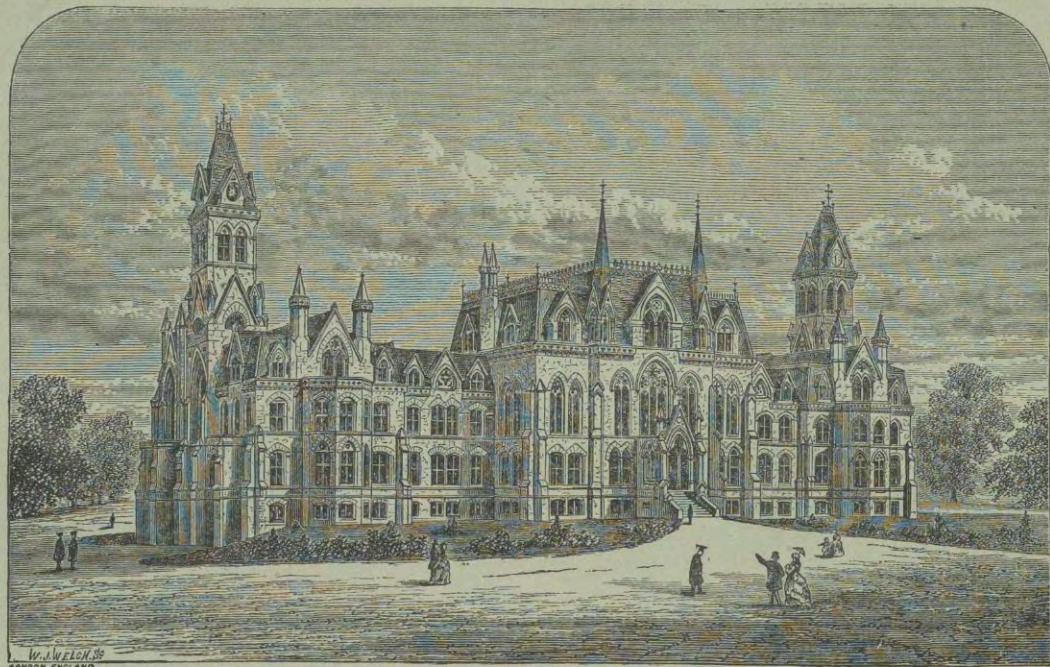


CATALOGUE

OF THE

UNIVERSITY OF PENNSYLVANIA.

1876-77.



UNIVERSITY OF PENNSYLVANIA.
COLLEGIATE AND SCIENTIFIC DEPARTMENTS.

CATALOGUE

OF THE

TRUSTEES, OFFICERS, AND STUDENTS

OF THE

UNIVERSITY OF PENNSYLVANIA.

1876-77.

PHILADELPHIA:

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1877.

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208 S. 4th Street, Philadelphia.

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| <hr style="width: 20%; margin: auto;"/> | |
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<i>Emeritus Professor of the Theory and Practice of Medicine.</i> | 1117 Arch Street. |
| HENRY H. SMITH, M.D.,
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| <hr style="width: 20%; margin: auto;"/> | |
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3900 Spruce Street.
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|--|----------------------------|
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Professor of Physics. | 3909 Locust Street. |
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| LEWIS M. HAUPT (late Lieut. U. S Engineers),
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| GEORGE STRAWBRIDGE, M.D.,
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Clinical Professor of Skin Diseases. | 1416 Spruce Street. |
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120 S. 22d Street.

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Instructor in Mathematics.

3826 Locust Street.

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Assistant in Analytical Chemistry.

3449 Woodland Avenue.

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3938 Woodland Avenue.

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MISS J. BEDLOCK,

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MISS M. BEDLOCK,

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HENRY LAUSSAT GEYELIN,	do.	do.
JOHN HOWARD GIBSON,	do.	do.
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HOWARD ATWOOD KELLY,	do.	do.
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ERNEST LAW,	do.	do.
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GEORGE STANLEY PHILLER,	do.	do.
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SENIORS, 22.

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WILLIAM HENRY STETLER,	do.	Philadelphia.

JUNIORS, 26.

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WILLIAM WAINWRIGHT BRITTON,	do.	do.
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THOMAS JOSHUA BROWN,	do.	do.
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CHARLES CLAXTON,	do.	Philadelphia.
CHARLES HOWARD COLKET,	do.	do.
BENJAMIN BARTIS COMEGYS, JR.,	do.	do.
HENRY TAYLOR DECHERT,	do.	do.
THOMAS AQUINAS EDWARDS,	do.	do.
GEORGE STEWART FULLERTON,	do.	do.
JOHN MARSHALL GEST,	do.	do.
GEORGE WOOD HUNT,	do.	do.
HORACE FORT JAYNE,	do.	do.
HENRY LA BARRE JAYNE,	do.	do.
HORACE HOFFMAN LEE,	do.	do.
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HILARY MISSIMER CHRISTIAN,	do.	do.
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CHARLES THOMSON CRESSWELL,	do.	do.
JAMES STUART DICKSON,	do.	do.
CHRISTIAN LEE GAUL,	do.	do.
WILLIAM PURVES GEST,	do.	do.
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HUSTON HAMMILL MILLIGAN,	do.	do.

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GEORGE TUCKER SANK,	Pennsylvania.	Philadelphia.

PARTIAL STUDENTS, 12.

DEPARTMENT OF ARTS.

RECAPITULATION.

SENIORS	22
JUNIORS	26
SOPHOMORES	35
FRESHMEN	36
TOTAL	119
PARTIAL COURSES	12
TOTAL MATRICULATES IN THE DEPARTMENT OF ARTS,	131

TOWNE SCIENTIFIC SCHOOL.

POST-GRADUATE STUDENTS.

1.* FREDERICK AUGUSTUS GENTH, JR., B.S., Pennsylvania.	Philadelphia.
1. HENRY CARVILL LEWIS, M.A., do.	Germantown.

SENIORS.

4. LLOYD BANKSON, JR.,	Pennsylvania.	Philadelphia.
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4. EDWARD WALTER CLARK,	do.	do.
4. CHARLES BENJAMIN HOWELL,	do.	do.
1. HERMANN ADALBERT LEWIS,	do.	do.
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4. HOWARD SELLERS,	do.	Philadelphia.
4. HORACE WELLS SELLERS,	do.	do.
2. ARTHUR WHITCOMB SHEAFER,	do.	Pottsville.
4. CHARLES SUMNER WILLIAMSON,	do.	Philadelphia.

SENIORS, 11.

JUNIORS.

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2. WILLIAM EDWARD HELME,	do.	do.
3. WILLIAM COUSTY JOHNS,	do.	do.
3. CHARLES FREDERICK MOORE,	do.	do.
3. JOHN CURTIS PATTERSON,	do.	do.
2. WILLIAM LEE ROWLAND,	Massachusetts.	Springfield.
4. CHARLES ALFRED RUTTER,	Pennsylvania.	Philadelphia.
3. NELSON OLIVER WHITNEY,	do.	do.

JUNIORS, 10.

* The numbers prefixed to the names of Students in the Senior and Junior classes designate the special course of study which they are pursuing.

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EVANS ROGERS DICK,	do.	do.
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ANTONE MISKEY HANCE,	do.	Germantown, Phila.
REGINALD LAWRENCE HART,	do.	Philadelphia.
AUSTIN STEVENS HECKSCHER,	do.	do.
WILLIAM KEATING HEWSON,	do.	do.
TOSUI IMADATE,	Japan.	Echizen.
ARTHUR GARRETT JACK,	Pennsylvania.	Philadelphia.
WALTER HAHN JARDEN,	do.	do.
JAMES BROOKS KINLEY,	do.	do.
GEORGE HAIL LEWIS,	do.	do.
WILLIAM LORENZ, JR.,	do.	Chestnut Hill, Phila.
JAMES WILFRED MCKINLEY,	do.	Philadelphia.
WILLIAM LATTI NEVIN,	do.	do.
CHARLES HENRY PAGE,	do.	do.
JAMES CAMPBELL PASCAL,	do.	do.
PERCY EUGENE RIHL,	do.	do.
ROBERT ADAIR SHILLINGFORD,	do.	do.
JAMES HULME SMITH,	do.	do.
NEWBERRY ALLEN STOCKTON,	do.	Huntingdon Valley.
JOHN WILLIAM DAVIS STOVELL,	do.	Philadelphia.
CLIFFORD SMITH THOMAS,	do.	Bellefonte.
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WILLIAM WALTER WEBB,	do.	do.

SOPHOMORES, 30.

FRESHMEN.

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SAMUEL MORRIS BARKER,	do.	Germantown, Phila.
HARVEY WILLIAMS BOYER,	do.	Pottsville.

