῳ ἐς πολεμίους ἐχρήσαντο, πρῶτοι δὲ ἀνεσχόντο ἐσθῆτά τε Μηδικὴν δρέοντες, καὶ τοὺς ἄνδρας ταύτην ἐσθημένους· τέως δὲ ἦν τοῖσι Ἑλληνισὶ καὶ τὸ ὄνομα τὸ Μήδων φόβος ἀκούσαι.  
HEROD. VI. 112.

Give the Attic forms for *ἀπείθησαν* (from what verb?), *δρέοντες*, *μανίην*, and *ὄνομα*.

## 5. TRANSLATE :—

Λακεδαιμονίων δὲ καὶ Θεσπιέων τοιούτων γενομένων, ὅμως λέγεται ἄριστος ἀνὴρ γενέσθαι Σπαρτιήτης, Διηνέκης, τὸν τότε φασὶ εἰπεῖν τὸ ἔπος πρὶν ἢ συμμίζειν σφας τοῖσι Μήδοισι· πυθόμενον πρὸς τὸν τῶν Τρηχινίων ὡς, ἐπεὰν οἱ βάρβαροι ἀπείωσι τὰ τοξεύματα, τὸν ἥλιον ὑπὸ τοῦ πλήθεος τῶν διστῶν ἀποκρύπτουσι, — τοσοῦτό τι πλήθος αὐτῶν εἶναι· τὸν δὲ οὐκ ἐκπλαγέντα τούτοις εἰπεῖν, ἐν ἀλογίῃ ποιούμενον τὸ τῶν Μήδων πλήθος, ὡς πάντα σφι ἀγαθὰ ὁ Τρηχίνιος ξείνος ἀγγέλλοι, εἰ, ἀποκρυπτόντων τῶν Μήδων τὸν ἥλιον, ὑπὸ σκιῇ ἔσοιτο πρὸς αὐτοὺς ἡ μάχη, καὶ οὐκ ἐν ἡλίῳ. HEROD. VII. 226.

Give the Attic forms for *τόν* (line 2), *τευ*, *ἐπεὰν*, *ἀπείωσι* (from what verb?), and *ἀλογίῳ*.

## GREEK POETRY.

You are advised to do the translation first, and answer the questions (a—f) afterward. Candidates in Course II. will do the translation in 1 and 2, and answer the questions (a), (b), (c), and (e).

## 1. TRANSLATE :—

εἶος δ' ταῦθ' ἔρμαινε κατὰ φρένα καὶ κατὰ θυμόν,  
ἔλκετο δ' ἐκ κολεοῖο μέγα ξίφος, ἦλθε δ' Ἀθήνη  
οὐρανόθεν· πρὸ γὰρ ἦκε θεὰ λευκώλενος Ἥρη,  
ἄμφω ὁμῶς θυμῷ φιλέουσά τε κηδομένη τε.  
στῆ δ' ὕπιθεν, ξανθῆς δὲ κόμης ἔλε Πηλεΐωνα,  
οἶφ' φαινομένη· τῶν δ' ἄλλων οὐ τις ὄρατο.  
θάμβησεν δ' Ἀχιλεὺς, μετὰ δ' ἐτράπετ', αὐτίκα δ' ἔγνω  
Παλλὰδ' Ἀθηναίην· δεινὰ δέ οἱ ὕσσε φάανθεν.

ILLIAD I. 198-200.

(a) Divide the last two verses into feet. Designate any one of these eight verses that has the *feminine caesura*.

(b) Who first collected the poems of Homer in their present form? What is the theme of the *Iliad*?

## 2. TRANSLATE:—

τῶν δ', ὧς τ' ὀρνίθων πεπενηῶν ἔθνεα πολλὰ,  
 χηνῶν ἢ γεράνων ἢ κύκνων δουλιχοδείρων,  
 Ἄσιψ ἐν λειμῶνι, Καῦστρίου ἀμφὶ βέεθρα  
 ἔθθα καὶ ἔθθα ποτῶνται ἀγαλλόμενα πτερύγεσσι,  
 κλαγγηδὸν προκαθίζοντων, σμαραγεῖ δέ τε λειμῶν,  
 ὧς τῶν ἔθνεα πολλὰ νεῶν ἄπο καὶ κλισιάων  
 ἐς πεδῖον προχέοντο Σκαμάνδριον· αὐτὰρ ὑπὸ χθῶν  
 σμερδαλέον κονάβιζε ποδῶν αὐτῶν τε καὶ ἵππων.

ILIAD II. 459-466.

(c) Write the Attic forms of οὐρανόθεν and φάανθεν in the first passage, and give the derivation of βέεθρα and κλαγγηδὸν in the second.

(d) Attic for of in the last verse of the third passage?

## 3. TRANSLATE:—

“Ζεῦ πάτερ, οὐ τις σείο θεῶν δλοώτερος ἄλλος.  
 ἦ τ' ἐφάμην τίσεσθαι Ἀλέξανδρον κακότητος·  
 νῦν δέ μοι ἐν χεῖρεσσιν ἄγη ξίφος, ἐκ δέ μοι ἔγχος  
 ἤιχθη παλάμφιν ἐτάσιον, οὐδὲ δάμασσα.”  
 ἦ καὶ ἐπαίξας κόρυθος λάβεν ἵπποδασείης,  
 ἔλκε δ' ἐπιστρέψας μετ' ἐκνημίδας Ἀχαιοῦς·  
 ἔγχε δέ μιν πολύκεστος ἱμᾶς ἀπαλὴν ὑπὸ δειρήν,  
 ὧς οἱ ὑπ' ἀνθερεῶνος ὀχεύς τέτατο τρυφαλείης.

ILIAD III. 365-372.

(e) State in the order of their occurrence the details of a sacrifice as described by Homer in Books both I. and II. of the Iliad.

(f) What is the meaning of the phrase μηρούς τ' ἐξέταμον? What were the σπλάγχνα?

## LATIN GRAMMAR.

1. Mark the quantity of the penult and ultima of each of the following words: *custodis, radices, decorus, fidei, veni* (Imperat.), *feri, circumdare, liceret*.

2. Indicate, by English spelling, the proper pronunciation of each syllable of the following sentence: *Gaius Iulius Caesar multas nationes vicit*.

3. Give rules for the gender of *palus, decus, Tenedos*.

4. Decline *ego; filia quaedam; vetus miles; alia manus*.

5. Compare *malus, dives, liber*. Form and compare adverbs from *audax, durus, libens*.

6. State where each of the following forms is made, and give principal parts of the verb to which it belongs: *iacēret, pactus, dedidisses, oderit, fugem, arcessit, severas, peperit, gaudet, sanximus*.

7. Give a synopsis (i.e. one form for every tense in each mood, besides participles, etc.) of *eo*; of the tenses formed on the Perfect stem of *pello*. Inflect the Fut. Indic. of *doceo* and *fero*, and the Pres. Subj. of *facio* and *do*, in both voices. Give all the participles of *labor*.

8. What is the root of *amo*? of *frango*? of *paciscor*? Show how the three stems of each verb are formed from the root.

9. Separate each of the following words into its component parts, — stem and suffix, — and give the meaning of each: *similitudo, documentum, particula, deditio, febilis, nosco*.

10. What case or cases follow *ob, sub; rogare, imperare, donare, potiri, paenitere; peritus, similis, dignus?* Write in Latin: *at Athens; he came to Rome by the Appian way; he is not believed in this by his friends.*

### LATIN COMPOSITION AND LATIN AT SIGHT.

TRANSLATE INTO LATIN:—

1. The ninth year after<sup>1</sup> the expulsion of the kings,<sup>2</sup> when Tarquin's son-in-law<sup>3</sup> had collected<sup>4</sup> a mighty<sup>5</sup> army for avenging<sup>6</sup> his father-in-law's<sup>7</sup> wrong,<sup>8</sup> a new dignity<sup>9</sup> was created<sup>10</sup> at Rome, which is called<sup>11</sup> the dictatorship<sup>12</sup>—greater than the consulship.<sup>13</sup> The same year a master of the horse, too, was appointed,<sup>14</sup> to be-under-the-orders-of<sup>15</sup> the dictator.

2. To the Sabines begging<sup>15</sup> the dictator and the senate to give pardon<sup>17</sup> for their<sup>18</sup> mistake<sup>19</sup> to men who-were-young,<sup>20</sup> answer was made<sup>21</sup> that the young could<sup>22</sup> be pardoned,<sup>23</sup> the old<sup>24</sup> could not be pardoned.

<sup>1</sup> post (with participle of *exigo*). <sup>2</sup> rex. <sup>3</sup> gener. <sup>4</sup> colligo. <sup>5</sup> ingens. <sup>6</sup> vindico. <sup>7</sup> socer. <sup>8</sup> iniuria. <sup>9</sup> dignitas. <sup>10</sup> creo. <sup>11</sup> appello. <sup>12</sup> dictatura. <sup>13</sup> consulatus. <sup>14</sup> fo. <sup>15</sup> obsequor. <sup>16</sup> oro. <sup>17</sup> venia. <sup>18</sup> omit. <sup>19</sup> error. <sup>20</sup> adulescens. <sup>21</sup> respondeo. <sup>22</sup> possum. <sup>23</sup> ignosco. <sup>24</sup> senex.

TRANSLATE INTO ENGLISH:—

A. Postumius dictator, T. Aebutius magister equitum magnis copiis peditum equitumque profecti ad lacum Regillum in agro Tusculano agmini hostium occurrerunt; et quia Tarquinius esse in exercitu Latinarum auditum est, sustineri ira non potuit, quin extemplo confugerent.

### CAESAR, SALLUST, AND OVID.

[N. B.— Each candidate is expected to translate the first and one other piece of verse; also the first and one other of prose; and to answer all the questions.]

TRANSLATE:—

I. Nec tibi quadrupedes animosos ignibus illis,  
Quos in pectore habent, quos ore et naribus efflant,  
In promptu regere est. Vix me patiuntur, ubi acres  
Incaluere animi, cervixque repugnat habenis.  
At tu, funesti ne sim tibi muneris auctor,  
Nate, cave, dum resque sinit, tua corrige vota.  
Scilicet ut nostro genitum te sanguine credas,  
Pignora certa petis. Do pignora certa timendo,  
Et patrio pater esse metu probor. Aspice vultus  
Ecce meos. Utinamque oculos in pectora posses  
Inserere, et patrias intus deprendere curas!

II. Hunc ego, me Cyclops nulla cum fine petebat:  
Nec, si quaesieris, odium Cyclopi, amorne  
Acidis in nobis fuerit praesentior, edam:  
Par utrumque fuit. Pro quanta potentia regni  
Est, Venus alma, tui! nempe ille inmitis et ipsi  
Horrendus silvis, et visus ab hospite nullo  
Inpune, et magni cum dis contemptor Olympi,  
Quid sit amor, sentit, nostrique cupidine captus  
Uritur, oblitus pecorum antrorumque suorum.

- III. Victor abes. Nec scire mihi, quae causa morandi,  
 Aut in quo lateas ferreus orbe, licet.  
 Quisquis ad haec vertit peregrinam littora puppim,  
 Ille mihi de te multa rogatus abit:  
 Quamque tibi reddat, si te *modo* viderit usquam,  
 Traditur huic digitis charta novata meis.  
 Nos Pylon, antiqui Neleia Nestoris arva,  
 Misimus. Incerta est fama remissa Pylo.
- IV. Aut semel in nostras quoniam nova puppis harenas  
 Venerat, audaces attuleratque viros,  
 Isset anhelatos non praemedicatus in ignes  
 Immemor Aesonides oraue adunca boum,  
 Semina sevisset, totidem sevisset et hostes,  
 Et caderet cultu cultor ab ipse suo.  
 Quantum perfidiae tecum, scelerate, perisset,  
 Dempta forent capiti quam *mala* multa meo!

(a) Divide into feet the second line in each piece translated, marking the quantity of every syllable and the ictus of every foot. (b) Show how the metre helps to determine the meaning of any two of the words in Italics.

TRANSLATE:—

1. Veneti reliquaeque item civitates cognito Caesaris adventu certiores facti, simul quod quantum in se facinus *admississent* intelligebant, legatos, quod nomen ad omnes nationes sanctum inviolatumque semper fuisset, retentos a se et in vincula coniectos, pro magnitudine periculi bellum parare et maxime ea quae ad usum navium pertinent providere instituunt, *hoc* majore spe quod multum natura loci confidebant.

2. Vix agmen novissimum extra munitiones processerat, cum Galli cohortati inter se ne speratam praedam ex manibus dimitterent, longum esse perterritis Romanis Germanorum auxilium expectare, neque suam pati dignitatem ut tantis copiis tam exiguum manum, praesertim fugientem atque impeditam, adoriri non *audeant*, flumen transire et iniquo loco committere non dubitant. Quae fore suspicatus Labienus, ut omnes citra flumen eliceret eadem usus *simulatione* itineris, placide progrediebatur.

3. Ceterum iuventus pleraque, sed maxime nobilium, Catilinae *inceptis* favebat; quibus in otio vel magnifice vel molliter vivere copia erat, incerta pro certis, bellum quam pacem malebant. Fuere item ea tempestate qui *crederent* M. Licinium Crassum non ignarum eius consilii fuisse; quia Cn. Pompeius invisus ipsi magnum exercitum ductabat, cuiusvis opes voluisse contra illius potentiam crescere; simul confisum, si coniuratio valisset, facile apud illos principem se fore.

4. Ita compositis rebus in loca quam maxime occulta discedit ac post paulo cognoscit Marium ex itinere frumentatum cum paucis cohortibus *Siccam* missum, quod oppidum primum omnium post malam pugnam ab rege defecerat. Eo cum delectis equitibus noctu pergat, et iam egredientibus Romanis in porta pugnam facit; simul magna voce Siccenses hortatur uti cohortes ab tergo circumveniant; fortunam illis praeclari facinoris casum dare; si id *fecerint*, postea sese in regno, illos in libertate sine metu aetatem acturos.

(a) What was the extent of Caesar's province? What was the place to which his attention was directed on first crossing the Alps?  
 (b) Give the syntax of the words in Italics in (1) and in any one of the other prose pieces.



## CICERO AND VIRGIL.

(LATIN AUTHORS FOR COURSE II).

Each candidate will do two selections of prose and two of poetry with the questions attached to each.

Candidates in Course II. will substitute the passage from Caesar for their second selection in poetry.

Those who do not select 1 will be presumed not to have read Cato Major.

Explain the construction of the words printed below each passage.

1. Quin etiam memoriae proditum est, cum Athenis ludis quidam in theatrum grandis natu venisset, magno consessu locum nusquam ei datum a suis civibus; cum autem ad Lacedaemonios accessisset, qui, legati cum essent, certo in loco consederant, consurrexisse omnes illi dicuntur et senem sessum recepisse. — CAT. MAJ. 18.

*Athenis, ludis, essent, sessum.*

2. Quem enim imperatorem possumus ullo in numero putare, cuius in exercitu centuriatus veneant atque venierint? Quid hunc hominem magnum aut amplum de re publica cogitare, qui pecuniam, ex aerario depromptam ad bellum administrandum, aut propter cupiditatem provinciae magistratibus dividerit, aut propter avaritiam Romae in quaestu reliquerit? — LEG. MAN. 37.

*Cogitare, administrandum, dividerit.*

3. Vidimus tuam victoriam proeliorum exitu terminatam: gladium vagina vacuum in urbe non vidimus. Quos amisimus civis, eos Martis vis perculit, non ira victoriae; ut dubitare debeat nemo quin multos, si fieri posset, C. Caesar ab inferis excitaret, quoniam ex eadem acie conservat quos potest. Alterius vero partis nihil amplius dicam quam (id quod omnes verebamur) nimis iracundam futuram fuisse victoriam. — PRO MARC. 17.

*Vagina, excitaret, futuram fuisse.*

4. Volturcius vero subito litteras proferri atque aperiri iubet, quas sibi a Lentulo ad Catilinam datas esse dicebat. Atque ibi vehementissime perturbatus Lentulus tamen et signum et manum suam cognovit. Erant autem [scriptae] sine nomine sed ita: *Qui sim scies ex eo quem ad te misi. Cura ut vir sis, et cogita quem in locum sis progressus; vide equid tibi iam sit necesse, et cura ut omnium tibi auxilia adiungas, etiam infirmorum.* — CAT. III. 12.

*Sim, adiungas.*

5. Itaque, credo, si civis Romanus Archias legibus non esset, ut ab aliquo imperatore civitate donaretur perficere non potuit. Sulla cum Hispanos donaret et Gallos, credo hunc petentem repudiasset: quem nos in contione vidimus, cum ei libellum malus poeta de populo subiecisset, quod epigramma in eum fecisset, tantummodo alternis versibus longiusculis, statim ex eis rebus quas tunc vendebat iubere ei praemium tribui, sed ea condicione, ne quid postea scriberet. — PRO ARCH. 25.

*Repudiasset, scriberet, donaret.* Explain the circumstances of this oration.

6. Iamque adeo donati omnes opibusque superbi  
 Punicis ibant evincti tempora taenis,  
 Cum saevo e scopulo multa vix arte revolsus,  
 Amissis remis atque ordine debilis uno,  
 Inrisam sine honore ratem Sergestus agebat.  
 Qualis saepe viae deprensus in aggere serpens,  
 Aerea quem obliquum rota transiit, aut gravis ictu  
 Seminecem liquit saxo lacerumque viator,  
 Nequiquam longos fugiens dat corpore tortus,  
 Parte ferox, ardensque oculis, et sibila colla  
 Arduus attollens; pars volvere clauda retentat  
 Nexantem nodis seque in sua membra plicantem:  
 Tali remigio navis se tarda movebat. — AEN. V. 268.

Write out the first and fifth lines, marking feet and caesura. Give the argument of this book.

- 7 Tu mihi seu magni superas iam saxa Timavi,  
 Sive oram Illyrici legis aequoris, en erit umquam  
 Ille dies, mihi cum liceat tua dicere facta?  
 En erit, ut liceat totum mihi ferre per orbem  
 Sola Sophocleo tua carmina digna cothurno?  
 A te principium, tibi desinam: accipe jussis  
 Carmina coepta tuis, atque hanc sine tempora circum  
 Inter victrices hederam tibi serpere laurus. — EC. VIII 6.

Explain allusions in *cothurno*, *hederam*. Write out the first line, marking feet and caesura.

8. Parte alia ventis et dis Agrippa secundis  
 Arduus agmen agens; cui, belli insigne superbum,  
 Tempora navali fulgent rostrata corona.  
 Hinc ope barbarica variisque Antonius armis,  
 Victor ab Aurorae populis et litore rubro,  
 Aegyptum virisque Orientis et ultima secum  
 Bactra vehit; sequiturque (nefas!) Aegyptia coniunx.  
 Una omnes ruere, ac totum spumare reductis  
 Convolsum remis rostrisque tridentibus aequor. — AEN. VIII. 682.

Explain allusion in the whole passage; in *coniunx*.

9. (FOR COURSE II.)

Hostes ubi et de expugnando oppido et de flumine transeundo spem se fefellisse intellexerunt, neque nostros in locum iniquiorem progredi pugnandi causa viderunt, atque ipsos res frumentaria deficere coepit, concilio convocato, constituerunt optimum esse domum suam quemque reverti, et, quorum in fines primum Romani exercitum introduxissent, ad eos defendendos undique convenirent, ut potius in suis quam in alienis finibus decertarent, et domesticis copiis rei frumentariae uterentur. — CAESAR, B. G. II. 10.

*Introduxissent, decertarent.*

## ARITHMETIC.

[Give all the work. Give each answer in its simplest form.]

1. How many hectares make a square mile? Use logarithms (if you desire) in the computation.
2. Divide, by means of logarithms,  $\frac{0.847\frac{1}{2}}{1.489}$  by  $\sqrt[4]{0.9}$ .
3. What is the ratio of 15 A. 1 R. 2 P. to  $2\frac{1}{2}$  times 2 A. 3 R. 4 P.?
4. Divide \$460 into three parts which shall be to each other as  $\frac{1}{2}$ ,  $\frac{2}{3}$ , and  $\frac{3}{4}$ .
5. What are the prime factors of 1716? How many integral divisors has this number, and what are they? What is the smallest integer by which this number can be multiplied, so that the product shall be a square?
6. A man paints two sides of a wall 7 feet high in 31 hours, 6 minutes, 40 seconds. If he can paint 4 square yards in an hour, how long is the wall?
7. A man sells flour at \$6.50 a barrel, and gains 10 per cent. What per cent would he gain, if he sold flour for \$8.25 a barrel?
8. In what time will \$4,500, at 5 per cent, gain \$181.25?
9. Find the cube root of 1027243.729.

## ALGEBRA.

[Write legibly and without crowding; give the whole work; and reduce the answers to their simplest forms.]

1. Divide  $16x^2y - [18x^2y^2 + 11xy^3 - 6(y^4 + 2x^4)]$  by  $-2x^2 - 5xy - 8y^2$ .
2. A merchant who had two brands of flour sold  $a$  barrels of the first and  $b$  barrels of the second at an average price of  $c$  dollars per barrel; and at the same rates, he sold  $m$  barrels of the first and  $n$  barrels of the second at an average price of  $p$  dollars per barrel. Find the price of each brand.
3. Solve the equation  $\frac{x}{m^2p(x+a)} = \frac{x+a}{n^2px}$ .
4. Two men,  $A$  and  $B$ , set out at the same time on the same walking journey, in opposite directions;  $A$  to go from  $M$  to  $N$ , and  $B$  to go from  $N$  to  $M$ . When they meet, the distance that  $A$  has already gone exceeds that which  $B$  has gone by 100 miles, and it is found that  $A$  will require 8 days more to reach  $N$ , while  $B$  will require 18 days more to reach  $M$ . Required, the distance  $MN$ , and the rate of each traveller.
5. Divide  $\frac{2}{x} - \frac{3}{2x-1} - \frac{2x-3}{4x^2-1}$  by  $\frac{16}{2x+1} - \frac{6x-1}{x^2}$ .
6. Reduce  $\frac{x^3+x-10}{x^4-16}$  to its lowest terms.
7. Divide  $\frac{(\sqrt[5]{a^4b})^3}{\sqrt[4]{c^2}}$  by  $\frac{\sqrt[3]{c^2b^5}}{\sqrt[4]{a^3}}$ .
8. Write out  $(x-y)^9$ .

## ADVANCED ALGEBRA.

[Give all the work.]

1. What is the meaning of  $x^1$ ? Of  $x^0$ ? Of  $x^{-1}$ ? Show that such meaning may properly be given to such expressions. What is the continued product of these three quantities?

2. Find four values of  $x$  in the equation

$$x^2 + \frac{1}{x^2} = a^2 + \frac{1}{a^2}.$$

3. In the quadratic equation  $ax^2 + bx + c = 0$ , prove to what the sum and the product of the roots are respectively equal. If  $a$  is 8 and  $c$  is 2, what value of  $b$  will make the two roots equal to each other?

4. The sum of two numbers is nine times their difference, and if their product is diminished by the greater number, the result is twelve times the greater number divided by the less. Find the numbers.

5. The interior angles of a rectilinear figure are in Arithmetical Progression; the smallest angle is  $120^\circ$ , and the common difference is  $5^\circ$ . Find the number of sides. If you obtain two results, see if both are possible.

6. What is the sum of  $n$  terms of the series  $3, 2, \frac{1}{2}, \dots$ ? What is the sum, if  $n$  is infinity?

7. What is the middle term of  $(x + y)^{40}$ ?

8. Having four single books, and 3 sets containing respectively 8, 5, and 3 volumes, in how many ways can I arrange them on a shelf, provided the volumes of each set are kept together?

## PLANE GEOMETRY.

1. Prove that the angle formed by two secants of a circle, and which has its vertex without the circumference, has for its measure half the concave arc intercepted between its sides, minus half the convex arc.

2. If, in a right triangle, a perpendicular is drawn from the vertex of the right angle to the hypotenuse, what relations exist between the three triangles thus formed? Prove.

How is this proposition useful in proving the Pythagorean proposition.

3. Find an expression for the length of any chord  $EF$  of a circle in terms of the segments  $AD$  and  $BD$ , into which it divides the diameter  $AB$  perpendicular to it.

4. If from a point, without a circle, a tangent and a secant are drawn, the tangent is a mean proportional between the entire secant and the part without the circle.

Prove without using the corresponding theorem for two secants.

5. How can the area of a trapezoid be found? The area of any regular polygon? Give the proof in each case.

6. Draw in your book any pentagon. Find a triangle equivalent to it. Explain and prove the method of your solution.

## SOLID GEOMETRY.

1. Define a *straight line perpendicular to a plane*, and prove that when a straight line is perpendicular to two straight lines drawn through its foot in a plane, it is perpendicular to the plane.
2. Prove that, if two solids have equal bases and heights, and if their sections, made by any plane parallel to the common plane of their bases, are equal, they are equivalent.
3. How is the area of the convex surface of a regular pyramid of any number of sides measured? Prove.
4. The altitude of a certain solid is 2 in., its surface 15 sq. in., and solid contents 4 cu. in. What are the altitude and surface of a similar solid whose solidity is 256 cu. in.?
5. Prove that the sum of the angles of a spherical triangle is greater than two right angles.
6. What is the measure of the area of a lunar surface? *State without proving.*

## PLANE TRIGONOMETRY.

1. Obtain the formulae  
 $\sin^2 x + \cos^2 x = \dots$   
 $\sin(x-y) = \dots$   
 $2 \cos^2 x = 1 + \dots$
2. Compare the tangent and cotangent of  $(90^\circ + y)$  with the same functions of  $(y - 90^\circ)$ .
3. Give the formulae for solving a plane oblique triangle  $ABC$ , when  $a$  and  $b$  and  $C$  are given; and explain fully the method of solution.
4. Find all the parts of the plane oblique triangle for which  $B = 39^\circ 48'$ ,  $C = 62^\circ 9'$ ,  $a = 143.7$ .
5. At a distance of 100 feet from a tree, the angle of elevation of its top is observed to be  $28^\circ 8'$ . If the height of the instrument above the ground is 5 feet, how high is the tree?

## ANALYTIC GEOMETRY.

1. What are the slope and intercept of the line  $2x - 5y - 10 = 0$ ? What is the equation of the perpendicular let fall upon this line from the point  $(-1, 2)$ ?
2. Find the equation of a circle referred to its principal vertex, either from the equation referred to the centre or directly from a figure.
3. What curve is represented by the equation  $4x^2 - 9y^2 + 25 = 0$ ? What is here the origin? what are the coördinate axes? Find the parameter and excentricity of the curve.
4. Find the equation of the circle passing through the vertex of the parabola  $y^2 = 10x$ , and the extremities of the double ordinate through the focus.
5. Deduce the equation of the normal to any point  $(x', y')$  of an ellipse, and prove that this normal bisects the angle between the focal lines to the point. The lengths of the focal lines are  $r = a - ex'$ ,  $r' = a + ex'$ , where  $a$  is the semi-transverse axis, and  $e$  the excentricity.

## ANCIENT HISTORY AND GEOGRAPHY.

[Answer five questions including the first.]

1. Draw a map of Italy, showing the position of the divisions and of the following places: Vercellae, Beneventum, Brundisium, Nola, Roma, Capua, Antium, Ostia, Asculum Apulum, Neapolis, Veii, Tibur, Tusculum, Tarentum, Pisa, Florentia, Placentia, Cannae, Cumae, Baiae.
2. The alliance of Athens and Sparta, 464-461 B. C., and its connection with Athenian politics.
3. The Theban supremacy.
4. Philip of Macedon.
5. The expedition of Pyrrhus to Italy.
6. State the extent of the Roman Empire at the time of Augustus. When and how were the various provinces subjected to Rome?
7. Give some account of the writers of the Augustan age.

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## MODERN AND PHYSICAL GEOGRAPHY.

1. Define *latitude* and *longitude*. What is the latitude of the Tropic of Capricorn? what that of the Arctic Circle? What countries of Europe are crossed by the 40th parallel of latitude? Between what parallels does Australia lie?
2. In what zone do the three northern continents chiefly lie? in what the three southern? How do the southern continents compare with the northern in respect to coast indentations and projections? What continent has its coast relatively most indented? Name its chief projections.
3. Describe the three great river systems of South America, naming the principal affluents of each. Name the chief rivers of Siberia, Chinese Empire, India, and Burmah, and state their courses and where they empty.
4. What states and territories of the United States lie wholly west of the Mississippi river? Through what states does that river run?
5. Name the states of Europe and their capitals.
6. Name the chief cities of the Prussian and Austrian Empires, and give as complete an account of one of them as time will allow.
7. Name the larger East India islands. Give some account of the physical character of Java, and of its productions. What large island lies near the southern extremity of Hindostan?
8. What mountains are included in the Appalachian system, and in what course, or courses, do its chains run? How do the Rocky and Appalachian mountains compare in height and extent? Name the principal mountain chains in or adjacent to Asia. Where do they lie, and what are their directions? Name some of the highest peaks, and state their altitudes.

## ENGLISH COMPOSITION.

You are required to write a short English composition, correct in spelling, punctuation, grammar, and expression. This composition must be at least fifty lines long, and be properly divided into paragraphs. One of the following subjects must be taken :—

The story of The Tempest.

The story and the character of Portia.

## FRENCH.

## 1. TRANSLATE INTO ENGLISH :—

Frémyn arriva ; je le regardai fixement, et je lui trouvai une physiologie dure qui ne promettait rien de bon. Il n'avait pas mis plus de trente heures à faire ses soixante lieues. Je commençai par lui montrer les misérables dont j'avais à plaider la cause. Ils étaient tous debout devant lui ; les femmes pleuraient ; les hommes, appuyés sur leur bâton, la tête nue, avaient la main dans leurs bonnets. F., assis, les yeux fermés, la tête penchée, et le menton appuyé sur sa poitrine, ne les regardait pas. Je parlai en leur faveur ; je ne *sais* où l'on prend ce qu'on dit en pareil cas. Je lui fis toucher au doigt combien il était incertain que cet héritage lui fût légitimement acquis ; je le conjurai par son opulence, par la misère qu'il avait sous les yeux ; je *crois* même que je me jetai à ses pieds : je n'en *pus* tirer un sou. . . . Je lui jetai les clefs au nez ; il les ramassa, s'empara de tout ; et je m'ea revins si troublé, si peiné, si changé, que votre mère, qui vivait encore, crut qu'il m'était arrivé quelque grand malheur. . . Ah ! mes enfants, quel homme que ce F. !—DIDEROT.

2. State the tense of the italicized verbs in the above, and give it in full.

3. Give the principal tenses of *connaître*, *tenir*, *vouloir*, *peindre*, (thus, INF., *être* ; PRES. PART., *étant* ; PAST PART., *été* ; IND. PRES. *je suis* ; PRET., *je fus*).

## 4. TRANSLATE INTO FRENCH :—

(a) I had no time<sup>1</sup> to speak<sup>2</sup> to him, but I will write<sup>3</sup> him a long letter.<sup>4</sup> (b) Bitter<sup>5</sup> fruits<sup>6</sup> are often the most wholesome.<sup>7</sup> (c) Have you taken a walk<sup>8</sup> this morning ? (d) To which of those pupils<sup>9</sup> have you promised<sup>10</sup> a reward<sup>11</sup> ?

<sup>1</sup> temps, m. <sup>2</sup> parler. <sup>3</sup> écrire. <sup>4</sup> lettre, f. <sup>5</sup> amer. <sup>6</sup> fruit, m. <sup>7</sup> sain. <sup>8</sup> se promener. <sup>9</sup> écolier, m. <sup>10</sup> promettre. <sup>11</sup> récompense, f.

## PHYSICAL SCIENCE.

## (I). BOTANY.

1. What are the organs of vegetation ?
2. Of what parts does an embryo consist ?
3. Describe the germination of a maple-seed, and of a grain of corn.

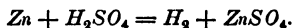
4. What is a biennial plant ?
5. Draw an outline sketch of a twice-pinnate leaf.
6. In what ways are leaves arranged on the stem ?
7. How does a cyme differ from a corymb ?
8. What is the difference between an imperfect and an incomplete flower ?
9. Explain the structure of the "fruit" of the strawberry.
10. Describe upon the schedule the plant given for analysis.

## SCHEDULE FOR PLANT-ANALYSIS.

1. State whether this plant is *exogenous* or *endogenous*, and give reasons for your answer.
2. Describe the *arrangement, venation, shape, margin, apex, and base* of the leaves.
3. What kind of flower-clusters does this plant have ?
4. **THE FLOWER.** State whether it is or is not *complete, regular, and symmetrical*. Give your reasons for each answer.  
**CALYX.** State whether free from, or coherent with, the ovary.  
**SEPALS.** Give their number.  
**COROLLA.** State whether *polypetalous* or *monopetalous*.  
**STAMENS.** (1) Give number. (2) State whether distinct or united together. (3) To what are they attached ?  
**PISTIL.** (1) State whether *simple* or *compound*. (2) If possible, give the number of cells in the ovary. (3) Is the ovary *superior* or *inferior* ?

## (II). CHEMISTRY AND PHYSICS.

1. What happens when a candle burns ? Describe experiments which illustrate the subject, and state clearly what each experiment proves.
2. What goes on when we breathe the air ? Illustrate the subject by familiar facts and experiments.
3. What sort of action do plants exert on the air ? Illustrate the subject as before.
4. What is water made up of ? Illustrate by experiments and state the law of chemical combination which may be deduced from them.
5. Describe the process represented by the following symbols, and state fully what the symbols express :—



6. Define the terms velocity and force, and name the chief forces of nature.
7. Define the term specific gravity, and state the principle of Archimedes by which the specific gravity of solids is most easily found.
8. How is a barometer made, and what does it measure ?
9. How is a thermometer made, and what does it measure ?
10. What is meant by *the latent heat of water*, and how is this quantity measured ?



*(III). PHYSICS AND ASTRONOMY.*

1. Why is the height of the barometer less at the summit of a mountain than at its foot?
2. Describe the common pump and its action.
3. What is latent heat?
4. Why is a spectrum formed when sunlight is passed through a prism?
5. On what principle does the use of lightning rods depend?
6. What is the theory of Copernicus?
7. State Kepler's three laws of planetary motion.
8. What is a sidereal day, and how is its length determined?
9. How is the sun's period of rotation ascertained?
10. What is the cause of solar eclipses? When will an eclipse be annular?

**HARVARD COLLEGE.**

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**COURSES OF INSTRUCTION FOR 1875-76,**

WITH SOME OF THE

**EXAMINATION PAPERS.**

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**I. ANCIENT LANGUAGES.**

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**HEBREW.**

PROF. E. J. YOUNG.

Hahn's or Theile's *Biblia Hebraica* (Pentateuch and Psalms).—Conant's Gesenius's Grammar.

*Three hours a week. 1 Junior, 1 Sophomore.*

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**SANSKRIT.**

**Sanskrit 2.\***—ASST. PROF. GREENOUGH.

Comparative Grammar of Sanskrit, Greek, and Latin.—Hitopadeça.

*Three hours a week. 1 Junior.*

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**II. THE CLASSICS.**

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**PRESCRIBED COURSE.**

FRESHMAN YEAR.—ASST. PROF. EVERETT.

Twenty Lectures on Classical Literature.

*One hour a week.*

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**ELECTIVES.**

**Classics 1.**—PROF. GOODWIN and ASST. PROF. GREENOUGH.

Greek and Latin Languages, Literature, and Antiquities.

*Two lectures a week, but counting as a one-hour elective only. 2 Seniors, 1 Junior, 3 Sophomores, 1 Freshman.*

**Classics 2.**—ASST. PROF. GREENOUGH.

*Greek and Latin Comparative Philology.*

Peile's Greek and Latin Etymology.—Lectures.

*Two hours a week. 4 Seniors, 1 Junior, 1 Sophomore.*

\* Sanskrit 1 was omitted in 1875-76.

## PRESCRIBED CLASSICS.

(March, 1876. One hour.)

## GREEK LITERATURE.

[N. B. — Dates are expected in all cases.]

1. Name any two writers between Homer and Pindar, giving the name, subject, and dialect of some one principal work of each.
2. Give the chief events in the life and literary history of Sophocles, with a short analysis of some one of his plays.
3. Show the respective relations of Lysias, Isocrates, and Demosthenes, to the political discussions of their time.
4. Assign the following works to their respective authors: *Seven against Thebes*, *Phaedrus*, *Hymn to Mercury*, *Oration against Ctesiphon*, *Oeconomicus*.

(June, 1876. One hour.)

## LATIN LITERATURE.

1. State with reference to the Roman Comedies: — (a) Where the scene is usually laid; (b) What are the staple characters; (c) What incident is frequently used in disentangling the plot.
2. Quintilian says: "*Satura tota nostra est.*" Explain this statement, with the derivation of *satura*; give the names, epochs, and one or more characteristics of the great Roman Satirists.
3. Each of the following names is borne by at least two Latin authors. Give the full names of all, with the dates and one of the chief works of the more important in each pair: —  
*Livius, Valerius, Statius, Annaeus, Flaccus.*
4. Name an author who might have been spectator both of Pompey's triumph (81 B. C.) and Augustus' (29 B. C.); also one who saw the accession of both Caligula (37 A. D.) and Trajan (98 A. D.). Show a close connection of dates between Cicero and Ovid, and also between Virgil and Lucretius.
5. Who wrote each of the following works: *Atys, De Beneficiis, De Officiis, Eunuchus, Pharsalia*?

## CLASSICS 1.

Give as particular an account as you can of the Greek arrangements for public religious worship in historic times, — of those for public games, and the training for them, — of those for theatrical exhibitions, — of the dress of the Greeks.

## CLASSICS 2.

Give the etymology of the following words; explaining the mode of formation, giving the roots (where known) and cognate words in other languages, with comments thereon, and showing the correspondences and changes by examples: —

ἔσπον, ἔπος, καρπός, δπάλω, δσμῖνι, μέσος, βήτωρ, φρόνη, δστις, κρίσις, κριτήριον, κύκλος, βαρύς, βάθρον, θερμός, ὤς, τε, τάσσω, πρό; *socius, tenuis, alter, ubi, volvo, puto, moneo, interior, forma, pierumque, civis, paciscor*; hole, bone, couch, health, worth.

Analyze the forms λύσω, ἔσομαι, εἶην, ἔφην, ἐλελοίπει, λείπω, τείνω, erat, amabam, amaverat, scibo, equorum, τιμῶν (τιμή), βίηφι; *vivere, dictum (supine), amamini anaivod, nobis.*

**G R E E K.****PRESCRIBED COURSE.**

**FRESHMAN YEAR.** — MESSRS. J. W. WHITE, GOULD, and CROSWELL.

Plato (Apology and Crito). — Homer (Odyssey, Books VI., VII., and IX). — Lysias (Oration against Eratosthenes). — Euripides (Alcestis, or Iphigenia at Aulis, or Electra and Cyclops). — Grote's History of Greece, chapters 67, 68. — Goodwin's Greek Moods and Tenses. — Ex-temporaneous Translation and Composition.

*Advanced Sections.* — Plato (Apology). — Demosthenes (three Olynthiac Orations). — Aristophanes (Clouds). — Grote's History, &c., as above.

*Three hours a week.*

**ELECTIVES.****Greek 1.** — ASST. PROF. ANDERSON.

Readings in Plato, Herodotus, and the Greek Poets.

*Two hours of required attendance weekly, counting as a one-hour elective.*

2 Juniors, 4 Sophomores.

**Greek 2.** — ASST. PROF. ANDERSON.

Thackeray's Anthologia Graeca.

*Reading at sight with two hours of required attendance weekly, counting as a one-hour elective.* 2 Seniors, 4 Juniors, 6 Sophomores, 1 Freshman.