WILLIAM ST. CLAIR CORCORAN,	Pennsylvania.	Philadelphia.
WILLIAM STAVELEY CORNELL,	do.	do.
EDWIN FORD DAWSON,	do.	do.
CONRAD BAKER DAY, JR.,	do.	do.
WILLIAM ALOYSIUS EDWARDS,	do.	do.
CHARLES STEINMAN FOLTZ,	do.	do.
ALBERT ANGELL GHRISKEY,	do.	do.
GEORGE JESPER HARDING,	do.	do.
JOSEPH MALCOLM HAWLEY,	do.	do.
JOHN WARNER HENDERSON,	do.	do.
JOHN JACKSON HENRY,	do.	Germantown, Phila.
JOHN ARTHUR HENRY,	do.	Philadelphia.
CARL OTTO HERING,	do.	do.
DONELSON HOOPES,	do.	do.
JAMES HUNTER, JR.,	do.	do.
HARRY LIVINGSTON KELLEY,	do.	do.
EDWARD KNEASS LANDIS,	do.	Chestnut Hill, Phila.
HENRY PHILIP LINCOLN,	do.	Philadelphia.
WILLIAM SUPPLEE LLOYD,	do.	do.
HARRY TAWS MOORE,	do.	Germantown, Phila.
ROBERT WILLIAM NEILSON,	do.	do.
WILLIAM GAUL OBERTEUFFER,	do.	do.
CHARLES STUART WOOD PACKARD,	do.	do.
WILLIAM BAIRD PATTON,	do.	Germantown, Phila.
WILLIAM CRESSON PRITCHETT,	do.	Philadelphia.
HARRY SHERMAN RIGHTER,	do.	Merion, Montg. Co.
HARRY RILEY,	do.	Philadelphia.
CHARLES FREDERICK SEEGER,	do.	do.
THOMAS WILSON SHARPLESS,	do.	do.
HARRY AUGUSTUS SIMONS,	do.	do.
CHARLES CARROLL SMITH,	do.	do.
ABEL LUKENS STOUT,	do.	do.
NATHANIEL FORBES WEBB,	do.	do.
EDWARD WILLARD, JR.,	do.	do.
CHARLES AUGUSTUS WILSON,	do.	do.

SPECIAL AND PARTIAL COURSES.

3. JOSIAH SETTLE GRAVES,	Pennsylvania.	Downingtown.
2. HUGH LAUSSAT WILLOUGHBY,	New York.	New York.
<hr/>		
2. JOHN PRICE CROZER,	Pennsylvania.	Upland (Delaware Co.).
2. ANNA LOCKHART FLANIGEN,	do.	Philadelphia.
6. WILLIAM HENRY GRANT,	do.	do.
4. WILLIAM HEMPHILL INGRAM,	do.	do.
4. HENRY ATLEE INGRAM,	do.	do.
3. FREDERICK HUMPHREVILLE LEWIS,	do.	do.
2. JOHN HASSINGER MURPHY,	do.	Philadelphia (Rising Sun Lane).
4. WILLIAM HENRY NORRIS,	do.	Philadelphia.
2. GERTRUDE KLEIN PEIRCE,	do.	do.
<hr/>		
4. FREDERICK VANLEER JARDEN,	Pennsylvania.	Philadelphia.
		SPECIAL AND PARTIAL, 12.

DEPARTMENT OF SCIENCE.

RECAPITULATION.

POST-GRADUATES	. . . . .	2
SENIORS	. . . . .	11
JUNIORS	. . . . .	10
SOPHOMORES	. . . . .	30
FRESHMEN	. . . . .	40
SPECIAL AND PARTIAL COURSES	. . . . .	12
TOTAL	. . . . .	<u>105</u>

GENERAL STATEMENT.

Instruction is given in the UNIVERSITY OF PENNSYLVANIA in four different Departments, viz. :—

THE DEPARTMENT OF ARTS.

THE TOWNE SCIENTIFIC SCHOOL.

THE DEPARTMENT OF MEDICINE.

THE DEPARTMENT OF LAW.

BUILDING, APPARATUS, ETC.

The Trustees of the University have erected, for the accommodation of the Departments of Arts and of Science, one of the largest and most conveniently arranged college buildings in the country. This building stands in a square of ground containing more than six acres, and is about two hundred and sixty feet front, by more than one hundred in depth. It was planned with special reference to the greatly increased number of rooms required for the full development of that elective system of studies which has now become the settled policy in the Department of Arts, as well as for the purpose of affording every facility for teaching Science in its applications to the Arts.

The students in these two Departments are under a common government and discipline, and are in constant association with each other. The instruction, however, in each Department is in charge of a distinct Faculty, and both the objects of that instruction and the methods of imparting it differ essentially.

THE DEPARTMENT OF ARTS is designed mainly to give that comprehensive and liberal culture, and to secure that mental training and discipline which was until recent years the sole aim of the best known

American colleges. The methods by which these objects are sought have been enlarged here by the adoption of a carefully arranged elective system, by the introduction of new subjects of study (notably the modern languages), and by giving greater prominence to certain old ones.

THE TOWNE SCIENTIFIC SCHOOL, while not neglecting the general liberal education of the student (as will be found hereafter more fully explained), aims chiefly to teach him the principles of natural and physical science with their applications to the arts of life.

THE DEPARTMENT OF MEDICINE.—The Trustees have erected on Thirty-sixth Street, south of Locust, for the use of this Department, a Hall of very large dimensions, which has been arranged for the convenient accommodation and instruction of students in accordance with plans based upon long experience. It is fully provided with all the approved means of research and illustration.

Adjoining this building is the University Hospital, which is an invaluable means of clinical instruction, both by the regular clinical lectures in the Amphitheatre and Dispensaries, and by private instruction to special classes.

THE DEPARTMENT OF LAW has been recently reorganized with a view of enlarging its aims and rendering more systematic the instruction given by it.

The details of the course of instruction in each of the Departments will be found under the proper head. Besides the Lectures of the Professors in the Departments of MEDICINE and LAW, lectures on the following subjects are given to the Students in the DEPARTMENT OF ARTS and the TOWNE SCIENTIFIC SCHOOL, viz.:—

On International Law and American History, by PROVOST STILLÉ.

On Systems of Intellectual Philosophy, by VICE-PROVOST KRAUTH.

On Social Science and National Economy, and on the History of the Civil Law, by PROFESSOR THOMPSON.

On English Philology, by PROFESSOR MCELROY.

On Physics and Astronomical Physics, by PROFESSOR BARKER.

On Inorganic and Organic Chemistry, by PROFESSOR SADTLER.

On Mineralogy, by PROFESSOR GENTH.

On Geology, by PROFESSOR LESLEY.

On Engineering and Contracts, by PROFESSOR HAUPT.

On Metallurgy and Applied Chemistry, by PROFESSOR KÖENIG.

On French Literature, by PROFESSOR BRÉGY.

Lectures on the SCIENCE OF MUSIC are delivered twice a week by PROFESSOR CLARKE to such persons, members of the University and others, male or female, as may desire systematic instruction on this subject. This instruction will include HARMONY, COUNTERPOINT, and COMPOSITION, with as much of the history of music as may be necessary to illustrate these subjects.

The Degree of BACHELOR OF MUSIC will be conferred on those who attend two courses of lectures and pass satisfactory periodical and final examinations thereon.

DEPARTMENT OF ARTS.

I.
FACULTY.

CHARLES J. STILLÉ, LL.D., Provost, and *John Welsh Centennial Professor of History and English Literature.*

REV. CHARLES P. KRAUTH, D.D., LL.D., VICE-PROVOST, and *Professor of Intellectual and Moral Philosophy.*

FRANCIS A. JACKSON, A.M., *Professor of the Latin Language and Literature.*

E. OTIS KENDALL, LL.D., *Professor of Mathematics.*

OSWALD SEIDENSTICKER, PH.D., *Professor of the German Language and Literature.*

JOHN G. R. McELROY, A.M., *Professor of Rhetoric and the English Language.*

REV. ROBERT E. THOMPSON, A.M., *Professor of Social Science.*

FREDERICK A. GENTH, PH.D., *Professor of Chemistry.*

F. AMÉDÉE BRÉGY, A.M., *Professor of the French Language and Literature.*

GEORGE F. BARKER, M.D., *Professor of Physics.*

SAMUEL P. SADTLER, PH.D., *Assistant Professor of Chemistry.*

REV. FREDERICK A. MUHLENBERG, D.D., *Professor of the Greek Language and Literature.*

OTIS H. KENDALL, A.M., *Instructor in Mathematics.*

FRANCIS A. JACKSON, *Secretary.*

II.

TERMS OF ADMISSION.

To be admitted into the Freshman Class of the Department of Arts, a student must be at least fourteen years of age, and pass a satisfactory examination on the following subjects and authors:—

ENGLISH.—Ancient and Modern Geography (Labberton's Historical Atlas is recommended). English Grammar and Elements of English Composition.

GREEK.—Greek Grammar. Greek Prose Composition (as much as is contained in *Jones' Exercises*). *Xenophon* (Four Books of the Anabasis). *Homer* (First three Books of the Iliad).

LATIN.—Latin Syntax and Prosody (A practical familiarity with the scanning of Hexameters). *Cæsar* (Three Books of the Gallic War). *Virgil* (Six Books of the Æneid). *Cicero* (Four Orations against Catiline). *Horace* (First Book of the Odes).

MATHEMATICS.—Arithmetic, Elementary Rules of Algebra, including Simple Equations. Decimal System of Weights and Measures.

The students in the Department of Arts are distributed into four classes, viz.: the Senior, the Junior, the Sophomore, and the Freshman Classes.

The examinations of Candidates for admission will be held for the current year on Friday, Saturday, Monday, and Tuesday, June 22d, 23d, 25th, and 26th, 1877, at the hours and upon the subjects stated in the following schedule. Candidates must be punctual in their attendance at the hours named, and should also be present on Wednesday, June 27th, at one o'clock, to learn the result of their examinations.

DEPARTMENT OF ARTS.

ON FRIDAY, JUNE 22D, from 9 o'clock to 10½—A written examination in *English Grammar*, and the *Elements of English Composition*, and in *Ancient and Modern Geography*.

From 10¾ to 12¾—A written examination in *Greek Grammar* and *Greek Prose Composition*.

From 1 to 2—A written examination upon the *first four books of Xenophon's Anabasis* and the *first three books of the Iliad*. (Candidates will be required to scan the *Homeric Verse*.)

ON SATURDAY, JUNE 23D, from 9 to 11—A written examination in Arithmetic (especially—*The Simple Rules, Vulgar and Decimal Fractions, The Decimal System of Weights and Measures, and The Extraction of the Square and Cube Root*).

From 11 to 1—A written examination in Algebra (*To Quadratic Equations, as in Alsop's Algebra, to p. 152, including Proportion, Progression, Surds, Imaginary Quantities, and The Binomial Theorem*).

ON MONDAY, JUNE 25TH, from 9 to 11—A written examination in *Latin Grammar* (*The Declensions, Comparisons, and Conjugations, and The Syntax of the NOUN and RELATIVE*).

From 11¼ to 1¼—A written examination upon *six books of Virgil's Æneid*, and upon the *Structure and Scanning of Hexameter Verse*.

ON TUESDAY, JUNE 26TH, from 9 to 2—An oral examination upon *Cicero's four Orations against Catiline*, and the *first book of the Odes of Horace*.

Applicants for admission to the SOPHOMORE CLASS will, in addition to the above, be examined in the following subjects, being those studied by the Freshman Class:—

ON TUESDAY, JUNE 26TH, from 9 to 2—Oral examinations on the following subjects and authors.

IN GREEK—Upon *Xenophon's Hellenics* (II. 4, IV. 2, 3, VI. 4, §§ 1-16, and VII. 5), and *The Clouds* of Aristophanes.

IN LATIN—An oral examination upon Livy (*Selections from the Tenth, Twenty-first, and Twenty-second Books*); and upon Horace (*Select Satires*); with the notes and explanations (as contained in the *Freshman Syllabus*). And a written examination on *The Rules of Latin Translation* and *The Rules of Syntax* to p. lvi.

IN MATHEMATICS—On *Aldop's Algebra* (to the end of Chapter XII.); And in *Geometry* (*Davies' Legendre* or *Chauvenet*).

IN HISTORY—Upon *Freeman's Outlines of History*.

IN FRENCH—On *Selections from Collot's Pronouncing French Reader: Smith's Guide to French Conversation* (selections) and *Brégy's Compendium of Grammatical Rules* (First Part).

Applicants for admission to the JUNIOR or SENIOR CLASS, who pass the above examinations satisfactorily, will have special appointments made for their examinations upon the studies of the *Sophomore and Junior Years*.

A second examination of applicants for admission, under the same conditions, will be held on days to be hereafter publicly announced previous to the beginning of the September Term.

☞ As candidates are often found deficient in *Ancient and Modern Geography*, it may be well to remind them that the same examination in these subjects is required of them, whether they apply for admission to the Department of Arts or to that of the Towne Scientific School. The examination will include in its questions, “*General Geography*” and, more minutely, that of *Modern Europe*, with particular reference to points of importance in the study of Modern History: and such portions of *Ancient Geography* as are necessary to the intelligent study of Ancient History: Particularly, the chief states, cities, rivers, mountain-chains, and adjacent waters and islands, of Asia Minor, Greece, and Italy.

Candidates are also reminded that, in their *Mathematical* examination, they will be expected to show that they are prepared to resume the study in the University, at the point where the *Entrance* examination terminates.

All the students in the Department of Arts who are candidates for the degree of Bachelor of Arts, pursue the same studies during the Freshman and Sophomore years. For the remaining two years of the course a limited election or choice of various studies is permitted under the following rules:—

During these two years *all* the members of the class are *required* to study Intellectual and Moral Philosophy; General Mechanics and

Physics, including Mathematical and Physical Astronomy and Physical Geography; English Literature and American History; the elements of the History of Civilization, and of Social and Political Science. They are also all instructed in English Composition and in Oratory.

Besides these studies, each member of the class at the beginning of his Junior year must select from the following list *three* subjects of study which he shall pursue during the last two years of his course, the alternatives being the following. He must take either—

GREEK or GERMAN;

LATIN or FRENCH;

PURE MATHEMATICS or advanced studies in HISTORY and ENGLISH LITERATURE.

A student may pursue the full course, or he may take any portion of that course which the Faculty may sanction. But no person will be admitted by the Faculty to a partial course, unless it is clearly shown that he has had sufficient preparation to profit by the instruction of those Professors whom he wishes to attend. At the termination of such a partial course, satisfactorily pursued, a certificate of proficiency will be awarded.

III.

COLLEGE TERMS AND VACATIONS—TUITION FEES.

The college year is divided into three terms: the *first* beginning on the 15th of September, and ending on the 24th of December; the *second* beginning on the 2d of January, and ending on the Wednesday before Easter; and the *third* beginning on the Tuesday after Easter, and ending on the last Thursday of June (Commencement day).

The Annual Tuition Fee is one hundred and fifty dollars, or fifty dollars for each term, payable always in advance, to the Treasurer of the University, at the beginning of each term. The Graduation Fee is twenty dollars.

During the first and second terms private examinations in the way of review are held by each Professor; and a public examination

upon the studies of the whole year is held by the Faculties in both Departments. At the end of each term students who attain distinction are classed in order of merit.

Students shown by their term average to be deficient in any of their studies are conditionally attached to their class until they prove on re-examination that said deficiency has been fully made up. In case of persistent neglect, or evident inability to keep up with the class, from any cause, the student must be dropped from the rolls.

COURSE OF INSTRUCTION FOR THE DEGREE OF BACHELOR OF ARTS.

FRESHMAN CLASS.

GREEK.—Xenophon (*Hellenics*). Aristophanes (*The Clouds*). Arnold's Greek Prose Composition.

LATIN.—Selections from Livy and Horace's Satires, with Professor's Syllabus.

MATHEMATICS.—Algebra (*Olney's*, to page 250). Geometry (*Chauvenet*). Plane Trigonometry (*Chauvenet*).

ENGLISH.—*Freeman's Outlines of History* and Lectures, with *Labberton's Historical Atlas*. English Lessons for English People.

FRENCH.—*Collot's Pronouncing French Reader*. *Brégy's Compendium of Grammatical Rules* (First Part). Guide to French Conversation (*Smith*, revised edition).

SOPHOMORE CLASS.

GREEK.—Thucydides (*Sicilian Expedition*). Aristophanes. Arnold's Greek Prose Composition completed.

LATIN.—Tacitus (*Agricola*, *Germania*, or *Annals*). Cicero (*De Senectute* or *De Officiis*). Horace (*Selected Odes*) with Professor's Syllabus of Horatian Metres.

MATHEMATICS.—Plane and Spherical Trigonometry (*Chauvenet*), with applications to Surveying, Navigation, etc. Analytical Geometry (*Olney*).

ENGLISH.—Elements of Rhetoric. *Earle's Philology of the English Tongue*, with Lectures. Compositions and Declamations.

GERMAN.—*Plute's German Studies*. Practical Exercises in Translation. Guide to German Conversation.

FRENCH (*Voluntary*).—*Un Philosophe sous les toits*. *Brégy's Compendium of Rules* (2d part). Guide to French Conversation (*Smith*, revised edition).

CHEMISTRY. Introduction to Modern Chemistry. Lectures.

JUNIOR CLASS.

- PHILOSOPHY (*Required*).—Intellectual Philosophy. Lectures introductory to Philosophy. *Hamilton's Philosophy*. Moral Philosophy. *Whewell's Elements* (Lectures). Logic. (*Atwater*.)
- GREEK (*Elective with German*).—Theocritus. Demosthenes (*Public Orations*). Plato. Sophocles.
- LATIN (*Elective with French*).—Selections from Juvenal. Cicero. (*De Officiis, De Finibus or De Amicitia*). Horace (*Epistles*).
- PURE MATHEMATICS (*Elective with English*).—Differential and Integral Calculus (*Olney*).
- PHYSICS (*Required*).—Mechanics. Sound. Heat. (*Ganot's Physics*.) Experimental Lectures.
- ENGLISH (*Required*).—Green's *History of the English People*. Compositions and Declamations.
- ENGLISH (*Elective with Pure Mathematics*).—History (*Student's Gibbon*).
- GERMAN (*Elective with Greek*).—Plate's German Studies. Whitney's German Grammar. Schiller's *Wilhelm Tell*. Storm's *Immensee*.
- FRENCH (*Elective with Latin*).—*Racine*. Noel et Chapsal's Grammaire. *Sadler's Cours de Versions*.

SENIOR CLASS.

- PHILOSOPHY (*Required*).—Intellectual Philosophy—Lectures: *Systems from Bacon to the present*. *Berkeley's Principles, annotated*. Evidences of Natural and Revealed Religion. *Butler's Analogy*.
- GREEK (*Elective with German*).—Xenophon (*Memorabilia*). Euripides.
- LATIN (*Elective with French*).—Cicero (*Tusculana or Oratio pro Cluentio*). Horace (*Ars Poetica*) or Lucretius (Selections). Reading at Sight.
- PHYSICS (*Required*).—Light and Electricity, including Magnetism (Lectures). Mathematical Astronomy (*Gummere*). Astronomical Physics (Lectures).
- ENGLISH (*Required*).—*Guizot's History of Civilization*. American History (Lectures). *Taine's English Literature*. International Law (Lectures). *Thompson's "Social Science and National Economy."* Compositions and Original Declamations.
- GERMAN (*Elective with Greek*).—Goethe's Egmont. Lessing's Nathan der Weise. History of German Literature. Exercises in German Grammar.
- FRENCH (*Elective with Latin*).—*Molière*. *Bridge's History of French Literature*. *Brégy's Compendium of Rules* (reviewed). French Compositions.

GRATUITOUS INSTRUCTION, ETC.

The Committees on the Department of Arts and the Towne Scientific School may admit, for gratuitous instruction in these Departments, such persons, not exceeding fifteen at any one time, as shall pass a satisfactory examination, and be reported by the Provost as worthy of admission.