**Greek 3.** — ASST. PROF. ANDERSON.

Greek Composition (especially for candidates for Second-year Honors).

*One hour a week.* 2 Juniors, 8 Sophomores, 5 Freshmen.

**Greek 4.** — ASST. PROF. ANDERSON.

Advanced Greek Composition (especially for candidates for Final Honors).

*One hour a week.* 2 Seniors, 1 Junior.

**Greek 5.** — ASST. PROF. ANDERSON.

Aeschylus (Prometheus). — Herodotus (Book I.). — Homer (Iliad).

*Two hours a week.* 1 Senior, 6 Juniors, 37 Sophomores, 2 Freshmen.

**Greek 6.** — PROF. GOODWIN.

Demosthenes (Philippics). — Sophocles (Antigone). — Aristophanes (Clouds).

*Two hours a week.* 5 Juniors, 35 Sophomores, 2 Freshmen.

**Greek 7.** — ASST. PROF. ANDERSON.

Sophocles (Oedipus Tyrannus). — Plato (Phaedo). — Introduction to Greek Philosophy.

*Two hours a week.* 1 Senior, 11 Juniors, 23 Sophomores, 2 Freshmen.

**Greek 8. — PROF. GOODWIN.**

Demosthenes (On the Crown), with parts of Aeschines against Ctesiphon. — Thucydides (parts of Books I and II). — Athenian History (Times of Pericles and Demosthenes).

Three hours a week. 23 Juniors, 1 Freshman.

**Greek 10.\* — PROF. SOPHOCLES.**

Arrian (Anabasis). — Polybius (Selections).

Three hours a week. 2 Seniors, 1 Junior.

**Greek 11. — PROF. GOODWIN.**

Plato (Gorgias and parts of the Republic). — Aristotle (Ethics, Books I.-III., and X.).

Three hours a week. 11 Seniors, 13 Juniors, 1 Sophomore, 1 Freshman.

In Course 11 attention was directed mainly to the subject-matter of the authors read.

**Greek 12. — PROF. SOPHOCLES.**

Ecclesiastical Greek. — Justin and Hippolytus. — Lectures on the early Christian sects.

Three hours a week. 5 Seniors.

**PRESCRIBED GREEK.**

(Final Examination.)

**PLATO, Apology and Crito.**

I. 1. Translate 80 E, *οἶον δὴ* (line 5) . . . *προσκαθίζων*, so as to show the construction of *οἶον*.

2. Comment on *ἀεροβατεῖν*, 19 C, l. 3.

3. Give another equally good expression in Greek of the thought in *εἰ γὰρ ἔφελον οἶοί τε εἶναι οἱ πολλοί*, in 44 D, l. 5.

II. 1. Describe briefly the preliminary legal process called *ἀνδκρισις* (on half a page at the most).

2. State the rule for the indirect quotation of a compound sentence, and give an example in Greek.

**LYSIAS, Eratosthenes.**

III. 1. Translate § 3.

2. Comment on *χορηγίας*, § 20, and state the difference between *χορηγός* and *κορυφαῖος*.

3. Define *brachylogy*, and cite a case of it in § 39.

4. Explain the optatives in § 44.

IV. Give a brief biography of Lysias (on half a page at the most).

**EURIPIDES, Electra and Cyclops.**

V. In the Electra: 1. Translate vv. 954-6.

2. Comment on *διαβόλους*, v. 825, and explain the mood of *γενομένης*, v. 911.

\* Greek 9 was not given in 1875-76.

3. How are the parts distributed among the actors ?

4. In what way and to what extent does Euripides transgress the laws of *tragic* composition in this play ?

VI. In the *Cyclops* : 1. Translate vv. 669-675.

2. Give the meaning and composition of *ξαναλω*, v. 10, and explain the allusion in v. 166.

3. Define *tetralogy*, and state on what account the *Cyclops* has a peculiar interest.

VII. Describe the interior of the Theatre of Dionysus at Athens.

HOMER, *Odyssey*.

VIII. In Bk. VI. : 1. Translate vv. 293-299.

2. Comment on *ύγρον έλαιον*, v. 79 ; explain the mood of *γένηται*, v. 201 ; and state what *βέροι* in v. 286 would be if the regular succession of moods were followed.

IX. In Bk. IX. : 1. Translate vv. 378-388.

2. Comment on *αμφιφορεῦσι*, v. 204, and give the syntax of *ειπεῖν*, v. 457.

X. 1. Give an example each of a reduplicated second aorist and of a syncopated second aorist, and explain their formation.

2. Comment on *μέγαρον* and *κρητήρ*.

3. What material addition to the epic legend of Polyphemus has Euripides made in the *Cyclops* ? State any other points of difference.

(Advanced Sections, Final Examination.)

[Do any two of the marked questions.]

1. Translate Aristoph. *Clouds*, vv. 299-313 ; vv. 1002-1008 ; vv. 1170-1180.

\*2. What is the implication in *δ Μήλιος* (830), and why ? Translate, with the requisite explanation, v. 859. Translate vv. 920-922. What tragedian is attacked in these lines ; and what criticism of his methods is implied in *επτάχευες* ? Explain the double meaning in line 1278. What is the connection in sense of line 1266 with the two preceding ?

3. Explain the use of *άνύσας* (181), *τί παθούσαι* (340), *πάτων* (912), *λέγων* (954).

Explain fully and accurately the syntax of : *θόσετε* (258) ; both verbs in v. 505 ; *άφανίσειας* (760).

What time is denoted by the Inf. *ελθεῖν* (268), *μαθεῖν* (631), *πονήσαι* (1049) ?

\*4. Where, and from what Present Indicative, are these verbs made : *παρεδόθη* (213), *είλασι* (341), *καλω* (632), *ξεί* (633), *περίδου* (644), *νενησμέγοι* (1203), *πεποιθειν* (1347), *τεθνήξεις* (1436) ?

\*5. Give a scheme of the Iambic Trimeter, showing the substitutions allowed in Comedy. Mark the quantities of the syllables in vv. 263, 1023, 1036, and 1115. What is an anapaestic system ?

6. Define these words : *στάσιμον*, *επεισόδιον*, *επίβρημα* ; also *λογεῖον* and *εκύκλημα* ; also *πρωταγωνιστής*.

7. What is the date of this play, and what is the object of its satire ? What was the fate of the play ? What plays had already been written by Aristophanes ?

8. Translate Demosth. *Olynth. Γ*, Ch. 4 and 5.

9. Translate Plato, *Apol. Soc.* 28 C, through *αρούρης*.

## (Advanced Sections, Final Examination.)

## 1. Translate (at sight) :—

## THE AUCTION OF WIVES IN ILLYRIA.

(α) Νόμοι δὲ αὐτοῖσι ὤδε κατεστᾶσι. ὁ μὲν σοφώτατος ὤδε, κατὰ γνώμην τὴν ἡμετέραν, τῷ καὶ Ἰλλυριῶν Ἐνετοῦς πυνθάνομαι χρᾶσθαι. κατὰ κόμας ἐκάστας ἅπαξ τοῦ ἔτεος ἐκάστων ἐποιεῖτο τάδε. ὡς ἂν αἱ παρθένοι γινοῖατο γάμων ὠραῖαι, ταύτας ὄκως συναγάγοιεν, πάσας ἐς ἓν χωρίον ἐσάγεσκον ἀλέας· περίξ δὲ αὐτάς ἴστατο ὄμιλος ἀνδρῶν. ἀνιστάς δὲ κατὰ μίαν ἐκάστην κῆρυξ πωλέσκε, πρῶτα μὲν τὴν εὐειδεστάτην ἐκ πασέων· μετὰ δὲ, ὄκως αὐτῇ εὐροῦσα πολλὰν χρυσίον πρηθείη, ἄλλην ἀνεκέρυσσε, ἢ μετ' ἐκείνην ἔσκε εὐειδεστάτη. ἐπωλέοντο δὲ ἐπὶ συνοικῆσει. ὅσοι μὲν δὴ ἔσκον εὐδαίμονες τῶν Βαβυλωνίων ἐπίγαμοι, ὑπερβάλλοντες ἀλλήλους ἐξωνέοντο τὰς καλλιστευούσας· ὅσοι δὲ τοῦ δήμου ἔσκον ἐπίγαμοι, οὗτοι δὲ εἶδεος μὲν οὐδὲν ἐδέοντο χρηστοῦ, οἱ δ' ἂν χρήματά τε καὶ αἰσχίονας παρθένους ἐλάμβανον. ὡς γὰρ διεξέλθοι ὁ κῆρυξ πωλέων τὰς εὐειδεστάτας τῶν παρθένων, ἀνίστη ἂν τὴν ἀμορφεστάτην, ἢ εἰ τις αὐτέων ἔμπηρος ἦε, καὶ ταύτην ἀνεκέρυσσε, ὅστις θέλοι, ἐλάχιστον χρυσίον λαβὼν, συνοικεῖεν αὐτῇ, ἐς ἃ τῷ τὸ ἐλάχιστον ὑπισταμένῳ προσεκέετο. τὸ δὲ ἂν χρυσίον ἐγίνετο ἀπὸ τῶν εὐειδῶν παρθένων καὶ οὕτω αἱ εὐμορφοὶ τὰς ἀμόρφους καὶ ἐμπήρους ἐξεδίδουσαν.—HEROD. I. 196.

## 2. Translate into Greek :—

(α) He said that he pardoned them on condition that they dispersed and returned to their several homes; but still they did not stop fighting before night came, for they expected the king shortly to offer terms of surrender himself. Meanwhile there was in the following night a violent storm. At last the storm was over and at daybreak the fighting was renewed in the direction of the ditch, which was now partly filled with snow. They did this, not with any view to cross, but to divert the besieged while their own leader forced his way in at another place.

(β) For I, Athenians, never held any other office in the city; but I was once a member of the council. And my tribe, Antiochia, happened to hold the presidency, when you wished to try the ten generals in a body, illegally, as in after time it appeared to yourselves.

3. (α) Describe the development of drama at Athens. What means were used to secure the attendance of the whole city at the theatre, and why? Discuss the differences in style and sentiment between the three great tragedians.

(β) Are the Attic comedians trustworthy witnesses to the character of public men? Sketch briefly the Socrates of the *Clouds*, and show where the drawing of the poet is probably false.

(γ) Define the term sophist, etymologically. What application did Plato make of it? Aristotle? What is the modern meaning? Describe the sophists of the Socratic period, giving any examples. What was the ground of the hostility of Aristophanes towards them? Of Plato?

## GREEK 2.

1. Translate (in Thackeray's *Anthologia Græca*):—

(α) Δάφνις . . . ἀδρανίην. CCCXXII.

(β) Ἄτθι κόρα, . . . στόμασιν. CCCXXVII.

- (γ) Τὰν ὄλοαν . . . Τιμομάχου. CCCXXXIV.  
 (δ) Δάκρυα σοι . . . ἐναγκάλισαι. CCCXXXIX.  
 (ε) Χαίρε μοι, . . . ἠρξάμην βίου. CLXXVI.

[In all fifty lines.]

2. Translate (at sight) : —

- (α) PRAXITHEA DEVOTES HER DAUGHTER TO DEATH.

Ἐγὼ δὲ δώσω τὴν ἐμὴν παῖδα κτανεῖν.  
 λογιζομαι δὲ πολλὰ· πρῶτα μὲν πόλιν  
 οὐκ ἂν τιν' ἄλλην τῆσδε βελτίω λαβεῖν,  
 ἢ πρῶτα μὲν λεῶς οὐκ ἐπακτὸς ἄλλοθεν,  
 αὐτόχθονες δ' ἔφουμεν· αἱ δ' ἄλλαι πόλεις,  
 πεσσῶν ὁμοίως διαφοραῖς ἐκτισμέναι,  
 ἄλλαι παρ' ἄλλων εἰσὶν εἰσαγώγιμοι.  
 ὅστις δ' ἀπ' ἑλλης πόλεος οἰκίζει πόλιν  
 ἄρμός πονηρὸς ὥσπερ ἐν ξύλῳ παγελς,  
 λόγῳ πολίτης ἐστὶ, τοῖς δ' ἔργοισιν οὐ.  
 ἔπειτα τέκνα τοῦδ' ἔκατι τίκτομεν,  
 ὡς θεῶν τε βωμοῦς πατρίδα τε βνόμεθα.  
 πόλεως δ' ἀπόσης τοῦνομ' ἐν, πολλοὶ δὲ νιν  
 ναλοῦσι· τούτους πῶς διαφθεῖραί με χρῆ,  
 ἔξδν προπάντων μίαν ἕπερ δοῦναι θανεῖν;

EURIPIDES, CXCVI.

- (β) PULVIS ET UMBRA SUMUS.

Ὅταν εἶδέναι θέλῃς σεαυτὸν ὅστις εἶ,  
 ἔμβλεψον εἰς τὰ μνήμαθ', ὡς ὀδοιπορεῖς.  
 ἐνταῦθ' ἔνεσ' ὅσα τε καὶ κόυφῃ κόνις  
 ἀνδρῶν βασιλέων καὶ τυράννων καὶ σοφῶν,  
 καὶ μέγα φρονούντων ἐπὶ γένει καὶ χρήμασιν,  
 αὐτῶν τε δόξη κάπλ κἀλλει σωμάτων.  
 ἀλλ' οὐδὲν αὐτῶν τῶνδ' ἐπήρκεσεν χρόνος.  
 κοινὸν τὸν αἶθρα ἔσχον οἱ πάντες βροτοί.  
 πρὸς ταῦθ' ὄρων γίνωσκε σεαυτὸν ὅστις εἶ.

MENANDER, CCXLII.

- (γ) Ἦφοι Μελάμπικον ἐθάπτομεν, ἡελίου δὲ  
 δυναμένου Βασιλῶ κάτθανε παρθενική,  
 αὐτοχειρί. ζῶειν γὰρ ἀδελφεὸν ἐν πυρὶ θεῖσα  
 οὐκ ἔτλη. δίδυμον δ' οἶκος ἔσειδε κακὸν  
 πατρὸς Ἀριστίπικιο, κατήφησεν δὲ Κυρήνη  
 πᾶσα τὸν εὐτεκνον χῆρον ἰδοῦσα δόμον.

CALLIMACHUS, CCXCIII.

GREEK 5.

1. Translate: Αὐτίκα δὲ . . . τὸ μέγαθος. — Herod. I. 98.

Comment on πολλός, ἐς δ, χάρις, ὥστε τοιοῦτο εἶναι, τὸν Ἀθηναίων κύκλον. How does the usage of Herodotus differ from that of Attic writers in Final Clauses?

2. (a) Translate Aesch. Prom. 128-135, 307-314, 953-961. Write three brief notes on each passage.

(b) Explain the derivation and meaning of six of the following words : ποικιλείμων, 24 ; κίνυγμα, 158 ; χλιδῆς, 466 ; κράσεις, 482 ; μεγάρω, 626 ; ἐλίγδην, 882 ; τρόχιν, 941 ; στρόμβοι, 1084.



(c) Comment on the meaning of γέ, 254; ὄργης, 878; κλύοντες οὐκ ἤκουον, 448; αἰεῖ, 937; ἀπέραντον, 158. (cf. 1078.)

(d) Explain the construction of ἀπηλλάγην, 750; νόσον, 977.

(e) Give the English of the following words: μύωψ; ἔχος, μύρμηξ, ἀποικία.

(f) In line 354 the MSS. read ἀντίεστη:—the editors change to ἀνέστη, — why?

3. (a) Describe the scene at the opening of the play. How is the entry of Oceanus contrived? At what point do the chorus take their places in the orchestra? How does the play close?

(b) Explain the following technical terms: πάροδος, θυμέλη, χορηγία. What is the meaning of διδάσκειν δράμα?

(c) What poets preceded Aeschylus in the composition of tragedies at Athens? How old was Aeschylus at the birth of Euripides? Give the names of four other plays of Aeschylus, and the plot of one of them *very briefly*.

4. (a) Translate: Ἔκτορα δ' . . . πτόλιος πέτερ' αἰεῖ.

HOMER: Iliad xxii. 188-198.

(b) Explain the cases of πεδίοιο and ὀπάρης (Iliad xxii. 26, 27.) What is the derivation of ἀρίζηλοι (27)? What is the meaning of πυρετόν (31)?

(c) Translate (at sight):—

Τὸν δ' ὀλιγοδραπέων προσέφη, Πατρόκλεις ἱππεῦ.  
 ἦδη νῦν Ἔκτορ, μεγάλ' ἔβχεο σοὶ γὰρ ἔδωκεν  
 νίκην Ζεὺς Κρονίδης καὶ Ἀπόλλων, οἳ μ' ἐδάμασσαν  
 ῥηϊδίως· αὐτοὶ γὰρ ἀπ' ὤμων τεύχε' ἔλοντο.  
 τοιοῦτοι δ' εἶπερ μοι εἰκόσιν ἀντεβόλησαν,  
 πάντες κ' αὐτόθ' ὄλοντο, ἐμφ' ὑπὸ δουρὶ δαμέντες.  
 ἀλλὰ με Μοῖρ' ὀλοή καὶ Δητοῦς ἔκτανεν νείδ,  
 ἀνδρῶν δ' Εὐφορβος· σὺ δέ με τρίτος ἐξενάρεις.

II. xvi. 843-850.

## GREEK 6.

### ANTIGONE OF SOPHOCLES. PHILIPPICS AND OLYNTHIACS OF DEMOSTHENES.

1. Translate, in the Antigone,

- (1) 82-92 (οἴμοι . . . τὰμήχανα);
- (2) 354-364 (καὶ φθέγμα . . . ξυμπέφραστοι);
- (3) 450-457 (οὐ γὰρ . . . φάνη);
- (4) 979-987 (κατὰ . . . ᾧ παῖ);
- (5) 1206-1218 (φωνῆς . . . κλέπτομαι).

In what voice, mood, and tense, and from what verbs, are πέσοιμι (240), ἐξομῆ (535), πεφάνθαι (562), τράφη (984), ἐπεξεργάσω (1288)?

2. Comment on any peculiarities of construction that you notice in Antig. (1) γν. 178-182; (2) 271, 272; (3) 278 and 1253; (4) 666; (5) 686; (6) 710. (7) Explain the use of μη οὐ (97 and 544), and also that of οὐ μή (Dem. Phil. I., end of § 54). (8) Translate Antig. 373-375 (μήτ' . . . ἔρδει); how will the sentiment be changed if we read ἔρδοι? (9)

What is the subject of *ὑπερδραμεῖν* in Antig. 455?—defend the interpretation which you adopt of this passage.

3. (1) In what relation does the Antigone stand (as respects its plot) to the Septem of Aeschylus and to the Oedipus Rex and Oedipus at Colonus of Sophocles? Give a brief sketch of the myth, including the plots of the four plays. Illustrate Antig. 131–137 by reference to the Septem. (2) What may we infer from the Antigone to have been the poet's opinion of the relation between the divine and the human law, and of man's duty in respect to each in cases of conflict? (3) What is the date of the Antigone, and how is this known? What are the principal events that are known to us in the life of Sophocles?

4. Explain the metres of Antig. 117–125 (*στὰς . . . δρόκουτι*). What effect was produced by the metre in 125 and the corresponding verse of the strophe?

5. Translate Phil. III. §§ 30, 31 (*καὶ μὴν . . . πρότερον*).

Describe the relations of Philip and Athens at the time of the delivery of the First Philippic, showing what aggressions had already been made by Philip.

## L A T I N .

### PREScribed COURSE.

FRESHMAN YEAR. — ASST. PROF. SMITH, MESSRS. HALE and GOULD.

Cicero (*Ad Quintum Fratrem*, I. 1.). — Livy (Books XXI. and XXII.). — Horace (Odes). — Merivale's General History of Rome, Chapters XLII. — LIII. — Extemporaneous Translation and Composition.

*Advanced Sections.* — In addition to the above course, the Advanced Sections read the first book of Cicero's *Tusculan Disputations*.

*Three hours a week.*

### ELECTIVES.

**Latin 1.** — ASST. PROF. GREENOUGH.

Cicero (*Laelius*). — Terence. — Horace (*Satires*).

*Two hours a week. 1 Junior, 43 Sophomores.*

**Latin 2.** — ASST. PROF. GREENOUGH.

Cicero (*Pro Sestio*). — Terence. — Horace (*Satires*).

*Two hours a week. 2 Juniors, 44 Sophomores, 6 Freshmen.*

Course 2 was similar to Course 1, but more difficult, as the amount read in it was greater, and the instruction was given in part by reading other books at sight.

**Latin 3.** — ASST. PROF. EVERETT.

Tacitus (*Agricola*). — Juvenal.

*Two hours a week. 22 Sophomores, 1 Freshman.*

**Latin 4.** — ASST. PROF. EVERETT.

Composition and Extemporaneous Translation (*Nixon's Parallel Extracts*).

*One hour a week. 12 Sophomores, 4 Freshmen.*

**Latin 5. — ASST. PROF. GREENOUGH.**

*Philosophical Course.* — Cicero (Tusculanae Disputationes; De Natura Deorum).

*Two hours a week. 2 Seniors, 4 Juniors, 10 Sophomores.*

**Latin 6. — ASST. PROF. EVERETT.**

Cicero (De Finibus). — Horace (Epistles).

*Two hours a week. 2 Seniors, 6 Juniors, 1 Sophomore.*

**Latin 7. — ASST. PROF. EVERETT.**

Advanced Course in Composition and Extemporaneous Translation (Nixon's Parallel Extracts).

*One hour a week. 2 Seniors, 3 Juniors.*

**Latin 8. — PROF. LANE.**

Suetonius. — Tacitus. — Juvenal.

*Three hours a week. 17 Seniors, 90 Juniors, 1 Sophomore.*

**Latin 9. — PROF. LANE.**

Catullus. — Lucretius. — Plautus.

*Three hours a week. 19 Seniors, 1 Sophomore, 1 Freshman.*

*Under this head for convenience is placed*

**Latin 11.\* — MR. E. YOUNG.**

*Elements of Roman Law.* — Institutes of Gaius and of Justinian. — Demangeat's Cours de Droit Romain.

*Three hours a week. 21 Seniors, 4 Juniors.*

**PRESCRIBED LATIN.**

(*Special Examination, November, 1875. Two hours.*)

**CICERO AD QUINTUM FRATREM, I. I.**

I. Render accurately into idiomatic English the following extracts marked *a, b, c*:—

(a) Tibi data est . . . arbitrantur. — i. 5, 6.

(b) Iam qui in eius modi rebus . . . venerint. — vi. 17.

(c) (*At sight.*) Qui ita se gerunt, ita vivunt, ut eorum probetur fides, integritas, aequitas, liberalitas, nec sit in iis ulla cupiditas, libido, audacia, sintque magna constantia, ut ii fuerunt, quos nominavi, hos viros bonos, ut habiti sunt, sic etiam appellandos putemus, quia sequantur, quantum homines possunt, naturam optimam bene vivendi ducem. sic enim mihi perspicere videor, ita natos esse nos, ut inter omnes esset societas quaedam, major autem, ut quisque proxime accederet. — De Amicitia, v.

II. SYNTAX. Account for the construction of *sim, velim, animo, faceres, Trallis, venerint* in (b), for the italicized forms in (c) and in the following extracts (which are not to be translated):—

\* Latin 10 was omitted in 1875-76.

(d) Quid est enim negotii continere eos quibus *praesis*, si te ipse *contineas*? Id autem *sit* magnum et difficile ceteris, sicut est *difficillimum*; tibi fuit hoc semper *facillimum*.

(e) Si quis est in quo jam *offenderis*, huic nullam partem existimationis tuae *commiseris*.

(f) Plato tum denique fore beatas res publicas putavit si ii qui *regerent* omne suum studium in doctrina ac sapientia *collocassent*.

(g) Nomen autem *publicani* aspernari non possunt, qui pendere ipsi *vectigal* sine *publicano* non potuerunt.

Supply the verb after *nemini* in the following, and give the reason for the form you use:—

(h) In *promerendo* ut tibi tanti honores haberentur, quanti haud scio an *nemini*, fuisti omnium *diligentissimus*.

III. Give the derivation of any three of the following words: *negotium*, *ingenium*, *quoniam*, *velum*, *nomen*, *familia*. Comment on the idiom, *haud scio an nemini* (h).

IV. Write out the Latin words indicated by HS. ccc. What is the value of the sum in our money? Explain the sign HS., and the derivation of the word for which it stands. What is meant by *publica male redimere*? What is meant by *socii* in this letter? by *provinciales*?

(Special Examination, March, 1876.)

LIVY, XXI, XXII.

[Answer I. and VI. and any other two.]

#### I. RESULT OF THE FIRST PUNIC WAR.

Angebant ingentis spiritus virum [Hamilcarem] Sicilia Sardiniaque amissae: nam et *Siciliam* nimis celeri desperatione rerum *concessam*, et *Sardiniam* inter *motum Africae fraude* Romanorum, *stipendio* etiam *in-super* inposito, *interceptam*.

Comment historically, so that the meaning of each italicized word shall be clear. How much was the first *stipendium*? What did Hamilcar do after the *motus Africae* came to an end? When did his son assume command? Construction of *concessam*. What English word akin to *virum*?

#### II. PASSAGE OF THE ALPS.

Hannibal ab *Druentia* campestri maxime itinere ad Alpes cum bona pace incoherentium ea loca Gallorum pervenit. tum, quamquam fama prius, qua incerta in maius vero ferri solent, praecepta res erat, tamen ex propinquo visa montium altitudo nivesque caelo prope immixtae, tecta informia imposita rupibus, pecora iumentaque torrida frigore, homines intonsi et inculti, animalia inanimaliaque omnia rigentia gelu, cetera visu quam dictu foediora, terrorem renovarunt. erigentibus in primos agmen clivos apparuerunt imminentes tumulos insidentes montani, qui, si valles occultiores insedissent, coorti ad pugnam repente ingentem fugam stragemque dedissent.

What did Hannibal do? What other difficulties did he meet in his passage? How many men did he lose? Result of first skirmish with the Romans. Date of these events. Construction of *erigentibus*, *insedissent*. Derivation of *iumenta*. What English word akin to *pecora*? to *torrida*?

## III. BATTLE OF THE TREBIA.

Erat forte brumae tempus et nivalis dies in locis Alpibus Apenninoque interiectis, propinquitate etiam fluminum ac paludium praegelidis. ad hoc raptim eductis hominibus atque equis, non capto ante cibo, non ope ulla ad arcendum frigus adhibita, nihil caloris inerat, et quicquid aurae fluminis appropinquabant, afflabat acrior frigoris vis: ut vero refugientes Numidas insequentes aquam ingressi sunt—et erat pectoribus tenus aucta nocturno imbri—tum utique egressis rigere omnibus corpora, ut vix armorum tenendorum potentia esset, et simul lassitudine et procedente iam die fame etiam deficere.

What followed? On which side of the Trebia does Livy put the battle? Give a map of the place. Construction of *quicquid*. Derivation and meaning of *bruma*. What English word akin to *aqua*?

## IV. BATTLE OF LAKE TRASIMENUS.

Conversus ad nuntium (qui nuntiarat signum, omni vi moliente signifero, convelli nequire), "num litteras quoque" inquit "ab senatu affers, quae me rem gerere vetent? abi nuntia, effodiant signum, si ad convellendum manus prae metu obtorpuerunt." . . .

Flaminius cum pridie solis occasu ad lacum pervenisset, inexplorato, postero die, vixdum satis certa luce, angustiis superatis, postquam in patientiorem campum pandi agmen coepit, id tantum hostium, quod ex adverso erat, conspexit: ab tergo ac super caput decipere insidiae.

What followed? Date. Allusion in *litteras*. Construction of *vetent*. What would *abi nuntia*, *effodiant*, and *obtorpuerunt* be in indirect discourse? Derivation of *agmen*, *littera*. What English word akin to *hostis*?

## V. FABIUS OUTWITTED.

Cum satis sciret per easdem angustias, quibus intraverat Falernum agrum, rediturum, Calliculam montem et Casilinum occupat modicis praesidiis: ipse iugis iisdem exercitum reducit, misso Minucio ad firmandum praesidium saltum, qui super Tarracinam imminet mari, ne ab Sinuessa Poenus Appiae limite pervenire in agrum Romanum posset. postquam Minucius se coniunxit Fabio, dictator ac magister equitum castra in viam deferunt, qua Hannibal ducturus erat. inclusus inde Poenus videtur.

How did he get out? Give a map of the place. What class of political leaders at Rome are Livy's favorites? Construction of *sciret*. Derivation and meaning of *prae-sidium*, of *magister*. What English word akin to *mari*? to *re-ducit*? to *agrum*?

## VI. INAUGURATION OF A CONSUL.

Give a brief account of this ceremony without translating the text.

C. Flaminius conscientia spretorum et Capitolium et sollemnem votorum nuncupationem fugisse, ne die initi magistratus Iovis optimi maximi templum adiret; ne senatum invisus ipse et sibi uni invisum videret consuleretque; ne Latinas indiceret, Iovique Latiari sollemne sacrum in monte faceret; ne auspicato profectus in Capitolium ad vota nuncupanda, paludaus inde cum lictoribus in provinciam iret.

Comment on *auspicato*, giving the derivation and meaning of the word. What did a commander lack when he had not the *auspicium*? Derivation of *nuncupationem*.

(Final Examination.)

CICERO.

Translate (at sight):—

Sed tamen hoc me ipse consolabar, quod non dubitabam quin te ille aut Dyrhachii aut in istis locis uspiam visurus esset. quod cum accidisset, confidebam ac mihi persuaseram fore ut omnia placarentur inter vos non modo sermone ac disputatione, sed conspectu ipso congressuque vestro. nam quanta sit in Quinto fratre meo comitas, quanta iucunditas, quam mollis animus ad accipiendam et ad deponendam offensionem, nihil attinet me ad te, qui ea nosti, scribere. sed accidit perincommode, quod eum nusquam vidisti. — Ad Atticum, I. xvii.

LIVY.

Translate (at sight):—

Consul in campo Martio comitiis, priusquam centurias in suffragium mitteret, contione advocata "ignorare" inquit "mihi videmini, Quirites, non utrum bellum an pacem habeatis vos consuli, — neque enim liberum id vobis Philippus permittet, qui terra marique ingens bellum molitur, — sed utrum in Macedoniam legiones transportetis, an hostes in Italiam accipiatis. hoc quantum intersit, si numquam alias, Punico proximo certe bello experti estis. quis enim dubitat, quin, si Saguntinis obsessis fidemque nostram implorantibus impigre tulissemus opem, sicut patres nostri Mamertinis tulerant, totum in Hispaniam aversuri bellum fuerimus, quod cunctando cum summa clade nostra in Italiam accepimus?" — XXXI. vii.

HORACE.

1. Write from memory:—

Ode I, iv. (Solvitur acris hiemps).

Ode II, xiv. (Eheu fugaces).

2. Translate:—

(a) Parcus deorum . . . gaudet. — I., xxxiv., 1-16.

(b) (*At sight.*) Ridentur mala qui componunt carmina; verum gaudent scribentes et se venerantur et ultro, si taceas, laudant quicquid scripsere beati. at qui legitimum cupiet fecisse poema, cum tabulis animum censoris sumet honesti; audebit, quaecumque parum splendoris habebunt et sine pondere erunt et honore indigna ferentur, verba movere loco, quamvis invita recedant et versentur adhuc intra penetralia Vestae.

Epist. II., ii., 106-114.

[The passages that follow are not to be translated.]

(c)

Hoc caverat mens provida Reguli  
dissentientis condicionibus  
foedis et exemplo trahentis  
perniciem veniens in aevum,

si non periret in miserabilis,  
captiva pubes. . . .

hic unde vitam sumeret inscius  
pacem duello miscuit. — III., v., 18-18; 37-38.

- (d) Te canam, magni Iovis et deorum  
nuntium curvaeque lyrae parentem,  
callidum quicquid placuit iocosum  
condere furto.

te, boves olim nisi reddidisses  
per dolum amotas, puerum minaci  
voce dum terret, viduus pharetra  
risit Apollo. — I., x., 5–12.

- (e) qui Lyciae tenet  
dumeta natalemque silvam,  
Delius et Patareus . . . — III., iv., 62–64.

3. What philosophy is referred to in *insanientis sapientiae* (a), and how does the reason Horace assigns for his change of faith bear upon that philosophy? Explain (with dates) the use of the reference to Regulus in the ode from which (c) is taken. To whom does *te* refer in (d)? What was the Roman conception of the god, and what the derivation of his name? In connection with *curvae lyrae parentem* (d), explain *insignem fraterna humerum lyra*. Explain the allusions in *saevos Lapithas et nimium mero Hylaeum*; *Lesbous barbiton*; *moenia Catili*; *longa ferae bella Numantiae*; *quem Venus arbitrum dicit bibendi*; *dum Capitolium scandet cum tacita virgine pontifex*. Explain the allusions in (e) and comment upon the order.

4. Explain the construction of *cultor*, *erro*, *summis*, *sustulit* (a); *taceas*, *versentur* (b); *hoc*, *periret*, *sumeret* (c); *reddidisses* (d).

Discuss Horace's use of the genitive in poetical constructions, giving whatever examples you can remember, with the corresponding prose constructions. Discuss in the same way his poetical use of the infinitive.

5. Give the derivation of the Latin words from which come the English *prose*, *verse*, *flame*, *immolate*, *ambiguous*, *contaminate*, *series*.

What is the root of the word from which *peace* is derived, and what its meaning? Mention any other Latin words of the same root that you can recall, with English derivatives. What is the meaning of the root of the English *nuptials* [cf. *nubila* (a)]?

6. Write the metrical schemes for the stanzas from which the following verses are taken: —

Quae mens est hodie, cur eadem non puero fuit?

Vos lene consilium et datis et dato  
gaudetis almae.

Te greges centum Siciliaeque circum  
mugiunt vaccae, tibi tollit hinnitum  
apta quadrigis equa.

Mention the common irregularities of metre in the Odes, pointing out any of them that you may observe in the six verses above. Translate *malus*, *voce*, *notus*, *dāsis*. Distinguish between *cants*, and *cants*, and mark the quantities of the penults (cf. the Ode, *Solvitur acris hiemps*). What is the quantity of the ultima in *gurgis*, and for what reason?

*(Final Examination. Two hours.)*

## COMPOSITION.

[The Latin is not to be translated].

Inter haec Satricani ad Samnites defecerunt, et Fregellae colonia necopinato adventu Samnitium — fuisse et Satricanos cum iis satis constat — nocte occupata est. timor inde mutuus utrosque usque ad lucem quietos tenuit; lux pugnae initium fuit, quam aliquamdiu aequam, et quia pro aris ac focis dimicabatur, et quia ex tectis adiuuabat inbellis multitudo, tamen Fregellani sustinuerunt. fraus deinde rem inclinavit, quod vocem audiri praeconis passi sunt, incolumem abiturum qui arma posuisset. ea spes remisit a certamine animos, et passim arma iactari coepta. pertinacior pars armata per aversam portam erupit tutiorque eis audacia fuit quam incautus ad credendum ceteris pavor, quos circumdatos igni, nequiquam deos fidemque invocantes, Samnites concremaverunt. — Livy, IX. xii.

Translate into Latin:—

The Samnites, leaving Satricum at sunset, marched silently to Fregellae, and took possession of one of the gates which was treacherously opened to them. But the town was not yet captured, and a battle began at dawn, in which the townspeople would at least have held their own, had not the Samnite general resorted to stratagem. By the voice of a herald he said to the Fregellani: \* "I have taken and hold a large part of your town; you cannot defend the rest. Why do you contend longer with men who cannot be resisted and who wish to spare you? Lay down your arms; all shall be secure who trust themselves to the Samnite." Hearing this, some of the townsmen threw away their arms, and allowing themselves to be surrounded by the enemy, were all slain to a man. Another band, as bold as these were timid, charging through the hostile ranks, escaped.

\* The quotation that follows must be turned into Indirect Discourse.

## HISTORY.

Write upon the following subjects:—

1. The life of Caesar after the passage of the Rubicon.
2. The expedition of Crassus.
3. The situation of the following places, with a brief mention of an historical event connected with each: Corfinium; Thapsus; Munda; Mutina; Misenum.
4. Comparison of the policies of Caesar and Augustus.

## LATIN 2.

Translate (at sight):—

Adi te heri de filia: ut ueni, fide incertum amisti.  
 Haud ita decet, si perpetuam hanc uis esse adfinitatem,  
 Celare te iras. siquid est peccatum a nobis, profer:  
 Aut ea refellendo aut purgando uobis corrigemus  
 Te iudice ipso. sin east retinendi causa apud uos,  
 Quia aegrast: te mi iniuriam facere arbitror, Phidippe,  
 Si metuis satis ut meae domi curetur diligenter.  
 At ita me di ament, haud tibi hoc concedo, etsi illi pater es,



Vt tú illam saluam mágis uelis quam ego : id ádeo gnati caúsa,  
 Quem ego intellexi illam haúd minus quam se ípsum magnificáre.  
 Neque ádeo clam me est, quam ésse eum grauíter laturum crédam,  
 Hoc sí rescierit : eó domum studeo haéc prius quam ille ut rédeat.

TERENTI Hecyra, 251-262.

Comment on *jam* and *scibo*, line 246; *num quid vis*, 272; *nescio quid*, 821; *Cesso ire*, 824; *usus fucost*, 827; *Sodes*, 858; *ain*, 415.

Translate Hor. Sat. II. III. 84-94.

Give an analysis of the Satire so as to show the connection. Explain mood and tense of *fecissent*.

Comment on Sat. II. v.

Comment on Sat. I. III. 96-114.

Comment on Sat. I. VI. 120-121.

Comment on Sat. I. VI. 8-22.

Translate (at sight) : —

In meo periculo senatus veste mutata fuit, quoad licuit per eorum edicta, qui mea pericula non modo suo praesidio, sed etiam vestra deprecatione nudarunt. quibus ego rebus obiectis, cum mihi privato configendum viderem cum eodem exercitu, quem consul non armis, sed vestra auctoritate superaram, multa mecum ipse reputavi. dixerat in contione consul se clivi Capitolini poenas ab equitibus Romanis repetiturum; nominatim alii compellabantur, alii citabantur, alii relegabantur; aditus templorum erant non solum praesidiis et manu, verum etiam demolitione sublatis. alter consul, ut me et rem publicam non modo desereret, sed etiam hostibus rei publicae proderet, factionibus se suorum praemiorum obligarat. erat alius ad portas cum imperio in multos annos magnoque exercitu, quem ego inimicum mihi fuisse non dico, tacuisse, cum diceretur esse inimicus, scio.

Cic. Orat. post Red. in Sen.

Comment on the passage from your knowledge of the circumstances.

### LATIN 3.

Translate, adding notes where needed to make the sense clear : —

1. Crebro per eos dies . . . agebatur. — Tac. Agric. cap. 41.

2. (at sight) : —

Vicit et hoc monstrum tunicati fuscina \* Gracchi,  
 Lustravitque fuga mediam gladiator arenam,  
 Et Capitolinis generosior, et Marcellis,  
 Et Catulis, Paulique minoribus, et Fabiis, et  
 Omnibus ad podium \* spectantibus : his licet ipsum  
 Admoveas, cuius tunc munere retia misit.  
 Esse aliquos Manes, et subterranea regna,  
 Et contum, et Stygio ranas in gurgite nigras,  
 Atque una transire vadum tot milia cumba,  
 Nec pueri credunt, nisi qui nondum aere lavantur.  
 Sed tu vera puta — Curius quid sentit, et ambo  
 Scipiadae ? quid Fabricius, manesque Camilli ?  
 Quid Cremerae legio, et Cannis consumpta iuventus,  
 Tot bellorum animae, quoties hinc talis ad illos  
 Umbra venit ? cuperent lustrari, si qua darentur

\* *Fuscina*, trident ; *podium*, the wall of the arena.

Sulfura cum taedis, et si foret humida laurus.  
 Illuc, heu! miseri traducimur. Arma quidem ultra  
 Littora Juvernae promovimus, et modo captas  
 Orcadas, ac minima contentos nocte Britannos:  
 Sed quae nunc populi fiunt victoris in urbe,  
 Non faciunt illi, quos vicimus.—Juv., Sat. II., 143–163.

8. Virro sibi . . . molari.—Juv. Sat. V., 149–160.

Omnibus in terris, . . . faciles.—Juv. Sat. X., 1–8.

4. Explain the historical allusions in 1. How do the last lines of 2 help to fix the date of writing?

How does Juvenal use the name Marius; what moral does he draw from any one else of the name; what is the difference in date of the two men?

5. Explain briefly, but exactly, the allusions in the following: *Expulsis sapientiae professoribus. Monstratus fatis Vespasianus. Auruncae alumnus. Venusinae digna lucerna. Lugdunensem rhetor ad aram. Cannarum vindex annulus. Senecae hortos clausit cohors. Boletus uxoris Claudii.*

6. Comment on these words and phrases: *filius sublatus; sparsi numeri; seu centurio seu praefectus; acta legenti; cenacula; sibi dabit ipse rudem; semestri digitos circumligat auro; balnea sexcentis aut pluris* (note the construction); *deunx; aplustre.*

7. Show how the meaning of the following words is affected by a difference of quantity in any syllable: *liberet, ponere, securis, edat.* Why does Juvenal adopt the forms *porthmea* and *induperator*? What termination allows a different quantity in the poetry of the silver age?

### LATIN 6.

1. Translate:—

Zenonis est, inquam, . . . uteretur.—Cic. de Finibus, II. vi.

Why is the word *Stoici* added? How does the clause *quam etiam pecudes*, etc., apply to the theory of Epicurus? Where does the *non dolere* view come from? Show how *si utrumque probare* differs in force from most sentences of the same form.

Comment on the title "*De finibus Bonorum et Malorum.*"

2. Translate Horace, Epistles, I. vii. 10–28.

Comment on syntax of *paratus* and *reddes*, and on *lupinis*.

What description of himself, parallel to line 26, does Horace give elsewhere?

Write a concise but accurate abstract of the story at the end of this epistle.

3. Translate Ep. II. i. 189–205.

Give the legend suggested by *Corinthus*; why *Garganum*? (compare *Calaber* in 2). What does this passage show of the change in the popular opinion of Democritus?

4. Translate (at sight)

ergo ubi me in montes et in arcem ex urbe removi,  
 quid prius illustrem satiris Musaeque pedestri?  
 nec mala me ambitio perdit nec plumbeus Auster  
 Autumnusque gravis, Libitinae quaestus accrbae.

matutine pater, seu Jane libentius audis,  
unde homines operum primos vitaeque labores  
instituant, (sic dis placitum,) tu carminis esto  
principium. Romae sponsorem me rapis. "eia,  
ne prior officio quisquam respondeat, urge!"  
sive Aquilo radit terras seu bruma nivalem  
interiore diem gyro trahit, ire necesse est.  
postmodo, quod mi obsit clare certumque locuto,  
luctandum in turba et facienda injuria tardis.

Satires, II. vi., 16-28.

How did the ancients' enjoyment of a country life differ essentially from ours? What is the cardinal maxim of Horace's Epicureanism? Give the anecdote of the monomaniac at Argos, and Horace's use of it.

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LATIN 9.

I. CATULLUS.

Translate: —

Sed quid ego . . . periuria portas? — LXIV. 116-185.

II. LUCRETIVS.

Translate: —

Nam quaecumque . . . praeterita aetas. — I. 449-488.

III. PLAUTVS.

1. Comment on these words: *Reliquos, ibidem, indaudio, hisce* (homines), *evenat, gratiis* and *ingratiis, hau, heri* and *here, frugi* (e.g. *servos*) *facilimed, Acheruns*.

Account for the orthography and pronunciation of *Onensimus, then-saurus, tarpessita, drachuma, Alcumaesus*. What five different ways of pronouncing *fuit*?

2. Analyze any six of these senarii and account for the peculiarities of Prosody: —

unde sáuritáte saépe ego exivi ébrius.  
meo té esse amicum et illum intellexi tibi.  
inde mé continuo récipiam rusúm domum.  
ego álienus aliénus ille ah Hégio.  
certúmnest tibi istuc nón moriri cértiust.  
nam míhi propter te hoc óptigit abdúcite.  
cave praéterbitas úllas aedis quín roges.  
hic áutem te ait míttre hinc velle ád patrem.  
pro di inmortales témpestatem quóius modi.  
breve spátiumst perferéndi quae minitás mihi.  
nempe sicut dicis quid hic non poterat dé suo.

By whom were the *apices* introduced?

3. (a) When were theatrical representations first given at Rome?
- (b) When and by whom was the first permanent theatre built in Rome?
- (c) When were seats first introduced?
- (d) What are the technical divisions of a play?
- (e) What use was made of music?

## 4. Explain the syntax of the italicized words :—

satis facundu's; set iam *fieri dicta compendi volo.*

*ne vereamini*

quia bellum Aetolis esse dixi cum Aleis :

foris illic *extra scaenam fient proelia.*

fugitivos ille, ut *dixeram* ante, huius patri  
domo quem profugiens dominum apstulerat, vendidit.

*quod apsq̄ hoc esset*, qui mihi hoc fecit palam,  
usque offrenatum suis me *ductarent dolis.*

*genu ut quemque* icero, ad terram dabo.

dentilegos omnis mortalis faciam, *quemque* offendero.

nec calidae citius decedunt corpore febres  
textilibus si in picturis ostroque rubenti  
*iaceris*, quam si in plebeia veste *cubandumst.*

## 5. Translate :—

(a) Tum denique . . . amisimus. — Captivi, 142, 143.

(b) ΗΕ. Quid ais? . . . scio. — Ib. 613-17.

(c) Tum pistores . . . piscariis. — Ib. 807-816.

## SPECIAL EXAMINATIONS FOR CLASSICAL HONORS.\*

(May, 1876.)

### SECOND-YEAR HONORS.

#### GREEK TRANSLATION.

## 1. Translate :—

\* Ἦν γὰρ ποτε χρόνος, ὅτε θεοὶ μὲν ἦσαν, θνητὰ δὲ γένη οὐκ ἦν. ἐπειδὴ δὲ καὶ τούτοις χρόνος ἦλθεν εἰμαρμένως γενέσεως, τυκοῦσιν αὐτὰ θεοὶ γῆς ἔνδον ἐκ γῆς καὶ πυρὸς μίξαντες καὶ τῶν ὅσα πυρὶ καὶ γῆ κέραννυται. ἐπειδὴ δ' ἄγειν αὐτὰ πρὸς φῶς ἐμελλον, προσέταξαν Προμηθεὶ καὶ Ἐπιμηθεὶ κοσμησαί τε καὶ νεύμαι δυνάμεις ἐκείστοις ὡς πρέπει. Προμηθεῖα δὲ παραιτεῖται Ἐπιμηθεὺς αὐτὸς νεύμαι, νεύμαντος δ' ἐμοῦ, ἔφη, ἐπίσκειψαι καὶ οὕτω πείσας νέμει. νέμων δὲ τοῖς μὲν ἰσχύην ἄνευ τάχους προσῆπτε, τοὺς δ' ἀσθενεστέρους τάχει ἐκόσμει· τοὺς δὲ ὤπλιζε, τοῖς δ' ἄοπλον διδοὺς φύσιν ἄλλην τιν' αὐτοῖς ἐμηχανᾶτο δύναμιν εἰς σωτηρίαν. ἃ μὲν γὰρ αὐτῶν σμικρότητι ἤμπισχε, πτηνὸν φυγῆν ἢ κατάγειον οἰκησιν ἐνεμεν· ἃ δὲ ἤξε μεγέθει, τᾶδε αὐτᾶ αὐτὰ ἔσωζε καὶ τᾶλλα οὕτως ἐπανισῶν ἐνεμε. ταῦτα δὲ ἐμηχανᾶτο εὐλάβειαν ἔχων μὴ τι γένος ἀϊστωθεῖν· ἐπειδὴ δὲ αὐτοῖς ἀλληλοφθοριῶν διαφυγὰς ἐπήρκεσε, πρὸς τὰς ἐκ Διὸς ὥρας εὐμάρειαν ἐμηχανᾶτο ἀμφιεννὺς αὐτὰ πυκναῖς τε θριξὶ καὶ στερεοῖς δέρμασιν, ἱκανοῖς μὲν ἀμύναι χειμῶνα, δυνατοῖς δὲ καὶ καύματα, καὶ εἰς εὐνὰς ἰούσιν ὅπως ὑπάρχοι· τὰ αὐτὰ ταῦτα στρωμνῆ οἰκεία τε καὶ αὐτοφύης ἐκείσθη· καὶ ὑπὸ ποδῶν τὰ μὲν ὀπλαῖς, τὰ δὲ ὄνυξι καὶ δέρμασι στερεοῖς καὶ ἀναίμοις.

PLATO, Protagoras XI. (320, D — 321, B).

## 2. Translate :—

\* Ἐρῖς δ' ἄρ' ἔχαιρε πολύστονος εἰσορόωσα·  
οἷη γὰρ βα θεῶν παρετύγχανε μαρναμένοισιν·

\* See pp. 61, 62.

οἱ δ' ἄλλοι οὐ σφιν πάρεσαν θεοί, ἀλλὰ ἔκηλοι  
σφοῖσιν ἐνὶ μεγάροισι καθέιατο, ἤχι ἐκάστω  
δώματα καλὰ τέτυκτο κατὰ πτύχας Οὐλύμποιο.  
πάντες δ' ἠτιώωντο κελαινεφέα Κρονίωνα,  
οὐνεκ' ἄρα Τρώεσσι ἐβούλετο κύδος ὀρέξαι.  
τῶν μὲν ἄρ' οὐκ ἀλέγισε πατήρ· ὁ δὲ νόσφι λιασθεῖς,  
τῶν ἄλλων ἀπάνευθε καθέζετο, κύδει γαίων,  
εἰσορόων Τρώων τε πόλιν καὶ νῆας Ἀχαιῶν,  
χαλκοῦ τε στεροπῆν, ὀλλύντας τ' ὀλλυμένους τε.

Ὅφρμ μὲν ἦως ἦν καὶ ἀέξετο ἱερὸν ἤμαρ,  
τόφρα μάλ' ἀμφοτέρων βέλε' ἤπτετο, πίπτε δὲ λαός·  
ἤμος δὲ δρυτόμος περ ἀνῆρ ὠπλίσσατο δεῖπνον  
οὔρεος ἐν βήσσησιν, ἐπεὶ τ' ἐκορέσσατο χεῖρας  
τάμνων δένδρεα μακρὰ, ἄδος τέ μιν ἴκετο θυμόν,  
σίτου τε γλυκεροῖο περὶ φρένας ἕμερος αἰρεῖ·  
τῆμος σφῆ ἄρετῇ Δαναοὶ ῥήξαντο φάλαγγας,  
κεκλόμενοι ἐτάροισι κατὰ στίχας. HOMER, Iliad XI. 73-91.

## 8. Translate: —

Τοῖσι μὲν δὴ ἄλλοισι τῶν θεῶν οὕτω θύουσι καὶ ταῦτα τῶν κτηνέων,  
τῷ δὲ Ἄρει ὕδε· κατὰ νομοῦς ἐκάστοισι τῶν ἀρχηγῶν ἐσιδρυταί σφι  
Ἄρεος ἱρὸν τοιόνδε· φρυγάνων φάκελοι συννεέταται ὅσον τ' ἐπὶ σταδίου  
τρεῖς μῆκος καὶ εὐρος, ὕψος δὲ ἔλασσον. ἄνω δὲ τούτου τετράγωνον ἄπειον  
πεποιεῖται, καὶ τὰ μὲν τρία τῶν κώλων ἐστὶ ἀπότομα, κατὰ δὲ τὸ ἐν ἐπι-  
βατόν. ἔτεος δὲ ἐκάστου ἀμάξιας πεντήκοντα καὶ ἑκατὸν ἐπινέουσι φρυγά-  
νων ὑποουστῆει γὰρ δὴ αἰεὶ ὑπὸ τῶν χειμώνων. ἐπὶ τούτου δὴ τοῦ  
ὄγκου ἀκινάκης σιδήρεος Ἱδρυται ἀρχαῖος ἐκάστοισι, καὶ τοῦτ' ἐστὶ τοῦ  
Ἄρεος τὸ ἄγαλμα. τοῦτῳ δὲ τῷ ἀκινάκει θυσίας ἐπετέους προσάγουσι προ-  
βάτων καὶ ἵππων, καὶ δὴ καὶ τοισίδ' ἔτι πλέω θύουσι ἢ τοῖσι ἄλλοισι  
θεοῖσι. ὅσους ἂν τῶν πολεμίων ζωγήσωσι, ἀπὸ τῶν ἑκατὸν ἀνδρῶν ἀνδρα  
ἓνα θύουσι τρόφῃ οὐ τῷ αὐτῷ καὶ τὰ πρόβατα, ἀλλ' ἑτεροῖφ. ἐπεὶ γὰρ  
οἶνον ἐπισπείουσι κατὰ τῶν κεφαλῶν, ἀποσφάζουσι τοὺς ἀθρώπους ἐς  
ἄγγος καὶ ἔπειτεν ἀνενέικαντες ἄνω ἐπὶ τὸν ὄγκον τῶν φρυγάνων καταχέ-  
ουσι τὸ αἷμα τοῦ ἀκινάκεος. ἄνω μὲν δὴ φορέουσι τοῦτο, κάτω δὲ παρὰ  
τὸ ἱρὸν ποιεῖσι τάδε· τῶν ἀποσφαγέντων ἀνδρῶν τοὺς δεξιῶς ὤμους πάν-  
τας ἀποτάμνοντες σὺν τῆσι χερσὶ ἐς τὸν ἥερα ἰεῖσι, καὶ ἔπειτεν καὶ τὰ  
ἄλλα ἀπέρξαντες ἰρήϊα ἀπαλλάσσονται. χεῖρ δὲ τῆ ἂν πέσῃ κέεται, καὶ  
χωρὶς ὁ νεκρός. HERODOTUS IV. 62.

## 4. Translate: —

ὦ παγκάκιστε, τοῦτο γὰρ σ' εἰπεῖν ἔχω  
γλώσση μέγιστον εἰς ἀνανδρίαν κακόν,  
ἤλθες πρὸς ἡμᾶς, ἤλθες ἔχθιστος γεγώς;  
οὗτοι θράσος τόδ' ἐστὶν οὐδ' εὐτολμία,  
φίλους κακῶς δρᾶσαντ' ἐναντίον βλέπειν,  
ἀλλ' ἢ μεγίστη τῶν ἐν ἀθρώποις νόσων·  
πασῶν, ἀναίδει· ἐδ' ἐποίησας μολῶν.  
ἐγὼ τε γὰρ λέξασα κουφισθήσομαι  
ψυχὴν κακῶς σε καὶ σὺ λυπήσει κλύων.  
ἐκ τῶν δὲ πρώτων πρῶτον ἄρξομαι λέγειν.  
ἔσωσά σ', ὡς ἴσασιν Ἑλλήνων ὅσοι  
ταῦτ' ἐν συνεισέβησαν Ἀργῶν σκάφος,  
πεμφθέντα ταύρων πυρπνῶν ἐπιστάτην  
ζεύγλαισι καὶ σπεροῦντα θανάσιμον γύνην  
δράκοντά θ', ὅς πάγχρυσον ἀμπέχων δέρας  
σπείραις ἔσωσε πολυπλόκοις ἄπνος ὢν,  
κτείνασ' ἀνέσχον σοὶ φάος σωτήριον.

EURIPIDES, Medea 465-482.

## GREEK COMPOSITION.

Translate into Greek :—

If any one should ask us, if we would choose to rule for such a period and then to witness the state suffering such disasters, who would consent, unless he was utterly abandoned, and cared nothing for either religion, or parents, or children, or any thing else, save only his own lifetime? We ought not to envy the sentiments of these men, but rather [the sentiments] of those who display great forethought for all such things, and who are no less ambitious of national than of personal honor, and who choose a moderate subsistence with righteousness, rather than great wealth with iniquity. For our ancestors, by such conduct, at once handed down the state, in a most flourishing condition, to their successors, and left the memory of their virtue for evermore. From this it is easy to learn two things, — that our country is capable of rearing better men than all others, and that what is called empire, but is calamity, tends to render all who enjoy it degenerate. And this is a conclusive proof: for empire ruined not only us but the Lacedaemonian state also; so that it is not possible for those who have been accustomed to eulogize their virtues to say that we managed our affairs badly owing to our democratic constitution, and that if the Lacedaemonians had assumed that power they would have rendered both others and themselves happy.

## LATIN TRANSLATION.

1. Quod si portu solventibus ei, qui iam in portum ex alto invehuntur, praedicere summo studio solent et tempestatum rationem et praedonum et locorum, quod natura fert ut eis faveamus, qui eadem pericula, quibus nos perfuncti sumus, ingrediuntur, quo tandem me animo esse oportet prope iam ex magna iactatione terram videntem in hunc, cui video maximas rei publicae tempestates esse subeundas? . . . nam quod legem de ambitu tuli, certe ita tuli, ut eam, quam mihi met ipsi iam pridem tulerim de civium periculis defendendis, non abrogarim. etenim si largitionem factam esse confiterer idque recte factum esse defenderem, facerem improbe, etiam si alius legem tulisset: cum vero nihil commissum contra legem esse defendam, quid est quod meam defensionem latio legis impediatur? negas esse eiusdem severitatis Catilinam exitium rei publicae intra moenia molientem verbis et paene imperio urbe expulsi et nunc pro L. Murena dicere. CICERO, Pro Murena II. 4.

## 2. THAIS. PHAEDRIA. PARMENO.

- TH. Potius quam te inimicum habeam, faciam ut iusseris.  
 PH. Vtinam istuc uerbum ex animo ac uere diceres  
 'Potius quam te inimicum habeam': si istuc crederem  
 Sincere dici, quiduis possem perpeti.  
 PA. Labascit, uictust, uno uerbo, quam cito!  
 TH. Ego non ex animo misera dico? quam ioco  
 Rem uoluisti a me tandem, quin perfeceris?  
 Ego impetrare nequeo hoc abs te, bidoom  
 Saltem ut concedas solum. PH. Siquidem bidoom:  
 Verum ne fiant isti uiginti dies.  
 TH. Profecto non plus bidoom aut . . . PH. Aut? nil moror.  
 TH. Non fiet: hoc modo sine te exorem. PH. Scilicet  
 Faciundumst quod uis. TH. Merito te amo, bene facis.  
 PH. Rus ibo: ibi hoc me macerabo bidoom:  
 Ita facere certumst: mos gerundust Thaidi.

TERENCE, Eunuch. 174-188.

3. Composuissse me quaedam de filio vestro non dixi vobis, cum proxime apud vos fui, primum quia non ideo scripseram, ut dicerem, sed ut meo amori, meo dolori satisfacerem; deinde quia te, Spurrinna, cum audisses recitasse me, ut mihi ipse dixisti, quid recitasset simul audisse credebam. praeterea veritus sum ne vos festis diebus confunderem, si in memoriam gravissimi luctus reduxissem. nunc quoque paulisper haesitavi, id solum quod recitavi mitterem exigentibus vobis, an adicerem quae in aliud volumen cogito reservare. neque enim adfectibus meis uno libello carissimam mihi et sanctissimam memoriam prosequi satis est, cuius famae latius consulatur, si dispensata et digesta fuerit. verum haesitanti mihi, omnia quae iam composui vobis exhiberem, an adhuc aliqua differrem, simplicius et amicus visum est omnia, praecipue cum adfirmetis intra vos futura, donec placeat emittere. quod superest, rogo ut pari simplicitate, si qua existimabitis addenda commutanda ommit-tenda, indicetis mihi. PLINY, Epist. III. 10.

4. Tyrrhenum poteras junctis transcurrere signis,  
 Et ratibus Syrtes, Libyam complere maniplis.  
 Consilio stetit ira minor, ne territus ille  
 Te duce, suspecto Martis graviore paratu,  
 Aut in arenosos aestus zonamque rubentem  
 Tenderet, aut solis fugiens transiret in ortus,  
 Missurusve sibi certae solatia mortis,  
 Oppida dirueret flammis. Res mira relatu :  
 Ne timeare, times ; et, quem vindicta manebat,  
 Desperare vetas. Quantum fiducia nobis  
 Profuit hostilis ! salvae Carthaginis arces,  
 Illaesis Tyrii gaudent cultoribus agri,  
 Quos potuit vastare fuga ; spe captus inani,  
 Nec se subripuit poenae, nostrisque pepercit  
 Demens ; qui numero tantum, non robore, mensus  
 Romanos, rapidis ibat ceu protinus omnes  
 Calcaturus equis ; et, quod jactare solebat,  
 Solibus effetos mersurus pulvere Gallos.

CLAVDIAN, De Laudib. Stilich. I. 333-350.

(For the paper in Latin Composition and the General Paper see pages 205, 206.)

## FINAL HONORS.

### GREEK TRANSLATION.

#### 1. Translate :

- ΔΙΚ.** ὄρα 'στίν ἔρα μοι καρτερὰν ψυχὴν λαβεῖν  
 καὶ μοι βαδιστέ' ἐστίν ὡς Εὐριπίδην.  
**ΚΗΦ.** τίς οὗτος ; **ΔΙΚ.** ἔνδον ἔστ' Εὐριπίδης ;  
**ΚΗΦ.** οὐκ ἔνδον ἔνδον ἐστίν, εἰ γινώμην ἔχεις.  
**ΔΙΚ.** πῶς ἔνδον, εἴτ' οὐκ ἔνδον ; **ΚΗΦ.** ὀρθῶς, ᾧ γέρον.  
 ὁ νοῦς μὲν ἔξω ξυλλέγων ἐπέλλια  
 οὐκ ἔνδον, αὐτὸς δ' ἔνδον ἀναβάδην ποιεῖ  
 τραγωδίαν. **ΔΙΚ.** ᾧ τρισμακάρι' Εὐριπίδην,  
 ᾧ δ' οὐδὸς οὐτωςὶ σοφῶς ὑποκρίνεται.  
 ἐκκάλεσον αὐτόν. **ΚΗΦ.** ἀλλ' ἀδύνατον. **ΔΙΚ.** ἀλλ' ὄμω.  
 οὐ γὰρ ἂν ἀπέλοιμ', ἀλλὰ κόψω τὴν θύραν.  
 Εὐριπίδην, Εὐριπίδιον,  
 ὑπάκουσον, εἴπερ πάποτ' ἀνθρώπων τινί'  
 Δικαιοπόλις καλεῖ σε Χολλεῖδης, ἐγώ.

ΕΤΡ. ἀλλ' οὐ σχολή.  
 ΔΙΚ. ἀλλ' ἐκκυκλήθητ'. ΕΤΡ. ἀλλ' ἀδύνατον. ΔΙΚ. ἀλλ' ὄμως.  
 ΕΤΡ. ἀλλ' ἐκκυκλήσομαι· καταβαίνειν δ' οὐ σχολή.  
 ΔΙΚ. Εὐριπίδῃ, ΕΤΡ. τί λέλακας; ΔΙΚ. ἀναβάδην ποιεῖς,  
 ἔξδν καταβάδην· οὐκ ἐτὸς χωλοὺς ποιεῖς.  
 ἀτὰρ τί τὰ βράκι' ἐκ τραγωδίας ἔχεις,  
 ἐσθῆτ' ἐλεεινήν; οὐκ ἐτὸς πτωχοὺς ποιεῖς.  
 ἀλλ' ἀντιβολῶ πρὸς τῶν γονάτων σ', Εὐριπίδῃ,  
 δός μοι βράκιόν τι τοῦ καλαιοῦ δράματος.  
 δεῖ γάρ με λέξαι τῷ χορῷ ῥήσιν μακράν  
 αὐτῇ δὲ θάνατον, ἣν κακῶς λέξω, φέρει.

ARISTOPH. *Acharn.* 393-417.

2. Περὶ δὲ τῶν ἀπὸ τύχης γιγνομένων ἀγαθῶν, δι' ὅσα αὐτῶν καὶ τὰ ἤθη ποιῶντα συμβαίνει τοῖς ἀνθρώποις, λέγωμεν ἐφεξῆς. εὐγενείας μὲν οὐν ἡθὸς ἐστὶ τὸ φιλοτιμότερον εἶναι τὸν κεκτημένον αὐτὴν ἅπαντας γάρ, ὅταν ὑπάρχῃ τι, πρὸς τοῦτο σωρεῖται εὐθιάσιν, ἢ δ' εὐγένεια ἐντιμότες προγόνων ἐστίν. καὶ καταφρονητικὸν καὶ τῶν ὁμοίων ἐστὶ τοῖς προγόνοις αὐτῶν, διότι πόρρω ταῦτά μᾶλλον ἢ ἐγγὺς γιγνόμενα ἐντιμότερα καὶ εὐαλαζόνεута. ἐστὶ δὲ εὐγενὲς μὲν κατὰ τὴν τοῦ γένους ἀρετὴν, γενναῖον δὲ κατὰ τὸ μὴ ἐξίστασθαι τῆς φύσεως· ὃ περ ὡς ἐπὶ τὸ πολὺ οὐ συμβαίνει τοῖς εὐγενέσιν, ἀλλ' εἰσὶν οἱ πολλοὶ εὐτελεῖς· φορὰ γάρ τις ἐστὶν ἐν τοῖς γένεσιν ἀνδρῶν ὡς περ ἐν τοῖς κατὰ τὰς χώρας γιγνομένοις, καὶ ἐνιοτε ἂν ἢ ἀγαθὸν τὸ γένος, ἐγγίγνονται διὰ τινος χρόνου ἄνδρες περιττοί, κᾶπειτα πάλιν ἀναβιβῶσιν. ἐξίσταται δὲ τὰ μὲν εὐφῶν γένη εἰς μακρότερα ἤθη, οἷον οἱ ἀπ' Ἀλκιβιάδου καὶ οἱ ἀπὸ Διονυσίου τοῦ προτέρου, τὰ δὲ στάσιμα εἰς ἀβελτερίαν καὶ νωθρότητα, οἷον [οἱ] ἀπὸ Κίμωνος καὶ Περικλέους καὶ Σωκράτους.

ARISTOT. *Rhet.* II. 15.

3. ΜΗΛ. Καὶ πῶς χρήσιμον ἂν ξυμβαίῃ ἡμῖν δουλεῦσαι, ὡς περ καὶ ὑμῖν ἄρξαι; ΑΘ. Ὅτι ὑμῖν μὲν πρὸ τοῦ τὰ δεινότερα παθεῖν ὑπακούσαι ἂν γένοιτο, ἡμεῖς δὲ μὴ διαφθειραντες ἡμᾶς κερδαίνομεν ἂν.

ΜΗΛ. Ὅστε δὲ ἡσυχίαν ἔχοντας ἡμᾶς φίλους μὲν εἶναι ἀντὶ πολεμίων, ξυμμάχους δὲ μηδετέρων, οὐκ ἂν δέξαισθε;

ΑΘ. Οὐ γὰρ τοσοῦτον ἡμᾶς βλάπτει ἢ ἔχθρα ὑμῶν ὅσον ἢ φιλία μὲν ἀσθενείας, τὸ δὲ μῖσος δυνάμειος παράδειγμα τοῖς ἀρχομένοις δηλούμενον.

ΜΗΛ. Σκοποῦσι δ' ὑμῶν οἴτως οἱ ὑπήκοοι τὸ εἶκόσ, ὡς τε τοὺς τε μὴ προσήκοντας καὶ ὅσοι ἀποικοὶ ὄντες οἱ πολλοὶ καὶ ἀποστάντες τινὲς κεχείρωνται ἐς τὸ αὐτὸ τιθέασιν;

ΑΘ. Δικαιώματι γὰρ οὐδετέρους ἐλλείπειν ἡγοῦνται, κατὰ δύναμιν δὲ τοὺς μὲν περιγίγνεσθαι, ἡμᾶς δὲ φόβῳ οὐκ ἐπιέναι· ὡς τε ἔξω καὶ τοῦ πλεόνων ἄρξαι καὶ τὸ ἀσφαλὲς ἡμῖν διὰ τὸ καταστραφῆναι ἂν παράσχοιτε, ἄλλως τε καὶ νησιῶται ναυκρατῶρων καὶ ἀσθενέστεροι ἐτέρων ὄντες εἰ μὴ περιγένοισθε.

THUCYDIDES V. 92-97.

4. ΧΟ. ὅστις τοῦ πλέονος μέρους χρήζει τοῦ μετρίου παρεῖς ζῶειν, σκαιουσὺν φυλάσσων ἐν ἐμοὶ κατάδηλος ἐσται.

ἐπεὶ πολλὰ μὲν αἱ μακρὰ ἡμέραι κατέθεντο δὴ λύπας ἐγγυτέρω, τὰ τέρποντα δ' οὐκ ἂν ἴδοις ὕπνου, ὅταν τις ἐς πλεόν πέση τοῦ θέλοντος· ὃ δ' ἐπίκουρος ἰσοτέλεστος, "Αἶδος ὅτε Μοῖρ' ἀνυμέναιος ἄλυρος ἄχορος ἀναπέφηνε, θάνατος ἐς τελευτάν. μὴ φῦναι τὸν ἅπαντα νικᾷ λόγον τὸ δ', ἐπεὶ φανῆ, βῆναι κείθεν ὅθεν περ ἤκει πολὺ δεύτερον ὡς τάχιστα.



ὅς εὐτ' ἂν τὸ νέον παρῆ κόφας ἀπροσύνας φέρον,  
 τίς πλάγχθη πολύμοχθος ἔξω; τίς οὐ καμάτων ἐνι;  
 φόνοι, σπάρσεις, ἔρις, μάχαι  
 καὶ φθόνος· τὸ τε κατὰμειπτον ἐπιέλογχε  
 πύματον ἀκρατὲς ἀπροσμίλων  
 γῆρας ἄφιλον, ἵνα πρόπαντα  
 κακὰ κακῶν ξυνοικεῖ.

SOPH. O. C. 1211-1238.

## GREEK COMPOSITION.

And I reflect while speaking, how great a change has befallen the State, and how our contemporaries hold sentiments utterly opposed to (those of) the men who directed the State in former times. For, when I was a boy, it was thought so safe and so grand a thing to be wealthy, that almost all pretended to possess a fortune larger than they happened to have, desirous of sharing in this glory; whereas it is now requisite to prepare a defence against the charge of being wealthy, as if it were one of the highest crimes, and to be on our guard if we expect to be preserved. For it has become far more dangerous to seem to be rich than to commit crime openly; for, while criminals (*lit.* the one) either meet with pardon or are fined in small sums, the others are utterly ruined; and we should find those who have thus been deprived of their property more numerous than those who have paid the penalty for their crimes. But why need I speak of what is common report? I myself lost not a little of my property through this very change. If now I had been good for nothing and had claimed nothing, nobody would have given me any trouble, but I should have lived on in safety, so far as informers were concerned, although I had openly committed crime. But now, instead of the glory which I expected, law-suits, dangers, and slanders have come around me. At present the State rejoices so greatly in distressing and humiliating the respectable and in giving to the base license to say and do what they please, that Lysimachus, who has chosen to live by informing and by constantly injuring some one of his fellow-citizens, has come up to accuse me, while I, who never did a wrong towards any man, but have abstained from all emoluments from that source, have found myself in this great danger. And would it not be an outrage, — when your ancestors honored Pindar for only one phrase (because he called Athens “the support” of Hellas) so greatly that they gave him ten thousand drachmas as a reward, — if it should yet not be permitted me to live in safety the rest of my life, after I have given still higher encomiums to your State and your ancestors?

## LATIN TRANSLATION.

Quid sentire putas omnes, Calvine, recenti  
 De scelere et fidei violatae crimine? sed nec  
 Tam tenuis census tibi contigit, ut mediocris  
 Iacturae te mergat onus, nec rara videmus,  
 Quae pateris; casus multis hic cognitus ac iam  
 Tritus et e medio fortunae ductus acervo.  
 Ponamus nimios gemitus; flagrantior aequo  
 Non debet dolor esse viri, nec vulnere maior.  
 Tu quamvis levium minimam exiguanque malorum  
 Particulam vix ferre potes, spumantibus ardens

Visceribus, sacrum tibi quod non reddat amicus  
 Depositum. Stupet haec, qui iam post terga reliquit  
 Sexaginta annos, Fonteio consule natus:  
 An nihil in melius tot rerum proficit usu?  
 Magna quidem, sacris quae dat praecepta libellis,  
 Victrix fortunae sapientia; ducimus autem  
 Hos quoque felices, qui ferre incommoda vitae  
 Nec iactare iugum vita didicere magistra.

JUVENAL XIII. 5-22.

2. Maxime vellem, iudices. ut P. Sulla et antea dignitatis suae splendorem obtinere et post calamitatem acceptam modestiae fructum aliquem percipere potuisset: sed quoniam ita tulit casus infestus, ut et amplissimo honore cum communi ambitionis invidia tum singulari Autronii odio everteretur, et in his pristinae fortunae reliquiis miseris et adfictis tamen haberet quosdam, quorum animos ne supplicio quidem suo satiare posset, quamquam ex huius incommodis magnam animo molestiam capio, tamen in ceteris malis facile patior oblatum mihi tempus esse, in quo boni viri lenitatem meam misericordiamque, notam quondam omnibus, nunc quasi intermissam, agnoscerent, improbi ac perditii cives, perdomiti atque victi, praecipitante re publica vehementem me fuisse atque fortem, conservata mitem ac misericordem faterentur.

CICERO, Pro Sulla I. 1.

3. BA. Quis sónitu ac tumúltu tantó nominát me atque púltat hasce aédís?

NI. Ego átque hic. BA. Quid hóc est negóti nam, amábo? quis ouís huc adégit?

NI. Ouís nos uocánt pessumaé. So. Pastor hárum Dormít. quom eunt sic a pecú palitántes.

BA. At haú pol nitént: sordidae ámbae uidentúr.

So. Attónsae quidem ámbae usque súnť. PH. Vt uidentúr Derídere nós. NI. Sine suo úsque arbitrátu.

BA. Rerín ter tu in áño has [ouís] tonsitári?

So. Pol hódie altera [haéc] iam bis détonsa cértost.

BA. Vetulaé sunt minae ámbae. So. At bonás fuisse crédo.

BA. Vidén limulís, opsecro, út contuéntur?

So. Ecástor sine ómni arbitrór malítia ésse.

PH. Merito hóc nobis fít, qui quidem húc uenerímus.

BA. Cogántur quidem íntro. So. Hausció quid eo opús sit:

Quae néc lacte néc lanam habént: sic sine ástent.

Exóluere, cuánti fuére: omnis frúctus

Iam illís decidít: non uidés ut palántes

[Solae libere]

Grasséntur? quin aétate crédo esse mútas:

Ne bálant quidém, quom a pecú cetero ápsunt: stultae ác malae uidentúr.

BA. Reuórtamur íntro, sorór. NI. Ilico ámbae manéte: hae uolúnt uos.

PLAUTUS, Bacch. 1120-1140.

4. Civilis medium agmen cum robore Batavorum obtinens utramque Rheni ripam, quo truculentior visu foret, Germanorum catervis complet, adsultante per campos equite; simul naves in adversum amnem agebantur. hinc veteranarum cohortium signa, inde depromptae silvis lucisque ferarum imagines, ut cuique genti inire proelium mos est, mixta belli civilis externique facie obstupescerant obsessos. et spem obpugnantium augebat amplitudo valli, quod duabus legionibus situm vix quinque milia armatorum Romanorum tuebantur; sed lixarum multitudo turbata pace illuc congregata et bello ministra aderat.

Pars castrorum in collem leniter exurgens, pars aequo adibatur. quippe illis hibernis obsideri premique Germanias Augustus crediderat, neque umquam id malorum, ut obpugnatum ultro legiones nostras venirent; inde non loco neque munimentis labor additus: vis et arma satis placebant. Batavi Transrhenanique, quo discreta virtus manifestius spectaretur, sibi quaeque gens consistunt, eminus lacescentes. post ubi pleraque telorum turribus pinnisque moenium irrita haerebant et desuper saxis vulnerabantur, clamore atque impetu invasere vallum, adpositis plerique scalis, alii per testudinem suorum; scandebantque iam quidam, cum gladiis et armorum incussa praecipitati sudibus et pilis obruuntur, praeferoce initio et rebus secundis nimii. sed tum praedae cupidine adversa quoque tolerabant; machinas etiam, insolitum sibi, ausi. nec ulla ipsis sollertia: perfugae captivique docebant struere materias in modum pontis, mox subiectis rotis propellere, ut alii superstantes tamquam ex aggere proeliarentur, pars intus occulti muros subruerent.

TACITUS, Hist. IV. 22, 23.

### LATIN COMPOSITION.

Translate into English:—

Romani omnia acta eius, ex quo tempore ab Syria classem solvisset, displicere senatui non dissimulabant, restituique et Ptolemaeo omnes civitates, quae dicionis eius fuissent, aequum censabant: nam quod ad eas civitates adtineret, quas a Philippo possessas Antiochus per occasionem, averso Philippo in Romanum bellum, intercepisset, id vere ferendum non esse, Romanos per tot annos terra marique tanta pericula ac labores exhausisse, Antiochum belli praemia habere. sed ut in Asiam adventus eius dissimulari ab Romanis tamquam nihil ad eos pertinens potuerit, — quid? quod iam etiam in Europam omnibus navalibus terrestribusque copiis transierit, quantum a bello aperte Romanis indicto abesse? illum quidem, etiam si in Italiam traiciat, negaturum; Romanos autem non expectaturos, ut id posset facere. LIVY, XXXIII. 39.

Translate into Latin:—

[The final portion, in brackets, is exclusively for candidates for *Final* honors.]

Cortes, delighted with their ardor, took no offence at the boldness with which it was uttered. The sentiments were what he himself had inspired, and the warmth of expression satisfied him that his followers had imbibed them thoroughly. He affected, however, to be surprised at what he heard, declaring that his orders to prepare for embarking were issued from a persuasion that this was agreeable to his troops; that, from deference to what he had been informed was their inclination, he had sacrificed his own private opinion, which was firmly bent on establishing immediately a settlement on the sea-coast, and then on endeavoring to penetrate into the interior part of the country; that now he was convinced of his error; and as he perceived that they were animated with the generous spirit which breathed in every true Spaniard, he would resume, with fresh ardor, his original plan of operation [and doubted not to conduct them, in the career of victory, to such independent fortunes as their valor merited. Upon this declaration, shouts of applause testified the excess of their joy. The measure seemed to be taken with unanimous consent; such as secretly condemned it being obliged to join in the acclamations, partly to conceal their disaffection from their general, and partly to avoid the imputation of cowardice from their fellow soldiers.]

ROBERTSON.

## GENERAL PAPER.

[Candidates for Final Honors will do the first seven, and select any others they please. Candidates for Second-Year Honors may make their own selection. A few well done will count more than many ill done.]

1. Describe the changes that took place in Greek Comedy (*Old, Middle, New*). What features has the New Comedy in common with the later Tragedy?