Ten prize scholarships in the Towne Scientific School (tenable for four years) are given annually to pupils from the public schools of Philadelphia. The candidates for these scholarships are sent up by the Board of Public Education to the annual Examination for admission in the month of June. The scholarships are bestowed upon those of their number (not exceeding ten) who reach the highest grade in that examination, provided that grade is at least 65 out of a possible 100.

Arrangements have been made to assist persons of limited means, but who are in earnest in their desire to gain a College education. For information in regard to these arrangements, candidates should apply *in person* to the PROVOST.

The degree of Master of Arts may be conferred on the alumni of the University, Bachelors of Arts of three years' standing, but, after the year 1878, only on those who shall give evidence that they have pursued liberal studies since their graduation, and shall present a satisfactory Thesis to the Faculty of Arts.

A public Commencement for conferring degrees is held on the last Thursday of June.

LIBRARIES.

Great additions have been recently made to the Libraries of the University. It is proposed to enlarge them still further, as occasion may offer, and to make the fullest use of this means of supplementing the instructions of the Class-room. Besides the old Library of the University, and those Libraries which are designed for the use of students in Chemistry and Engineering (the WETHERILL and the

ROGERS), there is the COLWELL LIBRARY, composed of a very complete collection of books relating to Social and Political Science, which has been arranged and is now ready for reference. The extensive and valuable Classical Library of the late Professor ALLEN has been presented to the University. A very choice collection of books, intended to illustrate the instruction in History and English Literature, has also been added; and, lastly, a Library selected with great care and designed to aid in the study of the English language, and of the works of Shakspeare, has been procured. The Libraries of the two Literary Societies of the University are also open to the students.

PRIZES.

I. A stated annual appropriation is made by the Board of Trustees to enable the Faculty to offer *Prizes* for superiority in the performance of voluntary exercises, over and above the ordinary Course. The subjects are proposed by the several Professors early in the year; the award is made by the Faculty, and reported to the Board, before the month of June; and the names of those who have received prizes are published at the annual Commencement.

The prizes offered for the present year, under this regulation, are—

1. In the DEPARTMENT OF INTELLECTUAL AND MORAL PHILOSOPHY, a prize of the value of \$20 for the best Essay by a member of the Junior Class. Subject: *Victor Cousin as a Philosopher*.

2. In the Department of Latin Language and Literature, a prize of the value of \$30 for the best examination upon Cicero's Oration *Pro Cluentio*, read with the Professor in addition to the regular course, by a member of the Senior Class.

3. In the DEPARTMENT OF MATHEMATICS, a first and second prize of the value of \$15 and \$10 respectively, for the best extra work and examination in Mathematics by members of the Freshman Class.

4. In the DEPARTMENT OF HISTORY AND ENGLISH LITERATURE, a prize of the value of \$30 for the best English Essay, by a member of the Senior Class. Subject: "*The Lessons of the International Exhibition*."

5. A prize of the value of \$20 for the best English Essay, by a member of the Junior Class. Subject: *Robert Fulton as a Pioneer*.

6. A prize of \$15 for the best original Declamation by a member of the Sophomore Class.

7. A prize of \$10 for the best Declamation by a member of the Freshman Class.

II. To encourage the training in Greek and Latin Prose Composition in the Preparatory Schools, a first and a second prize have been established by the Faculty, under authority of the Board of Trustees, of the values of \$15 and \$10 respectively, to be awarded annually to the two Freshmen who upon entering College shall pass the best special examination in the *Elements of Latin Prose Composition*, provided said examinations reach a satisfactory standard of excellence: the examination to take place on or about the first day of October. The examination in 1877 will be upon the first forty exercises in Part I. of Arnold's Latin Prose Composition. Certificates of the fact will also be presented to *all* competitors whose examination reaches a satisfactory standard.

Two prizes of like amount for *Greek Prose Composition* will be awarded annually. The examination in the year 1877 will be upon the whole of Jones's Greek Exercises.

III. A prize of \$20 has been established by the Board of Trustees, to be awarded to such member of the Scientific Classes as shall, "by his improvement in Drawing, and his general good conduct and application," be entitled to such honorary distinction.

IV. The "HENRY REED PRIZE," founded by the Alumni of the University in memory of the late Prof. Henry Reed, is annually awarded for the best *English Essay* by a member of the Senior Class (Department of Arts), entitling the successful candidate to one year's interest on a certificate of loan issued by the City of Philadelphia in the sum of \$600, and also to an accompanying Diploma of Merit. The Essays must be handed in to the Provost, for transmission to the Board of Trustees, by the first of May. The subject for the present year is "*Spiritual Forces in History*."

V. The SOCIETY OF THE ALUMNI have founded the following prizes:—

1. A prize to be annually awarded to that member of the graduating class who shall present the best *Latin Essay*, entitling the successful candidate to one year's interest on a certificate of loan, issued by the City of Philadelphia, in the sum of \$900. The Essays must be handed to the Provost, for transmission to a Committee of Examiners appointed by the Society, by the first day of May.

2. A prize is annually awarded to a member of the Junior Class for the best *Original Declamation*, entitling the successful candidate to one year's interest on certificates of loan, issued by the City of Philadelphia, in the sum of \$300.

No prizes are offered this year in the Department of the Greek Language and Literature, as the newly elected Professor of Greek has not yet entered upon his duties.

THE TOWNE SCIENTIFIC SCHOOL.*

I.

FACULTY.

- CHARLES J. STILLÉ, LL.D., PROVOST OF THE UNIVERSITY, and *John Welsh Centennial Professor of History and English Literature.*
- REV. CHARLES P. KRAUTH, D.D., LL.D., VICE-PROVOST, and *Professor of Intellectual and Moral Philosophy.*
- J. PETER LESLEY, A.M., DEAN OF THE FACULTY, *Professor of Geology and Mining.*
- E. OTIS KENDALL, LL.D., *Professor of Mathematics.*
- F. A. GENTH, A.M., PH.D., *Professor of Chemistry and Mineralogy.*
 ———— *Whitney Professor of Dynamical Engineering.*
- GEORGE F. BARKER, M.D., *Professor of Physics.*
- OSWALD SEIDENSTICKER, PH.D., *Professor of the German Language and Literature.*
- JOHN G. R. McELROY, A.M., *Professor of Rhetoric and the English Language.*
- REV. ROBERT E. THOMPSON, A.M., *Professor of Social Science.*
- F. AMÉDÉE BRÉGY, A.M., *Professor of the French Language and Literature.*
- THOMAS W. RICHARDS, A.M., *Professor of Drawing and Architecture.*
- LEWIS M. HAUPT, *Professor of Civil Engineering.*
- GEORGE A. KÖENIG, PH.D., *Assistant Professor of Chemistry, Instructor in Metallurgy and Technical Chemistry.*
- SAMUEL P. SADTLER, PH.D., *Assistant Professor of Chemistry, Instructor in General and Organic Chemistry.*

INSTRUCTORS AND ASSISTANTS.

- OTIS H. KENDALL, A.M., *Instructor in Mathematics.*
- WILLIAM D. MARKS, PH.B., C.E., *Instructor in Dynamical Engineering.*
- EDGAR F. SMITH, PH.D., *Assistant in Analytical Chemistry.*
- JOHN HENRY HARDEN, *Assistant in Geology and Mining Engineering.*
- THOMAS FRENCH, PH.D., *Assistant in Physics.*
- R. E. THOMPSON, A.M., *Secretary.*

II.

AIMS OF THE TOWNE SCIENTIFIC SCHOOL.

The design of the instruction in this School is to give a thorough technical and professional training to those who propose to engage

* The Department of Science in the University having been largely endowed under the provisions of the Will of the late John Henry Towne, Esq., the Board of Trustees at its meeting in June, 1875, resolved, that in honor of his memory it should hereafter be known as "THE TOWNE SCIENTIFIC SCHOOL OF THE UNIVERSITY OF PENNSYLVANIA."

in the following, among other pursuits, viz.: in CHEMISTRY, with its manifold applications to the industrial arts; in METALLURGY and ASSAYING; in MINERALOGY, GEOLOGY, and MINING; in CIVIL, DYNAMICAL or MECHANICAL, and MINING ENGINEERING; and in MECHANICAL DRAWING and ARCHITECTURE. A GENERAL COURSE embracing scientific studies, but not of so technical and professional a nature as provided in the other courses, has been established.

In order that this professional course shall be complete and systematic, and rest upon a broad basis, so that the student at its close may not be a mere *specialist*, but a man of liberal education as well, it has been determined that the course shall be a comprehensive one, extending through four years. The first two years are devoted, not merely to a thorough training in the preparatory and elementary Mathematics, Physics, Chemistry, and methods of physical research generally, but a considerable portion of the time is given to instruction in certain English studies—History, Logic, English Composition, Rhetoric, and Oratory—as well as to the Modern Languages and to Mechanical and Free Hand Drawing.

At the close of these two years, the student is presumed to be prepared for studies of a strictly professional or technical character, and he then selects one of six parallel courses, in which instruction is given in this Department, and during the last two years his work is mainly confined to the studies of one or other of these courses, in accordance with the plans he may have formed in regard to his future profession.

The professional courses, from which a student may select, are at present—

- I. COURSE IN ANALYTICAL AND APPLIED CHEMISTRY AND MINERALOGY.
- II. COURSE IN GEOLOGY AND MINING.
- III. COURSE IN CIVIL ENGINEERING.
- IV. COURSE IN MECHANICAL ENGINEERING.
- V. COURSE IN DRAWING AND ARCHITECTURE.
- VI. GENERAL COURSE.

The Degree conferred by the University, on the satisfactory completion of any one of these professional courses, is that of BACHELOR OF SCIENCE.

A POST-GRADUATE Course of Instruction in this School has been organized. For the *programme* of this course, see p. 46.