2. Give the relation between Roman Comedy and Greek, stating what Greek authors were followed by the Romans, and how closely.

3. Define *Prologus, diverbia, canticum*. How were they respectively delivered?

4. Mark the feet and explain the peculiarities in the following lines:

Tám similem quam lacte lactis; áput te eos hic devórtier.

I, stúltior es hárbáro Potício.

Níne miserét, inanis cédis; dicta nón sonant.

5. Translate *οὐ περιείδον τὴν γῆν τμηθεῖσαν, and τὸν Μῆδον ἴσμεν ἐλθόντα*. Explain the tense of the participle in each case, and show the essential difference in the construction. Illustrate this difference by parallel examples of the Infinitive.

6. Give an account of the life and works of one of each of the following pairs: Aeschylus or Euripides, Pindar or Alcaeus, Herodotus or Thucydides, Plato or Aristotle.

7. Give an account of the life and works of Plautus, Cicero, and Juvenal.

8. Give some account of the Ionic philosophy.

9. Give a very brief account of the disciples of Socrates and the schools which sprang from them.

10. In Pericles' time how were the Archons elected, and what were their powers? How were the generals elected, and what were their powers?

11. Give a concise account of the steps by which the Plebeians gradually won admission to the public offices in Rome, and the effect the change had on the powers of the consuls.

12. How was a Roman Province governed? In 800 B. C. how was a Consul elected? How was a *Tribunus Plebis*?

13. What was the difference between an Athenian *κληρουχία* and *ἀποικία*, and which corresponded to the Roman *Colonia*?

14. Describe the characteristic features of a Greek temple; of a Greek theatre; of a Roman house; of a Roman dinner.

15. Explain the allusions:—

"Tis the brand of *Meleager*

Dying on the hearth-stone here!—LONGFELLOW.

Sometimes let gorgeous Tragedy

In sceptred pall come sweeping by,

Presenting *Thebes* or *Pelops' line*.—MILTON.

Tho' he inherit

Nor the pride nor ample pinion

That the *Theban eagle* bare.—GRAY.

And *Milo-like* surveys his arms and hands.

POPE'S DUNCIAD.

Desertae et multa querenti  
 Amplexus et opem Liber tulit; utque perenni  
 Sidere clara foret, sumptam de fronte coronam  
 Immisit caelo. — OVID.

16. What can you infer, from the relation of the following words to one another, as to the early history of the Indo-European family? ewe, *ovis, ūs*; sow, *sus, ūs*; cow, *bos, boūs*; hound, *canis, κυών*; steer, *taurus, ταῦρος*; horse, *equus, ἵππος*; yoke, *iugum, ζυγόν*; wagon, *vehiculum, ὄχος*; door, *fores, θύρα*; timber (*Zimmer*), *domus, δόμος*; ship, *navis, ναῦς*; mast, *malus, ἰστός*; oar, *remus, ἑρεμός*; plough, *aratrum, ἄροτρον*; spear, *hasta, δόρυ*; beech, *fagus, φηγός*; tree, *drūs* (cf. *δόρυ*).

17. In what relation do the following words stand to one another, and what light do they cast upon the religion of Greece and Rome?

*Zeús, Iuppiter, Διώνη, Iuno, Diana, dies, deus, divus (dius), δῖος.*

18. *Deiotarum . . . ex itinere aquila revocavit : qui nisi revertisset in eo conclavi ei cubandum fuisset quod proxima noctu conruit : ruina igitur oppressus esset. At id neque si fatum fuerat effugisset nec si non fuerat in eum casum incidisset.*

Explain the conditional sentence *si . . . incidisset*.

19. What two meanings may the expression *ἔδει σε τοῦτο ποιῆσαι* have? Explain the difference.

20. Give a full explanation of *μή* in *εἴργει σε μή τοῦτο ποιεῖν*; of *quin* in *Quid est causae quin coloniam in Ianiculum possint deducere?*

21. How does the Homeric conditional sentence contrary to fact differ from the Attic?

22. Give the plup. pass. indic. of *τέσσω*; the perf. pass. indic. of *λείπω*; the 2d plup. act. indic. of *λανθάνω*; the plural of *βασιλεύς*, according to best Attic analogy.

23. Explain the etymology of the following English words, tracing them to their farthest attainable elements; explain the formation and connection of meaning: *hypocrite, purge, nervous, enthusiasm, trapezoid, couch, sir*.

24. Connect with Greek, *torqueo, vetus, vereor, brevis, levis, levis, volo, sequor*.

25. Latin and Greek words akin to *why, doom, say, thirst, aye, feather, first, thole* ("To thole the winter's sleety dribble." — BURNS).

### III. MODERN LANGUAGES.

#### ENGLISH.

##### PRESCRIBED COURSES.

Prescribed Rhetoric. — ASST. PROF. A. S. HILL.

*Sophomore Year.*

Campbell's Philosophy of Rhetoric (Book II., Chapters 1-6). — Whately's Rhetoric (Part III.) — Herbert Spencer's Philosophy of

Style. — Hill's General Rules for Punctuation and the Use of Capital Letters. — Abbott's How to Write Clearly.

*Two hours a week. First half-year.*

*Junior Year.*

Whately's Rhetoric (Parts I. and II.). — Lessing's Laocoon.

*Two hours a week. Second half-year.*

### Prescribed Themes and Forensics.

SOPHOMORE YEAR. Six Themes : ASST. PROF. A. S. HILL.

JUNIOR YEAR. Six Themes : PROF. CHILD.

Four Forensics : ASST. PROF. PALMER.

SENIOR YEAR. Four Forensics : PROF. PEABODY.

In place of Forensics, *Candidates for Honors* were allowed to substitute an equal number of Theses in their special departments, with the consent of the Instructors in those departments.

### ELECTIVES.

**English 1.** — PROF. CHILD.

*English Literature.* — Chaucer (Part of the Canterbury Tales). — Shakespeare (Hamlet and King Lear). — Bacon (Essays). — Milton (Areopagitica).

*Three hours a week. 5 Seniors, 19 Juniors, 11 Sophomores.*

**English 2.** — PROF. CHILD.

*English.* — Hadley's History of the English Language. — March's Anglo-Saxon Reader. — Mätzner's Altenglische Sprachproben.

*Two hours a week. 2 Juniors, 3 Sophomores.*

### PRESCRIBED THEMES.

*Sophomore Year.*

Write not less than four, nor more than six, pages on the following subject : —

"No society in which eccentricity is a matter of reproach, can be in a wholesome state." — J. S. MILL.

### ENGLISH I.

1. Upon what earlier composition is Chaucer's Clerk's Tale founded ? Give the story. Is there proof that Chaucer obtained the story from the source referred to in the Clerk's Prologue ? Describe the versification of this tale.

2. Explain : —

- (1) Al had hir lever han had a knave child.
- (2) A maner sergeant was this privé man.
- (3) That bestes ne no briddes it to-race.
- (4) My peple sekly berith oure mariage.
- (5) Though thyn array be badde and ille byseye,  
Do thou thy dever atte leste weye.

(6) And in that same stounde

Al sodeinly sche swapped down to grounde.

(7) Lest Chichevache yow swolwe in hir entraile.

(8) Beth nought bydaffed for your innocence,  
But sharply tak on yow the governayle.

3. Exhibit the prosody of the above lines, and give reasons.

4. Write the description of the Clerk, in the Prologue of the *Canterbury Tales*: or twenty-four consecutive lines from the description of the Parson. Write Hamlet's speech, beginning "I have of late — but wherefore I know not — lost all my mirth:" or twenty verses, beginning with "For who would bear the whips and scorns of time."

5. Explain (accurately and fully): —

(1) I love you more than words can wield the matter.

(2) Beyond all manner of so much I love you.

(3) I loved her most, and thought to set my rest  
On her kind nursery.

(4) Or your fore-vouch'd affection  
Fall'n into taint.

(5) You have obedience scanted,  
And well are worth the want that you have wanted.

(6) Old fools are babes again, and must be used  
With checks as flatteries, when they are seen abused.

(7) Do you bandy looks with me?

(8) Take my coxcomb.

(9) What makes that frontlet on?

(10) Such men as may besort your age, and know themselves and  
you.

(11) And be a thwart disnatured torment to her.

(12) The untented woundings of a father's curse.

(13) If a man's brains were in's heels, were't not in danger of  
kibes? . . . Then I prithee be merry; thy wit shall ne'er  
go slipshod.

(14) The news . . . are yet but ear-kissing arguments.

(15) My master, my worthy arch and patron, comes to-night.

(16) I'd turn it all to thy suggestion, plot and damned practice.

(17) Three-suited, lily-livered, action-taking, superserviceable . .  
cullionly barber-monger . . . neat slave.

(18) I will tread this unbolted villain into mortar.

(19) O how this mother swells up toward my heart!

(20) I have hope

You less know how to value her desert  
Than she to scant her duty.

(21) Unaccommodated man is no more but such a poor —

6. Either write some account of Bacon's life, or give the substance of some one of his *Essays*.

7. What authors does Bacon most frequently refer to in his *Essays*? What historical personages of his own time are mentioned.

8. Indicate (with fulness) what your idea of Bacon would be, as derived from the *Essays* alone.

9. Explain: —

(1) There is a *toy* which I would not have given over, but *waited upon*.

(2) As for the observation that *Macchiavel* hath that the jealousy of sects doth much extinguish the memory of things, *tra-*

- ducing *Gregory the Great*, that he did what in him lay to extinguish all heathen antiquities.
- (3) Speculative heresies, such as were in ancient times the *Arians* and now the *Arminians*.
  - (4) Anger must be limited both in *race* and in time.
  - (5) *Socrates, Aristotle, Galen*, are men full of ostentation.
  - (6) Suitors are so *distasted* with delays and *abuses* that plain dealing . . . in *challenging* no more thanks than one hath deserved, is grown *gracious*.
  - (7) The lads of *Sparta* were wont to be scourged without so much as *queeching*.
  - (8) Not the *hundred poll* will be fit for an helmet.
  - (9) The schoolmen were like astronomers, which did feign *Eccentrics* and *Epicycles*, to save the *phenomena*.
  - (10) The devouring trades of *Usury, Engrossing*.
  - (11) The *doctor of the Gentiles*, the *propriety* of whose vocation drew him to have a special care of those without.
10. Explain :—
- (1) Ask a *Talmudist* what ails the modesty of his *marginal Keri*.
  - (2) Acquainting them with the choicest *criticisms* of sin.
  - (3) If every action were to be under *pittance*, what were virtue but a name? what *grammercy* to be sober?
  - (4) Such an Adam as he is in the *motions*.
  - (5) Ye must reform it according to the model of *Trent* and *Sevil*.
  - (6) We must not think to make a *staple commodity* of all the knowledge in the land.
  - (7) An *unprincipled, unedified, and laic* rabble.
  - (8) This is but to *chop an episcopacy*: this is but to translate the *palace metropolitan* from one kind of dominion into another: this is but an old *canonical slight* of *commuting our penance*.
  - (9) There be of *protestants* and *professors* who live and die in as *arrant an implicit faith* as any *lay Papist of Loretto*.
  - (10) *Interlinearies, breviaries, synopses, and other loitering gear*.
  - (11) The whole *noise* of timorous and *flocking* birds.
  - (12) No, though *Harry the 7. himself there, with all his liege tombs about him*, should lend their voices from the dead.
  - (13) Of these *sophisms and elenchs of merchandize* I skill not.
  - (14) Our *inquisiturient* bishops and the attendant *minorites* their chaplains.
  - (15) That *libertine school of Cyrene*, or what the *Cynic impudence* uttered.
  - (16) None should be traduced by name, as was the manner of *Vetus Comoedia*.

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## GERMAN.

### PRESCRIBED COURSE.

FRESHMAN YEAR. — MR. FAULHABER and MR. W. COOK.

Peissner's Grammar with Joynes's Otto's Reader; or Whitney's Grammar and Reader.

*Three hours a week.*



**ELECTIVES.****German 1 (I). — MR. W. COOK.**

*Section A: Zschokke's Todte Gast, 65 pages. — Section B: Kotzebue's Deutsche Kleinstädter (8 acts). — Section C: Iffland's Hagestolzen (8 acts); Selection from Nathan der Weise. — All sections: Selection from Faust; Composition.*

*Two hours a week. 3 Juniors, 50 Sophomores, 1 Law Student.*

**German 1 (II). — MR. BARTLETT.**

*Kähler (Die Drei Schwestern). — v. Hartmann (Das Schloss im Gebirge). — Gerstaecker (Germelshausen). — Tieck (Des Lebens Ueberfluss). — Schiller (Der Neffe als Onkel). — Extemporaneous Translation and Composition. — Oral Exercises.*

*Three hours a week. 5 Juniors, 56 Sophomores, 1 Freshman.*

**German 2. — MR. BARTLETT.**

*German Historical Prose. — Selections from Freytag (Aus dem Mittelalter), Giesebrecht (Geschichte der deutschen Kaiserzeit), v. Sybel (Kleine historische Schriften), Carrière (Die Kunst, etc.).*

*Three hours a week. 13 Seniors, 83 Juniors, 8 Sophomores, 1 Freshman, 1 Law Student.*

Course 2 was intended for those students only who wished to read a large amount of German as a preparation for the use of German text-books and other aids in studies of the Junior and Senior years.

**German 3. — PROF. HEDGE.**

*Hoffmann (Madame Scudery). — Lessing (Nathan der Weise). — German Lyrics. — Composition.*

*Three hours a week. 2 Seniors, 31 Juniors, 5 Sophomores.*

**German 4. — PROF. HEDGE.**

*Richter. — Goethe (Faust and Aus meinem Leben). — German Lyrics. — Composition.*

*Three hours a week. 9 Seniors, 1 Junior, 2 Freshmen, 1 Scientific Student.*

**PRESCRIBED GERMAN.**

## 1. (a) Translate into German: —

He would be allowed to come if he liked. He ought to do it, if he could. Would your friend be obliged to do it, if he could? Are you able to speak German? He might come back to-day; he is reported to have said so. I am permitted to go, but I do not wish to miss my examination and I ought to study more.

## (b) Translate into English: —

Sechs Wörtlein nehmen mich in Anspruch jeden Tag:  
 Ich soll, ich muß, ich kann, ich will, ich darf, ich mag;  
 Nur wenn Du selbst mich lehrst, weiß ich was jeden Tag  
 Ich soll, ich muß, ich kann, ich will, ich darf, ich mag. .

## 2. (a) Translate into German: —

Has your friend been persecuted? Has he been seen by his mother? Has your city been beleaguered by the enemies? He will be punished by his father. The little girl has been sent to us by our poor friend. He had been blamed by his teacher on account of his bad conduct.

## (b) Translate into English: —

Die Armee der Süds-Staaten wurde von den vereinigten Heeren der Generale Grant und Sherman geschlagen und nach einer großen Siegesfeier in der Hauptstadt Washington wurden die Soldaten nach ihren respectiven Staaten zurückgeschickt, um daselbst entlassen zu werden.

## 3. Translate and parse the following sentence: —

Der Philosoph Euklides wagte es sehr oft, in Frauenkleidern gegen Abend sich in Athen einzuschleichen, um den Unterricht des Sokrates zu genießen.

## 4. (a) Translate into English: —

Also wieder dieser Champagne, der mich zu diesem hohen Posten befördert. Ich bin ihm unendlichen Dank schuldig, daß er so hoch mit mir hinaus will. Herr Gaspar! Sie werden zu Hause mein Billet gefunden haben; es würde mir lieb sein, wenn der Ehe-contract noch diesen Abend unterzeichnet würde.

(b) Du hast eine Eroberung gemacht. Schwester! Der Lormeuil ist Knall und Fall sterblich in dich verliebt worden. Eben hat er mir das Geständniß gethan, weil er glaubte, mi, dem Onkel zu reden! Ich sagte ihm aber, diese Gedanken sollte er sich nur vergehen lassen: — du hättest das Heirathen auf immer verschworen — Ich habe recht gethan; nicht?

5. Write the following numbers and fractions in letters: 1876, 5423, 9087, 873, 542,  $\frac{2}{4}$ ,  $\frac{1}{2}$ ,  $\frac{7}{8}$ ,  $\frac{9}{10}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$ .

6. Explain position of words in sentences, and illustrate by six German sentences of your own selection.

7. State the general rules in regard to gender of German nouns, and give a German noun for each rule.

8. Copy the following German verses, and underline the words that should be emphasized in reading; also translate them: —

(a) Du bist wie eine Blume,  
So hold und schön und rein.  
Ich seh dich an und Wehmuth  
Schleicht mir ins Herz hinein.

(b) Mir ist, als ob ich die Hände  
Auf's Haupt dir legen sollt!  
Betend, daß Gott dich erhalte  
So rein und schön und hold.

9, 10. Translate the following prose into English, and extract such German words from it as have an affinity to English words: —

In den Annalen der Geschichte der vereinigten Staaten hat die hundert-jährige Jubiläums-feier für die Republik eine hohe Bedeutung. Die Welt-ausstellung zu Philadelphia hat, so zu sagen, einen cultur-historischen Werth. Sie giebt deutlich zu erkennen, daß hundert Jahre freier Entwicklung in einer Republik weit bessere Resultate erzielen zu Gunsten der Volksmassen, als ein viel größerer Zeitraum in einer Monarchie. Im Jahre 1776 representirte die Union 13 Staaten mit 4 Millionen Einwohnern und nun sind es 39 Staaten mit 40 Millionen. Der ferne Westen ist innerhalb 50 Jahren aus einer Wüste in ein segensreiches und fruchtbares Getreide-land verwandelt worden.

Das atlantische Meer ist mit dem stillen Ocean durch ein Eisenbahnnetz verbunden. Ein unterseeischer Telegraph verbindet 2 Hemisphären. Die Sklaverei ist abgeschafft. Der große Bürgerkrieg ist zu Gunsten der Union beendet. 10 Jahre darauf finden wir die Senatoren der Südstaaten im Congreß die Sache des Nordens auf das eifrigste vertreten. Was in Europa von den Regierungen unternommen wird, geschieht hier durch Privatunternehmung. Jedermann fühlt den Werth seiner Unabhängigkeit und bedarf deshalb auch weniger der Obhut der Regierung. Das Volk regiert im wahren Sinn des Wortes. Amerika hat schon nach dem kurzen Zeitraum eines Jahrhunderts eine selbstständige Nationallitteratur gegründet und sieht der blühendsten Zukunft entgegen. Die Kirche ist vom Staate getrennt und es herrscht kein Zwang in Sachen der Religion. Im Raas, im Gelde, in commerzieller Hinsicht finden wir gleichfalls ein einheitliches System. Das Volksschulwesen wird vortrefflich geleitet und die sogenannten *High Schools* und *Academies* sind in ihren Lehrkursen auch bedeutend fortgeschritten. Trotz der zeitweisen politischen Erschütterungen und trotz aller socialen Hindernisse deutet Alles mit Sicherheit auf eine große Zukunft. Möge der Geist Washingtons und seiner Gefährten die Nation stets zu neuer Kraftentwicklung ermunthigen und möge die Union als eine glänzende Pyramide der Freiheit und der Volksrechte der civilisirten Welt zum Muster dienen.

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 GERMAN 4.

Translate: —

## I. JEAN PAUL. — Blumen-, Frucht- und Dornstücke, &amp;c.

Das überwältigte den Armenadvocaten. Er drückte die Hand seines Freundes damit sich dieser bezähmte, und fragte mit einer vom Gefühle fremden Hasses ordentlich niedergedrückten Stimme: „Haben Sie nie nach Leipzig an mich geschrieben?“ „Wenn Sie mein Bündel sind,“ versetzte Blasius, „ja wohl, mehrmal; sind Sie es nicht, so haben Sie meine Briefe bios auf eine andere Weise.“ Nun sagte er, noch weicher stammelnd: „Erinnern Sie sich keines Schreibens worin Sie mir die Gefahrllosigkeit meines Namentausches versicherten, gar keines?“ „Wahrhaftig, das ist lächerlich,“ versetzte Blasius; „dann wäre die streitige Sache ja eben entschieden.“

## II. GOETHE. — Aus meinem Leben

Ein anhaltender Regen hatte die Wege äußerst verdorben, welche überhaupt noch nicht in den guten Stand gesetzt waren, in welchem wir sie nachmals finden; und unsere Reise war daher weder angenehm noch glücklich. Doch verbanke ich dieser feuchten Bitterung den Anblick eines Naturphänomens, das wohl höchst selten seyn mag; denn ich habe nichts ähnliches jemals wieder gesehen, noch auch von andern, daß sie es gewahrt hätten, vernommen. Wir fuhren nämlich zwischen Hanau und Gelnhausen bei Nachtzeit eine Anhöhe hinauf, und wollten, ob es gleich finster war, doch lieber zu Fuße gehen, als uns der Gefahr und Beschwerlichkeit dieser Wegstrecke aussetzen. Auf einmal sah ich an der rechten Seite des Wegs, in einer Tiefe, eine Art von wunderfam erleuchtetem Amphitheater. Es blinkten nämlich in einem trichterförmigen Raume unzählige Lichtchen stufenweise über einander, und leuchteten so lebhaft, daß das Auge davon geblendet wurde. Was aber den Blick noch mehr verwirrte, war, daß sie nicht etwa still saßen, sondern hin und wieder hüpfen, sowohl von oben nach unten, als umgekehrt und nach allen Seiten. Die meisten jedoch blieben ruhig und stimmerten fort. Nur höchst ungerne ließ ich mich von diesem Schauspiel anrufen, das ich genauer zu beobachten gewünscht hätte.

## III. GOETHE. — Faust.

Ha! welche Wonne fließt in diesem Blick  
 Auf einmal mir durch alle meine Sinnen!  
 Ich fühle junges heil'ges Lebensglück  
 Neuglühend mir durch Nerb' und Adern rinnen,  
 War es ein Gott, der diese Zeichen schrieb,  
 Die mir das innre Loben stillen,  
 Das arme Herz mit Freude füllen,  
 Und mit geheimnißvollem Trieb,  
 Die Kräfte der Natur rings um mich her enthüllen?  
 Bin ich ein Gott? Mir wird so licht!  
 Ich schau' in diesen reinen Zügen  
 Die wirkende Natur vor meiner Seele liegen.  
 Jetzt erst erkenn' ich was der Weise spricht:  
 „Die Geisterwelt ist nicht verschlossen;  
 Dein Sinn ist zu, dein Herz ist todt!  
 Auf, bade, Schüler, unverdrossen  
 Die ird'sche Brust im Morgenroth!“

[Er beschaut das Zeichen.

Wie alles sich zum Ganzen webt,  
 Eins in dem andern wirkt und lebt!  
 Wie Himmelskräfte auf und nieder steigen  
 Und sich die goldnen Eimer reichen!  
 Mit segenduftenden Schwingen  
 Vom Himmel durch die Erde dringen,  
 Harmonisch all' das All durchklingen!  
 Welch Schauspiel! aber ach! ein Schauspiel nur!  
 Wo faß' ich dich, unendliche Natur?  
 Euch Brüste, wo? Ihr Quellen alles Lebens,  
 An denen Himmel und Erde hängt,  
 Dahin die welcke Brust sich drängt —  
 Ihr quellt, ihr tränkt, und schmachet' ich so vergebens?

## IV. GERMAN AT SIGHT.

Durch solche Darstellungen, die mich gar nichts kosteten, machte ich mich bei Kindern beliebt, erregte und ergözte die Jugend und zog die Aufmerksamkeit älterer Personen auf mich. Nur mußte ich in der Societät, wie sie gewöhnlich ist, solche Uebungen gar bald einstellen, und ich habe nur zu sehr an Lebensgenuß und freier Geistesförderung dadurch verloren; doch begleiteten mich jene beiden elterlichen Gaben durch's ganze Leben, mit einer dritten verbunden, mit dem Bedürfniß, mich figürlich und gleichnißweise auszudrücken. In Rücksicht dieser Eigenschaften, welche der so einsichtige als geistreiche Doctor Gall, nach seiner Lehre, an mir anerkannte, betheuerte derselbe, ich sey eigentlich zum Volksredner geboren. Ueber diese Eröffnung erschraak ich nicht wenig: denn hätte sie wirklich Grund, so wäre, da sich bei meiner Nation nichts zu reden fand, alles Uebrige, was ich vornehmen konnte, leider ein verfehlter Beruf gewesen.

## V. COMPOSITION.

Schiller appears here as always in absolute<sup>1</sup> possession<sup>2</sup> of his elevated<sup>3</sup> nature. He is as great at<sup>4</sup> the tea-table<sup>5</sup> as he would have been in the Council-of State.<sup>6</sup> Nothing embarrasses<sup>7</sup> him, nothing oppresses<sup>8</sup> him, nothing draws-down<sup>9</sup> the flight<sup>10</sup> of his thoughts. Whatever<sup>11</sup> of great

views<sup>12</sup> there is<sup>13</sup> in him always goes out<sup>14</sup> freely, without regard<sup>15</sup> and without hesitation.<sup>16</sup> That was a right man, and so one ought always to be! We others on-the-contrary<sup>17</sup> always feel ourselves conditioned.<sup>18</sup> The persons, the objects,<sup>19</sup> which surround<sup>20</sup> us have their influence<sup>21</sup> upon<sup>22</sup> us; the tea-spoon<sup>23</sup> embarrasses<sup>24</sup> us if it is of gold when<sup>25</sup> it ought to be of silver. And so, paralyzed<sup>26</sup> by a thousand regards,<sup>27</sup> we do not attain<sup>28</sup> to-give<sup>29</sup> freely forth<sup>30</sup> what<sup>31</sup> there may be that is great in our nature.

1absolut. 2Besitz, m. 3erhaben. 4an (with dat.). 5Theetisch. 6Staats-rath, m. 7geniren. 8einengen (sep.). 9herabziehen (sep.). 10Flug, m. 11Was. 12Ansicht, f. 13lebt. 14heraus. 15Nüchternheit (no art.). 16Bedenken. 17dagegen. 18bedingt. 19Gegenstand, m. 20umgeben. 21Einfluß, m. 22auf. 23Theelöffel, m. 24da. 25paralysirt. 26dazu kommen. 27auszulassen. 28was etwa.

## FRENCH.

### PRESCRIBED COURSE.

#### FRESHMAN OR SOPHOMORE YEAR. — MR. JACQUINOT.

Required (1) of Freshmen who, at their examination for admission to College, passed on German instead of French; (2) of Sophomores who had failed to pass an examination upon the subject by the beginning of the Sophomore year.

Otto's French Grammar. — Bôcher's Reader. — Three Modern Comedies.

*Two or three hours a week. 1 Junior, 65 Sophomores, 10 Freshmen.*

### ELECTIVES.

#### French 1. — MR. JACQUINOT.

Chardenal's Advanced Exercises. — About (Les Mariages de Province). — G. Sand (La Famille de Germandre). — J. Sandeau (La Maison de Penarvan). — Scribe et Legouvé (Les Doigts de Fée).

*Two or three hours a week. 2 Seniors, 43 Juniors, 33 Sophomores, 10 Freshmen.*

#### French 2. — PROF. BÔCHER.

Molière (8 Comedies). — La Fontaine (Fables, 5 Books). — Racine (Andromaque). — Taine (La Fontaine et ses Fables). — Composition.

*Three hours a week. 17 Seniors, 23 Juniors, 19 Sophomores, 6 Freshmen.*

#### French 3. — PROF. BÔCHER.

Brachet (Écrivains du XVIème Siècle). — Molière (Le Misanthrope). — Corneille (Le Cid). — Paul Albert (Littérature française au XVIème Siècle). — Composition (The Translator).

*Three hours a week. 6 Seniors, 12 Juniors, 3 Sophomores, 1 Freshman.*

#### French 4. — MR. JACQUINOT.

Syntaxe supérieure. — Paul Albert (La Littérature française au

XVIII<sup>ème</sup> Siècle). — Le Sage, Montesquieu, Buffon, Piron, Voltaire, J. J. Rousseau, Beaumarchais. — Composition and Themes. — Lectures.

*Two or three hours a week.* 1 Senior, 4 Juniors, 7 Sophomores, 3 Freshmen.

Course 4, in three successive years, embraces the French Literature of the 17th, 18th, and 19th centuries.

## PRESCRIBED FRENCH.

### I.

Translate : —

(a) Personne ne savait rien de tout cela chez nous ; la surprise et la joie devaient en être d'autant plus grandes. Mon cœur nageait de bonheur. Je n'avais qu'une crainte, c'était qu'on apprît quelque chose par hasard ; et plus le moment approchait, plus mon inquiétude et ma satisfaction augmentaient.

Jâry, durant ces huit jours, n'avait rien dit ; seulement il serrait les dents et me regardait d'un mauvais œil. Moi, je ne disais rien non plus.

Ma table déjà construite se trouvait dans un coin éloigné de l'établi. En entrant, le matin du jour où je devais commencer à polir, je regarde pour voir si le vernis avait séché, et qu'est-ce que je vois ? un trou gros comme les deux poings dans la planche du milieu sur le bord. — Je devins tout pâle, et je tournai la tête.

ERCKMANN-CHATRIAN.

(b) P. (*lisant*). "Un événement qui aurait pu avoir des suites déplorables vient d'arriver à la mer de Glace . . . M. Daniel S. . . a fait un faux pas et a disparu dans une de ces crevasses si redoutées des voyageurs. Un des témoins de cette scène, M. P. (qu'il nous permette de le nommer)." Comment donc ! si je le permets ! "M. P., notable commerçant de Paris et père de famille, n'écoutant que son courage, et au mépris de sa propre vie, s'est élancé dans le gouffre." C'est vrai, "et après des efforts inouïs, a été assez heureux pour en retirer son compagnon. Un si admirable dévouement n'a été surpassé que par la modestie de M. P., qui s'est dérobé aux félicitations de la foule émue et attendrie . . . Les gens de cœur de tous les pays nous sauront gré de leur signaler un pareil trait !"

LABICHE ET MARTIN.

(c) L'animal parut presque aussitôt au coin du verger, s'avancant en droite ligne vers le poirier en question, passa à dix pas de Guillaume, monta lestement sur l'arbre, dont les branches craquaient sous le poids de son corps, et se mit à y faire une consommation telle qu'il était évident que deux visites pareilles rendraient la troisième inutile. Lorsqu'il fut rassasié, l'ours descendit lentement, comme s'il avait du regret d'en laisser, repassa près de notre chasseur, à qui le fusil chargé de sel ne pouvait pas être dans cette circonstance d'une grande utilité, et se retira tranquillement dans la montagne.

A. DUMAS.

(d) [*At sight*.] J'étais assis auprès d'un vieux valet de chambre nommé M. — Seigneur cavalier, me dit-il tout bas après le dîner, je voudrais bien avoir une conversation particulière avec vous. En même temps il me mena dans un endroit du palais où personne ne pouvait nous entendre, et là il me tint ce discours : Mon fils, dès le premier instant que je vous ai vu, je me suis senti pour vous de l'inclination. Je veux vous en donner une marque certaine en vous faisant une confidence qui vous sera d'une grande utilité. Vous êtes ici dans une maison où les vrais et les faux dévots vivent pêle-mêle. Il vous faudrait un temps

infini pour connaître le terrain. Je vais vous épargner une si longue et si désagréable étude, en vous découvrant les caractères des uns et des autres. — LE SAGE.

## II.

The following questions are stated, except the first, in the order in which the italicized words stand in *a, b, c*, above.

(1) State the mood and tense of all italicized verbs, giving the infinitive only of regular verbs and the *primitive tenses*\* of irregular verbs. (2) When is the English *that* translated by *cela*? (3) *Inquiétude* and *satisfaction* are feminine; why is *mon* used in one case and *ma* in the other? (4) Give the feminine of *gros, faux, heureux*. (5) Say any thing you know about the meaning and use of the pronoun *en*. (6) Why and when is the cedilla put under the letter *c* in the verb *avancer*, and in verbs of like termination? (7) What difference is there between *vers* and *envers*? (8) *Dix* is a cardinal number; form the ordinal number from it, and give the rule. (9) Are *ds* sounded in *poids*? Is *s* sounded in *ours*? What consonants are generally sounded at the end of French words? (10) *Lentement* is an adverb; how are adverbs formed in French? (11) When is the *i* of the conjunction *si* elided? (12) Could *au quel* be used instead of *à qui*? Give the rule referring to the use of *qui* and *le quel* after prepositions.

\* Thus, Inf., *être*; Pres. Part., *étant*; Past. Part., *été*; Ind. Pres., *je suis*; Pret., *je fus*.

## III.

Translate into French: —

(a) Have you heard<sup>1</sup> the birds<sup>2</sup> sing<sup>3</sup> this morning<sup>4</sup> in our uncle's garden? (b) There are at my cousin's house beautiful books which I will show<sup>5</sup> you; he has a complete<sup>6</sup> set<sup>7</sup> of all the first editions<sup>8</sup> of Molière's plays.<sup>9</sup> (c) I get up<sup>10</sup> every morning at seven o'clock<sup>11</sup>; my sister who went [has gone] to bed<sup>12</sup> yesterday at eleven o'clock, did not get up before nine o'clock. (d) With what key<sup>13</sup> have you opened<sup>14</sup> the door<sup>15</sup>? With that which you have lent<sup>16</sup> me. (e) You must read<sup>17</sup> the letter<sup>18</sup> which has been published<sup>19</sup> in all the papers.<sup>20</sup> (f) Nobody knows<sup>21</sup> that man; he does not see<sup>22</sup> anybody in this town<sup>23</sup>; he lives<sup>24</sup> alone in a new<sup>25</sup> house.<sup>26</sup> (g) Has she given him the gloves?<sup>27</sup> She has given them to him.

<sup>1</sup>entendre. <sup>2</sup>oiseau, *m.* <sup>3</sup>chanter. <sup>4</sup>matin, *m.* <sup>5</sup>montrer. <sup>6</sup>complet. <sup>7</sup>collection, *f.* <sup>8</sup>édition, *f.* <sup>9</sup>comédie, *f.* <sup>10</sup>se lever. <sup>11</sup>heure, *f.* <sup>12</sup>se coucher. <sup>13</sup>clef, *f.* <sup>14</sup>ouvrir. <sup>15</sup>porte, *f.* <sup>16</sup>prêter. <sup>17</sup>lire. <sup>18</sup>lettre, *f.* <sup>19</sup>publier. <sup>20</sup>journal, *m.* <sup>21</sup>connaître. <sup>22</sup>voir. <sup>23</sup>ville, *f.* <sup>24</sup>vivre. <sup>25</sup>neuf. <sup>26</sup>maison, *f.* <sup>27</sup>gant, *m.*

## FRENCH 2.

1. Write out as nearly as you can in La Fontaine's own words the first 16 lines of the fable beginning *Un lièvre en son gîte songeait*; — also the last 15 lines of the fable about the ass loaded with sponges and the ass loaded with salt, beginning at, *Camarade épongieur prit exemple sur lui*.

2. Write in ordinary French prose the fable of the Fox and the Stork. It begins in La Fontaine, *Compère le Renard se mit un jour en frais*.

3. Where do the following lines occur, and how are they applied: —

- (a) Vous chantiez? j'en suis fort aise.  
Eh bien! dansez maintenant.

- (b) Jura, mais un peu tard, qu'on ne l'y prendrait plus.  
 (c) Lynx envers nos pareils, et taupes envers nous.  
 (d) Eh ! mon ami, tire moi de danger.  
 Tu feras après ta harangue.  
 (e) Je plie et ne romps point.  
 (f) On le peut, je l'essaie ; un plus savant le fasse.  
 (g) Chacun fut de l'avis de monsieur le Doyen.  
 (h) Le sage dit, selon les gens :  
 Vive le roi ! vive la ligue !  
 (i) On a souvent besoin d'un plus petit que soi.  
 (j) Car c'est double plaisir de tromper le trompeur.  
 (k) Le plus âne des trois n'est pas celui qu'on pense.  
 (l) C'est moi qui suis Guillot, berger de ce troupeau.  
 (m) Ils sont trop verts, dit-il, et bons pour des goujats.  
 (n) Amour ! amour ! quand tu nous tiens,  
 On peut bien dire : Adieu prudence !  
 (o) Ne forçons point notre talent ;  
 Nous ne ferions rien avec grâce.  
 (p) Il n'est, pour voir, que l'œil du maître.  
 (q) Mais tournez-vous, de grâce, et l'on vous répondra.  
 (r) Arrière ceux dont la bouche  
 Souffle le chaud et le froid !

## 4. Translate :—

Ne t'attends qu'à toi seul ; c'est un commun proverbe.

Voici comme Ésope le mit

En crédit :

Les alouettes fond leur nid

Dans les blés quand ils sont en herbe. . . .

[Une] bâtit un nid, pond, couve, et fait éclore

À la hâte : le tout alla du mieux qu'il put.

Les blés d'alentour mûrs avant que la nitée

Se trouvât assez forte encor

Pour voler et prendre l'essor,

De mille soins divers l'alouette agitée

S'en va chercher pâture, avertit ses enfants

D'être toujours au guet et faire sentinelle. . . .

Eux repus, tout s'endort, les petits et la mère.

L'aube du jour arrive, et d'amis point du tout.

L'alouette à l'essor, le maître s'en vient faire

Sa ronde ainsi qu'à l'ordinaire. . . .

Pour la troisième fois, le maître se souvint

De visiter ses blés. "Notre erreur est extrême,

Dit-il, de nous attendre à d'autres gens que nous.

Il n'est meilleur ami ni parent que soi-même.

Retenez bien cela, mon fils. Et savez-vous

Ce qu'il faut faire ? Il faut qu'avec notre famille

Nous prenions dès demain chacun une faucille :

C'est là notre plus court ; et nous achèverons

Notre moisson quand nous pourrons."

Dès lors que ce dessein fut su de l'alouette :

"C'est ce coup qu'il est bon de partir, mes enfants !"

Et les petits en même temps,

Voletants, se culebutants,

Délogèrent tous sans trompette. — LA FONTAINE.

5. Give briefly an account of the *dénouement* of *l'Avare*. [The names of the principal characters are Harpagon, Cléante and Élise (his son and daughter), Valère, Mariane, Anselme, La Flèche.]



6. State briefly the nature of the conversation between Sganarelle and Pancrace, and also with Marphurius, in *Le Mariage forcé*.

7. Translate :—

- (a) *Jamais amant n'a fait tant de trouble éclater,  
Au poulet renvoyé sans le décacheter :  
Il perd toute espérance enfin, et se retire :  
Mais il m'a tendrement conjuré de te dire ;  
" Que du moins en t'aimant, il n'a jamais pensé  
À rien dont ton honneur ait lieu d'être offensé,  
Et que, ne dépendant que du choix de son âme,  
Tous ses désirs étaient de t'obtenir pour femme,  
Si les destins, en moi qui captive ton cœur,  
N'opposaient un obstacle à cette juste ardeur ;  
Que, quoi qu'on puisse faire, il ne te faut pas croire  
Que jamais tes appas sortent de sa mémoire ;  
Que quelque arrêt des cieus qu'il lui faille subir,  
Son sort est de t'aimer jusqu'au dernier soupir ;  
Et que, si quelque chose étouffe sa poursuite,  
C'est le juste respect qu'il a pour mon mérite."*  
Ce sont ses propres mots ; et, loin de le blâmer,  
Je le trouve *honnête homme*, et le plains de t'aimer.

L'ÉCOLE DES MARIÉS.

- (b) *Cet homme, gendarme d'abord contre mon feu,  
Qui chez lui se retranche, et de grès fait parade,  
Comme si j'y voulais entrer par escalade ;  
Qui, pour me repousser, dans son bizarre effroi,  
Âme du dedans tous ses gens contre moi ;  
Et q'abuse à ses yeux, par sa machine même,  
Celle qu'il veut tenir dans l'ignorance extrême !  
Pour moi, je vous l'avoue, encor que son retour  
En un grand embarras jette ici mon amour,  
Je tiens cela plaisant, autant qu'on saurait dire :  
Je ne puis y songer sans de bon cœur en rire ;  
Et vous n'en riez pas assez, à mon avis.*

L'ÉCOLE DES FEMMES.

(c) ÉLISE. — Est-ce qu'il y a une personne qui soit plus véritablement qu'elle ce qu'on appelle *précieuse*, à prendre le mot dans sa plus mauvaise signification ?

URANIE. — Elle se défend bien de ce nom, pourtant.

ÉLISE. — Il est vrai. Elle se défend du nom, mais non pas de la chose : car enfin elle l'est depuis les pieds jusqu'à la tête, et la plus grande façonnière du monde. Il semble que tout son corps soit démonté et que les mouvemens de ses hanches, de ses épaules et de sa tête, n'aillent que par ressorts. Elle affecte toujours un ton de voix languissant et niais, fait la moue pour montrer une petite bouche, et roule les yeux pour les faire paraître grands. — LA CRITIQUE DE L'ÉCOLE DES FEMMES.

(d) Pour vous, vous représentez une de ces personnes qui prêtent doucement des charités à tout le monde ; de ces femmes qui donnent toujours le petit coup de langue en passant, et seraient bien fâchées d'avoir souffert qu'on eût dit du bien du prochain. Je crois que vous ne vous acquitterez *pas mal* de ce rôle. — L'IMPROMPTU DE VERSAILLES.

(e) BÉLINE. — Hé bien ! je vous crois, mon ami. Là, remettez-vous.

Écoutez, Toinette : si vous fâchez jamais mon mari, je vous mettrai dehors. Ça, donnez-moi son manteau fourré et des oreillers, que je l'accommode dans sa chaise. Vous voilà je ne sais comment. Enfoncez bien votre bonnet jusque sur vos oreilles ; il n'y a rien qui enrhumé tant que de prendre l'air par les oreilles.

ARGAN. — Ah ! *ma mie*, que je vous suis obligé de tous les soins que vous prenez de moi ! — LE MALADE IMAGINAIRE.

8. Make such comments as you can upon the italicized words in 7.

9. Scan the first three lines in No. 7 (a) (*Jamais amant, &c.*).

10. Translate or explain the following : (a) *À d'autres!* (as an answer to some statement). (b) *Nous savons comme il faut s'en défendre.* (c) *Vous prendrez part, je pense, à l'heur de mes affaires.* (d) *Épouser une sottise, est pour n'être point sot.* (e) *Jouer au corbillon.* (f) *Aller au collège.* (g) *Cela ne guérit pas de grand'chose.* (h) *Souffrez que je lui montre son bec jaune.* (i) *Donner dans le panneau.* (j) *Je n'ai garde de m'y aller frotter.*

11. What was peculiar in the use of the following words in Molière's time : (a) *libertin*, (b) *ressentiment*, (c) *ennui*, (d) *gêner*.

12. Describe the following articles of clothing : (a) *rabat*, (b) *canon*, (c) *fraise*, (d) *haut-de-chausses*.

13. Translate : —

(a) Et vous prononcerez un arrêt si cruel ?  
Est-ce mon intérêt qui le rend criminel ?  
Hélas ! on ne craint point qu'il venge un jour son père ;  
On craint qu'il n'essuyât les larmes de sa mère.  
Il m'aurait tenu lieu d'un père et d'un époux ;  
Mais il me faut tout perdre, et toujours par vos coups. — RACINE.

(b) Ah ! dissipez ces indignes alarmes :  
Il a trop bien senti le pouvoir de vos charmes.  
Vous croyez qu'un amant vienne vous insulter ?  
Il vous rapporte un cœur qu'il n'a pu vous ôter.  
Mais vous ne dites point ce que vous mande un père. — RACINE.

14. What are the sources of Racine's *Andromaque* ?

15. State some of the peculiarities of the French Classic tragedy.

## FRENCH 4.

(Part I. is from the Mid-Year paper, Parts II. and III. from the Final.)

### I.

1. Traduisez les mots écrits en italiques dans les extraits ci-dessous :

- (a) *Par ma foi, je vous ferai bien voir du pays.*  
 (b) *Cette figure me revient assez.*  
 (c) *Ce monsieur R. est votre âme damnée.*  
 (d) *Je mériterais d'être cassé à la tête de ma compagnie.*  
 (e) *C'est un panier percé.*  
 (f) *Les associés de monsieur T. ont mis garnison chez lui.*  
 (g) *Quelques acteurs nous font faux bond en ce moment.*  
 (h) *Aussi me traitent-ils de poète à la douzaine.*  
 (i) *Entre vingt prétendants on vous le donne beau ;*  
     *Et vous avez pour vous, Monsieur, l'air du bureau.*

- (j) Le parodiste oisif et les *forains* t'attendent.  
 (k) Et pour un bel esprit, il est *franc du collier*.  
 (l) *Faisons la guerre à l'œil* et . . .  
 (m) F. Quoi ! la pièce . . . L. *Est au croc* une seconde fois.

2. Traduisez et commentez les mots écrits en italiques dans les extraits ci-dessous : —

(a) Vous aviez déjà mangé le petit *douaire* qu'il vous avait laissé en partant.

(b) La bonne *aubaine* et la bonne femme !

(c) Elle verrait tout aller *sens dessus dessous* dans votre maison sans dire une syllabe.

(d) Il est votre parent comme *Jean de Vert*.

(e) Feu mon époux ! Cela ne me regarde point ; j'ai *renoncé à la communauté* !

(f) C'est, me répondit-il, un prédicateur et, qui pis est, un *directeur*.

(g) Voici les grammairiens, les *glossateurs*, et les *commentateurs*.

(h) Je l'ai vu quelquefois *au parloir*.

(i) Viennent *baigneur*, marchand, tailleur, *hôte*, aubergiste . . .

(j) C'est qu'on pourrait vous mettre aux *Petites Maisons*.

(k) *Scarron* même l'emporte aujourd'hui sur *Patru* !

(l) *De par* monsieur, expresse et nouvelle défense  
 De souffrir que jamais vous osiez vous parler.

3. Expliquez les allusions que renferment les passages suivants : —

(a) J'ai ouï parler d'une espèce de tribunal qu'on appelle l'Académie française . . . Il y a quelque temps que, pour fixer son autorité, il donna un code de ses jugements. Cet enfant de tant de pères était presque vieux quand il naquit ; et quoiqu'il fût légitime, un bâtard, qui avait déjà paru, l'avait presque étouffé dès sa naissance.

(b) J'allai voir l'autre jour une grande bibliothèque dans un couvent de dervis, qui en sont comme les dépositaires, mais qui sont obligés d'y laisser entrer tout le monde à de certaines heures.

(c) Le roi de France est vieux . . . Il a un ministre qui n'a que dix-huit ans et une maîtresse qui en a quatre-vingts. Il aime sa religion et il ne peut souffrir ceux qui disent qu'il faut l'observer à la rigueur : quoiqu'il fuie le tumulte des villes et qu'il se communique peu . . .

(d) Elle n'a plus maintenant l'esprit occupé  
 Que des bords du Lignon . . .

4. (a) Quelle est l'opinion de Montesquieu sur le divorce ? Quelles réflexions fait-il à ce sujet ? (b) Qu'est-ce qu'il dit des poètes ? (c) Donnez une idée générale de l'épisode des Troglodytes dans les *Lettres persanes*. (d) Quel est l'incident de la vie de Voltaire auquel Piron fait longuement allusion dans la *Méromanie* ? Rapprochez cet incident de la manière dont il se trouve intercalé dans la pièce.

## II.

Traduisez en français : —

(a) With regard to the queen's person, a circumstance not to be omitted in writing the history of a female reign, all contemporary authors agree in ascribing to Mary the utmost beauty of countenance, and elegance of shape, of which the human form is capable. Her hair was black, though, according to the fashion of that age, she frequently wore borrowed locks, and of different colors. Her eyes were of dark gray ; her complexion was exquisitely fine ; and her hands and arms remarkably delicate, both as to shape and color. Her stature was of an height that rose to the majestic. — W. ROBERTSON.

(b) It was a single head; but there was something so uncommon, so frightful and unearthly, in its expression, though by no means ugly, that he found himself irresistibly attracted to look at it. In fact he could not tear himself from the fascination of this portrait, till his imagination was filled by it and his rest broken. He retired to bed, dreamed, and awoke from time to time with the head glaring on him. In the morning his host saw by his looks that he had slept ill, and inquired the cause, which was told. The master of the house was much vexed, and said that the picture ought to have been removed, that it was an oversight, and that it always was removed when the chamber was used.

S. T. COLERIDGE.

(c) Well, friend, says I, but how can you get money as a waterman? Does anybody go by water these times? Yes, sir, says he, in the way I am employed there does. Do you see there, says he, five ships lie at anchor? pointing down the river a good way below the town; and do you see, says he, eight or ten ships lie at the chain there, and at anchor yonder? pointing above the town. All those ships have families on board, of their merchants and owners, and such like, who have locked themselves up, and live on board, close shut in, for fear of the infection; and I tend on them to fetch things for them, carry letters, and do what is absolutely necessary, that they may not be obliged to come on shore.

DANIEL DEFOE.

### III.

(a) Écrivez une courte notice sur Fontenelle.

(b) Donnez un aperçu du roman de *Zadig*, par Voltaire. Racontez, en abrégé, les incidents que renferment les chapitres intitulés: "Le nez," — "La danse."

(c) Quels sont les traits marquants du *Discours sur le style* par Buffon? Quels sont les points sur lesquels il insiste? Comment Buffon, dans sa théorie du style, peut-il être considéré comme un représentant de l'esprit classique? Faites ressortir, en quelques mots, les tendances opposées de l'esprit français et de l'esprit anglais, en matière de style.

(d) Quel fut le rôle de J. J. Rousseau au 18ème siècle? En quoi se rapproche-t-il et se sépare-t-il des auteurs contemporains? Indiquez les principaux traits de son caractère, en vous appuyant sur l'histoire de sa vie. Quels sont les incidents de la vie de Rousseau auxquels se rattachent les lieux suivants: Les Charmettes, l'Hermitage, Ermenonville? Quels furent ses rapports avec l'historien anglais Hume? Donnez une liste de ses principaux ouvrages dans l'ordre où ils furent publiés; faites suivre d'une analyse sommaire le titre de chaque ouvrage.

(e) En quelle année parut le premier volume de l'Encyclopédie? Faites un court historique de cette publication. Quelle fut la part qu'y prirent Diderot et D'Alembert? Quelles sont les doctrines de l'école encyclopédique et surtout de ses deux chefs, en religion et en philosophie? Donnez quelques détails sur la vie et le caractère de Diderot et de D'Alembert.

(f) Comment les noms de Mme Geoffrin, de Mme du Deffand, et de Melle de Lespinasse se trouvent-ils étroitement liés à l'histoire littéraire du 18ème siècle?

(g) Racontez les incidents qui précédèrent, accompagnèrent et suivirent la représentation du *Barbier de Séville* et du *Mariage de Figaro*.

(h) Quels sont les auteurs des ouvrages suivants: *Projet de paix perpétuelle*; *L'Histoire des Oracles*; *L'Esprit des Loix*; *La Henriade*; *La Religieuse*; *Bélisaire*; *Candide*; *Le Lycée*; *Le Devin du Village*; *Les Études de la Nature*; *Les Jeux de l'Amour et du Hasard*?

## ITALIAN.

**Italian 1. — ASST. PROF. NASH.**

Prose Scelte. — Italian Grammar. — Italian Composition.

*Two hours a week. 3 Seniors, 19 Juniors, 20 Sophomores, 2 Freshmen.*

**Italian 2. — ASST. PROF. NASH.**

Nota's La Fiera. — A. Manzoni. — Tasso. — Italian Composition.

*Three hours a week. 6 Seniors, 14 Juniors.*

**Italian 3. — PROF. LOWELL.**

*Early Italian Literature. — Dante (Vita Nuova and Divina Commedia).*

*Three hours a week. 5 Seniors, 2 Juniors.*

## ITALIAN 3.

Translate (at sight) : —

1. Deus in adiutorium meum intende,  
Che sofferisti per noi dura croce,  
Che la tua grazia e 'l tuo regno ci rende :  
Non mi lassar perir presso a la foce,  
Poi che noi siamo al levar de le tende :  
Io te ne priego con sommessa voce,  
Che tutto loda il fin d' ogni opra nostra,  
Dunque il cammino insino al fin mi mostra.
2. Rinaldo pel deserto se n' andava ;  
Aveva il sol coverto il marin suolo ;  
La luna il lume suo tutto mostrava ;  
Cedevon gli squadranti a l' oriuolo ;  
Quando Rinaldo la notte trovava  
Dove si sta quel Fuligatto solo ;  
E picchiò l' uscio d' un suo stran palagio,  
Fin che rispose il traditor malvagio.
3. E disse : chi se' tu? che vai cercando?  
Disse Rinaldo : a te mandato sono.  
Fuligatto gli aperse minacciando,  
Dicendo : se tu vai qui pel perdono,  
Io tel darò con la croce del brando.  
Dicea Rinaldo : dirti il vero è buono :  
Sappi, ladron, che fuor di queste porte  
Non uscirai, ch' io ti darò la morte.
4. Io vengo per provar mia forza teco.  
Rispose Fuligatto : tu n' andrai,  
S' io ti do qualche mazzata di cieco ;  
Ecco, per Dio, la serpe ch' io sognai,  
Che mi pareva s' avviluppasse meco,  
E per paura di ciò mi destai :  
Non mi pareva poterla sviluppare :  
Tu se' la serpe che non vuoi sbucare.
5. Disse Rinaldo : pel contrario fia :  
Che tu sarai la serpe, io lo spinoso,

- Che 'l misse un tratto per la sua follia  
 Ne la sua buca, chiedendo riposo :  
 Poi lo voleva costei cacciar via,  
 Perch' e' si voltolava il doloroso ;  
 Onde e' rispose : a non tenerti a bada,  
 Chi non ci può star, serpe, se ne vada.
6. Fuligatto era tutto meraviglia :  
 Chi fia costui, dicea ; che cosa è questa !  
 Prese al caval di subito la briglia,  
 E mena un colpo a Rinaldo a la testa.  
 Rinaldo un salto de la sella piglia,  
 Quando e' sentiva toccarsi la cresta :  
 Dettegli un colpo, e sbrucagli l' orecchio,  
 E fe' di sangue un lago di Fucecchio :
7. E Fuligatto balza giù stordito.  
 Rinaldo nol toccò che s' è levato :  
 E come e' fu tutto in se risentito,  
 Diceva : io credo che tu sia incantato,  
 O qualche diavol de l' abisso uscito :  
 Io son per questo pugno smemorato.  
 Per questa notte vo' che ci posiamo,  
 E domattina insieme combattiamo.
8. Non dubitar di tradimento o inganno,  
 Disse Rinaldo : non temer pur tu.  
 Così la notte in cagnesco si stanno ;  
 E come il giorno in oriente fu,  
 Armati fuori a campo se ne vanno ;  
 E disfidati, senza parlar più,  
 Ognun del campo a suo senno si tolse,  
 E con la lancia al nimico si volse.
9. E riscontrati, le lance volorno  
 In pezzi in aria, e 'l caval di Rinaldo  
 Non resse : i piè dinanzi sinistrorno,  
 Quantunque in sella si tenesse saldo :  
 Sì che d' accordo pedon s' affrontorno :  
 Perchè Rinaldo per la stizza caldo  
 Diceva : scendi in su la terra piana,  
 O io t' ammazzerò sotto l' alfana.
10. Fuligatto smontò subitamente :  
 Quivi si danno colpi di maestro :  
 Rinaldo per un colpo che si sente,  
 S' inginocchiava dal lato sinistro ;  
 Poi si rizzò : Fuligatto pon mente ;  
 Parvegli tanto nel rizzarsi destro,  
 E ne' suoi colpi sì fiero e sì forte,  
 Che cominciò a dubitar de la morte.
11. E quando egli ebbe un pezzo combattuto,  
 Disse : baron, l' un di noi dee morire :  
 Dimmi il tuo nome, ch' almen conosciuto  
 T' abbi, s' io debbo a la fine perire.  
 Disse Rinaldo : questo par dovuto :  
 Da Montalban Rinaldo mi fo dire.  
 Ah, disse Fuligatto, se' tu desso  
 Colui ch' a tutto il mondo è noto espresso !

12. Odo che se' di casa di Chiarmonte ;  
 Odo che hai tre buon fratei carnali ;  
 Odo che tu uccidesti Fieramonte ;  
 Odo se' il fior de' guerrier naturali :  
 Odo se' nievo a Buovo d' Agrismonte ;  
 Odo in battaglia più che gli altri vali :  
 Odo che hai Frusberta il nobil brando :  
 Odo che sei cugin del conte Orlando.
13. Io son de la tua fama innamorato.  
 E disse tanto, che Rinaldo va  
 Amico, suo fratello, e congiurato  
 Drento al palazzo, e grande onor gli fa ;  
 Poi s' accordorno mutar luogo e fato,  
 E Fuligatto il suo palagio arso ha,  
 Dicendo : mai più uom vo' che qui vegna  
 Dove stata è la tua persona degna :
14. Andianne ove ti piace a la ventura.  
 In questo un gran serpente ch' era piatto,  
 Si scuopre, quando al cul sente l'arsura :  
 Aggraticciosi al collo a Fuligatto  
 Tanto, che tramortì per la paura.  
 Rinaldo con la spada tanto ha fatto,  
 Che finalmente gliel levò da dosso ;  
 Ma prima gli tagliò la carne e l' osso ;
15. Ed anco poi con la coda pur guizza.  
 Fuligatto pareo che fusse morto :  
 Donde Rinaldo avea gran duolo e stizza  
 Restar soletto, e dovevasi a torto,  
 Che Fuligatto a la fine si rizza :  
 E risentito, e ripreso conforto,  
 E ringraziando que' che in cielo stanno,  
 Pel gran deserto a la lor via ne vanno.
16. E poi che molto furon cavalcati,  
 Due lion morti in un luogo foresto  
 Nel mezzo de la strada anno trovati :  
 Disse Rinaldo : che vorrà dir questo?  
 Questi lion chi ha così ammazzati?  
 Ma Fuligatto se n' accorse presto,  
 E disse : e' fia Spinardo senza fallo,  
 Che dicono ch' è mezz' uom, mezzo cavallo.
17. Nel monte periglioso suole stare :  
 Per certo noi dobbiamo esservi presso :  
 Una fromba e tre dardi suol portare.  
 Disse Rinaldo : e' sarà stato desso :  
 Non si potre' questa bestia trovare?  
 Rispose Fuligatto : e' suole spesso  
 Tra questi boschi andar cercando prede ;  
 E intanto una bandiera appresso vede
18. Con certi macometti molto strana.  
 Cominciono a studiare allora il passo :  
 Questo Spinardo stava in una tana  
 Nascoso come l' orso o come il tasso ;  
 Sente venire il cavallo e l' alfana ;  
 Subito misse ne la fromba un sasso,  
 E prese i dardi, ed assaltò costoro,  
 E mugghia e soffia che pareva un toro.

19. L'alfana per le muggia è spaventata :  
 Non la potea Fuligatto tenere ;  
 Poi disse, quando e' l' ha rassicurata :  
 Io vo', Rinaldo, mi facci un piacere :  
 S' io uccidrò questa bestia sfrenata,  
 Tu creda in Macometto, ch' è dovere :  
 Se tu l' uccidi, la tua fede vaglia ;  
 Ma che mi doni la prima battaglia.

PULCI: Morgante, Canto xxiii.

## SPANISH.

### Spanish 1. — ASST. PROF. NASH.

Gil Blas. — Spanish Grammar (Josse) and Composition.

Three hours a week. 8 Seniors, 8 Juniors, 5 Sophomores, 1 Freshman.

### Spanish 2. — ASST. PROF. NASH.

Moratin (Comedias). — Emilio Castelar (Recuerdos de Italia). — Spanish Composition (Josse's Exercises and Salvá's Grammar).

Three hours a week. 2 Seniors, 5 Juniors.

### Spanish 3. — PROF. LOWELL.

Early Spanish Literature — Cervantes (Don Quijote).

Three hours a week. 8 Seniors.

## SPANISH 1.

### KEY TO THE TENSES.

<i>Simple.</i>		INDICATIVE.	<i>Compound.</i>	
1. Present.			5. Preterite Indefinita.	
2. Imperfect.			6. Preterite Anterior.	
3. Preterite Definite.			7. Pluperfect.	
4. Future Absolute.			8. Future Anterior.	
SUBJUNCTIVE.				
9. Present.			12. Preterite.	
10. Imperfect.			13. Pluperfect.	
11. Future Conjunctive, Simple.			14. Future Conjunctive, Compound.	
CONDITIONALS.				
15. 1st Conditional	} Present.		18. 1st Conditional	} Past.
16. 2d     "			19. 2d     "	
17. 3d     "			20. 3d     "	
21. IMPERATIVE.				
INFINITIVE.				
22. Present.			23. Preterite.	
24. Gerund.	25. Compound Gerund.		26. Participle Past.	

Prefix to your answers the numbers and letters which stand before the questions.

### GIL BLAS.

A. Amada Mencla, replicó don Alvaro en un tono que mostraba bien cuanto le habian enternecido mis lágrimas, yo no me quejo de tí, ántes bien,



lejos de censurar la brillantez en que te *veo*, juro que *doy* al cielo mil gracias. Desde el triste día en que partí de Valladolid *tuve* siempre contraria la fortuna: mi vida *fué* un tejido de desdichas, y para su colmo *nunca me fué posible* darte noticia de mí. Seguro siempre de tu amor, se me representaba continuamente *la situación á que mi fatal cariño te habia reducido*. *Confieso* que algunas *veces* tenia por delito la dicha de haberte agradado.

*B.* No *fuí* perezoso en levantarme al día siguiente. *Fué á ajustar* la cuenta con la huéspedada, que *ya estaba* levantada, y me pareció de mejor humor que el día antecedente. Informéme en el lugar del camino que *guiaba á* la casa de campo adonde yo *queria* ir, y se lo pregunté á un paisano que me *deparó* la suerte del mismo carácter que mi antiguo mesonero de Peñafior. No contento con responderme á lo que le preguntaba, *añadió* que don Ambrosio habia *muerto* tres semanas hacia, y que la marquesa, *su mujer*, se habia retirado á un convento de la ciudad; que me nombró. Al punto *fuí* volando al monasterio en donde me *dijeron* que se hallaba doña Mencía. *Supliqué á* la tornera se *serviese* decir á aquella señora que deseaba hablarle un mozo recién *salido* de la cárcel de Astorga. Inmediatamente *fué á* darle el recado la tornera. Volvió esta, y me *hizo* entrar en un locutorio, adonde dentro de poco *ví* llegar muy enlutada á doña Mencía.

1. Translate the Text (*A* and *B*) as closely as you can.

2. In the Text *A*:—

*Replicó*, give 1st pers. sing. of tense 3; *mostraba* (like *acordar*), 1st pers. sing. of 9; *cuanto le habian enternecido mis lágrimas*, turn all this into Passive; also name 1st pers. sing. of 1 of *enternecer*; *me quejo* (regular), all tense 4 as reflective, with pronouns nominative and objective; *veo*, all tense 3, and 1st pers. sing. of 2; *doy*, all this tense, also (with pronouns) all 21; *tuve*, all 1 and all 4; *fué*, to which two verbs might this belong, and from which is it, here? *nunca me fué posible*, put in a second negative without changing the meaning; *de mí*, why is *mí* accented? *la situación*, &c. to period, turn all this into passive; *confieso*, complete this tense; *veces*, give Genitive, Dative, and Ablative, sing. and plural, all with definite articles.

In the Text *B*:—

*Fué á ajustar*, 22, and all 1 of *fué*; *estaba* all of 1; *guiaba* (reg.) all 21; *queria*, in full tenses 3, 4, and 15; *añadió* (reg. 8d conj.), give 1st pers. sing. of 1 and of 4; *muerto*, all of 1; *su mujer*, transpose, with needed change; *dijeron*, 22 and 26; *supliqué*, 22; *serviese* (like *pedir*), all of 3; *salido*, all 21; *hizo*, all 1; *á doña M.*, account for *á*, here.

Write the following in Spanish, using chiefly the Text *B* as vocabulary:—

[N. B. — Translate *you* by *usted* or *ustedes* (or corresponding pronouns). English words in Italics are not needed in Spanish. English words in square brackets are needed in Spanish.]

(a) With whom were those ladies talking a little *while* ago? and who are they?

(b) *They* are three of the richest (masc. *rico*) ladies of Astorga, recently come (verb *venir*) from that city.

(c) *I* have asked thee (enclitic) also (*tambien*) with whom *they* were talking. *I* will tell [it] you (enclit.): *it* is the inn-keeper, whose wife is our hostess.

(d) *I* shall speak to the ladies; for (*pues*) *I* wish to inform myself about that which *they* desire to find. Ladies, be pleased to tell me if *I* can (*poder*) do any thing (*algo*) for (*por?* or *para?*) you.

(e) I will guide (4) you (*enclit.*) to your country-houses if you shall wish it. I am of this place, and know (*conocer*) the roads.

(f) Sir (*Señor*), if you could (*poder*) go with us, we should be very glad (*masc. contento*). We know (*conocer*) the character of these peasants as little as the roads.

(g) Fear not (*temer*, *reg.*), ladies; I shall be with you shortly.

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## IV. PHILOSOPHY.

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### PRESCRIBED COURSES.

#### Prescribed Political Economy.

##### *Sophomore Year.*

Fawcett's Political Economy for Beginners. — Flanders's Exposition of the Constitution of the United States.

*Two hours a week. Second half-year.*

**Prescribed Philosophy.** — PROF. PEABODY and ASST. PROF. PALMER.

##### *Junior Year.*

Jevons's Logic. — Locke's Essay on Human Understanding (Selections).

*Two hours a week.*

This Course was taken as an elective by 31 Sophomores.

### ELECTIVES.

#### Philosophy 1. — ASST. PROF. PALMER.

Descartes. — Gassendi. — Malebranche. — Locke's Essay on Human Understanding.

*Three hours a week. 4 Seniors, 34 Juniors.*

#### Philosophy 2. — PROF. BOWEN.

*Schools of Descartes and Kant.* — Bouillier, *Histoire de la Philosophie Cartésienne.* — Kant's *Critique of Pure Reason.* — Schwegler's *History of Modern Philosophy.* — Lectures on French and German Philosophy.

*Three hours a week. 47 Seniors, 1 Junior, 1 Law Student.*

#### Philosophy 3. — PROF. BOWEN.

*Modern German Philosophy.* — Schopenhauer's *Die Welt als Wille und Vorstellung.* — Hartmann's *Philosophie des Unbewussten.*

*Three hours a week. 13 Seniors.*

#### Philosophy 4. — PROF. PEABODY.

*Ethics.* — Lectures. — Cicero de *Officiis.* — Upham's *Mental Philosophy* (Vol. II.).

*Three hours a week. 38 Seniors, 16 Juniors, 3 Sophomores.*

**Philosophy 5. — PROF. DUNBAR.**

*Political Economy.* — J. S. Mill's *Political Economy.* — *Financial Legislation of the United States.*

*Three hours a week. 36 Seniors, 80 Juniors, 1 Sophomore.*

**Philosophy 6. — PROF. DUNBAR.**

*Advanced Political Economy.* — Cairnes's *Leading Principles of Political Economy.* — McKean's *Condensation of Carey's Social Science.*

*Three hours a week. 24 Seniors.*

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**PRESCRIBED POLITICAL ECONOMY.**
**POLITICAL ECONOMY.**

[Those who take the examination in the Constitution may omit the questions marked with a star.]

1. Explain the service which Capital renders to production. Should you call a coal mine capital? a steam engine? a mill stream? Why?

2. Define *Value*. Show whether a general rise of values is possible. Distinguish between natural value and market value. Do they ever coincide?

3. What do you understand to be "the value of money"? On what does it depend? How does a rise in the value of money show itself?

4. Mention the three classes into which commodities are divided in relation to their value. In which class should you place gold and silver?

\* 5. Show how far the action of demand and supply controls the value of commodities in each class.

6. Explain the relations between rent of land, price of food, and growth of population.

7. What is meant by cost of labor? Show that a man's wages may be low and yet the cost of his labor be high. Point out the connection between cost of labor and profit of capital.

\* 8. Wherein do productive and unproductive consumption differ? "A knowledge of one of the first principles of political economy is sufficient to show that society is no gainer by the reckless expenditure of the spendthrift:" State the principle referred to, and illustrate the truth of the assertion.

\* 9. Show that foreign trade is advantageous to both countries only when the relative cost of the commodities exchanged is different in the two countries. When exports and imports fail to balance each other in any country, how is the equilibrium restored?

10. Give the four "canons of taxation," and show the application of any two of them. How may the burden of taxation be distributed according to the first canon, in a country where the revenue is raised by duties on tea, sugar, wines, etc.?

\* 11. Distinguish direct from indirect taxes. To which class does the income tax belong? Ought permanent and temporary incomes to be taxed equally?

\* 12. Show whether high wages make high prices. Suppose that laborers, by combinations and strikes, should succeed in raising wages so much as to bring profits down to a very low figure, would they be benefited thereby? Why?

## CONSTITUTION OF THE UNITED STATES.

[Those who take the examination in Political Economy will answer questions 1-7 only.]

1. Explain the terms *exclusive* and *concurrent* as applied to legislative power. Mention two subjects in reference to which Congress has exclusive, and two in which it has concurrent, power of legislation.

2. Through what stages must bills go in their passage through each house? Mention the ways in which a bill may become a law. In what case does a bill fail to become a law though passed by both houses and not vetoed by the President?

3. State the qualifications required for Vice-President; for senators. Describe the mode of electing senators. How, and under what authority, has this mode been established?

4. Show how the amendments relating to slavery (XIII.-XV.) affected the apportionment of representatives. How far has the right of each State to make its own franchise law been abridged by these amendments?

5. When a president is to be elected, how many electors are appointed by each State? How are the electors chosen? What control has Congress over the election?

6. What officers are subject to impeachment? For what offences? What is the effect of resigning? How may persons convicted on impeachment be punished?

7. Give the provisions of the Constitution in reference to trial by jury. Describe the function of grand juries. Explain fully "the privilege of the writ of *habeas corpus*."

8. Define treason. What courts have jurisdiction in cases of treason? What evidence is necessary in order to convict? What is provided in the Constitution as the punishment of treason?

9. How are direct taxes apportioned? What taxes are direct in the meaning of the Constitution? Compare this sense of the word with its use in Political Economy.

10. Give the provisions in the original Constitution relating directly or indirectly to the subject of slavery. What difficulties, arising from the existence of slavery, were encountered in framing the Constitution?

11. Taxes on exports. Taxes on immigrants.

12. The treaty-making power in the United States and in England.

13. Copyright and patent rights.

14. Naturalization of aliens. Expatriation.

15. Bills of credit. Legal-tender notes.

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 PHILOSOPHY 2.

## KANT AND HIS SUCCESSORS.

1. Adopting Kant's definitions and phraseology, distinguish clearly but briefly, —

(a) The faculty of Sense (*Sinnlichkeit*) from the Understanding (*Verstand*), and both from (*Vernunft*) Reason, pointing out the different functions of each, and their relations respectively to the Form and the Matter of Thought.

(b) Transcendental from Transcendent.

(c) Analytic from Dialectic, both in General (ordinary) Logic and in Transcendental Logic.

(d) The Liberty of Spontaneity from the Liberty of Indifference.

(e) The Platonic from the Kantian meaning of the word *Idea*.

(f) The Negative from the Positive signification of *Noumenon*.

(g) The two meanings of the word *absolute*. Which of these two is adopted by Kant, and why?

2. What are the three Transcendental Ideas (forms of the Unconditioned) of Pure Reason; from what logical forms are they derived; how are they so derived? Though incognizable, why are some of them still useful as regulative or limitative ideas?

3. Explain the paralogism of Rational Psychology. Which are the four propositions respecting the Soul developed by applying the Categories to the brief phrase which is "the only text of Rational Psychology"? What is that phrase?

4. What is meant by asserting, and how does Kant prove, that the *Idea* of God is properly an *Ideal* of Pure Reason? Give Kant's statement and criticism of the ontological proof of the being of a God.

5. Distinguish the functions of Theoretical or Speculative, and of Practical, Reason. According to Kant, what is the only Absolute Good? Prove by examples that every other Good is merely *relative*. When is the will autonomous, and when is it heteronomous?

6. Explain Kant's distinction between Man's Empirical Character and his Intelligible Character, and reconcile thereby the necessity of man's actions with the freedom of his will.

7. What brief formula or rule of conduct, according to Kant, expresses the whole purport of the Moral Law? What does he say are the two elements of the *summum bonum*? Explain the doctrine of the Stoics, the Epicureans, and Kant himself, in respect to the attainment of these two elements.

8. Positivism in its narrower and more defensible sense:—according to J. S. Mill, what are its *essential* doctrines, omitting all that is peculiar to Comte, the putative father of the system?

9. Refute Positivism as thus understood, by pointing out the various necessary metaphysical assumptions which underlie, and so first render possible, both the principles and the processes of modern physical science.

10. Work out deductively, or by necessary assumption, the three fundamental principles of Fichte's philosophy, and show how it is related, respectively, to the systems of Descartes, Spinoza, and other Philosophers of the Absolute. What two propositions, deduced from one of his fundamental principles, are the basis, the one of the theoretical, the other of the practical, part of the *Wissenschaftslehre*?

11. What objections can be stated to Spinoza's doctrine, that "Substance" as conceived and defined by him is the *only real* substance in the universe?

### PHILOSOPHY 3.

(Mid-Year Examination, February, 1876.)

1. Translate accurately the following passage, and then explain briefly those portions of Schopenhauer's theory of æsthetics which it is intended to illustrate:—

"Jene Seligkeit des willenlosen Anschauens ist es endlich auch, welche über die Vergangenheit und Entfernung einen so wundersamen Zauber verbreitet, und sie in so sehr verschönerndem Lichte uns darstellt, durch eine Selbsttäuschung. Denn indem wir längst vergangene Tage, an einem fernen Orte verlebt, uns vergegenwärtigen, sind es die Objecte allein, welche unsere Phantasie zurückruft, nicht das Subject des Willens, das seine unheilbaren Leiden damals eben so wohl mit sich herumtrug, wie jetzt; aber diese sind vergessen, weil sie seitdem schon oft andern Platz gemacht haben. Nun wirkt die objektive Anschauung in der Erinnerung eben so, wie die gegenwärtige wirken würde, wenn wir es über uns vermöchten, uns willensfrei ihr hinzugeben. Daher kommt es, dass besonders wann mehr als gewöhnlich irgend eine Noth uns beängstigt, die plötzliche Erinnerung an Scenen der Vergangenheit und Entfernung wie ein verlorenes Paradies an uns vorüberfliegt. Bloss das Objective, nicht das Individuell-Subjective ruft die Phantasie zurück, und wir bilden uns ein, dass jenes Objective damals eben so rein, von keiner Beziehung auf den Willen getrübt vor uns gestanden habe, wie jetzt sein Bild in der Phantasie; da doch vielmehr die Beziehung der Objecte auf unser Wollen uns damals Quaal schuf, so gut wie jetzt."

2. Why is it no cause for wonder that Physical Laws should work infallibly and with perfect uniformity?

3. Carry out the parallel between Will and Intellect on the one hand, and the different parts of a growing plant on the other. Show what is the common and essential element in all Consciousness, even that of brutes, and what is only the secondary and accidental element? Illustrate and prove your answer.

4. Define the Platonic Idea and Kant's *ding-an-sich*, showing how far they agree with each other. What forms of cognitive Representation are discarded by each? What one of these forms is retained by one of them, though not by the other?

5. What are the characteristics of Art, and wherein does it differ from Science? Wherein does a man of genius differ from an ordinary man? Why does the former dislike Mathematics? Why is he often suspected of insanity?

6. What are the two inseparable elements of æsthetic contemplation? Point out the separate characteristics of the Beautiful and the Sublime, showing wherein they differ from each other. Wherein does the Dynamical differ from the Mathematical Sublime, and what similar effect is produced by both upon the beholder?

7. What is the nature of a morally sublime, or lofty, character? What is the Attractive, and why is it inconsistent with the Beautiful? What things are too attractive to become objects of Art?

8. What is the nature and origin of Egoism or Selfishness; of Wrong or Wickedness; of Injustice? Can Injustice be practised in a state of nature, or before the formation of Society? As respects Justice and Injustice, which is the *positive* term, and which the *negative*; and why?

9. On what does Schopenhauer found the moral validity, or obligation, of contracts? What is the origin of "the State," and what is its purpose? Does the State punish Injustice *as such*,—that is, the unjust intention?

10. What is the difference between Morality and Legislation, or Civil Polity, in respect to the distinction between the *mere will to do wrong* and the *wrong actually done*. Why does Schopenhauer call jurisprudence or civil law inverted morality?

11. What does he mean by *eternal* justice, and wherein does it differ from *temporal* justice? Why has man no reason to fear death, and why has he every reason to wish for annihilation? What use does Schopenhauer make of the doctrine of metempsychosis?

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### PHILOSOPHY 6.

1. Give Mr. Cairnes's statement of the wages-fund doctrine. (p. 167.)
2. Criticise the following extracts from Walker's "Wages Question," pp. 128-130:—

"A popular theory of wages is based upon the assumption that wages are paid out of capital, the saved results of the industry of the past. Hence, it is argued, capital must furnish the measure of wages. On the contrary, I hold that wages are, in a philosophical view of the subject, paid out of the product of present industry, and hence that production furnishes the true measure of wages. . . . So long as additional profits are to be made by the employment of additional labor, so long a sufficient reason for production exists; when profit is no longer expected, the reason for production ceases. At this point the mere fact that the employer has capital at his command no more constitutes a reason why he should use it in production when he can get no profits, than the fact that the laborer has legs and arms constitutes a reason why he should work when he can get no wages.

"The employer purchases labor with a view to the product of the labor; and the kind and amount of this product determine what wages he can afford to pay. . . . If the product is to be greater, he can afford to pay more; if it is to be smaller, he must, for his own interest, pay less. It is, then, for the sake of future production that the laborers are employed, not at all because the employer has possession of a fund which he must disburse; and it is the value of the product, such as it is likely to prove, which determines the amount of the wages that can be paid, not at all the amount of wealth which the employer has in possession or can command. Thus it is production, not capital, which furnishes the motive for employment, and the measure of wages."

3. What is the reasoning which leads Mr. Cairnes to predict an ultimate fall of prices in the United States as compared with prices elsewhere? How will a protective tariff affect the movement? (p. 364.)

4. A recent writer says:—

"We will be able to resume specie payments when we cease to rank among the debtor nations, when our national debt is owed to our own people, and when our industry is adequate to the supply of the nation's need of manufactured goods." (Thompson's "Social Science," p. 206.)

How essential are these three conditions, severally, for the resumption of specie payments?

5. Criticise the argument contained in the following proposition:—

"With every increase in the facility of reproduction, there is a decline in the value of all existing things of a similar kind, attended by a diminution in the price paid for their use. The charge for the use of the existing money tends, therefore, to decline as man acquires control over the great forces provided by the Creator for his service; as is shown by the gradual diminution of the rate of interest in every advancing country."