The Degree of MASTER OF SCIENCE will be conferred upon such Bachelors of Science as may have pursued the Course of Post-Graduate Instruction prescribed, and who shall have shown their proficiency by examination, and by presenting a satisfactory Thesis.

III.

TERMS OF ADMISSION, FEES, ETC.

Candidates for admission to the Freshman Class, in the Towne Scientific School, must be at least sixteen years of age, and must be prepared to pass an examination in Ancient and Modern Geography, in English Grammar and the Elements of English Composition, in the Elements of French Grammar and translation, in Arithmetic, including the Decimal System of Weights and Measures, in Algebra through Quadratic Equations, and in the first four books of Chauvenet's Geometry.

Applicants for admission to the FRESHMAN or other CLASSES in the Towne Scientific School will be examined for the current year as follows:—

ON FRIDAY, JUNE 22D, from 9 to 10½ o'clock—A written examination in *English Grammar and the Elements of English Composition*, and in *Ancient and Modern Geography*.

☞ For details of this examination see page 21.

From 10½ to 12¾—Oral examination in *Collot's French Reader* (first 100 pages), and in *French Grammar (Brégy) to the Irregular Verbs*.

ON SATURDAY, JUNE 23D, from 9 to 11—A written examination in Arithmetic (*Elementary Rules, Compound Numbers, Fractures, Proportion, Percentage*, and the *Decimal System of Weights and Measures*).

From 11 to 1—A written examination in *Algebra* (to *Quadratic Equations*, as in *Alsop's Algebra*, to page 152, including *Proportion, Progression, Surds, Imaginary Quantities*, and the *Binomial Theorem*).

ON MONDAY, JUNE 25TH, from 9 to 10—A written examination in Geometry (*through the first four books of Chauvenet's Geometry*).

TOWNE PRIZE SCHOLARSHIPS.

Candidates for the Towne Prize Scholarships from the Public Schools will be examined on the 15th of June (at the same hours) in

the subjects assigned for other applicants for the 22d; on the 16th of June, in those assigned for the 23d; and on the 18th, in those assigned for the 25th of June.

Candidates for admission to either Department are also reminded that, in their *Mathematical* examination, they will be expected to show that they are prepared to resume the study in the University, at the point where the Entrance examination terminates.

Applicants for admission to the SOPHOMORE CLASS will, in addition to the above, be examined on the following subjects which have been studied in the Freshman Class:—

ON MONDAY, JUNE 25TH, from 10 to 12—A written or oral examination upon the whole of *Alsop's* or *Olney's University Algebra*, *Chauvenet's Geometry*, and *Chauvenet's Plane Trigonometry*.

From 12½ to 2—A written examination upon *Earle's Philology of the English Tongue*.

Also, Oral examinations upon the following subjects:—

IN HISTORY—Upon *Freeman's Outlines of History*.

IN CHEMISTRY—Upon *Theoretical Chemistry* (Barker's).

IN FRENCH—On *Selections from Collot's Pronouncing French Reader*; *Smith's Guide to French Conversation* (pp. 7, 8, 182, 183, 184, 185); and *Brégy's Compendium of Grammatical Rules* (First Part).

Special students (not candidates for a degree) may be received into any of the professional courses, when, in the opinion of the Professor, the applicant is likely to derive profit from the instruction given, and where the applicant desires to receive technical instruction only in any one of the professional courses. Permission will not be given, however, in any case, except upon proof of sufficient preparation, and will be withdrawn in all cases of irregularity of attendance or conduct. To these students a CERTIFICATE OF PROFICIENCY will be awarded upon the completion of such a course and a satisfactory examination therein. No PARTIAL STUDENTS, that is, those proposing to take a portion of one or more of the professional courses, can be received during the last two years of the course of instruction in the TOWNE SCIENTIFIC SCHOOL.

The college year is divided into three terms: the *first*, beginning on the 15th of September, and ending on the 24th of December; the *second*, beginning on the 2d of January, and ending on the Wednesday before Easter; and the *third*, beginning on the Tuesday after

Easter, and ending on the last Thursday of June (Commencement day).

The fees for instruction in the Towne Scientific School are \$50 per term (payable in advance to the Treasurer at the beginning of each term), or \$150 per annum. The Graduation Fee is \$20. The regulations in regard to gratuitous instruction in the Towne Scientific School will be found on page 25.

A separate charge is made to all students for chemicals and the use of apparatus, whenever they may be needed for practical exercise in the Laboratories.

Any further information concerning the Towne Scientific School may be obtained by addressing Professor J. P. LESLEY, Dean of the Faculty, 1008 Clinton Street, or Professor THOMPSON, Secretary, at the University.

IV.

COURSE, METHODS, AND MEANS OF STUDY.

The Students in the Towne Scientific School are divided into four classes, Senior, Junior, Sophomore, and Freshman.

Instruction is given by lectures and recitations, and by daily exercises in the Laboratories, Drawing, and Model Rooms, which are open to the students all day, work being required of them five afternoons in the week, as well as in the morning hours named in the Roster.

Instruction is made as practical as possible. In the Department of CHEMISTRY, the Freshmen attend a course of Lectures on Elementary Chemistry, followed by illustrated Lectures on the Non-metallic Elements. In the Sophomore Year they have a very complete course of Lectures, fully illustrated by experiments and covering the whole ground of Inorganic Chemistry, and commence with a practical exercise of several hours a week in a Laboratory specially devoted to this work. They perform the simple experiments illustrating the manual they study, and thus have a valuable course in manipulation of apparatus, etc. In the Junior Year commences their work in the Analytical Laboratories, while they also attend Lectures on Organic Chemistry, Mineralogy, and Metallurgy. In the Senior Year the work in

the Laboratory is continued with Quantitative Analysis, etc., and Lectures and practical work on Metallurgical and Technical subjects.

Students in GEOLOGY are trained in drawing rooms to plotting original field notes, contouring, making relief maps of mineral properties, constructing sections on an equal vertical and horizontal scale, converting thereby their maps into clay models, casting these in plaster, and coloring the solid models to show the structure of the country. Solid models of underground work are made to show the posture of veins and beds, and the connection of these with the surface. To these are added illustrative diagrams and pictures, calculations of quantity, and whatever else is needful for the writing of reports for professional service.

One or more excursions to the mines and furnaces of the State, for the purpose of practical instruction, are provided for in the Spring.

Students in CIVIL and in DYNAMICAL ENGINEERING will be required to make drawings and models as an essential part of the course.

Workshops for modelling in wood, iron, and plaster are now established, where the students construct, from their own working drawings, models of a technical nature.

Field practice in Surveying and Engineering, and the careful inspection of machine shops, factories, and public works in process of construction form an essential part of the instruction given, Saturday being set apart for that purpose.

The field practice in Civil Engineering is intended to instruct the students in the practical problems of Chain Surveying (Perpendiculars, Broken Lines, Areas, etc.); and the use of instruments in the location of Roads and Railroads, and in Topography.

To the more advanced students the practical determination of the problems of Geodetic Surveying and Hydrography will be taught by field practice, and the construction of private and public works will be illustrated and taught by visits of inspection.

The PHYSICAL COURSE in the Department of Arts extends over two years; that in the Department of Science, over three. During the first year the instruction is by means of text-book recitations, explanations and illustrations being introduced where necessary

During the second year the instruction is by lectures, with examinations at stated intervals. In the first year the course comprises Mass-Physics, including Acoustics, and the subject of Heat in Molecular Physics. In the second, Molecular Physics, comprising Light and Electricity, is finished. For the present, a course of lectures on Astronomical Physics is included in the instruction of the second year in this department. The third year of instruction in physics is given exclusively to the Senior Class of the Department of Science, and consists of practical work in the *Physical Laboratory*, for a given number of hours a week. It is intended to limit the course to Quantitative Methods in Physics; in other words, to put the student in practical possession of the best methods of accurately measuring quantities, whether these be the simpler quantities of mass-measurement, as volumes, densities, or motions, or the more subtle measurements of thermal, electrical, or luminous quantities.

In Pennsylvania, the chief seat of coal mining and iron smelting, and in Philadelphia, the most important focus of American manufactures, such practical instruction in Mining and Metallurgy, Civil Engineering, and Mechanical and Physical Science, not only is indispensable, but takes precedence of merely didactic and theoretical scientific tuition, such as was once accounted a sufficient supplement of a liberal education. The Students of this Department of the University, therefore, are not only taught to comprehend the principles, but to exercise themselves constantly in the technical labor demanded by a professional life before assuming its responsibilities in the world of business. Every year will enlarge the scope and add to the efficiency of the instruction organized on this practical basis.

CABINETS, APPARATUS, Etc.

The *Chemical Department* contains a large collection of minerals, embracing over 10,000 specimens, representing the most important forms and varieties of nearly every established species. It contains many unique specimens, and especially many pseudomorphous forms.

Of instruments it contains a fine Zentmayer's microscope, with

Polarizer, etc., and Groth's improved instruments, viz., Goniometer for the exact measurement of angles of crystals, his Stauroscope for the optical examination of crystals, and his universal compound instrument for the exact determination of the optical bisectrix and the optical behavior of minerals at an elevated temperature.

It also contains a collection of slices or microscopical sections of all the important minerals and artificial crystals for the study of their optical properties, and

A collection comprising three series of microscopic plates cut from typical rocks, and a machine for the production of microscopic plates, a complete collection of the renowned "Siegen Models of Crystals," illustrating the formation of the more complicated from the simple forms, and very complete sets of wooden models for practical study.

For instruction in *Analytical Chemistry*, students are furnished with a working table, and each with a set of such reagents as are constantly required for their work.

The Laboratory for Volumetric Analyses is furnished with a complete set of graduated vessels for normal or standardized solutions, with burettes, pipettes, etc.; also a collection of hydrometers, alcoholometers, and similar instruments, representing the principal forms used in the arts.