6. Compare the generally received principle that paper currency tends to expel coin, with the following:—

“All commodities tend to move towards those places at which they are most utilized. . . . The note and the check increase the utility of the precious metals; and therefore is it, that money tends to flow towards those places at which notes and checks are most in use,—passing, in America, from the Southern and Western States towards the Northern and Eastern ones, and from America towards England.”

7. What is Mr. Carey's doctrine as to the value of land in an advancing society? Compare it with his general doctrine as to the determination of value by cost of reproduction.

8. What is Mr. Carey's general law of distribution between labor and capital? Give the general course of reasoning leading to this law.

9. Discuss Mr. Carey's objection to the Malthusian theory, that increase of numbers is in the inverse ratio of development, man multiplying slowly while the lower forms of animal and vegetable life multiply rapidly.

10. What logical necessity has compelled Mr. Carey to assume the existence of a law of diminishing fecundity in the human race? Compare this with the process of reasoning which leads to the Malthusian conclusion as to the necessary operation of “checks,” positive and preventive.

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## V. HISTORY.

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### PRESCRIBED COURSE.

**Sophomore Year.** — MR. E. YOUNG.

Freeman's Outlines of General History, Chapters V.—XIV.

*Two hours a week. First half-year.*

### ELECTIVES.

**History 1.** — ASST. PROF. SMITH.

Later Roman and Early Mediæval History.

*Two hours a week. 1 Senior, 1 Junior, 26 Sophomores, 10 Freshmen, 1 Scientific Student.*

**History 2.** — MR. E. YOUNG.

The General History of Europe from the Tenth to the Sixteenth Century.

*Three hours a week. 1 Senior, 12 Juniors, 16 Sophomores.*

**History 3.** — ASST. PROF. ADAMS.

Mediæval Institutions. (Advanced Course.)

*Three hours a week. 10 Seniors, 4 Juniors.*

Course 3 was only for students who took, or had taken, Course 2.



**History 4. — ASST. PROF. ADAMS.**

History of England to the Seventeenth Century (Constitutional and Legal).

*Three hours a week. 11 Seniors, 2 Sophomores.*

**History 5. — ASST. PROF. ADAMS.**

Colonial History of America to the year 1789.

*Three hours a week. 5 Seniors, 7 Juniors, 8 Sophomores.*

**History 7.\* — PROF. TORREY.**

Modern History (from the Middle of the Eighteenth Century).

*Three hours a week. 49 Seniors, 63 Juniors, 2 Sophomores.*

**Diplomatic History and International Law. — PROF. TORREY.**

This course, designed for Graduates, was open to such college students as were qualified to pursue it.

*Three hours a week. 8 Seniors.*

## HISTORY 1.

[Dates required in all cases.]

1. Show by a map (a) the boundary between the Eastern and Western Empires under the sons of Theodosius; (b) the kingdom of Theodoric the Ostrogoth; (c) the Exarchate of Ravenna.

2. Describe the events that resulted in the loss of Africa to the Empire.

3. Write a five-line sketch of the character and career of each of the following persons: Gallienus, Genseric, Heraclius, Odoacer, Pertinax, Totila, Ulphilas, Zenobia.

4. State, without details, the successive steps by which the whole of Gaul became subject to the Franks.

5. Compare the conditions of the Roman subjects of the Franks and of the Lombards.

6. State, without details, the chief events of the half-century beginning A.D. 511, in Africa, France, and Italy.

7. Give an account of the origin of the temporal power of the Popes.

8. Write a brief abstract of the course of events from the abdication of Diocletian to the death of Licinius.

9. Alaric.

## HISTORY 2.

1. Map of France. Mark the royal domain, Normandy, Brittany, Flanders, Anjou, Artois, Champagne, Vexin, Picardy, Burgundy, Maine, the Cotentin; Paris, Laon, Orleans, Calais, Rouen, Rheims, Bouvines, Crecy, Amiens, Château Gaillard — Guienne, Toulouse (county), Navarre, Poitou, Marche, Auvergne, Saintonge, Limousin, Venaissin;

\* History 6 was omitted in 1875-6.

- Lyons, Bordeaux, Albi, Beziers, Avignon, Poitiers, Narbonne, Vienne, Clermont, Dijon.
2. Relations of Burgundy with Otto I.; with Henry II.; with Conrad II.
  3. Lothar of Supplinburg.
  4. How did the Hohenstauffens acquire the kingdom of Naples?
  5. Origin, nature, and influence of the False Decretals.
  6. The Pataria.
  7. Abelard; St. Bernard; Arnold of Brescia.
  8. Frederic II. and Gregory IX.
  9. Suppression of the Templars; share taken in it by the Pope.
  10. Enumerate the successive additions to the French monarchy, before the year 1346, giving dates.
  11. The relations of Philip Augustus with Richard Cœur de Lion.
  12. Relations of Philip the Fair with Flanders; battle of Courtrai.
  13. Genealogy of the children of St. Louis, showing the claimants to the throne in 1328.

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### HISTORY 3.

1. To what extent may the family be considered as the source of the state?
2. Define the patriarchal theory, and state arguments for and against it.
3. Nature of the royal power in the Lex Salica. Causes and nature of its subsequent development.
4. What portions of private law may be traced with certainty to the family?
5. What portions, if any, cannot be traced to the family?
6. How does German law compare with Roman law in regard to the history of contract and conveyance?
7. To what extent was land treated as property in the Lex Salica?
8. What is meant by executive, and what by judicial procedure in German law?
9. Define, as briefly as possible, the nature of the early Germanic Constitution.
10. Explain with the utmost conciseness the influences which overthrew that Constitution, and the nature of the subsequent changes.

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### HISTORY 7.

[N.B. A number marked with an asterisk may be substituted for the *same* number not so marked.]

1. Say briefly (in three sentences, if you can), why the great Revolution broke out in France rather than elsewhere; why privilege was especially hated there; and why the fall of the noblesse, as an order, was so sudden.

1.\* Give some account of the Congress of 1765, name the chief points in its Declaration of Rights, and show why they were deemed of great importance.

2. The "Economists" or "Physiocrats."

2.\* "Whilst England," said Burke, in 1774, "pursued trade and forgot revenue, America had, except the commercial restraint, every characteristic mark of a free people in all her internal concerns. She had the image of the British Constitution. She had the substance." He called the Act of Navigation "the corner-stone of the policy of England with regard to its Colonies."

3. The political influence of men of letters in France in the eighteenth century.

3.\* The origin and the necessity of the Convention of 1787; its chief difficulties; the manner in which the Constitution was ratified. (Refer particularly to the Preamble of the Constitution.)

4. The object, importance, and history of the Treaty of 1794 between Great Britain and the United States.

4.\* The Louisiana Purchase, the Florida Treaty, the Annexation of Texas, the Treaty of Guadalupe Hidalgo, the Boundary Treaty of 1846, the Award of 1872.

5. Compare the relation of India to Great Britain with that of the British Colonies to the mother country. What change accounts for the statement that "the directors of the East India Company remained [after 1833] princes, but merchant-princes no longer"? What was the last great change made in the government of India, and what is the present system?

6. Discuss or explain *six* (and only six) of the following paragraphs:—  
"England's colonial dependencies have grown into affiliated States."

"England is governed by a committee of the legislative body selected to be the executive body."

"The whole power of the state periodically returns into the Royal hands whenever a ministry is changed."

"With the triumph of Wolfe on the Heights of Abraham began the history of the United States."

Mr. J. Q. Adams wrote, in 1817: "It is notorious that the issue of our late war with England was at best a drawn game." And yet the Treaty of Ghent marks an epoch in our history. How so?

The end of the charter of Rhode Island.

The Proclamation of January 1, 1863, and the Thirteenth Article of the Amendments to the Constitution.

The development of two leading passions in France in the eighteenth century.

7. The English Sovereign and the American President. The English Cabinet and that of the President of the United States. The extinct English and the active American Veto. The House of Lords and our Senate. (Try also to give the political sense of the word "constitutional" in the English system and in our own.)

8. Define or explain, distinctly but briefly, the following:—

The first, the second, the third French Republic; the first, the second Empire; the Days of September, the day of the Sections (18 *Vendémiaire*), the Hundred Days, the Days of February, the Days of June.

## VI. MATHEMATICS.

## PRESCRIBED COURSES.

*Freshman Year.*

## 1. MESSRS. STORY AND BRIGGS.

Plane Trigonometry (Chauvenet). — Analytic Geometry (Peck). — Solid Geometry (Peirce).

*Three hours a week in first half year, and after May 1; two hours a week in second half year till May 1.*

## 2. ASST. PROF. C. J. WHITE.

Algebra (Todhunter).

*One hour a week till May 1.*

## ELECTIVES.

**Mathematics 1.** — PROF. J. M. PEIRCE.

Differential and Integral Calculus; Elementary Course (Williamson's Differential Calculus, Chapters i.-vi., ix., xii., xv.-xviii., with Lectures and Examples; Simple Integrations and Applications of Integration.)

*Two hours a week. 2 Juniors, 15 Sophomores, 6 Freshmen.*

**Mathematics 2.** — PROF. J. M. PEIRCE.

Analytic Geometry (Salmon's Conic Sections, Chapters i., ii., v., vi., x-xiii.).

*Two hours a week. 1 Junior, 4 Sophomores, 3 Freshmen.*

**Mathematics 3.** — ASST. PROF. C. J. WHITE.

Practical Applications of Trigonometry. — Principles of Surveying. — Spherical Trigonometry. — Applications of Spherical Trigonometry to Astronomy and Navigation.

*Two hours a week. 1 Senior, 3 Juniors, 16 Sophomores, 11 Freshmen.*

**Mathematics 4.** — PROF. J. M. PEIRCE.

Formulas of Plane Trigonometry. — Elements of the Theory of Equations.

*One hour a week. 2 Juniors, 4 Sophomores, 4 Freshmen.*

**Mathematics 5.** — PROF. J. M. PEIRCE.

Differential and Integral Calculus; Second Course (Calculus of Imaginaries; Methods of Integration; Definite Integrals; Computation of Arcs, Areas, and Volumes; Theory of Surfaces and Curves in Space; Differential Equations of the First Order and Linear Differential Equations, with two variables.)

*Three hours a week. 2 Seniors, 7 Juniors.*

**Mathematics 6. — PROF. J. M. PEIRCE.**

Analytic Geometry of Three Dimensions (Salmon, Chapters i.-vii.). — Determinants. — Spherical Trigonometry.

*Two hours a week. 1 Senior, 3 Juniors.*

**Mathematics 7. — PROF. EUSTIS.**

Descriptive Geometry and Perspective.

*Three hours a week.*

**Mathematics 8. — PROF. J. M. PEIRCE.**

Examples in Conic sections (Salmon, Chapters iii., vii., xiii.).

*One hour a week. 4 Juniors.*

**Mathematics 9. — PROF. B. PEIRCE.**

Analytic Mechanics (Peirce).

*Two hours a week. 1 Senior.*

**Mathematics 10. — PROF. J. M. PEIRCE.**

Examples in Mechanics. — Theory of Attraction.

*Two hours a week. 3 Seniors.*

**Mathematics 11. — PROF. B. PEIRCE.**

Quaternions.

*Two hours a week. 3 Graduates, 2 Seniors, 4 Juniors.*

This course, though designed for graduates, was open to properly qualified College students.

**PRESCRIBED MATHEMATICS.**

(April, 1876.)

**ALGEBRA.**

1. Solve any two of the following equations: —

(a)  $x^{-1} + x^{-2} = 6.$

(b)  $x^2 - 7x + \sqrt{x^2 - 7x + 18} = 24.$

(c)  $x^2 + \frac{1}{x^2} + x + x = 4.$

(d)  $\sqrt{x+8} - \sqrt{x+3} - \sqrt{x} = 0.$

2. Form the equation whose roots are  $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}.$

In the equation  $ax^2 + 3x + 7 = 0$ , what value of  $a$  will make the roots equal? What values will make them imaginary?

3. Find three different cube roots of 8.

4. If  $z$  varies as  $ax + y$ , and if  $z$  is 16 when  $x$  is 1 and  $y$  is 5, and is 32 when  $x$  is 5 and  $y$  is 1, find  $a$ .

5. Find the expression for the sum of the first  $n$  natural numbers. For the sum of the first  $n$  odd numbers. For the sum of the first  $n$  even numbers.

6. In an arithmetical progression, the first term is 24, and the common difference is  $-4$ . Of how many terms is the sum 72? How many answers are there to this problem?

7. The sum of three numbers in arithmetical progression is 21: if 2, 5, 14 be added to them respectively, the results are in geometrical progression. Find the numbers.

8. Show that the harmonical mean of  $a$  and  $b$  is always less than the arithmetical mean.

9. How many numbers between 100 and 600,000 can be formed with the digits 8, 7, 4, 8, 2, 1, 0?

10. Find the middle term and the  $r$ th term of  $\left(\frac{1}{x} - x\right)^{2n}$ .

11. A bag contains 3 black and 5 white counters. What are the chances that a man, drawing 4 counters at once, will draw 2 white ones and 2 black ones?

(June, 1876.)

#### TRIGONOMETRY, ETC.

[N.B. Members of A sections will omit No. 11; of B sections Nos. 3 and 11.]

1. Explain how all the parts of a plane oblique triangle can be found when two angles and the included side are given.

2. Of what degree is the equation of a straight line? of a parabola? of an ellipse?

What condition must be fulfilled if any plane curve passes through a given point?

Explain the polar system of coördinates.

3. Prove that the angle between two planes, which cut each other, is measured by the angle between two straight lines drawn, one in one plane, one in the other, perpendicular to their common intersection, at the same point.

4. Prove that if two lines are parallel, any plane which contains one of them is parallel to the other.

5. Prove that the section of a pyramid made by a plane parallel to the base is a polygon similar to the base.

6. Prove that a truncated triangular prism is equivalent to the sum of three pyramids, which have for their common base the base of the prism, and for their vertices the three vertices of the inclined section.

7. The convex surfaces of similar prisms, pyramids, cylinders, or cones are to each other as their bases, or as the squares of their altitudes. Prove.

8. The angle formed by two arcs of great circles is measured by an arc drawn from the vertex as a pole, and included between its sides. Prove.

9. The sum of the angles of a spherical triangle is greater than two right angles; and either angle is greater than the difference between the sum of the other two and two right angles.

10. If two spherical triangles on the same or equal spheres, are equilateral with respect to each other, they are also equiangular with respect to each other.

11. Of two angles of a spherical triangle, the one which differs most from  $90^\circ$  is opposite the side which differs most from  $90^\circ$ .

12. Two symmetrical spherical triangles are equivalent.

MATHEMATICS 2.

1. A pair of rectangular axes form two opposite sides of a quadrilateral, the other two sides being represented by the equations

$$\frac{x}{a} + \frac{y}{b} = 1, \quad \frac{x}{a'} + \frac{y}{b'} = 1.$$

Find the equations of

(1) The diagonals;

(2) The line joining the middle points of the diagonals;

(3) The perpendicular from the origin to the line (2);

(4) The line joining the origin to the intersection of the diagonals. If the coördinates were oblique, which of the above-named equations would be changed?

2. To find the angle between the two lines represented in rectangular coördinates by the equation

$$ax^2 + 2hxy + by^2 = 0.$$

3. To find the equation of that chord of a conic which is bisected at the origin; and to show that the locus of the middle points of a system of parallel chords is a right line.

4. The general equation of the tangents to a conic from a point  $(x' y')$  being  $U' U = V^2$ , where  $U = 0$  is the equation of the conic, and  $V = 0$  of the polar  $(x' y')$ ; apply this equation to the central conic referred to its principal axes; and thence deduce the locus of the point of intersection of two mutually perpendicular tangents.

When does this locus become imaginary?

5. In the case of a central conic referred to its principal axes, to find the equation of the diameter conjugate to that which meets the curve at  $(x' y')$ , and the coördinates of its extremities; also to express the lengths of the two conjugate semidiameters in terms of  $x'$ .

To find the lengths of the focal perpendiculars on a tangent; and to show that their product is constant.

6. To reduce the general equation of the parabola to the form  $y^2 = px$ , in rectangular coördinates.

To find the pole of the line  $Ax + By + C = 0$ , relatively to the parabola  $y^2 = px$ ; and the condition that the given line is a tangent to the curve.

What combination of right lines occurs as a case of the parabola; and how may the centre be taken in this case?

MATHEMATICS 3.

1. Prove that, in a spherical oblique triangle, an angle which differs more from  $90^\circ$  than another angle is in the same quadrant as its opposite side.

$$\cos C + \cos A \cos B = \sin A \sin B \cos c.$$

2. In the spherical oblique triangle  $MNO$ , given  $m$ ,  $n$ ,  $M$ : obtain, by Napier's and Bowditch's rules, formulas for finding  $o$  and  $O$ . Show to what the formulas will be reduced, if  $M$  is  $90^\circ$ .

Data for the following problems :

	Right Ascension.		Declination.
	H.	M.	
Sun . . . .	13	14	$19^\circ 42' S.$
Moon . . . .	21	16	$10^\circ 22' N.$
Antares . . .	16	19	$26^\circ 9' S.$
Regulus . . .	10	2	$12^\circ 84' N.$

3. Find the meridian altitude and bearing of Antares and Regulus in latitude  $40^\circ N.$ ; of the Sun and Moon in latitude  $75^\circ S.$  In what latitudes is Antares never seen? In what latitudes does Regulus never set? In what latitude does Regulus pass through the zenith?

4. At a certain place a star is  $30^\circ$  high at its lower transit, and bears  $S.$ ; and is  $80^\circ$  high at its upper transit, and bears  $N.$  Find the latitude of the place and the declination of the star.

5. Find the length of the day and of the night in latitude  $40^\circ N.$ ; in latitude  $40^\circ S.$

$$\cos H = -\tan L \tan d.$$

6. In latitude (about)  $5^\circ 15' N.$ , longitude  $174^\circ E.$ , Greenwich time 6h. 2m. A.M., the moon's altitude is  $54^\circ$ . When on the meridian, it bears  $N.$  Find the true latitude.

$$\cos(L - d) = \sin a + 2 \cos L \cos d \sin^2 \frac{1}{2}H.$$

7. In latitude  $37^\circ N.$ , Greenwich time 11 h. 49 m. P.M., the altitude of Antares, west of the meridian, is  $11^\circ$ . Find the longitude.

$$s'' = \frac{1}{2}(L + a + p).$$

$$\sin^2 \frac{1}{2}H = \sec L \csc p \cos s'' \sin(s'' - a).$$

8. In latitude  $43^\circ S.$ , the altitude of Regulus, east of the meridian, is  $18^\circ$ , and the compass bearing is  $N.$  by  $E.$  Find the variation of the compass.

$$\tan^2 \frac{1}{2}A = \sec s'' \sec(s'' - p) \sin(s'' - a) \sin(s'' - L).$$

9. Show how the formulas of the previous question are obtained.

### MATHEMATICS 5.

1. Prove the formula for the volume of a solid of revolution. Find the volume of a segment, cut by a plane perpendicular to the axis, from the solid generated by the revolution of a cycloid about its base.

Find the value of the result, when the cross section is equal to the generating circle of the given cycloid.

2. Integrate the following differential equations :—

$$(1) (x^2 - b^2)^{\frac{1}{2}} (y + a)^{\frac{1}{2}} dx + x (y - a)^{\frac{1}{2}} dy = 0.$$

$$(2) (10x - 3y^2) dx + (2 - 6xy - 12y^2) dy = 0.$$

$$(3) (x + 8y) dx + (x + 4y) dy = 0.$$

$$(4) D_x^2 y + 4 D_x y + 13y = 0.$$

$$(5) D_x^2 y + 4 D_x y + 13y = 22 - 13x.$$



3. To integrate differential equations of the forms  $D_x y + Py = Q$  and  $y = x\phi p + \psi p$ .

To deduce a singular solution from a differential equation of the first order.

What is usually the geometric equivalent of a singular solution?

4. Define the *osculating plane* of a twisted curve; the *principal normal*; the *osculating sphere*.

Define the *evolutes* of a twisted curve. On what developable surface do they lie, and what is their relation to that surface? What is the cuspidal edge of that surface?

Find the equations for the coördinates of a point of an evolute, in the form:

$$x' = x + R \cos \nu_x + \sqrt{u^2 - R^2} \cos \mu_x.$$

5. To find the curvature of a surface at any point in a normal plane; and to show that a certain constant relation exists among the normal curvatures at a given point.

MATHEMATICS 6.

1. Prove the formula  $\cos \theta = \cos \alpha \cos \alpha' + \dots$

Find the equation of a plane which passes through a given point  $(x'y'z')$  and is perpendicular to the line represented by the equations

$$a_1x + b_1y + c_1z + d_1 = 0,$$

$$a_2x + b_2y + c_2z + d_2 = 0.$$

2. To find the general equation of the polar plane of any point, relatively to a given quadric, by reasoning from the harmonic property.

To find the general condition that the equation of the second degree represents a cone.

3. Investigate the sections of the surface  $9x^2 - 86y - 16z^2 = 0$  by planes parallel to the plane of  $xz$ ; planes containing the axis of  $y$ ; and planes containing the axis of  $x$ . What is the name of this surface?

4. Investigate the circular sections of a central quadric, and prove that any two circular sections of opposite systems lie on the same sphere.

5. Name the principal general properties of the rectilinear generators of a quadric. What peculiar relation exists among the generators of a hyperbolic paraboloid?

What quadrics have real generators; and what quadrics have real umbilics? What quadrics are developable?

MATHEMATICS 10.

1. A uniform ladder stands against a wall at an angle  $\alpha$  with the horizon, and a man ascends whose weight is half that of the ladder. The angle of friction between the ladder and the ground being  $f$ , find the angle of friction between the ladder and the wall, if the ladder begins to slip when the man is  $\frac{1}{3}$  of the way up.

2. To find the centre of gravity of the solid comprised between the paraboloid  $y^2 + z^2 = 2px$  and the planes  $x = a, y = 0, z = 0$ .

3. To investigate the attraction of a uniform lamina included between two infinite planes; and to prove (for all cases) Poisson's modification of Laplace's Equation.

4. Define a Chaslesian shell. If itself regarded as an attracting mass, what is the law of its potential for interior and for exterior points?

Define a Newtonian shell. How is it related to a Chaslesian shell?

What are the external level surfaces of an ellipsoidal Chaslesian shell? Investigate its attraction for a point at its surface; for an external point.

Investigate the attraction of an ellipsoid, obtaining the formula. [Peirce's Anal. Mech. 82<sub>24</sub>].

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### MATHEMATICS 11 (QUATERNIONS).

1. Prove that  $aa + b\beta$  and  $aa - b\beta$  are perpendicular vectors.
2. If  $\phi$  and  $\phi'$  are conjugate linear functions, prove that  $\phi + \phi'$  is self-conjugate.
3. Find the general form of  $\phi - \phi'$  in the same case.
4. Give the method of solving the equation  $\phi p = \gamma$ .
5. Solve the equation  $\alpha p \beta = \gamma$ , by the method of No. 4, or otherwise.
6. Prove that the hodograph of a body moving under the law of gravitation is a circle.

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### SPECIAL EXAMINATIONS

#### FOR SECOND-YEAR HONORS IN MATHEMATICS.\*

(May, 1876.)

#### SOLID GEOMETRY.

1. Prove that the sum of all the plane angles, which form a solid angle, is less than four right angles.
2. If two solid angles are respectively contained by three *obtuse* plane angles which are equal each to each, the planes of any two of these angles in the one have the same inclination to each other as the planes of the homologous angles in the other. Prove.
3. Prove that the volume of any parallelepiped is measured by the product of its base by its altitude.
4. Prove that the frustum of a triangular pyramid is equivalent to three triangular pyramids, which have for their common altitude the altitude of the frustum, and for their bases the lower base of the frustum, its upper base, and a mean proportional between them.
5. If two spherical triangles on the same or equal spheres are equiangular with respect to each other, they are also equilateral with respect to each other.
6. The surface of a spherical triangle is measured by the excess of the sum of its three angles over two right angles. Prove.
7. Given that the area of the surface, generated by a straight line revolving about another in the same plane with it as an axis, is the product of the length of the revolving line by the circumference described by its middle point. Also that the solidity of a pyramid is one-third of the product of its base by its altitude.

\* See page 61.

Find from these the measure of the area of the surface of a sphere ; and also the measure of the volume of a sphere.

8. Show how to find the number of faces of any regular polyedron. Apply the method to a regular polyedron whose faces are squares.

GEOMETRICAL PROBLEMS.

1. If from either angle of a triangle a line be drawn intersecting the line which joins the vertex and the middle point of the base, the opposite side, and the line from the vertex parallel to the base, it will be cut harmonically.

2. To determine that point in the base produced of a right triangle, from which the line drawn to the angle opposite to the base shall have the same ratio to the base produced, which the perpendicular has to the base itself.

3. If straight lines be drawn from the vertices of a triangle through any point, either within or without the triangle, to meet the sides, and the lines joining these points of intersection and the sides of the triangle be produced to meet, the three points of concourse will be in the same straight line.

4. In any trapezium, if two opposite sides be bisected, the sum of the squares of the two other sides, together with the squares of the diagonals, is equal to the sum of the squares of the bisected sides together with four times the square of the line joining those points of bisection.

5. If on the two sides of a right triangle squares be described, the lines joining the acute angles of the triangle and the opposite angles of the squares will cut off equal segments from the sides ; and each of these equal segments will be a mean proportional between the remaining segments.

6. If squares be described on the hypotenuse and sides of a right triangle, and the extremities of the sides of the former and the adjacent sides of the others be joined, the sum of the squares of the lines joining them will be equal to five times the square of the hypotenuse.

7. From a given point without a circle, to draw a straight line cutting the circle, so that the rectangle contained by the part of it without and the part within the circle shall be equal to a given square.

8. From the obtuse angle of a given triangle, to draw a line within the triangle to the opposite side, which shall be a mean proportional between the segments of that side.

9. To draw a line parallel to a given line, which shall be terminated by two others given in position, so as to form with them a triangle equal to a given rectangle.

TRIGONOMETRY AND ALGEBRA.

1. Obtain the usual formulas for  $\sin \frac{1}{2}\alpha$ ,  $\cos \frac{1}{2}\alpha$ , and  $\tan \frac{1}{2}\alpha$ ; and prove the formula

$$\tan \frac{1}{2}\alpha = \frac{1 + \sin \alpha - \cos \alpha}{1 + \sin \alpha + \cos \alpha}.$$

2. Given

$$\frac{\sin(\theta - \beta) \cos \alpha}{\sin(\phi - \alpha) \cos \beta} + \frac{\cos(\theta + \alpha) \sin \beta}{\cos(\phi - \beta) \sin \alpha} = 0,$$

$$\frac{\tan \theta \tan \alpha}{\tan \phi \tan \beta} + \frac{\cos(\alpha - \beta)}{\cos(\alpha + \beta)} = 0.$$

Find simple formulas for  $\tan \theta$  and  $\tan \phi$ , in terms of  $\alpha$  and  $\beta$ .

3. A tower standing on a horizontal plain leans towards the north. At two points due south of it, at distances from the base equal to  $a$  and  $b$ , the angular altitudes of the tower are  $\alpha$  and  $\beta$ . Find formulas for the inclination of the tower, and for its vertical height.

4. Solve the equations

$$\sqrt{x+y} + \sqrt{x-y} = \sqrt{a}, \quad \sqrt{x^2+y^2} + \sqrt{x^2-y^2} = b.$$

5. If  $a$ ,  $b$ , and  $c$  are in Harmonic Progression, show that  $\frac{a}{b+c}$ ,  $\frac{b}{c+a}$ ,  $\frac{c}{a+b}$  are also in Harmonic Progression.

6. Prove the rule for Greatest Common Divisor. What devices may be employed in applying this rule to polynomials; and why are they permissible?

### THEORY OF EQUATIONS.

1. Prove the rule for finding the multiple roots of an equation.

2. State and prove Stern's Theorem and Descartes's Rule of Signs. Find the character of the roots of the equation

$$2x^4 - x^3 - 7x - 11 = 0,$$

by inspection of the *signs*, stating your grounds.

3. Find all the roots of the equation  $x^3 = 27\sqrt{-1}$ , by the trigonometric method.

4. The equation

$$x^3 + 3x^2 - 8x - 10 = 0$$

has a root between 2 and 3. Compute it to *ten* places of decimals, by Horner's Method, beginning to shorten when the fourth decimal figure has been found.

5. To find the commensurable roots of an equation of which the first coefficient is 1, the other coefficients being integers.

6. Apply Sturm's Theorem to the equation

$$2x^3 - x^2 - 30x + 50 = 0,$$

finding the whole number of positive and of negative real roots, and the number of roots between 0 and 2, 2 and 3, 3 and  $\infty$ .

Has this equation multiple roots? State the reason of your answer.

### CALCULUS AND CONICS.

1. To find the equation of the tangents to a conic from an external point ( $x'$   $y'$ ).

2. Prove the formula for the complete differential of a function of two or more variables.

Prove *Euler's Theorem*.

3. A perpendicular is dropped from the centre of an ellipse on a variable tangent. Prove that the maximum distance of the foot of the perpendicular from the point of contact is  $(a - b)$ , and that when that distance is a maximum,  $p$  is a mean proportional between  $a$  and  $b$ .

4. A circle is described on a fixed line  $AB$  as a diameter. Two variable but equal ordinates,  $MN$  and  $M'N'$ , meet the circle at  $N$  and  $N'$ , and the right line  $BN'$  meets  $MN$  at  $P$ . Find the equation of the locus at  $P$ , taking  $A$  for the origin, and  $AB$  for the axis of  $x$ .

Trace the figure of the curve, and find the equation of a tangent at the point at which it meets the circle.

5. To find the envelope of  $y = ax + \frac{m}{a}$ , where  $a$  is a variable parameter.

## VII. PHYSICS.

### PRESCRIBED COURSES.

#### FRESHMAN YEAR. — MR. WILLSON.

Chambers's Matter and Motion. — Goodeve's Mechanics (Selections).  
*Two hours a week.\**

#### SOPHOMORE YEAR. — ASST. PROF. G. A. HILL.

Searle's Astronomy (Selections). — Chambers's Matter and Motion. —  
Goodeve's Mechanics (Selections).  
*Two hours a week.*

Lectures.

*One hour a week. Second half-year.*

#### JUNIOR YEAR. — PROF. LOVERING.

Lectures.

*One hour a week.*

### ELECTIVES.

#### Physics 2. † — PROF. LOVERING.

Astronomy, Optics, and Acoustics.

*Three hours a week. 1 Graduate, 9 Seniors, 5 Juniors, 1 Scientific Student.*

#### Physics 3. — ASST. PROF. TROWBRIDGE.

Practical exercises in the Laboratory, including the use of instruments of precision in testing the laws of Mechanics, Acoustics, Optics, Magnetism, and Electricity; and an extended course in Electrical Measurements.

*Three hours a week. 13 Seniors, 10 Juniors, 1 Sophomore.*

\* This course had been a Sophomore study. In order to effect its transfer to the Freshman year, it was pursued in 1875-6 by both classes.

† Physics 1 was omitted in 1875-6.

**Physics 4. — ASST. PROF. TROWBRIDGE.**

Advanced Course of Laboratory Practice. . .

*Three hours a week. 5 Seniors.*

Course 4 was open only to students who had pursued with credit Course 3.

**Physics 5. — PROF. LOVERING.**

Undulatory Theory of Light. — Electricity and Magnetism.

*Three hours a week. 2 Graduates, 5 Seniors.*

**Physics 6. — PROF. GIBBS.**

Heat (with its Applications).

*Three hours a week. 1 Graduate, 8 Seniors.*

## PRESCRIBED PHYSICS.

## MECHANICS.

1. Define specific heat and latent heat, and illustrate by experiments. (12)

2. A weight of 18 lbs. is placed at the centre of a smooth circular table 8 feet in diameter. It is moved by a weight of 2 lbs. attached to a cord passing over the edge of the table. What will be its velocity at the end of one second? How long before it will reach the edge of the table? (20)

3. Forces of 15.7, 33.8, 20.1, 7.1, and 10.0 act in a vertical plane on the same point. The first force is horizontal, and each force makes an angle of  $30^\circ$  with that next preceding; find the magnitude of their resultant and its inclination to the horizon. (22)

4. What are the conditions of equilibrium of any number of forces acting in one plane on a rigid body?

A uniform bar 6 feet long with a weight of 55 lbs. placed at a distance of 2 feet from its centre, is supported by cords fastened to each end, that nearer the weight making an angle of  $30^\circ$ , and the other an angle of  $45^\circ$  with the vertical; the rod is horizontal; find its weight and the tension on each cord. (24)

5. A force of 28 lbs. is required to draw a weight of 30 lbs. up a plane inclined  $30^\circ$  to the horizon. What is the coefficient of friction? What force would be required to draw it up the plane if the angle of inclination were  $45^\circ$ ? (22)

6. What is the pressure on the surface of a sphere, 6 inches in diameter, resting on the bottom of a trough filled with water to the depth of 1 foot? (20)

7. What is Boyle's law? Illustrate by the changes which take place in the volume of air in a diving bell, whose capacity is 500 cubic feet, upon lowering it to depths of 33, 66, 99 feet successively. (20)

8. Describe the common air pump. What is the density of the air in the receiver after 16 strokes if the volume of the receiver is twice that of the barrel of the pump? (16).

9. Find the equation of the curve described by a projectile. A ball rolls down an inclined plane whose height and base are each 144 feet.

At the bottom it strikes a horizontal plane and rebounds; at what distance and after what time will it again strike the plane? (20)

10. Find the value of the centrifugal force of a body which revolves uniformly in a circle. (16)

11. A right cone 4 feet high with a base 1 foot in diameter rests on a plane whose inclination to the horizon continually increases. What is the least value of the coefficient of friction possible in order that it shall fall over before it begins to slide down? (8)

### PHYSICS 8.

1. What are the rules for approximation in calculating with small quantities?

2. What corrections are necessary in weighing?

3. How is the sensitiveness of a balance determined?

4. How would you obtain the specific gravity of melted paraffine, also of common salt?

5. A table of the density of water at different temperatures is appended: how will you discuss the observations?

T.	D.	T.	D.
0°	0.99988	4°	1.00000
1°	0.99993	5°	0.99999
2°	0.99997	6°	0.99997
8°	0.99999	7°	0.99994

6. In the following table the first column gives the designation of the line in the solar spectrum; the second the wave length; and the third the scale reading: how do you find the approximate wave length of the line C?

A	7604	17.5	C	—	34.0
B	6867	27.6	D	5895	50.

7. How is the term potential used in electricity and magnetism? State the most prominent facts in static induction.

8. How was it shown that the mere contact of different metals was sufficient to produce a difference of potential?

9. State some of the analogies between the pressure and flow of water, and electrical phenomena.

10. Upon what phenomena are electro-static measurements based?

11. Define the terms magnetic field, magnetic moment, lines of force.

12. Upon what phenomena are electro-magnetic measurements based?

13. If a circular coil of wire rotates in a uniform magnetic field, what phenomena will be observed?

14. What do you know about the chemical theory of electro-motive force?

15. How will you construct an apparatus by which the dip of the lines of magnetic force of the earth can be determined by induction? What precautions will be necessary?

16. How is the electricity of the air measured?

17. How is the difference of potential of the poles of a battery shown?

18. Give the proof of the method of determining battery resistance by means of a mirror galvanometer.

## PHYSICS 5.

1. How is the formula obtained for the velocity of vibration when light is polarized in the plane of reflexion, viz. :—

$$v = - \frac{\sin(i-r)}{\sin(i+r)}$$

2. Find the corresponding formula for light polarized in the rectangular plane, viz. :—

$$v' = - \frac{\tan(i-r)}{\tan(i+r)}$$

3. How are these same equations found by MacCullagh's theory ?

4. Obtain the equation of the surface of elasticity, viz. :—

$$r^2 = a^2 \cos^2 \alpha + b^2 \cos^2 \beta + c^2 \cos^2 \gamma.$$

5. Give the equations for the two ellipsoids, and explain the use made of them and of the surface of elasticity in finding the wave velocity and the wave slowness.

6. Prove that the original direction of vibration must be decomposed according to the greatest and least axes of the section of the figure of elasticity.

7. From the general equation of the wave surface deduce its three principal sections.

8. What are the four different senses which attach to the phrase "The axes of a crystal" ?

9. Show that when rays of polarized light are reflected the new plane of polarization is expressed by the formula :—

$$\tan \alpha' = - \tan \alpha \frac{\cos(i+r)}{\cos(i-r)}$$

10. Prove that when the same rays are refracted the formula is :—

$$\cot \alpha' = \cot \alpha \cos(i-r).$$

11. Find the resultant motion for two rectilinear vibrations in planes at right angles and differing in phase, viz. :—

$$x = a \sin(vt - \alpha) \text{ and } y = b \sin(vt - \beta).$$

12. What are the different ways in which light is circularly polarized ?

13. In the interference of polarized light prove that the intensities of the two pencils obtained by a doubly refracting analyzer are expressed by the formulæ :—

$$\cos^2 \beta - \sin 2\alpha \sin 2(\alpha - \beta) \sum \sin^2 \pi \left( \frac{o-e}{\lambda} \right).$$

$$\sin^2 \beta + \sin 2\alpha \sin 2(\alpha - \beta) \sum \sin^2 \pi \left( \frac{o-e}{\lambda} \right).$$

14. Apply these formulæ to the different positions of the analyzer and depolarizer.

15. Find the general equation for the chromatic lemniscates in uniaxial and biaxial crystals, and point out the different varieties.

16. Explain the mechanical action of quartz upon a ray of polarized light.



17. State Ohm's law for the voltaic current, and apply it to the different arrangements of voltaic cells.

18. What is the statical theory of magnetism and Ampère's dynamical theory?

19. What are the peculiarities of the Holtz electrical machine?

20. Describe Ladd's magneto-electric machine.

### PHYSICS 6.

1. Deduce the first fundamental principle of the mechanical theory of heat as expressed by the equation

$$dQ = A (dU + pdv).$$

2. What is the second fundamental principle, and what form does the equation assume for a complete circular process?

3. Write the first and second principal equations, and explain the method of applying these equations to special cases, and the reason for adopting this method.

4. Write the general equations of the three lines of transformation, and show how these are applied to special cases.

5. What is the signification of the function  $T$ ? Give, with or without symbols, the steps of the reasoning by which its meaning is determined.

6. Prove that on the absolute scale there can be no temperature lower than  $-273^{\circ}$  C.

7. What are the forms of the functions  $X$  and  $Y$  for perfect gases?

8. Define external and internal latent heat and heat of vaporization, and give the equation expressing the relation between these three.

9. Prove that in any form of heat-engine, the maximum effect is obtained when the engine works according to a Carnot's cycle.

10. A uniform pressure is applied to every point upon the surface of a crystal, having three unequal axes of expansion: what are the relative quantities of heat developed or absorbed in the directions of the axes?

## VIII. CHEMISTRY.

### PRESCRIBED COURSE.

FRESHMAN YEAR. — PROF. COOKE.

Elementary Chemistry. (Twenty-four lectures).

*One hour a week, beginning Nov. 3.*

### ELECTIVES.

Chemistry 1. — ASST. PROF. JACKSON.

Descriptive Chemistry (with Laboratory Practice).

*Two hours a week. 3 Juniors, 50 Sophomores.*

**Chemistry 2.** — ASST. PROF. H. B. HILL.

Qualitative Analysis. — Chemical Philosophy.

*Three hours a week. 8 Seniors, 82 Juniors.*

**Chemistry 3.** — PROF. COOKE and MR. WADSWORTH.

Mineralogy, including use of the Blowpipe and Crystallography.

*Three hours a week. 2 Seniors.*

**Chemistry 4.** — PROF. COOKE and ASST. PROF. JACKSON.

Advanced Chemistry (including Quantitative Analysis).

*Three hours a week. 1 Graduate, 7 Seniors, 1 Junior.*

**Chemistry 5.** — ASST. PROF. H. B. HILL.

The Carbon Compounds (Theoretical and Experimental).

*Three hours a week. 1 Graduate, 6 Seniors.*

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**CHEMISTRY 1.**

1. Describe the preparation and properties of  $\text{CO}_2$ .
2. Describe the process of making soap, starting from  $\text{Na}_2\text{CO}_3$ .
3. How can  $\text{NH}_4$  be detected in its salts? Write the reaction.
4. Compare the properties of the chlorides of Mg, Ba, Sr, and Ca; of the hydrates, and of the sulphates of the same metals.
5. Describe one process for the preparation of each of the three substances used for white paint, and give the advantages and disadvantages of each substance.
6. Explain the use of mordants, and mention the most important ones.
7. Describe the smelting of iron ores for cast iron.
8. What is the most important use of  $\text{MnO}_2$ ? Write the reaction, and describe all the substances that appear in it.
9. Describe and give the formulas of the two forms of ferrous sulphate. What is the action of heat upon it? Describe the products. (The reaction is not required.)
10. Describe the process for extracting copper from copper pyrites.
11. Describe the collodion process of photography.
12. Describe the two processes by which mirrors are made.
13. Give the names and constituents of the alloys of tin in common use.
14. Why is arsenic green dangerous in paper hangings? How can the As in paper be detected? (Marsh's test.)
15. Give the symbols of chrome iron, galena, ferrocyanide of potassium, chloroform, sapphire, chloride of lime, chloride of calcium, calomel.
16. Why does  $\text{NH}_4\text{Cl}$  precipitate  $\text{Al}_2\text{O}_3\text{H}_3$  from a solution in  $\text{KOH}$ ?
17. Why acidify with  $\text{HC}_2\text{H}_3\text{O}_2$  before precipitating  $\text{ZnS}$  with  $\text{H}_2\text{S}$ ?
18. Why add  $\text{NH}_4\text{OH}$  before precipitating calcic oxalate from an acid solution?
19. Why dissolve the carbonates of group 2 in acetic acid instead of  $\text{HCl}$ ?

## CHEMISTRY 4.

1. Describe the complete quantitative analysis of felspar, of chalcopryrite, of dolomite, of pyromorphite (two methods), of potassic dichromate, of cupric sulphate. Write the reactions that occur in the above analyses whenever it is possible, and explain fully the reasons for each precaution.

2. Describe four methods for determining the amount of HCl in a solution of this acid.

3. Describe two volumetric methods for determining ferrous salts, and give the advantages in each method.

## IX. NATURAL HISTORY.

## ELECTIVES.

**Natural History 1. — MR. HAMLIN.**

Physical Geography and Structural Geology.

*Two hours a week. 2 Juniors, 18 Sophomores.*

**Natural History 2. — ASST. PROF. GOODALE.**

Elementary Botany (Gray's Structural and Systematic Botany.)

*Three hours a week. 6 Seniors, 18 Juniors, 4 Sophomores, 1 Freshman.*

Twelve lectures on Cryptogamic Botany were delivered in this course by ASST. PROF. FARLOW.

**Natural History 3. — DR. JAMES.**

Comparative Anatomy and Physiology of Vertebrates (Mivart's Anatomy; Küss's Physiology; Lectures and Laboratory Work).

*Three hours a week. 8 Seniors, 3 Juniors, 2 Sophomores.*

**Natural History 4. — PROF. MCCRADY.**

Zoölogy (Radiates and Articulates).

*Three hours a week.*

**Natural History 5. — PROF. SHALER.**

Geology (Lyell's Elements; Lectures, Laboratory Practice, and Field Work).

*Three hours a week. 22 Seniors, 16 Juniors, 4 Sophomores.*

**Natural History 6. — PROF. SHALER.**

Palæontology.

*Three hours a week. 5 Seniors, 1 Junior.*

**Natural History 7. — PROF. MCCRADY.**

Zoölogy (Mollusks and Vertebrates).

*Three hours a week. 1 Senior.*

**Natural History 8. — ASST. PROF. GOODALE.**

Advanced Botany (Lectures and Laboratory Practice).

*Three hours a week. 7 Seniors, 1 Junior.*

## NATURAL HISTORY 1.

*(Mid-Year Examination, February, 1876.)*

1. On what observed facts is the theory of the earth's internal fluidity based? Give Sir Wm. Thomson's view of the process of consolidation from the liquid state. How, accepting this, can the present existence of molten matter below the surface be accounted for?

2. Name the geological formations in their order, and indicate their distribution into the great groups. When are successive sets of strata said to be unconformable? Explain the formation of sedimentary strata. What agents have operated, and how, to change them from their primitive condition? Estimated total thickness?

3. Into what two groups may islands naturally be divided? State proof that Australia has been long separated from all other lands. How may lines be drawn to define the position and form of an ancient continent supposed to have existed south of Asia? On what evidence does the theory of such a continent rest? What is the age of Madagascar, Corsica, and Sardinia, as islands, compared with that of Great Britain? Proof?

4. What are the relative areas of the Pacific and Atlantic oceans? What difficulties hinder deep-sea soundings? Maximum depth of soundings between France and the United States? Greatest depth found in the Pacific? How far does the assumed resemblance between sea-bottoms and land-surfaces hold good? What kind of deposit is found upon the deep-sea bottom? What rocks have been produced from similar material?

5. Explain, with diagram, the formation of tides. What is the ratio of the heights of solar and lunar tides. When are spring-tides highest?

6. State the two current opinions as to the origin of the oceanic circulation. How are the terms *drift* and *stream* applied? State the origin and course of the equatorial drift, and of the Gulf Stream. Dimensions and velocity of the Gulf Stream at the Straits of Florida? Two views respecting Gulf Stream beyond lat. 45°? What parallel does the summer isotherm of 60° reach in the North Atlantic, what in the South Atlantic? What current in the eastern hemisphere is the counterpart of the Gulf Stream? What are their relative velocities, and what is the cause of difference?

7. What is the average slope of river beds? What is Lyell's estimate of the amount of sediment discharged daily by the Ganges? What general tendency in respect to water-falls has been noted? State the exceptional case of Niagara, and its history as a fall. What and where are the most remote sources of the Nile? What is the distance from its mouth to the first tributary? When do the Nile floods begin, and how long do they last?

8. Assuming the theory studied to be true, what are the grandest examples of lakes formed by obstructions? State the supposed change of outlet of those lakes. What regions especially abound in lakes. How does Ramsay account for the origin of many lakes? What evidence is adduced in support of his opinion, and what example does he cite? What objections may be drawn from facts relating to the great lakes of North America? What is the history of a lake basin after its formation?

9. What parallel of latitude is the southern limit of snow-fall in Europe? To what latitude does the limit of snow-fall recede in the North Atlantic, and to what latitude does it descend on the continent of North America? In what latitudes (N. and S.) does snow become perpetual at the ordinary level? At what height is the *snow-line* in equatorial South America? What differences in height of snow-line occur on the N. and S. sides of the Himalayas, and on the E. and W. sides of the Andes? State reasons for the variation.

10. What is meant by the *plasticity* of ice? What is Sir Wm. Thomson's theory of the motion of glaciers down their valleys? What is *névé*? Explain briefly the genesis of a glacier. How long does the *push* from the feeding-grounds continue? To what is the subsequent motion of the glacier attributed? Explain the formation of crevasses, and in what direction do they run? Length of Alpine glaciers at present and former periods?

11. When will the extremity of a glacier become stationary, — when advance, — when recede? Advance or retrocession how estimated? Explain formation of lateral, medial, and terminal moraines. What is the *moraine profonde*? What evidences of glacial action occur in New England and Scotland? In what latitude (north) do glaciers descend to the coast-line? How are icebergs formed? To what most probable cause may the rigorous climate of the glacial epochs be assigned? What astronomical conditions would result in maximum and minimum of solar heat to the earth?

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### NATURAL HISTORY 3.

1. Structure of the spinal cord. Mode of attachment of nerves to it. Properties of nerve-roots, with experimental proof.

2. Describe what you know of the development of the ovum and foetus.

3. Give an account of the cell-theory, with examples of the way in which different tissues are constituted by cells.

4. Give some instances of the physiological importance of the vital properties of the epithelium according to Küss.

5. Draw up a table of the transformations of matter and energy in their circulation through the three kingdoms.

6. Give as complete an account as you can of the blood.

7. What changes in the circulatory organs will make the blood circulate faster, and why?

8. How fast is the average flow of blood in the arteries? In the capillaries? What is the pulse-wave?

9. Diagram of the circulatory apparatus.

10. What is the shortest path by which a blood-globule passing out of the heart-cavities may return into them?

11. Give a full account of alimentation.

12. What are briefly the principal effects of alcohol?

13. Diagram of alimentary canal.

14. Full account of the function of digestion so far as you have studied it.

15. What is meant by the glycogenic function of the liver?

## X. MUSIC.

## ELECTIVES.

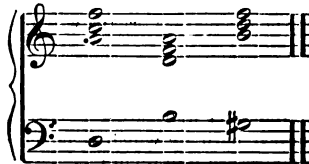
**Music 1. — PROF. PAINE.****Harmony.***Two hours a week. 1 Senior, 7 Sophomores, 1 Freshman.***Music 2. — PROF. PAINE.****Counterpoint.***Three hours a week. 1 Senior, 3 Juniors.***Music 3. — PROF. PAINE.****Canon. — Free Thematic Music.***Three hours a week. 1 Graduate, 1 Senior.***Music 4. — PROF. PAINE.****Fugue.***Three hours a week. 1 Graduate, 1 Senior.***Music 5. — PROF. PAINE.****History of Music.***Three hours a week. 1 Graduate, 4 Seniors, 7 Juniors, 1 Sophomore.*

## MUSIC 1.

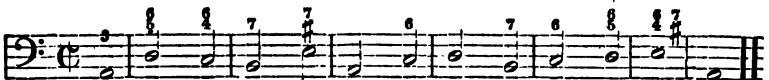
## HARMONY.

1. Resolve the dominant seventh chord of F, through an upward progression of the seventh: 1st, by sustaining the fundamental tone, 2d, by chromatic alteration and modulation.

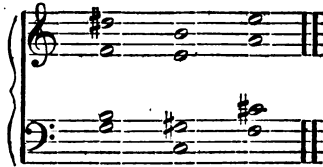
2. Resolve each of the following chords in three different ways:—



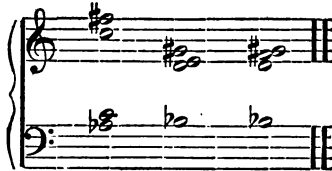
3. Write out the four-part harmony of the following figured bass:—



4. Name and resolve the following chords : —

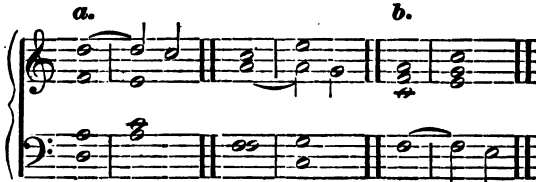


5. Name and resolve the following chords, as well as the name of the original chord from which each is derived : —

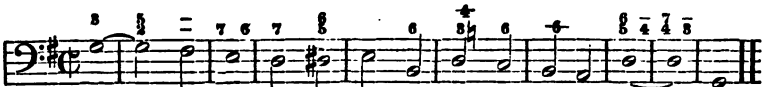


6. State the rules that govern suspension.

7. Correct the following examples of suspension, and give the rules : —



8. Write the four-part harmony to the following figured bass : —



9. Define passing-notes and appoggiaturas, giving an example of each.

10. State the rules to be observed in the treatment of passing-notes and appoggiaturas.

11. What intervals are used when the appoggiatura is *below* the harmonic note, and when *above* the harmonic note ?

12. What are the peculiarities of the following passages : —



13. What is modulation? State the principal means employed in modulation.

14. What constitutes a good harmonic leading of the bass in harmonizing a melody?

15. What intervals are available and what are to be avoided in the melodic progression of the parts?

16. State the restrictions that govern the proper use of the chord of the sixth and fourth; give examples.

17. When are concealed fifths and octaves allowable, and when not?

18. Harmonize in four parts the following choral:—

### MUSIC 3.

#### CANON.

1. Define the two general classes of canons.

2. In the so-called infinite canon in two voices, how may an inversion of the voices be affected in the repetition? Show this by a short example on the following theme:—

3. Compose a two-part canon in the fifth with two free voices, in the tenor and bass, to the following subject:—

4. Explain the difference between strict canon in three and four voices and the canon with a *round* of voices.

5. In a three or four voiced round for mixed voices, what rules must be followed?



## FREE THEMATIC MUSIC.

6. Give an account of the sonata form in its parts and subdivisions, showing the order of modulation. Analyze the first movement of Beethoven's Sonata, Op. 7.

7. State the various forms employed in the slow movement of the sonata and symphony.

8. Analyze the form of the slow movement of Beethoven's Op. 13.

9. Define the scherzo form. Analyze the scherzo of Beethoven's Fourth Symphony.

10. Describe the several forms of rondo. Analyze the finale of Beethoven's Op. 27 in C sharp minor.

## MUSIC 4.

## FUGUE.

1. Give the reasons why the subject of a fugue should be: (a) generally a short, comprehensive, and complete musical thought; (b) precise and characteristic; (c) melodious (*gesangmässig*), and adapted to contrapuntal treatment.

2. State the conditions of the key and compass of the subject.

3. In the fugue, why is the fifth chosen by preference as the interval of imitation, and in what peculiar relation do the subject and answer stand to each other?

4. How may fugal subjects, in relation to their answers, be divided into two classes?

5. Give and explain the answers to the following subjects: —

The image shows two staves of musical notation. The first staff contains three subjects labeled 'a.', 'b.', and 'c.'. Subject 'a.' is in C major, 2/4 time, starting on G4. Subject 'b.' is in C major, 2/4 time, starting on G4. Subject 'c.' is in C major, 2/4 time, starting on G4. The second staff contains one subject labeled 'a.', which is in C major, 2/4 time, starting on G4.

6. Define the stretto. What object does it serve?

7. Show how the following subject may be employed in stretto: —

The image shows a single staff of musical notation for a fugue subject in C major, 2/4 time, starting on G4. The subject is followed by the text "Answer comes."

8. Give the order of the various entrances of the voices in the four-part fugue. 1, Subject. 1, Answer. 2, Subject. 2, Answer.

9. Sketch out a complete four-part fugue on the preceding subject, in order to exhibit the general divisions in the forms and order of modulation that occur in the course of the fugue, the order of the entrance and recurrence of the voices, the digressions, the stretto organ-point, and other materials of the fugue.

## XI. THE FINE ARTS.

### ELECTIVES.

#### Fine Arts 1. — MR. MOORE.

*Principles of Design in Painting, Sculpture, and Architecture.* — Examples in Illumination, Landscape and Figure Painting; and in Pottery, Carving, &c.

*Three hours a week. 4 Seniors, 9 Juniors, 6 Sophomores.*

#### Fine Arts 2. — PROF. NORTON.

*The History of the Fine Arts of Construction and Design, and their Relations to Literature.* — Definitions. — Oriental and Egyptian Art. — Greek Art. — Roman Art. — Mediæval Art. — The Art of the Renaissance in Italy.

*Three hours a week. 59 Seniors, 27 Juniors, 4 Sophomores.*

#### Fine Arts 3. — PROF. NORTON.

*The Rise and Fall of the Arts in Athens and in Venice.* — Schnaase, *Geschichte der bildenden Künste.* — Beulé, *Histoire de l'Art Grec avant Périclès.* — Michaelis, *Der Parthenon.* — Burckhardt, *Die Cultur der Renaissance in Italien.* — Mothes, *Geschichte der Baukunst und Bildhauerei Venedigs.* — Ruskin, *Stones of Venice.*

*Three hours a week. 4 Seniors, 3 Juniors.*

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### FINE ARTS 8.

1. Compare Athens and Venice in the conditions favorable to the development of the fine arts.

2. Note the circumstances which gave to Venice a unique character among the states of modern Europe, — origin, geographical position, legend, relations to other states, etc.

3. Sources of Venetian art. The influence of the Greek Empire and the East; of the tradition of Rome; of the races of Northern Europe.

The Ducal Palace as "the central building of the world."

4. The distinctive characteristics, and approximate duration of the successive styles of Venetian architecture, — Byzantine, Gothic, Renaissance.

5. The spirit of political and ecclesiastical independence, and the community of sentiment at Venice, in their effect upon her art. Account for the absence of literary eminence. Contrast and compare with Florence.

6. Give some account of the Byzantine school of painting in Venice; of the influence of Gentile da Fabriano, of Antonello da Messina, of Squarcione and Mantegna.
7. The common characteristics of the painting of Giorgione, Titian, Paolo Veronese, and Tintoretto.
8. The last relations of Venice and Athens.
9. The correspondence of the artistic and the political history of Venice, and the inferences to be drawn from it.

## THE DIVINITY SCHOOL.

### EXAMINATIONS OF THE JUNIOR AND MIDDLE CLASSES.

HEBREW. — PROF. YOUNG.

#### *Junior Class.*

1. Write the Hebrew verbs signifying to create, to make, to form; to say, to speak, to call, to command; to go, to come, to go forth, to go up, to go down.

2. What is the meaning of פָּתַח־מִן, סְחַח־מִן, פָּרַשׁה, יִהְיֶה־פָּתַח, סָרַר, מִפְּתֵר?

3. Give the origin and use of the terms Ashkenazim and Sephardim. Is there any mention of these in the Hebrew Bible, and what are the characteristics of each?

4. Explain "Rambam," "Raddak," "Rashi."

5. What are the vowel letters, and why were they so called?

6. Give the peculiarities and significations of the several conjugations.

7. The force of הַ appended to nouns and verbs?

8. Explain the difference between נִפְתַּח־הַיָּם and בְּהִמָּה, נִפְתַּח־הַיָּם in Genesis i. 24. What is the exact meaning of רָקִיעַ in v. 20?

9. Translate literally Gen. ii. 3-5.

10. How are the "days" in the account of the creation to be understood? How is it to be explained that light is represented as having been created before the sun?

11. How was the name "Jehovah" originally pronounced? What was afterwards substituted for it, and why? What is its proper meaning?

12. Give the titles of the books of the Pentateuch according to the Hebrew and the Septuagint.

13. How is the second document in Genesis distinguished from the first, and what is its general character and relation to the other?

14. Parse the following words: יָרַד I. 6, יָרַע I. 7, יָרַח, יָרַח I. 9, יָרַח I. 17, לְמַשַׁל I. 18, תּוֹצֵא I. 24, אָתָם I. 27, יָרַח I. 28, יָרַח II. 4, יָרַח II. 7, יָרַח II. 8, יָרַח II. 17.

THE PSALMS. — PROF. YOUNG.

#### *Junior Class.*

1. Write the Hebrew for the following Greek words: ἀλληλουῖα, ὁσαννά, πρόσωπον, ἄγιος, χάρις, τὰ ἔθνη, Χριστός, Ἰησοῦς, ἀμήν, πνεῦμα, ψυχὴ, βακί, τί ἐμοὶ καὶ σοί.

2. State what is meant by the "Gittith;" and by the "Songs of Degrees." Give the different explanations.

3. What evidence is there for thinking that Psalms XLII. and XLIII. were originally one Psalm? Translate literally Ps. XLII. 6 (5), and comment upon the reading of the Masoretic text.

4. Give the true rendering of Ps. XLV. 7 (6), with the grammatical and other reasons for it.

5. Translate Ps. L. 23. What change is necessary to justify our English version? Parse  $\text{שָׁמַע}$ .

6. Show the progress of the thought in Ps. LXXXIV. Explain v. 6.

7. The authorship of Psalm XCIII.? Parse the verbs in v. 2.

8. The subject of Psalm CXIV.? What is especially to be noticed in regard to it?

9. Discuss the inscription of Psalm CXXVII. How do you construe  $\text{בָּן}$  in v. 1 and  $\text{שָׁמַע}$  in v. 2? Explain v. 2 and the last clause of v. 5.

10. What is the signification of the article in  $\text{הַסֵּלִיחָה}$  and  $\text{הַתְּסִיחָה}$  in Ps. CXXX. 4, 7?

11. Re-translate into Hebrew, with the points, these sentences:

Hear, O Israel, the Eternal our God, the Eternal is one.

The word of our God shall stand for ever.

Open thou mine eyes, that I may behold wondrous things out of thy law.

The fool hath said in his heart, There is no God.

My help cometh from the Eternal, who made heaven and earth.

The Eternal shall be king over all the earth; in that day shall the Eternal be one, and his name one.

## THE MINOR PROPHETS.—PROF. YOUNG.

### Middle Class.

1. What is characteristic of the prophetic style? How is the peculiar pointing of  $\text{יְהוָה אֱלֹהֵינוּ}$  to be accounted for?

2. Translate Hosea II. 15-18, (11-16). Explain "Baalim" v. 15 (13), "the wilderness" v. 16 (14), and "the valley of Achor" v. 17 (15). Give the meaning of v. 18 (16).

3. What signifies the "basket of summer-fruit" in Amos VIII. 1, 2, and on what Hebrew words does the force of the comparison depend?

4. What was the "sin of Samaria," and where was it practised? How do you understand "the sun going down at noon," and the "famine of hearing the words of the Eternal," VIII. 9, 11?

5. To what does Amos IX. 1, 2 refer? Parse all the verbs in v. 1.

6. How is the second chapter of Jonah to be regarded, and why? Render literally vv. 6, 7 (5, 6) and explain v. 9 (8).

7. Give an exact translation of Micah VI. 6-8.

8. The origin and signification of "Malachi," its interpretation by the Seventy, and the view of Ewald in regard to it?

9. Translate Malachi III. 1. Illustrate III. 19, 20 (IV. 1, 2).

10. Point the following, inserting also the chief accents:

הוֹשִׁיב לֵב אֲבוֹת עַל בְּנֵי וְלֵב בְּנֵי עַל אֲבוֹתָם כִּן אֲבוֹא וְהִכִּיתִי אֹתָם  
הָאָרֶץ תִּרְמָס׃

## TEXTUAL CRITICISM. — PROF. ABBOT.

*Junior Class.*

1. Materials and instruments of writing used for manuscripts of the New Testament.
2. Form of ancient books. Rubrication. Illumination.
3. Mode of rapidly multiplying copies.
4. Uncial and cursive manuscripts. Style of writing in the fourth and fifth centuries compared with that of the ninth and tenth.
5. Abbreviations. Letters easily confounded.
6. Ancient and modern divisions of the text.
7. Describe MSS.  $\aleph$  A B C D Z  $\Delta$  of the Gospels; E of the Acts; D of the Pauline Epistles; and P of the Acts, Epistles, and Revelation.
8. Mention the most important palimpsests among our New Testament manuscripts.
9. Value of the ancient versions in textual criticism; cautions.
10. Name the principal ancient versions in chronological order.
11. History of the Latin Vulgate.
12. Account of the Curetonian Syriac and the Peshito. What is the special characteristic of the Harclean Syriac?
13. Value of quotations by early Christian writers; cautions.
14. Give a chronological account of the Greek Fathers whose quotations are most important in textual criticism.
15. Give a similar account of the chief Latin Fathers.
16. Classify and describe the principal causes of error in transcription.
17. State the chief maxims of textual criticism and the general principle that underlies them.
18. Give an account of the various readings in Matt. vi. 13; John v. 3, 4; vii. 52 — viii. 11; Acts xx. 28; 1 Tim. iii. 16; 1 John v. 7, 8, and state the considerations in each case which seem decisive of the question.
19. Give an account of the early editions of the Greek Testament on which the so-called "Received Text" was founded.
20. Give a particular account of the labors of Dr. Tregelles in the department of textual criticism.
21. Give a similar account of the life and critical labors of Tischendorf.
22. Matt. ii. 18, Elzevir edition: *θρῆνος καὶ κλαυθμὸς καὶ ὄδυρος πολλός*. Tischendorf gives the authorities for omitting *θρῆνος καὶ* as follows:  $\aleph$  B Z 1, 22, it vg pp<sup>lat</sup> sah cop syr<sup>sch</sup> syr<sup>hr</sup> Just<sup>tr</sup> 77. Explain these abbreviations, and remark upon the date and value of the several witnesses for the omission. How is the addition of the words *θρῆνος καὶ* to the original text to be explained?

## GOSPEL OF MATTHEW. (UNFINISHED.) — PROF. ABBOT.

*Junior Class.*

1. Origin of the word "Bible." Common error. History of the use of  $\rho\alpha\beta\iota\beta\alpha\iota\alpha$  and the Latin *Biblia*. Jewish divisions of the Old Testament.

Designations of the Old Testament, and its chief divisions, in the New. Origin of the terms Old Testament and New Testament.

2. The word *εὐαγγέλιον*; difference of use in the earlier and the later Greek. Meaning of the title *εὐαγγέλιον κατὰ Ματθαῖον*. Use of *τὸ εὐαγγέλιον* in the writings of the Christian Fathers.

3. Give a brief analysis of the Gospel of Matthew.

4. Ch. i. 1. Probable meaning and application of *βίβλος γενέσεως*. Other explanations.

5. Translate i. 18–21. Etymology and uses of the names *Ἰησοῦς* and *Χριστός*. Meaning of *ἐκ πνεύματος ἁγίου*. Etymology and principal uses of *πνεῦμα*. Use of the phrases “the Holy Spirit” and “the Spirit of God” in the Old and New Testaments. Ver. 19, use of *μή*. Distinction between *θέλω* and *βούλομαι*. Use of *αὐτός* ver. 21.

6. Translate iii. 1–3. What have we to fix the time when John the Baptist began his ministry? In what year may we probably place it? What was “the wilderness of Judæa”? Full meaning of *μετανοείτε*, ver. 2. Use of the phrase *ἡ βασιλεία τῶν οὐρανῶν*. Ver. 8, distinction between *διδά* and *ὄψό*. To what does this passage of Isaiah refer in its original connection?

7. Ch. iii. 9–12. What Jewish notion is here referred to? Give illustrations of it. Use of the presents *ἐκκόπτεται*, *βάλλεται*. What custom is referred to in ver. 11? Meaning of the last clause of the verse. What was *τὸ πτύον*, ver. 12? Remark on *πυρὶ ἀσβέστω*.

8. Ch. iv. 18. What kind of a net was the *ἀμφίβληστρον*? What other words in the New Testament are translated “net,” and how do they differ?

9. Give an analysis of the Sermon on the Mount. To what view of its structure are we led by comparing the parallel passages in Mark and Luke?

10. Explain Matt. v. 4.

11. Explain v. 17.

12. Remark on the etymology and meaning of *ἐπιούσιος*, vi. 11.

13. Translate vi. 25, and explain the logical connection of the last part of the verse with the preceding.

14. Translate viii. 11, 12, remarking on *ἀνακλιθήσονται, οἱ υἱοὶ τῆς βασιλείας*, and *τὸ σκότος τὸ ἐξώτερον*. Who are meant by the *πολλοί*?

15. Translate ix. 14, 15. What idiom have we in ver. 14? Give other examples of it. How many times a week and on what days did the Pharisees fast? Explain *οἱ υἱοὶ τοῦ νυμφῶνος*.

16. Give an account of Herod the Great and of the principal members of the Herodian family mentioned in the New Testament, specifying the more important dates in their history.

17. Explain xvi. 18–20.

18. Translate xvi. 21–23. What is meant here by “the elders, chief priests, and scribes”? Use of *ἴλεως σοι*. Why is Peter called *Σατανᾶς* and *σκάνδαλον*?

19. Explain xvi. 28.

20. Ch. xvii. 24, 25. What is meant by *τὰ δίδραχμα*? Value of the didrachm, mina, and talent. Distinction between *τέλος* and *πῆγσοσ*.

PORTIONS OF THE GOSPEL OF MATTHEW AND OF THE  
GOSPEL OF JOHN. (UNFINISHED COURSE.)—PROF. ABBOT.

*Middle Class.*

1. Matt. xx. 1-16. Explain the object of this parable, and its connection with what precedes. How can the last be first and the first last if all receive the same wages? Ver. 12, use of *παρῆν* with *ἔραν*. 16, *ὁ ὀφθαλμὸς πονηρὸς*.

2. Ch. xx. 29-34. What discrepancies appear on comparing this narrative with the parallel passages in Mark and Luke, and what view is to be taken of them?

3. Ch. xxi. On what day of the week did the entry into Jerusalem take place? What part of the chapter (probably) describes the events of Monday? What part of the Gospel is covered by the events of Tuesday? What additional narrative in Mark and Luke belongs to that day? What in John, probably?

4. Ch. xxi. 9. From what Psalm are the expressions in this verse borrowed, and what can you say of the use of this Psalm and of this verse in particular at the great Jewish festivals? What Psalms compose the *Hallel*, and why were they so called? Meaning of the word *Hosanna*; various uses of it among the Jews; and probable meaning of *ὡσαννὰ ἐν τοῖς ὑψίστοις*?

5. Ch. xxi. 12-17. What question arises respecting this incident, and what view seems most probable?

6. Distinction between *τὸ ἱερόν* and *ὁ ναός*.

7. Ch. xxii. 1-14. Object of the parable. What is referred to in ver. 7? In ver. 9? What is represented by "the wedding-garment"?

8. Ch. xxii. 15-22. How did the Pharisees expect to embarrass Jesus by the question about the tribute-money?

9. Translate xxiii. 1-8. Meaning of vv. 2, 3. What are "the heavy burdens," ver. 4? Give an account of the *φυλακτήρια* and *κράσπεδα*, ver. 5, and explain *πρωτοκλισίαν* in ver. 6. What was the difference between Greek, Roman, and Persian usage as to the place of honor at table? Where were "the chief seats" in the Jewish synagogue? Distinction between Rab, Rabbi, and Rabban or Rabbuni.

10. What view is to be taken of Matt. xxv. 31-46?

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1. Give a sketch of the modern controversy respecting the genuineness of the Fourth Gospel.

2. Give a view of the external evidences of its genuineness.

3. Describe the main features which distinguish it from the Synoptic Gospels.

4. The chief peculiarities of its style and diction.

5. Give an account of those representations of the word and the wisdom of God in the Old Testament and Apocrypha, which may illustrate the use of *λόγος* in the Proem of this Gospel.

6. Give an account of Philo's doctrine of the Logos. What is to be said, generally, of the conception of *personality* in ancient philosophy?



7. Use of the expression "Word of Jehovah" in the Targums.
8. John's use of the term *Logos*.
9. Explain John i. 4, 5.
10. Translate and explain i. 15.
11. Translate and explain iii. 3-5.
12. Explain iii. 12, 13.
13. Give an account of the Feast of Tabernacles.
14. What is to be said of the passage about the woman taken in adultery, vii. 53 — viii. 11?
15. Explain viii. 25, remarking on the different constructions of the passage.
16. What objection to Hilgenfeld's interpretation of viii. 44? How did some of the Fathers try to get over the difficulty? To what does *αὐτοῦ* at the end of the verse refer?
17. Explain viii. 58.

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ETHICS. — PROF. STEARNS.

*Junior Class.*

1. What are the different tests of specific natural desires given by different authors, and what the difficulty of enumeration?
2. What is the explanation of asceticism, and what its reputation?
3. Mention points of distinction between desires and affections.
4. What are the laws governing the affections and controlling their discipline and preservation?
5. Explain the three modes of volition, according to Jouffroy.
6. Mark a proper distinction between self-love and self-interest. And show whether self-interest in the highest form may be a sufficient exclusive or principal motive of action.
7. What is the account to be given of the diversities of human judgment in regard to the morality of actions. Consider Bain.
8. What is the objection to Bain's derivation of the distinctive Moral Feeling from Government and Punishment?
9. How was Socrates led to his strong assertion of the principle of acting according to reason?
10. What was the peculiar Socratic method of teaching?
11. What was the defect of the moral teaching of Aristotle?
12. Give the essence, the consequences, and the main criticism of the system of Hobbes.
13. How meet the objection of Bentham that the moral principle is anarchic or despotic?
14. What are the two classes of systems which base morality on a disinterested principle, and how named?
15. How does Adam Smith explain one's approbation or disapprobation of another's sentiments and of one's own?
16. What are the principal objections to his Theory of Moral Sentiments?

17. What characterizes the systems of the moral sense in Shaftsbury, Butler, and Hume; and what is the fundamental difference between these instinctive philosophers and Smith?

18. What is the peculiarity of the Rational Systems of Ethics, and how does that of Price differ from others? Name authors of other systems.

19. How does he suppose the idea of good to be obtained, how does he define a moral action, and how does he suppose the different classes of virtues to be formed by the mind?

20. What are the consequences derivable from the doctrine of Price, that good is a quality of action only, a simple indefinable quality immediately discerned? Explain the different meanings of *good*, and show how Price confounds absolute good and moral good.

21. How has Price been led to introduce into his system, in a definition, a principle which contradicts it?

22. Present Mill's doctrine of Utilitarianism. Is the doctrine that happiness is the sole end of life true as a theory of life and as a theory of morals? What is indicated by his introducing "a sense of Dignity" into his exposition, what the validity of his explanation of that "love of virtue for its own sake" which he regards as essential to a perfect life? What important truth is contained in his view?

23. What are the three truths presented by the moral reason in its intuitive function? What is meant by Conscience, and by its being educable? What are the two principal signs of criteria of right actions? What is the full statement of the standard of right actions, and how is each of the two criteria necessary to supplement the other?

#### *Middle Class.*

[A part of these questions refer to expositions of Rothe's Theological Ethics.]

1. What is the motive, method, and order of the Divine creating? and what is meant by saying it is not an absolute act?

2. What is the relation of human Personality to the natural and to the supernatural? and what task is imposed upon the new kind of created being which appears in man?

3. What is the definition of the moral?

4. What is the essence of the moral process in the unfolding of man, and how is man contemplated in regard to it?

5. In what Rule is expressed the moral demand made on man?

6. What is the Moral Good of man?

7. What is the Moral Process as Ethical, and how is the Ethical related to the Moral?

8. Give the Idea of Ethical Good in its Totality and in its Division.

9. Explain the relation of the Ethical Process to the growth of spirit.

10. Explain the Moral Process as religious, and what is Religious Good?

11. Explain Individuality and its Defect.

12. Explain Temperament, and how it occasions defects.

13. State the ground of the possibility of realizing the essential human Being.

14. What is the moral Subject, on whom the moral task of humanity rests, and what is the demand on Individuals preliminary to it ?

15. Explain how Individuality, which is a natural limitation, is a Perfection relatively to Fellowship.

16. What is meant by a common Personality and a common Spirit, and by an increase of *Moral Capital* ?

17. Why is the moral problem of the individual or the collective man insoluble without love ?

18. How may be effected that correction of the individual which is a further preliminary to the solution of the moral problem, and where is found the standard presupposed in this correction ?

19. Explain what is meant by Culture and its relation to Love.

20. Explain the two-fold function of the Personality, Knowing (or exerting the intelligence) and Forming (or exerting the power of will), by which the moral aim is realized in ethical action.

21. Give the Individual Ethical Knowing in its principal and in its concomitant functions with their products; and explain the "concomitant function."

22. Explain the universal ethical Knowing in its principal and concomitant functions, with their products.

23. Explain similarly the Individual and Universal Forming.

24. What is the idea of social organization, and what a calling ?

25. State what natural provisions are made to render fellowship possible in both Individual and Universal Knowing and Forming.

26. What are the four circles of moral fellowship to which the four forms of ethical action separately belong; and what two more fundamental and comprehensive spheres are to be added to these; and what, according to Rothe, is the relation of the state to them all ?

27. What is the Moral Ideal of Marriage ?

28. What is its importance as a civil contract ?

29. Why assert it to be a union for the mutual life of the parties ?

30. Give the indications of the law of Monogamy.

31. State the doctrine of Jesus Christ respecting Marriage and Divorce.

32. Is any thing added by Paul, 1 Cor. vii. 11, &c. ?

33. Give the two reasons why Imperfection and Sin should not too hastily be permitted to sunder human relations.

34. What are the objections to facility of divorce, *a priori*, and from experience ?

35. What is the notion of the just ? its whole extent ? its relation to positive law ?

36. What is the idea of the State ? and what the probable course of its evolution ?

37. In what sense has government divine authority, and how is this authority recognized in the New Testament ?

38. What are the objections to the doctrine that the State is a voluntary association merely; and where is the place for the human Will in determining it ?

## FUNDAMENTAL THEOLOGY.—PROF. STEARNS.

*Junior Class.*

1. What is meant by primary beliefs ?
2. What are the tests of such a belief ? and what is the difference between the first three and the last two tests ?
3. Explain the primary belief of cause.
4. What are the forms in which the cosmological argument is given ?
5. What distinction does Baden Powell make between physical and moral causes ? How can the distinction be illustrated by taking the Alphabet to represent a series of antecedents and consequents ?
6. What is the logical validity of the cosmological argument ?
7. What is the argument from design ? What are the two forms of it ? What is the principle on which it rests ? and is that principle inductive or intuitive ?
8. What is the reply to Wallace's explanation of the appearance of design ?
9. What is the distinction between an illustrative analogy and the illative force of the argument from design, and how may Paley be criticised in the light of this distinction ?
10. What are the deficiencies of the argument from design, and what its worth ?
11. What is the nature of the anthropological and moral argument ? and what are the three items of it ?
12. What is the nature of the *a priori* argument in theology ? What is its syllogistic form ? Whence do we derive its premises ? and what is the criticism of it ?
13. What was adverted to as the source of atheism ?
14. What is the theoretical basis of the conviction of Divine existence ?
15. What parts of it are found in the Scriptures, and where ?
16. What is the theoretical basis of the conviction of Divine personality ? and how is the idea of Divine personality to be held, explained, and guarded against error ?
17. What is the distinction between the fundamental predicates and attributes of the Deity ?
18. What are the principal points in the *a posteriori* evidence of the perfect goodness of God ?
19. What is meant in relation to this question by the argument of approximation ? and how is the proof attempted to be completed by considerations *a priori* ?
20. What is the general definition of Pantheism ? What the present influence of Spinoza's system ? And what are the principal parts of Spinoza's doctrine ?
21. Does he allow any standard of the perfect life ?
22. What is his account of immortality ?
23. What is the criticism of his method ?
24. Where does he get his notion of substance ?

25. How does his view of the human soul contradict human convictions ?
26. How has he laid himself open to the charge of materialism ?
27. Into what absurdities is he led by his statement in regard to the attribute of thought in God ?
28. What two classes of solutions of the problem of the origin of things ? And to which will Spinoza's doctrine logically belong ? And how must it be supplemented ?
29. What is Materialism ? and the facts with which it is incompatible ?
30. To what preceding philosophers is the system of Taine intimately related ?
31. What is his explanation of duty, order, and obligation, so far as he gives one ?
32. What does he teach about substance and cause ? And what becomes of human freedom and divine freedom in his system ?
33. How does he explain the usual conception of God ?