The Laboratory for Gas Analysis contains a complete set of apparatus for such work, absorptiometer, etc.; also a machine for graduating eudiometers.

For the determination of the value of saccharine substances, a Soleil-Ventzke's Saccharimeter has been acquired, and for the valuation of illuminating gas, Bunsen's Photometric Apparatus.

A Laboratory has been fitted up so as to allow of exercises in chemical manipulation by the Sophomore Class. It is thought that a preparatory course of this kind will prepare Students better for the regular analytical work in the main Laboratories.

A Chemical Museum has also been begun. In Philadelphia, the centre of the chemical manufacturing industry of the country, such a Museum is peculiarly appropriate. With the co-operation of the

largest manufacturing establishments, already assured, it cannot fail of being a success.

The Metallurgical and Assay Laboratories, etc., are furnished with the requisite furnaces, also with numerous diagrams and models of wood, representing on a reduced scale many of the most important forms of furnaces and machinery, and a Spectroscope, especially constructed for observations of the spectra in the production of Bessemer steel.

There is also a collection of furnace products and ores from Freiberg, representing the whole metallurgical process.

A *Collection of American Fossils* (exclusive of the vertebrata) has been presented to the *Geological Department* of the University, and has been systematically arranged during the past year. It exhibits in two parts, first, type specimens of all the known subdivisions of prezoic, palæozoic, mesozoic, and kainozoic rocks, with or without their fossils; and, secondly, types of all known genera and characteristic species of the fossils themselves. It has been constructed on this plan to exhibit the gradual change of the sedimentary formations in passing from one geographical district to another, and the effects of these changes upon the organic life-forms in the same age and in successive ages.

Suites of European fossils and collections of American coals and iron ores make the Museum useful in other ways. It is hoped that all the graduates of the School will show their interest in the Museum by collecting for it valuable suites of minerals, metals, products of furnaces, and fossils wherever they may spend their professional lives.

Important additions have been made to the already excellently-arranged apartments heretofore assigned to the *Department of Physics*. The lecture-room has been provided with the conveniences which the recent rapid progress of Experimental Physics renders necessary if a corresponding fulness of demonstration be attained. Besides water, gas, and steam, the lecture-table is supplied with a vacuum and an air-blast, with oxygen and hydrogen, and with electricity, all of which are constantly available. The photographic-room

and the battery-room are in full operation, and a photometric-room is in course of preparation. A large room has been assigned as a workshop, and is to be fitted up with the necessary tools for the working of wood and metals, after the plan now becoming general in all our larger scientific institutions. The value of such a room, in teaching the student the use of tools and in enabling him to construct special apparatus, cannot easily be overestimated.

The apparatus used, both for the purposes of lecture-demonstration and of practical laboratory work in the Department of Physics, is intended to be very complete. A large part of it has been recently purchased in Europe. It comprises acoustical apparatus from Kœnig, electrical measurement apparatus from Elliott, other electrical apparatus from Ruhmkorff, Borchardt, Alvergriat, and Geissler; optical apparatus from Duboscq, Hofmann, Browning, and Ladd; and apparatus in mass-physics from Salleron. Among the larger pieces of apparatus may be mentioned a powerful electro-magnet from Mr. Wallace, and a large Gramme magneto-electric machine for the electric light. It is expected that greater additions will be made to the collection of apparatus, especially to that portion designed for the physical laboratories and the laboratories for special investigation, so soon as it shall become necessary.

In the Department of Civil Engineering, the cabinet contains a selection of models of bridges, roofs, wooden pavements, excavators, rolling stock, couplings, brakes, springs, divided axles, lock nuts, rails, switches, frogs, hydraulic apparatus, and machines used in construction; specimens of American timbers from different States; photographs of quarries, bridges, and tunnels; a large collection of mounted studies of important American and Foreign Engineering works; several sets of topographical charts, etc.

There has recently been added a collection of Schröder's models illustrating problems in Descriptive Geometry and intersections of solids.

The collection of surveying instruments includes, *inter alia*, two standard ten feet rods for base measurements, two levelling rods, ten transit rods and flags, a collection of chains, tapes, pocket sextant,

orthogoniometer, odometer, trigonometer, clinometer, compass, transit, solar transit, Y level, hand levels, plane table, heliotropes, etc.

The Rogers Engineering Library, is composed of the best works on the various sub-divisions of the profession, treating of drawing, mathematics, astronomy, physics, surveying and explorations, technical works on roads, and strength and properties of material, railroads, tunnels, canals, water supply, drainage, architecture, mechanics, navigation, harbor improvements, park and landscape engineering, with a valuable collection of Reports of American, English, and French Engineering Societies and periodicals. Coast survey and hydrographic charts, maps, diagrams and drawings.

In the Department of Dynamical Engineering the cabinet contains: couplings, trains of spur- and bevel-wheels, the worm and spur-wheel, the screw-propeller, a combination of the toggle-joint and screw, the differential screw, a tilt-, trip-, and forge-hammer, several dynamometers, a governor with throttle-valve, a set of fixed and movable and compound pulleys, an apparatus to determine the coefficient of friction, and models of various forms of steam engines, water-wheels, etc.

A SCIENTIFIC SOCIETY has been organized by Students of the School, with the co-operation of a few of those in the Department of Arts, and meetings are held every week, at which scientific essays are read, discussions are held, and a general comparison of observations and experiences is had. A collection of minerals and of the local fauna and flora is forming.

V.

COURSE OF STUDY.

The following is an outline of the Course of Study pursued in the Towne Scientific School:—

FRESHMAN YEAR.

ENGLISH.—*Freeman's General Sketch of History*, with *Labberton's Historical Atlas*. Elements of Rhetoric. *Earle's Philology of the English Tongue*, with Lectures. Compositions. English Lessons for English People.

FRENCH.—*Collot's* Pronouncing French Reader. *Brégy's* Compendium of Grammatical Rules (First Part). Guide to French Conversation (*Smith*).

MATHEMATICS.—Algebra (*Olney's University*). Plane Trigonometry (*Chauvenet*). Geometry (*Chauvenet*).

DRAWING.—Geometrical and Isometrical Drawing, and Drawing from the Flat. Free Hand Sketching. Use of the Scale and Protractor. Shading in India Ink. Graphical representations from Geometry. Ornamentation.

PHYSICAL SCIENCE.—Elementary Chemistry.

GERMAN.—Plate's German Studies.

SOPHOMORE YEAR.

ENGLISH.—Compositions and Declamations.

GERMAN.—Whitney's *German Grammar*. Schiller's *Wilhelm Tell*. Storm's *Immensee*. Guide to German Conversation.

FRENCH.—*Souvestre's* "Un Philosophe sous les toits." *Brégy's* Compendium of Grammatical Rules (Part II.) Guide to French Conversation. (*Smith*.)

MATHEMATICS.—Trigonometry, Plane and Spherical (*Chauvenet*). Descriptive Geometry, Shades, Shadows, and Perspective Spherical Projections. Analytical Geometry (*Olney*).

DRAWING.—Linear Perspective. Geometric and Isometric Drawing. Projection of Shadows. Architectural Detail and Ornament. Gothic Tracery. Drawing from the Solid Models. Shading in India Ink. Free Hand Drawing. Water Colors. Landscape.

PHYSICAL SCIENCE.—Mechanics, Sound, Heat. Theoretical Mineralogy (Crystallography, and Classification of Minerals). Theoretical and Inorganic Chemistry (fully illustrated lectures and Laboratory exercises in chemical manipulation). Topographical Geology (Construction of Geological Maps and Sections, Plans of Mines, and Calculations of Place and Quantity).

JUNIOR YEAR.

STUDIES PURSUED BY THE WHOLE CLASS.

ENGLISH.—Logic (*Atwater*). Compositions and Declamations.

GERMAN.—Schiller's *Wilhelm Tell*. Storm's *Immensee*. Whitney's Grammar and Exercises.

PHYSICAL SCIENCE.—Light and Electricity, including Magnetism. Astronomical Physics.

1. Studies pursued by the Chemical Section.

Organic Chemistry.—Lectures with Experiments.

Practical instruction in Chemical Manipulation, the use and construction of apparatus, and the detection of the more frequently occurring elements and the simpler compounds.

Qualitative Analysis by the blowpipe in connection with reactions in the humid way for the rapid determination of Minerals and Ores.—Introduction into Metallurgy. Pyrochemical properties of Minerals and their compounds. Metallurgical processes (Dressing of ores).

Instruction in the practical production of chemical salts, preparations, and simple substances in their greatest perfection and purity; and also according to the principles which govern their manufacture on a large scale.

Qualitative Analysis of more complex substances, with practice in determining the color and condition of products and in the determination of minerals.

Qualitative Analysis and detection of the more rare elements and organic constituents of bodies. Introduction to Quantitative Analysis. Use of the spectroscope in qualitative determinations.

Assaying of Ores. Metallurgical apparatus and its construction, with practical exercises and demonstrations on models and diagrams. Fuel. Ores.

Practical assaying of ores in the dry way.

Descriptive Mineralogy, the species and varieties fully illustrated by characteristic specimens of minerals.

2. *Studies pursued by the Geological Section.*

Organic Chemistry.—Lectures with Experiments.

The Coal and Iron Mines of the United States. Methods of Mining. Statistics. Uses. Markets, History, etc.

Copper, Lead, Silver, Gold, Salt, Petroleum, etc., in the United States, and elsewhere.

Mapping and modelling continued.

Surveying—same as for students in Department No. 3.

3. *Studies pursued by the Civil Engineering Section.*

MATHEMATICS.—Differential and Integral Calculus. Applications of Descriptive Geometry to working drawings in constructions and Stereotomy.

SURVEYING.—*Field-practice*; including Chain Surveying, Use of Compass, Transit and Plane Table in measuring lines and areas, Traversing and Location of Roads, Drains, etc., on Topographical Charts. *Recitations* from Gillespie's Land and Higher Surveying and Henck's Field-Book for Engineers.

DRAWING.—Topography in ink and colors, Studies in Contours. Plotting field notes; Shades, Shadows, and Perspective.

ARCHITECTURE.—Ornament. Styles. Decorations and Shading in Colors.

ENGINEERING.—Mechanics of Engineering embracing the Laws of Motion. Statics and Dynamics of Rigid Bodies, Determination of Centres of Gravity, Moments of Flexure, Rupture, etc.

METALLURGY.—Lectures on properties of metals, methods of reducing ores, blast-furnaces, etc., with practical blowpipe and humid analyses.

MINERALOGY.—Lectures on physical properties and characteristics, with examinations of natural specimens.

GEOLOGY.—Lectures on Structural Geology.

CHEMISTRY.—Laboratory Practice. Qualitative Analysis.

MODELLING.—Construction of Scarfs and Joints used in Framing, Centres, Caissons, Cofferdams, Trestles, Bents, etc., from working drawings.

4. *Studies pursued by the Mechanical Engineering Section.*

MATHEMATICS.—Differential and Integral Calculus. Descriptive Geometry (Applications to the Projections of Machines).

MECHANICS.—Laws of Motion. Statics and Dynamics of rigid Bodies. Definition of Elementary Machines. Work done by Machines. Apparatus to Measure the Mechanical Effect. Regulating Apparatus. Fly-wheel. Governors and Brakes. Friction.

Drawing of parts of Machines: Screw-bolts and nuts; riveting; gudgeons, pivots, axles, shafts, couplings, pillow-blocks, shaft-hangers; band, cord, and train-wheels; gearing; crank and connecting rod; walking beam; connection of pipes, valves, cylinders, pistons, stuffing boxes; hempen ropes, wire ropes, chains, tools, etc.

ARCHITECTURE.—Orders and Ornament; Shading in India Ink.

5. *Studies pursued by the Section in Drawing and Architecture.*

MATHEMATICS.—Descriptive Geometry (application to Ground Plans, Maps, etc.).

DRAWING AND ARCHITECTURE.—Principles and Method of Drawing the Classical Orders of Architecture. The Study of Executed Works and of Buildings in Progress. History of Architecture, illustrated by views of structures of all ages. Ornament. Water-color drawing.

MECHANICS.—Statics and Dynamics of Rigid Bodies.

ENGINEERING.—Masonry; Framing; Calculation of the strength of Framework; Materials; Construction.

6. *Studies pursued in the General Course.*

Physics; History; German; French; Ethics; Critical Study of the English Language; Geology; and Botany.

SENIOR CLASS.

STUDIES PURSUED BY THE WHOLE CLASS.

ENGLISH.—*Guizot's* History of Civilization. History of English Literature. American History, Lectures. International Law. *Thompson's* "Social Science and National Economy." Compositions. Declamations.

PHYSICAL SCIENCE.—Practical Physics, Instruction in the Physical Laboratory. [Instruction in the best methods of numerical computation of important formulas, is given to a Volunteer Class of Seniors.]

1. *Studies pursued by the Chemical Section.*

Quantitative Gravimetric Analysis of the simple and complex salts and minerals.
 Volumetric Analysis and preparation of normal solutions. Gas Analysis.
 Manufacture, graduation, and use of eudiometers.
 Determination of the constituents of cast-iron and steel. Practice in Agricultural Chemistry, and Analysis of Manures.
 Determination of small amounts of impurities (adulteration and poison in food and drink). Analysis of water of mineral springs. Organic Analysis.
 Practice in production of Chemical preparations. Quantitative Blowpipe Analysis.
 Special Metallurgy—Gold, Silver, Lead, Copper, Zinc, Cobalt, Nickel, etc.
 Metallurgy of Iron and Steel treated with special attention. Metallurgical practice. Construction of plans for metallurgical works, with estimate or cost.
 Practical determination of minerals by their physical properties.

2. *Studies pursued by the Geological Section.*

Special Geology of the United States taken up in order of the Formations, with characteristic minerals and fossils.
 The general Geology and Topography of the World, with regard also to the distribution of the metals and fuels.
 History of Geology.
 Writing of Professional Reports and their illustration by diagrams, maps, and pictures.
 Field practice in surveying.

3. *Studies pursued by the Civil Engineering Section.*

In addition to the studies of the whole class, as stated on page 42:—

ENGINEERING.—Strength and properties of materials. *Recitations* from Mahan's Civil Engineering, Gillespie's Roads and Railroads, accompanied by *lectures* on Calculations of Strains by Moments, Resolution of Forces, and Graphical Solutions; Tunnelling, blasting, and excavating in earth. Earthwork Computations; Estimates and Contracts.
 DRAWING.—Details of Engineering Works, Composition, Plans, Sections, Elevations; Profiles and Cross-sections. Working drawings.
 SURVEYING.—*Field practice.* Reconnaissance, Use of Prismatic Compass, Level, Solar Transit, Repeating Theodolites, and Heliotropes. Sketching; Preliminary Surveys for and locations of Roads, Railroads, or Canals; Hydrography; laying out of Parks; use of Sextant, etc.
 GEODOSY.—Measurement of Bases, Triangulation, Determination of Meridian, Latitude, Longitude, Time, and Azimuth.
 ASTRONOMY.—Gummere's Astronomy.
 MECHANICS.—Motors, Hydraulics, etc., with Principles of Mechanism.
 ARCHITECTURE.—Shading in Colors, Decorations, etc.

MINERALOGY.—Determinative Mineralogy.

METALLURGY.—Technical Chemistry and Metallurgy.

CHEMISTRY.—Qualitative Analysis.

GEOLOGY.—Lectures. Palæontology, etc.

MODELING.—Construction of trusses for bridges and roofs, girders, etc. Conducting experiments on strength of beams and trusses. Problems in stone-cutting.

4. *Studies pursued by the Mechanical Engineering Section.*

APPLIED MECHANICS.—Statics and Dynamics of Fluid Bodies.

MECHANISM.—Trains of Mechanism in general; rolling contact, sliding contact, wrapping connectors, link-work.

MACHINERY.—Strength and proportions of machines, water-wheels, water-pressure engines, steam and its properties, steam-engines, air and gas engines, estimates and contracts.

DRAWING.—Construction of machines. Working drawings. Architecture.

5. *Studies pursued by the Section in Architecture and Drawing.*

ENGINEERING.—Calculation of the strength of roofs and bridges. Foundations, retaining walls, arches.

ARCHITECTURE.—Elements of design and principles of composition. Ornament of all styles. Sketching and measurement of works executed and in progress, building materials and processes. Specifications. Contracts.

DRAWING.—Plans, Elevations, and Sections of original designs. Exercises with perspective views. Water-color.

6. *Studies pursued by the Section in the General Course.*

General Metallurgy; Determination of Minerals; Blowpipe Analysis; Geology; Practical Physics; Astronomy; Zoology; Social Science; International Law; History of Civilization; American History; Intellectual Philosophy; Comparative Philology.

The following Table shows the number of hours given WEEKLY to instruction in the PROFESSIONAL COURSES, viz.:

JUNIOR YEAR—STUDENTS IN

	1. Chemistry	2. Geology and Mining	3 Civil Engineering.	4. Mechanical Engineering.	5. Architecture.
General Chemistry	1	1	..	..	..
Applied Chemistry	12	11	2	2	2
Mineralogy	2	2	2	2	2
Metallurgy and Assaying	4	4	2	2	2
Physics	4	4	4	4	4
Geology	1	5	1	1	1
German	2	2	2	2	2
Mathematics . . . . .	..	..	3	3	3
Theoretical Mechanics . . . . .	..	..	3	6	3
Mechanical Drawing . . . . .	..	..	..	2	..
Civil Engineering . . . . .	..	..	2	..	3
Surveying . . . . .	..	5	5	..	..
Architectural Drawing . . . . .	..	..	4	4	7
Intellectual and Moral Philosophy	2	2	2	2	2
Number of Hours	28	36	32	30	31

SENIOR YEAR—STUDENTS IN

	1. Chemistry	2. Geology and Mining	3. Civil Engineering.	4. Mechanical Engineering.	5. Architecture.
Applied Chemistry	17	10	2	2	2
Metallurgy and Assaying	6	6	6	6	6
Geology	3	9	1	1	1
Physical Laboratory . . . . .	..	2	4	..	..
Mathematics	3	3	3	3	3
Mech. Engineering . . . . .	..	..	2	5	2
Mechanical Drawing and Modelling . . . . .	..	..	..	4	..
Civil Engineering . . . . .	..	..	7	..	3
Surveying (field practice). . . . .	..	..	4	..	..
History, etc.	3	3	3	3	3
Architectural Drawing . . . . .	..	..	5	3	12
Number of Hours	32	33	37	27	32

POST-GRADUATE INSTRUCTION IN THE TOWNE SCIENTIFIC SCHOOL.

1. The post-graduate courses of study extend over two years, at the conclusion of which, and upon satisfactory examination and presenting a thesis, students will receive the degree of Master of Science with special mention of the branch of study pursued.

2. Applicants for this course are received only at the beginning of the academic year, and if not graduates of the University of Pennsylvania (Towne Scientific School) or of other institutions named in the *ad eundem* list, they must pass an examination for admission thereto.

3. The rules in force for the undergraduates, in regard to discipline, attendance, and fees, govern the post-graduate students.