*Middle Class.*

1. What are the different ways of conceiving the Divine Providence in relation to the material world ?
2. What is meant by calling this Providence universal, particular, and moral ?
3. How is Providence to be conceived in relation to the human mind ; and how is answer to human prayer reconcilable with the divine immutability ?
4. What was the particular aim of Butler in his Chapter on a Future Life ?
5. What is the difference between the materialist and the spiritualist doctrines in their bearing on future existence ?
6. State the argument for immortality from the nature of man.
7. Show how the argument is strengthened by the admission of the Christian idea of God.
8. What is meant by Revelation, and by its being Universal, Special, and Historical ?
9. What is the relation of Religion to Revelation ?
10. What are the conditions of fitness to be a bearer of Historical Revelation ?
11. What extremes of opinion have arisen from neglecting the distinction between the divine revealing act and the human apprehension of revelation ?
12. Explain how Inspiration may become a guaranty for the adequacy of the transmitted knowledge of the revelation.
13. What is the chief Test of the inspiration of a writing ?
14. What is the Central object of Holy Scripture, and what the order in relative value of different portions ?
15. What is the need and value of miracle in connection with Historical Revelation ?
16. How may we meet the objections to miracle from the idea of Law, and from the uncertainty of human testimony ?

17. What is the general statement of the question in regard to the evidences of Christianity ?

18. What is the argument for the genuineness of the Gospels from the agreement of manuscripts ?

19. What is that from the testimony of the later Fathers ?

20. What is that drawn from the judgment of the early church concerning the genuineness of other books of the New Testament ?

21. What is that from a comparison of the third Gospel with the Acts of the Apostles, and of the Acts with Paul's Epistles ?

22. What is the weakness of the argument from the supposed references of the early Fathers ?

23. How did Justin Martyr describe the writings he used ?

24. Mention some places cited by him from each Gospel which are peculiar to each.

25. Remark upon the statement in "Supernatural Religion," that "the inference from the two facts, (1) that the evangelic references are anonymous in Justin, and (2) that they do not verbally agree with our Gospels, can not only be that he attached small importance to the Memoirs, but also that he was ignorant of the authors' names, and that his Gospel had no more definite superscription."

26. How is the affirmation that Eusebius's silence as to the use made by an early Father of a particular book of the New Testament is a proof that the Father was unacquainted with it, shown to be groundless ?

27. What is the general argument to show that the Gnostic leaders, as well as their followers, must have supported their doctrine in part from our Gospels, and what is the error of some recent writers on this point ?

28. What is meant by internal evidence of the genuineness and authenticity of the Gospels ? What are the principles of evidence ? and some applications of them ? and what is the strongest argument in refutation of the Mythological Theory ?

29. What is meant by the experimental evidence of the Divine Origin of Christianity, and what its force ?

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## SCIENCE OF THOUGHT.—PROF. EVERETT.

### *Junior Class.*

1. The logic of *a priori* theology ?
2. Fallacies to which the fundamental relation of the ideas of the reason to one another may lead ?
3. Two difficulties underlying Philosophy ?
4. Three things to be kept in mind in studying Greek philosophy ?
5. Relation of philosophy of Plato to ideas of the reason ?
6. Illustrate static, dynamic, and organic analogy by reference to the question whether other worlds are inhabited.
7. State formula for causation furnished by science with real or apparent exceptions.
8. State the metaphysical difficulty in regard to causation, and its relation to first idea of the reason.

9. To what alone does causation apply? Why is not the question, Who made God, pertinent?
10. What of arguments in regard to the reliability of thought?
11. What of the theory which makes goodness dependent on the Divine will? on education? on utility? on intuition?

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PHILOSOPHY OF RELIGION. — PROF. EVERETT.

*Middle Class.*

1. Three stages in the development towards complete consciousness, with illustrations.
2. The theory that the desire of happiness furnishes the only motive-power in life.
3. Examples of the love of beauty in the lower animals.
4. How should we regard any indication of the beginnings of the ideas of the reason in the lower animals?
5. Meaning of the word *Faith* (*a*) as compared with knowledge, and (*b*) as compared with belief in general?
6. Relation of faith to science?
7. Two sources of religion?
8. Nature of systems of philosophy in which the understanding predominates?
9. The position of Hume in the history of philosophy?
10. Compare Positivist method of indicating the absence of a controlling will in the universe with Positivist theory of will.
11. Considerations adduced to modify Comte's statement of the comparatively slight influence of Monotheism?
12. Two assumptions underlying Spencer's philosophy?
13. The nature and real unity of religion, with criticisms of Spencer's view.
14. Spinoza's denial of intellect to God; with its basis, and qualifications demanded by other parts of his system?
15. Schopenhauer's theory of happiness, with criticism?
16. Basis of Schopenhauer's pessimism in his system.
17. Compare Von Hartmann's view of the world with that of Schopenhauer.

# THE LAW SCHOOL.

## EXAMINATIONS OF THE FIRST YEAR.\*

### REAL PROPERTY.—PROF. WASHBURN.

1. Can the same thing have the qualities of Real and Personal property? If so, under what circumstances may this be true? Mention some things of which this may be true. To whom does real property, if the owner has a fee in it, go at his death? To whom does his personal property go?

2. State some of the incidents of an estate for life. What may the tenant take from the premises? What may he not do upon them? If there is an existing charge upon them, is he bound to contribute towards it; and, if so, to what extent?

3. What beneficial use can a lessor make of conditions in a lease which he could not make of the covenants therein? Are the benefits of those assignable? if so, is it by common law or by statute? and how are such conditions to be availed of?

4. What interest or estate has the assignee of a tenant at will, against the owner of the premises so held? How, in the absence of any express agreement between the parties, can the owner of land determine a tenancy at will? If the statute requires a certain length of notice to determine a tenancy at will, what is the nature of the tenant's interest in such premises during the pendency of such notice?

5. What is the distinction between an easement in another's land, and a license to do the same acts thereon as may be done by such easement: 1st, in the mode of creating it; 2d, in the mode of determining it? What licenses, if any, are irrevocable against the will of the licensee? State some instances of such licenses by way of example.

6. If land is mortgaged to two to secure a joint debt, is their interest in the land that of joint tenants, or of tenants in common? If process is commenced to enforce the mortgage, can each pursue a separate remedy for his own share? If one of such mortgagees dies, by whom can such process be maintained? If a joint mortgage to two is foreclosed, how will the land be held after such foreclosure?

7. What is meant by a *subrogation*, and how does it apply to the interest of a mortgagee? Give examples of one who is not in terms a party to a mortgage, being subrogated to the rights of the mortgagee named therein.

8. What constitutes a deed as distinguished from any other writing? Before the time of Henry VIII. were deeds necessary to convey lands? If not, how were lands conveyed? Were deeds necessary to pass titles to lands after the time of Henry VIII. and before that of Charles II.? If so, in what cases? If deeds were, after that time, required in conveying lands, by what law, and in the conveyance of what kinds of estates, were they necessary?

\* Examination papers of the Second Year were published in the last Catalogue and may be expected in the next.



9. What is the purpose of recording a deed? Of what avail is recording a deed which has not been acknowledged? If one makes a deed to J. S., who fails to record his deed, and then makes a second to J. D., who knows of the first deed, and he puts the same on record; what are J. D.'s rights in the land as against J. S.? If J. D. conveys the same to W., who knows nothing of the deed to J. S., what right, if any, will W. acquire in the land as against J. S.?

10. What are the forms of deeds in general use in this country? What two elements of title are thereby vested and united in the one to whom the deed is made? Does a seisin thereby pass from the vendor to the vendee without a formal livery thereof? If so, how is this accomplished?

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CONTRACTS.—ASST. PROF. AMES.

1. Give an instance of a purely bilateral contract; a partly bilateral contract; a unilateral contract; a sale without a contract. A sells X a horse, warranting it to be sound. The title of course passes to the vendee, but the price is not yet paid. What class of contracts is illustrated by this transaction, and why?

2. June 1, X offered to sell A a certain estate for \$10,000, the offer to continue for one week. June 2, X agreed to sell and M to buy the said estate for \$12,000. A, hearing incidentally from N of this contract between X and M, accepted X's offer. X refused to convey the property. Has A any cause of action against X or not, and why?

3. In consideration of his promise to pay him a certain sum of money, A agreed to marry a specified young lady. Before, contemporaneously with, and after this agreement, X, Y, and Z respectively promised A \$1000 if he would marry the said lady. The marriage took place. X, Y, and Z refused to pay the sums of money promised. Is A entitled to recover any or all of such sums of money or not, and why?

4. *Assumpsit* by A against X. The consideration was laid as follows: In consideration that A promised never to sue X on a certain promissory note, X promised to pay A \$1000 in six months. X offered evidence to show that his signature to the note was a forgery, and known to be such by A at the time of the alleged promise. This evidence was excluded. A rule *nisi* was granted for a new trial. Should the rule be discharged or made absolute and why?

5. X in consideration of A's promise to pay him \$5000 promised to sell him certain goods, and also to smuggle certain other goods for A's benefit. A tendered the \$5000 to X, and demanded the goods first mentioned, abandoning all claim as to the other goods. Has A a cause of action or not, and why?

6. June 1, X wrote to A requesting him to sell M six casks of wine. June 3, A sold M the wine. June 4, A died. June 5, X in ignorance of A's death wrote to him promising to pay him for the wine if M did not pay therefor. A's executor declares against X both in general and special *assumpsit*. Is X liable on either or both counts or not, and why?

7. December 1, 1878, it was mutually agreed between A and X that A should act in X's theatre in London from March 30 to July 1, 1874, that A should not act during the year 1874 anywhere except in X's theatre, and that X should pay A a certain sum of money. January

25, 1874, A took a subordinate rôle in the theatre of a remote provincial town. X, in consequence of this breach of A's contract, declined to receive his services March 30. Has A a cause of action against X or not, and why ?

8. X and A entered into a contract for the building of a house by X for A, the contract providing that within 30 days each should give the other security for the performance of the contract on his part. Neither party gave the required security within the 30 days, and X now refuses to build the house. Has A a cause of action against X or not, and why ?

9. A gave to X a bond, conditioned to convey to X a certain piece of land, on July 1, 1875; and X at the same time gave to A his promissory note for \$1000, payable on said 1st of July; X having in fact bought the land for \$1000, and the note being given for the purchase-money. Can A enforce the payment of the note without a conveyance or the tender of a conveyance or not, and why ?

10. In 1860, an insurance company in New York issued policies of insurance upon the lives of persons resident in the Southern States. By one of the conditions of the policies they were to become void on the non-payment of any of the annual premiums. The war and the prohibition by Congress of all intercourse between the United States and the States in rebellion made the payment of the premiums impossible. Did the policies become void by reason of the non-payment of the premiums under these circumstances or not, and why ?

#### TORTS.—ASST. PROF. AMES.

1. Trespass by A against X for an imprisonment. Plea, not guilty. A, who has an important engagement with M for 5 o'clock, is in X's house. M, fearful of missing A, comes to the house of X at 4 o'clock. X locks the room in which A is, and refuses to let M in or A out until M pays him (X) money. M refuses, but remains until 5 o'clock, when he goes away. Soon after, X unlocks the door, and discovers that A has been asleep since three o'clock. A's action is to recover damages, suffered by his failure to meet his engagement. Should the judge direct a nonsuit or not, and why ?

2. Trespass *quare clausum fregit* by A against X. Plea, not guilty. A's evidence showed that X, standing on his own land, shot a crow as it rose from A's cornfield. Should the judge direct a nonsuit or not, and why ?

3. Trespass *quare clausum fregit*. Plea, that the wind blew the fruit from X's tree upon A's land; that X asked A's permission to go upon his land for the fruit; that A refused to give such permission; whereupon X went upon the land and removed the fruit, doing no unnecessary damage. Demurrer. Should the demurrer be allowed or overruled, and why ?

4. Trespass *quare clausum fregit* by A against X. Plea, that X went upon A's land to save M's boat, which had been driven upon the land by a storm, and was in danger of being washed away. Demurrer. Should the demurrer be allowed or overruled, and why ?

5. Trespass *per quod consortium amisit* by A against X. Plea, that A was a notorious libertine. Demurrer. Should the demurrer be allowed or overruled ?

6. Trover by A against X. Plea, not guilty. A's evidence showed a demand by A of A's goods, then in the possession of X; that X said to him, "I do not know who owns the goods: I am keeping them for the owner. Prove to me that they are yours and you shall have them, but not otherwise." X demurred to this evidence. Should the demurrer be allowed or overruled, and why?

7. X by fraudulent misrepresentations as to his solvency induced A to sell him a certain horse. X sold and delivered the horse to Y, a purchaser for value, without notice of the fraud. A afterwards made an unsuccessful demand of the horse of both X and Y. Were either X or Y guilty of a conversion either before or after the demand and refusal or not, and why?

8. Trover by A against X, a cattle salemaster, in a certain market overt. Plea, not guilty. M having stolen A's cow, brought her to X's stand in the market, and X sold the cow in the course of his ordinary business to R for full value. X and R acted in good faith. For whom should a verdict be directed, and why?

9. X was the author of a publication which appeared in a London journal, and which reflected upon A's moral character. X at the time was insane, and afterwards having become sane publicly retracted the statements and apologized for their publication. Has A any right of action against X or not, and why?

10. X uttered these words of A in the hearing of several: "I advise you not to go to A's inn. His wife is carrying on her adulterous amours there. A, to be sure, is respectable and ignorant of his wife's infidelity." A declares against X in case for slanderous words injurious to his trade. X demurs. Should the demurrer be allowed or overruled, and why?

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CRIMINAL LAW.—PROF. WASHBURN.

1. May a man be liable to be punished, as for a crime, and be subject to a civil action for damages for the same act? If so, give some examples. Who would be the parties to the necessary proceedings? And would a judgment in one of the processes affect the right to maintain the other?

2. What is necessary to constitute one an accessory to a crime? If A procures B to commit a misdemeanor and he does so in the absence of A, does A thereby become an accessory? At common law does it make any difference whether the principal or accessory is tried first? How is it by statute?

3. Can a citizen commit treason against a State? If so, and an armed body of citizens were to make a hostile attack upon a United States fort situated within a State, would the State or the U. S. court have cognizance of the crime?

4. If one wounds another and death follows from an improper treatment of the wound, would it be murder? How would it be if the wound is a mortal one, unless properly treated, and he dies in consequence of failing to procure such treatment?

5. What is meant by "night time" in defining the crime of Burglary? Would it be an act of burglary to enter a door which was secured by a latch only, without any bolt or lock? If A sells a dwelling-house to B, who moves his goods and furniture into it, but, before he has slept

therein, a man breaks into it in the night time with an intent to steal his goods, is it burglary at common law ?

6. What is the distinction between Larceny and Embezzlement ? What is requisite to make a man guilty of embezzlement ?

7. What is an Indictment ? By what body of men is it found ? If the person charged in it is not in custody when it is returned into court, by what process is he brought to answer to it ?

8. What is meant by a recognizance ? Why, and in what cases, is it taken ? If the principal fails to appear at court, can he be compelled to do so ? If so, by what process ?

9. After a trial and verdict in a criminal case, what steps or measures are open to the Defendant. If there be sufficient facts to prevent judgment being rendered against him, how are they taken advantage of ?

10. Of what offences, if any, because they are such by the common law, can the U. S. courts take cognizance ? Of what classes of offences do these courts have cognizance by either the statute or the common law ? If A steals a letter from the post-office containing money, can he be indicted and tried by a state court therefor ?

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#### CIVIL PROCEDURE AT COMMON LAW.—PROF. LANGDELL.

1. Does, or not, a demurrer admit facts of which the court has judicial knowledge, and why ? Give an example.

2. Can, or not, a pleading be read in evidence against a party who has demurred to it, or pleaded to it by way of confession and avoidance, and why ? If you say it can, do you mean in the same action, or in another action, or both ? If you say in another action, need the parties to the action be the same or not, and why ?

3. Explain the rule that upon demurrer judgment shall be given upon the whole record. What constitutes the record within the meaning of that rule ?

4. What is the meaning of the rule that a plea in confession and avoidance must confess the cause of action to which it is pleaded ?

5. In an action upon a contract is it, or not, a good defence that the declaration states the contract incorrectly ? If it is, how can the defendant avail himself of it ?

6. In an action of trover the defence was that the defendant had taken the goods upon execution, issued upon a judgment recovered by the defendant against the plaintiff. How should the defence be pleaded under the Hilary rules, and why ?

7. In an action of trespass *quare clausum fregit*, the defence was that one A was the owner of the close, and had a right to the immediate possession of it, though the plaintiff was in actual possession ; and that the defendant entered the close by the command of A. By what kind of plea should this defence be set up under the Hilary rules, and why ?

8. In an action of covenant for rent by assignee of lessor against lessee, the defence was that the lessor had only an estate for his life, and that he died before any part of the rent sued for accrued. By what kind of plea should this defence be set up, and why ? Could it, or not, be set up by more than one kind of plea, and why ?

9. In trespass for assault and battery, the defence was that plaintiff

was defendant's apprentice, and that the assault and battery complained of was a rightful chastisement of plaintiff by defendant for misbehavior. This defence being set up by a proper plea, the plaintiff replied *de injuria*. Was the replication proper or not, and why? Upon an issue joined on that replication, would it, or not, be open to the plaintiff to show that the chastisement was excessive, and why?

10. In an action for maliciously suing out a commission of bankruptcy against the plaintiff, the defendant justified by pleading that plaintiff was a trader, that he had committed an act of bankruptcy, and that defendant was a good petitioning creditor. The plaintiff replied, specifically traversing the entire plea. Was, or not, the replication double, and why? What is the true test for deciding the question? Could, or not, the plaintiff have replied *de injuria*, and why?

# THE LAWRENCE SCIENTIFIC SCHOOL.

## EXAMINATIONS FOR ADMISSION.

June, 1876.

### LATIN.

[Translate as literally as is consistent with English idiom.]

Translate:—

His de rebus Caesar certior factus et infirmitatem Gallorum veritus, quod sunt in consiliis capiendis mobiles et novis plerumque rebus student, nihil his committendum existimavit. Est hoc Gallicae consuetudinis, uti et viatores etiam invitos consistere cogant et quod quisque eorum de quaque re audierit aut cognoverit quaerant, et mercatores in oppidis vulgus circumstet, quibusque ex regionibus veniant quasque ibi res cognoverint pronuntiare cogant. His rebus atque auditionibus permoti de summis saepe rebus consilia ineunt, quorum eos e vestigio paenitere necesse est, cum incertis rumoribus serviant et plerique ad voluntatem eorum ficta respondeant.

Give the principal parts of *consistere*, *cogant*, and *cognoverit*.

Decline *oppidis*, *regionibus*, and *voluntatem* throughout. Explain the cases of *consuetudinis*, *quorum*, *rumoribus*, and the mood and tense of *audierit*. What are the Latin verbs corresponding respectively to the nouns *consuetudinis* and *consiliis*?

Translate:—

Quamobrem placuit ei ut ad Ariovistum legatos mitteret qui ab eo postularent uti aliquem locum medium utriusque colloquio diceret: velle sese de re publica et summis utriusque rebus cum eo agere. Ei legationi Ariovistus respondit: si quid ipsi a Caesare opus esset, sese ad eum venturum fuisse: si quid ille se velit, illum ad se venire oportere.

Translate:—

Atque ubi iam patriae perventum ad limina sedis  
Antiquasque domos, genitor, quem tollere in altos  
Optabam primum montis primumque petebam,  
Abnegat excisa vitam producere Troia  
Exiliumque pati. 'Vos o, quibus integer aevi  
Sanguis' ait 'solidæque suo stant robore vires,  
Vos agitate fugam.  
Me si caelicolae voluissent ducere vitam,  
Has mihi servassent sedes. Satis una superque  
Vidimus excidia et captæ superavimus urbi.  
Sic o sic positum adfati discedite corpus.'

Inflect *tollere* in the perfect subjunctive active. Give the derivation of *caelicolae*. What custom is alluded to in the last verse?

Translate:—

'Anna soror, quae me suspensam insomnia terrent!  
Quis novus hic nostris successit sedibus hospes,  
Quem sese ore ferens, quam forti pectore et armis!  
Credo equidem, nec vana fides, genus esse deorum.'

Mark the feet in the last four verses.

## ARITHMETIC.

1. From  $126 + \overline{(16 + 4) \times 2}$  take  $(48 \div 2) + \overline{34 \times 6 \div (17 - 5)}$ .
2.  $\frac{27}{37\frac{1}{2}} \times \frac{87\frac{3}{8}}{98\frac{1}{8}} \times \frac{7}{2\frac{1}{8}} \times \frac{81\frac{5}{11}}{128}$  equals what?
3. Multiply 825.701428 by .7218398 and divide 695.57270875 by 52.35775.
4. Find the first six approximate values of  $\frac{1}{13\frac{568}{1000}}$ .
5. If five compositors in 16 days, 11 hours long, can compose 25 sheets of 24 pages in each sheet, 44 lines in a page, and 40 letters in a line; in how many days, 10 hours long, can 9 compositors compose a volume (to be printed in the same kind of type), consisting of 36 sheets, 16 pages to a sheet, 50 lines to a page, and 45 letters to a line?
6. Purchased 3 horses for \$500. The first horse cost  $37\frac{1}{2}$  per cent less than the second, and the third horse 70 per cent less than the first. What was the price of each?
7. Find the square root of 3858.07694409, and the cube root of 12000.8121619.
8. If a man dig a small square cellar, which will measure 6 feet each way, in one day, how long would it take him to dig a similar one that measured 10 feet each way?
9. A triangle has a base of 40 feet, and an altitude of 15 feet; how many square feet does it contain?
10. Required the area of a rhombus of which one of the equal sides is 358 feet; and the perpendicular distance between it and the opposite side is 194 feet?

## METRIC SYSTEM AND LOGARITHMS.

## METRIC SYSTEM.

1. What is the unit on which the metric system is based, what is its value in inches, and in what does the metric system differ principally from the common system?
2. What relation exists between the measures of length, surface, volume, and weight; what are the names of the units in each, and their values in metres?
3. What is the amount of 34789.56 litres of distilled water, under the standard conditions, in cubic centimetres? in cubic metres? in cubic kilometres? its weight in grammes? in kilogrammes?
4. How many metres of a carpet, nine decimetres wide, will cover a floor six metres long and five metres and four decimetres wide? and what would be the cost of the carpet at \$2.50 a centaire?
5. How many steres in a wall twenty-four metres long, eight metres and five decimetres high, and fifty-two centimetres thick? and what would be the cost of building it, at \$4.25 a cubic metre?

## LOGARITHMS.

Solve the following examples by logarithms:—

6. Find the logarithms corresponding to the numbers: 784826., 24.6879,

and .000678432; and the numbers corresponding to the logarithms: 5.786342, 3.429876, and 2.006345.

7. Extract the fifth root of .00678943, and raise 67 to the third power.

8. What is the value of the expression

$$\left\{ \frac{(125)^2 \times (2.456)^{\frac{1}{2}} \times \frac{3}{8} \frac{7}{8}}{.0000726 \times 4395} \right\}^{\frac{1}{2}} p$$

9. Find the value of the following:—

$$\frac{\left( \frac{7}{8} \times \frac{2}{5} \frac{2}{6} \div \frac{1}{6} \frac{3}{8} \right)^{\frac{1}{2}} \div (525 \times \frac{2}{7} \frac{2}{8})}{67.83}$$

10. What is the value of the following:—

$$\frac{76.345 \div 9678 \times .000047895}{6.78 \times .3467 \div .023} + \frac{625 \times 978}{976 \times 43976}$$

### ELEMENTARY ALGEBRA.

1. Define the following terms as used in Algebra: Elimination, radical, equation, reciprocal, substitution, transformation, transposition, reduction, and verification of an equation.

2. Expand  $(x^3 - 2x^2 + 3x - 4)(4x^3 + 3x^2 + 2x + 1)$ .

$$\frac{x+1}{x} + \frac{y+1}{y} - \frac{z+1}{z} - \frac{u+1}{u}$$

Simplify  $\frac{\frac{zu}{z+u} - \frac{xy}{x+y}}{\frac{z+1}{z} - \frac{u+1}{u}}$ .

Simplify  $\left\{ \frac{(\sqrt[4]{5} + 2)(\sqrt[4]{5} + \sqrt{2})(\sqrt[4]{5} - \sqrt{2})}{(\sqrt[4]{18} + 3)(\sqrt[4]{18} + \sqrt{3})(\sqrt[4]{18} - \sqrt{3})} \right\}^{\frac{1}{2}}$ .

3. Find the greatest common divisor of

$8x^4 + 14x^2y^2 - 5y^4$ ,  $6x^4 - 14x^2y^2 + 4y^4$ , and  $3x^4 - 22x^2y^2 + 7y^4$ .

4. Explain the forms  $\frac{a}{0}$ ,  $\frac{a}{\infty}$ ,  $\frac{0}{a}$ , and  $\frac{0}{0}$ .

5. Find the square root of

$9y^2z^2 + x^4 + 4x^2u^2 + 4x^2z^2u - 6x^2yz - 4xu^3 - 12yz^2u + u^4 - 2x^2u^2 + 6yzu^2$ , and the cube root of

$$\frac{195x^2}{16} + \frac{1}{64} - 12x^5 - 70x^3 - \frac{3x}{4} + x^6 + \frac{195x^4}{4}$$

6. Find the sum of  $\sqrt[3]{108}$ ,  $9\sqrt[3]{4}$ , and  $\sqrt[3]{1372}$ ; and the product of

$$\sqrt[4]{\frac{a^4c}{(a-x)^4}}, \sqrt{\frac{(bca^2 - x^2)^2}{x^4}}, \text{ and } \sqrt{\frac{ax^2}{(a+x)^2}}$$

7. Solve the equation  $\frac{3\sqrt{x-4}}{\sqrt{x+2}} = \frac{3\sqrt{x+15}}{\sqrt{x+40}}$ .

8. Solve the equation  $\frac{\sqrt{x+a} - \sqrt{x-a}}{\sqrt{x+a} + \sqrt{x-a}} = \frac{x}{2a}$ .

9. Find the value of  $x$  and  $y$  in the equations  $x^2 + y^2 = 65$ , and  $xy = 28$

10. Find two numbers whose sum, product, and difference of their squares, are all equal to each other.



## ADVANCED ALGEBRA.

1. What are identical equations? Give and prove their more important properties.
2. Separate  $\frac{7x^2 + x}{2x^2 - x - 1}$  into partial fractions.
3. Resolve  $\frac{10}{x^4 - 18x^2 + 86}$  into partial fractions.
4. Expand  $(a^2 - x^2)^6$  by the binomial theorem.
5. Expand  $(1 - x)^a$  into a series by means of the binomial theorem.
6. Develop  $\frac{1}{1 + 2x^2 + 3x^4}$  into a series by means of indeterminate coefficients.
7. Give the general principles of the theory of logarithms, and prove them as far as you can. Define the base and modulus of a system of logarithms. What systems of logarithms are in general use, and what are the base and modulus of each?
8. Given  $6^x = \frac{24^6 (17)^{\frac{1}{2}}}{71}$ , to find the value of  $x$ .
9. What is the equation whose roots are  $-1, -2, +3, 2 + \sqrt{-8}, 2 - \sqrt{-8}$ ?
10. Find by Cardan's rule the roots of the equation  $x^3 - 7x^2 + 14x - 20 = 0$ .

## PLANE GEOMETRY.

## THEOREMS.

1. The sum of all the angles of any polygon is equal to two right angles taken as many times less two as the polygon has sides.
2. In the same circle, or in equal circles, two angles at the centre are in the same ratio as their intercepted arcs.
3. Two triangles are similar when they have their sides parallel each to each, or perpendicular each to each.
4. If a perpendicular is drawn from the vertex of the right angle to the hypotenuse of a right triangle:—
  - (1) The two triangles thus formed are similar to each other and to the whole triangle;
  - (2) The perpendicular is a mean proportional between the segments of the hypotenuse;
  - (3) Each side about the right angle is a mean proportional between the hypotenuse and the adjacent segment.
5. In any triangle, the square of the side opposite to an acute angle is equal to the sum of the squares of the other two sides diminished by twice the product of one of these sides and the projection of the other upon that side.

6. Similar polygons are to each other as the squares of their homologous sides.
7. The circumferences of two circles are to each other as their radii, and their areas are to each other as the squares of their radii.

**PROBLEMS.**

8. To divide a given straight line in extreme and mean ratio.
9. To find a fourth proportional to three given straight lines.
10. To find the centre of a given circumference or of a given arc.

**SOLID GEOMETRY.**

Prove the following theorems :—

1. Through any given straight line a plane can be passed perpendicular to any given plane.
2. The sum of the face angles of any convex polyedral angle is less than four right angles.
3. The volume of any parallelopiped is equal to the product of its base by its altitude.
4. Similar polyedrons are to each other as the cubes of their homologous edges.
5. If the base of a cone is a circle, every section made by a plane parallel to the base is a circle.
6. The angle of two arcs of great circles is equal to the angle of their planes, and is measured by the arc of a great circle described from its vertex as a pole and included between its sides (produced if necessary).
7. In two polar triangles, each angle of one is measured by the supplement of the side lying opposite to it in the other.
8. Any side of a spherical triangle is less than the sum of the other two.
9. The sum of the angles of a spherical triangle is greater than two and less than six right angles.
10. The volume of a spherical pyramid is equal to the area of its base multiplied by one-third of the radius of the sphere.

**PLANE TRIGONOMETRY.**

1. Define the sine, cosine, tangent, cotangent, secant, and cosecant of an acute angle of a right triangle in terms of its sides (the radius being different from one).
2. Find the cosine in terms of the sine; the tangent and cotangent in terms of the sine and cosine; the secant in terms of the tangent; and the cosecant in terms of the cotangent.
3. Given the sines and cosines of two angles, find the sine and cosine of their sum and the sine and cosine of their difference.

4. Deduce geometrically and by fundamental formulas the natural sine, cosine, tangent, cotangent, secant, and cosecant of

$0^\circ, 30^\circ, 45^\circ, 60^\circ, 90^\circ, 180^\circ, 270^\circ, 360^\circ.$

5. Reduce to the simplest form the expressions for the sine, cosine, tangent, cotangent, secant, and cosecant of

$(-x), (90^\circ - x), (90^\circ + x), (180^\circ - x), (180^\circ + x).$

6. Deduce the following formulas from fundamental ones :—

$$\sin x + \sin y = 2 \sin \frac{1}{2}(x+y) \cos \frac{1}{2}(x-y).$$

$$\sin x - \sin y = 2 \cos \frac{1}{2}(x+y) \sin \frac{1}{2}(x-y).$$

$$\cos x + \cos y = 2 \cos \frac{1}{2}(x+y) \cos \frac{1}{2}(x-y).$$

$$\cos x - \cos y = -2 \sin \frac{1}{2}(x+y) \sin \frac{1}{2}(x-y).$$

7. Obtain the formulas for the tangent of the sum, and the tangent of the difference of two angles ; for the sine of the sum divided by the sine of the difference, and the cosine of the sum divided by the cosine of the difference of two angles, in terms of the tangents of the angles themselves.

8. Prove that the sides of a plane triangle are proportional to the sines of their opposite angles.

9. Prove that the sum of any two sides of a plane triangle is to their difference as the tangent of half the sum of the opposite angles is to the tangent of half their difference.

10. Prove that the square of any side of a triangle is equal to the sum of the squares of the other two sides diminished by twice the rectangle of these sides multiplied by the cosine of their included angle.

## THE MEDICAL SCHOOL.

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### EXAMINATIONS OF THE THIRD YEAR.\*

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#### THERAPEUTICS. — PROF. EDES.

1. What substances are used to promote sleep, and in what doses? What indications would govern your choice among them?
2. What is the action of strychnia, for what is it used, and what drugs are its physiological antidotes?
3. If a healthy man takes a glass of wine, what happens to it and to him? If he takes one or more glasses of brandy? If he repeats the latter process for some days?
4. What is the difference in the action of digitalis, aconite, veratrum viride, and for what is each used?
5. What drugs are supposed to constitute material for the nutrition of various tissues in the body? What are the indications for use, and methods of administration?
6. What are the clinical phenomena observed after use of quinia? What experiments have been made upon its physiological action? What have been used instead of quinia in intermittent fever, and with what success?
7. What are the action and uses of iodide of potassium? of arsenic?
8. What is the action of cold baths? When and how should they be given, and when not?

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#### OBSTETRICS. — PROF. BUCKINGHAM.

1. Mobility of pelvic articulations.
2. Anchylosis of the coccyx.
3. Fœtal Auscultation, — what is to be learned by it? How is it to be performed, and when? (The placental murmur is not to be considered under this head.)
4. What disorders of the digestive system are occasioned by pregnancy? Can they be relieved, and how?
5. What is your duty, and what your privilege, as a witness in court? Should your testimony be any different upon direct and upon cross examination?
6. At your first examination of the patient, you find that the liquor amnii has to a great extent been drained away; the os uteri is far enough open to admit three fingers, and is dilatable; the vagina is far from

\* Examination papers of the First and Second Years may be found in the last Catalogue, and may be expected in the next. A complete set of papers is published in the special catalogue of the School, which will be furnished on application See p. 127.

moist; one hand is in the vagina; one half the length of its forearm protrudes from the os uteri; the pulse is rapid, and the patient restless. — Go on with the diagnosis, and proper treatment of the case.

7. In case of breech presentation and delivery, what is meant by too early extension of the head? Describe it, and how to avoid it.

8. Under what circumstances, in case of a breech presentation, would you apply forceps? when? where? how?

9. Give the exact anatomical relations of the human ovary, and state the several tissues and structures of which it is made up?

10. Describe the vessels of the umbilical cord as they exist at term: give the origin, the course, and the anatomical peculiarities and function of each of them.

11. In a presentation of the vertex, with the head well flexed, the ear of the anterior half of the child remains at or near a certain part of the mother's pelvis, from the time the head enters the pelvis, till rotation is nearly completed. What is that part of the mother's pelvis? Under the conditions just given, in a first position, anterior variety ("left occipito-cotyloid") at or near what part of the pelvis will the posterior ear be placed? What suture, prolonged, guides the examining finger to the ear?

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#### SURGERY.—PROF. BIGELOW.

1. Pott's Disease.
2. Hip Dislocation.
3. Aneurism.
4. Hydrocele.
5. Adenocele.
6. Stone.
7. Felon.
8. Fractures of the Elbow.
9. Chancre.
10. Cataract.

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#### CLINICAL SURGERY.—PROF. CHEEVER.

[In addition to the following questions, the clinical report of a surgical case is required.]

1. Senile Gangrene:—causes,—symptoms,—treatment.
2. Causes of retention of urine, and appropriate modes of relieving it.
3. Carbuncle.
4. Acute Abscess:—symptoms,—course,—termination.
5. Describe Surgical Fever.
6. Hospital Gangrene,—appearances,—course,—termination.
7. Epididymitis.
8. Piles.
9. Describe the Urethral triangle of the Perineum.
10. Tie the Radial artery in the upper third of the arm.

## THEORY AND PRACTICE. — PROF. MINOT.

1. With what diseases is cyanosis of the skin most frequently associated ?
2. Describe the symptoms of fatty degeneration of the heart.
3. What are the principal symptoms of Addison's disease of the suprarenal capsules ?
4. In what respects does pleurisy in children differ from that in adults ?
5. What are the chief points in the diagnosis between the first stage of scarlatina and that of varioloid ?
6. How should you distinguish between varicella and varioloid ?
7. What are the principal signs of retarded development in infants ?
8. Name the order in which the milk teeth appear.
9. How ought we to be guided in the use of stimulants in typhoid fever ?
10. Of what diseases is hæmaturia a symptom ?
11. What is the treatment of chronic albuminuria ?
12. Mention the principal symptoms of diphtheria.
13. What are some of the most common causes of uterine displacements ?
14. Of what diseases is aphonia a symptom ?
15. Mention some of the indications furnished by the tongue in the diagnosis of disease.

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 CLINICAL MEDICINE. — PROF. ELLIS.

Give the differential diagnosis, the prognosis, and treatment of as many of these cases as the time will allow. Assume that symptoms not mentioned were wanting; but as omissions, intentional or not, may occur, state them, if essential.

A woman, about 50 years of age, began to cough two weeks before she was seen; but she gradually improved and went out. The cough returned, became very urgent, and was accompanied by dyspnoea and the expectoration of purulent mucus, the latter often raised with much difficulty. There was fever, increased rapidity of the pulse, and marked prostration, though not sufficient to confine her to her bed.

On examination, sub-crepitant râles were heard in the lower half of the right back, without dulness or change in the voice.

A boy, about 15 years old, had always been troubled by incontinence of urine at night, and for a year or two he had complained that the letters ran together in reading.

With these exceptions, he was well, until the age of 13½, when he had measles, whooping cough, and scarlet fever, within twelve months. After recovery he became irritable, and complained much of his stomach; but in a few months he was well enough to attend school.

A month before he was seen, he had tonsillitis, and complained of pain in the right eye. Suddenly it was noticed that the mouth was drawn to the left, that the right eye could not be closed, and that the upper lid could not be raised as completely as before. The eye was somewhat painful, owing to exposure to the air. The speech was unaffected.

When seen, no improvement had taken place. The mind was clear, and the hearing unaffected. No paralysis elsewhere.

A bar-tender, 45 years old, was in the habit of drinking large quantities of gin. Two years before he was seen, he began to suffer from attacks of vomiting. The latter became more frequent, and was accompanied by diarrhœa, pain in the hepatic region, and slight jaundice. The matter vomited often contained blood. He also had epistaxis several times, and one severe attack of epileptiform convulsions. When seen, there was marked jaundice, slight pitting of the lower extremities, enlarged abdominal veins, ascites, increased splenic dulness, and tenderness on pressure below the right ribs. Pulse 84, feeble but regular. The urine showed a sp. gr. of 1.020; bile pigment; a trace of albumen; a few blood corpuscles, but no casts.

A man, 56 years of age, in 1866 was suddenly seized with severe pain in the epigastrium, after standing the day before on a cold floor. This pain returned in 1870, while he was worn by business cares, and since then he has been liable to such attacks, from time to time; the pain being quite severe, and, though somewhat irregular, generally coming on in the night, about 7 hours after eating, accompanied by chills. It has rarely appeared as often as once a day, and never more than once. Though it comes on rather gradually, it sometimes ceases instantaneously. There have been no ordinary dyspeptic symptoms, though he thinks indiscretion in diet has sometimes been the exciting cause. Never any jaundice, nausea, or vomiting. Twelve or thirteen years ago passed a renal calculus. Though a great smoker for a number of years, he gave up tobacco in 1872.

A man, 27 years old, was attacked, a year before he was seen, with headache. This was soon followed by loss of consciousness. He was found lying on the ground in convulsions. The latter recurred two or three weeks before he sought advice, and he has suffered more or less from headache. Early in the disease, he was totally blind for three days; and remains so with one eye, though he sees perfectly well with the other. The mind has been clear. Slight cough occasionally, but nothing marked. Much dyspnoea and some palpitation. Appetite variable: none at time of visit. Urine never very scanty, and at times quite abundant. P. 116. He had lost both flesh and strength. The cardiac dulness extended some distance to the left nipple. Pulsations of the heart quite strong. No valvular murmur. Abundant sub-crepitant and crumpling râles were heard on the lower third of the back, on both sides. The urine showed a sp. gr. of 1013. Albumen by heat and nitric acid. No casts.

A man, 32 years old, presented himself in April, stating that he had been troubled with cramp-like pains in the lower extremities all winter, so severe as to keep him awake. For a long time he had noticed that he became dizzy on attempting to walk on a narrow plank. Six weeks before he asked advice, he noticed a loss of power in the ankles, but not in other parts of the legs. He spoke also of numbness in the soles of the feet, particularly of the right foot; and, for four or five months, in the legs and hands. The appetite and digestion were good.

Was unable to stand with the eyes shut and both feet close together, and still less on one foot. Could not walk with the eyes shut; and the gait, under any circumstances, was very peculiar. The toes were raised well: but the legs were thrown forward, with a wavering, uncertain motion; but the gait improved when he looked at his legs.





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