4. Instruction in this course is given in any one of the following subjects, viz.: I. Chemistry and Metallurgy; II. Geology; III. Civil Engineering; IV. Dynamic Engineering; V. Physics; VI. Architecture. The synopsis of instruction in each of the above branches is appended.

I. CHEMISTRY AND METALLURGY.

Applicants for admission to this post-graduate course, who are not graduates of the Department of Science or on the *ad eundem* list, will be examined as follows:—

General Chemistry. Barker's Text-Book of Chemistry, and Roscoe's Organic Chemistry, or Remsen's translation of Wöhler's Organic Chemistry, or their actual equivalents.

Analytical Chemistry. A report will be required, in writing, on the complete humid analysis of an inorganic compound; a blowpipe determination of a mechanical mixture: and a blowpipe determination of a mineral.

Metallurgy. An examination will be required on the use and construction of furnaces and blast engines; on fuels; on the extraction of metals from their ores; and on the practical assaying of ores in the dry way.

Physics. Ganot's Physics or its equivalent.

FIRST YEAR.

The studies in *General Chemistry* of the first year will consist of lectures on the historical development of chemistry and theoretical chemistry.

In Inorganic Chemistry: full discussion of special subjects of chemical technology; the principal feature of the course being the manufacture of staple chemicals, drugs, and dyestuffs.

In Analytical Chemistry: practice in gasometric and volumetric analysis of intermediate and ultimate products in the arts.

In Special Metallurgy: exercises with working details of processes and statistical references.

In Organic Chemistry: organic analysis, with determinations of vapor density, fusing and boiling points, etc.; preparation of organic reagents and compounds.

SECOND YEAR.

Original research in some one branch of chemistry or in metallurgy, at the option of the student. The result of this work will be accepted as a thesis for the degree.

II. GEOLOGY.

Applicants for admission to this post-graduate course (with the exceptions already stated) will be examined on Dana's Manual of Geology, or Juke's Manual of Geology, or Lyell's Elements. A specimen manuscript map with contour lines; a vertical section geologically colored; a cross-section of a mine; and the drawing of a fossil will be required.

FIRST YEAR.

Lectures on the history of theoretical geology. Practice in mapping and modeling from field notes.

Lectures on systematic palæontology. Practice in drawing and describing fossils.

Determinative mineralogy and lithology.

SECOND YEAR.

Superintendence of courses of reading, and the writing of special memoirs. A full, illustrated report on some mineral property in actual development will be accepted as a thesis for the degree.

III. COURSE IN CIVIL ENGINEERING.

Applicants for admission to this course, not graduates and not on the *ad eundem* list, will be examined on all the studies required of graduates in this department.

The subjects pursued in the two years will be *Stereotomy*—Amplification of the Theory and Practice of Roads and Railroads—*Railway Management and Policy*—*Practical Geodesy*—*Practical Hydrography in tidal waters*—*Hydraulic Engineering*, including distribution and supply of water to cities, irrigation, sewerage, and drainage—*Law of Contracts*, with specifications, detail drawings, and estimates—*Sanitary and Landscape Engineering*—*Construction of Bridges for Special Emergencies*—*Experiments on the Strength of Arches*, verifying advanced mathematical theories, etc.

IV. DYNAMICAL ENGINEERING.

Requirements for admission, similar to those above.

This course will include—

History of Mechanics; Mechanical Technology; Lectures on the working of wood, metals, and the manufacture of machinery for textile fabrics. Advanced studies in the theory and construction of mechanisms; Planning of machine workshops and factories; Drawing; Modelling in wood and iron; Visiting factories and machine-shops.

Considerable time will be devoted to graphic representation and the construction of models. The drawing-rooms and workshop will be open until 5 o'clock P. M. Visits to prominent works in course of erection will form an essential part of the above courses of Engineering.

V. PHYSICS.

Investigations of special subjects of physical research in the Physical Laboratory, and a satisfactory thesis giving evidence of high attainment.

VI. ARCHITECTURE.

This course will include free hand sketching of executed works and of buildings in course of erection—Measurements and descriptions—Original designs, with plans, elevations, sections, and perspective drawings in the different styles of architecture—Specifications of construction—Description of plans, indicating advantages and reasons for specific arrangements—Full-size working drawings of original designs—Estimates and contracts—Quality of material—Heating and ventilation.

UNIVERSITY OF PENNSYLVANIA,
MEDICAL DEPARTMENT.

THIRTY-SIXTH STREET AND WOODLAND AVENUE (DARBY ROAD).

MEDICAL FACULTY.

GEORGE B. WOOD, M.D., LL.D.,
Emeritus Professor of Theory and Practice of Medicine.
1117 Arch Street.

HENRY H. SMITH, M.D.,
Emeritus Professor of Surgery.
1800 Spruce Street.

ROBERT E. ROGERS, M.D.,
Professor of Chemistry.
1004 Walnut Street.

JOSEPH LEIDY, M.D., LL.D.,
Professor of Anatomy.
1302 Filbert Street.

FRANCIS G. SMITH, M.D.,
Professor of Institutes of Medicine.
1504 Walnut Street.

RICHARD A. F. PENROSE, M.D., LL.D.,
Professor of Obstetrics and the Diseases of Women and Children.
1331 Spruce Street.

ALFRED STILLÉ, M.D., LL.D.,
Professor of Theory and Practice of Medicine, and of Clinical Medicine.
3900 Spruce Street.

D. HAYES AGNEW, M.D., LL.D.,
Professor of Surgery and of Clinical Surgery.
1611 Chestnut Street.

HORATIO C. WOOD, JR., M.D.,
Professor of Materia Medica and Pharmacy.
1631 Arch Street.

JOHN NEILL, M.D.,
Professor of Clinical Surgery.
258 South Eighteenth Street.

WILLIAM PEPPER, M.D.,
Professor of Clinical Medicine.
1811 Spruce Street.

WILLIAM GOODELL, M.D.,
Clinical Professor of the Diseases of Women and Children.
Twentieth and Hamilton Streets.

JAMES TYSON, M.D.,
Professor of General Pathology and Anatomy.
1508 Spruce Street.

H. LENOX HODGE, M.D.,
Demonstrator of Anatomy.
506 South Broad Street.

CHARLES T. HUNTER, M.D.,
Demonstrator of Surgery.
1905 Walnut Street.

GEORGE M. WARD, M.D.,
Demonstrator of Practical Chemistry.
268 South Ninth Street.

HENRY C. CHAPMAN, M.D.,
Demonstrator of Experimental Physiology.

☞ The recent addition to the FACULTY, by the Board of Trustees, of PROFESSORS OF CLINICAL MEDICINE, CLINICAL SURGERY, the CLINICAL DISEASES OF WOMEN AND CHILDREN, and of GENERAL PATHOLOGY AND ANATOMY, will involve no change in the relations of the students to the SCHOOL. They will pay the same fees as hitherto, and the Candidates for Graduation will be examined upon such branches only as have heretofore been obligatory.

W. H. SALVADOR, *Janitor*,
University Building.

R. E. ROGERS, M.D.,
Dean of the Medical Faculty,
University Building.

MEDICAL DEPARTMENT.

The Medical Department of the University of Pennsylvania was founded in 1765. Its originators were Dr. WILLIAM SHIPPEN, Dr. JOHN MORGAN, Dr. ADAM KUHN, Dr. BENJAMIN RUSH, and Dr. THOMAS BOND, all of whom, except Dr. Bond, received their medical education in Europe, principally at the Universities of Leyden and Edinburgh, and there attained both distinction and honors. Among their successors, whose names are most widely known, were Barton, Wistar, Chapman, Physick, Dewees, Horner, Hare, Gibson, Jackson, and Hodge. From the foundation of the school down to the present time the number of its graduates EXCEEDS NINE THOUSAND.

The present eligible site of the school forms a portion of a large plot of ground ceded to the University by the city of Philadelphia, upon which one of the most stately college buildings in the country was erected for the Department of Arts and Sciences. The Medical Department occupies an adjacent edifice of the same general style of architecture, but much larger and more commodious, as well as more elegant, than any building in America devoted to a similar purpose. The Lecture and Dissecting Rooms, the Museums, and the numerous other apartments are so constructed as to excel all previous accommodations for a Medical School. These advantages, with the quietness, the absence of temptations to idleness, and the pure air of the locality, have greatly tended to promote industrious habits among the Students, to render their studies agreeable and profitable, and to preserve their health, objects which it was impossible to secure in an equal degree while the school remained in the centre of the city. The University is in the immediate neighborhood of its own Hospital and of the Philadelphia Hospital, at both of which Students receive Clinical Instruction. A more particular account of the clinical courses will be found below.

I.

REGULATIONS.

The Medical Department is under the immediate government of the Medical Professors, who constitute the Faculty of Medicine, subject to the Rules and Statutes of the Board of Trustees. The Faculty consists of—

A Professor of the THEORY AND PRACTICE OF MEDICINE AND CLINICAL MEDICINE,

A Professor of ANATOMY,

A Professor of MATERIA MEDICA AND PHARMACY,

A Professor of CHEMISTRY,

A Professor of SURGERY,

A Professor of OBSTETRICS AND THE DISEASES OF WOMEN AND CHILDREN,

A Professor of the INSTITUTES OF MEDICINE,

A Professor of CLINICAL MEDICINE,

A Professor of CLINICAL SURGERY,

A Clinical Professor of the DISEASES OF WOMEN AND CHILDREN, and

A Professor of GENERAL PATHOLOGY AND MORBID ANATOMY.

The Medical Faculty hold meetings for the purpose of arranging and conducting the business of the department, and for the preservation of order and decorum among the medical students.

One of the members acts as Dean, whose duty it is to keep the Minutes of the Faculty, to arrange the examination of the candidates for graduation, to conduct the business of the Faculty at their meetings, and to attend to correspondence.

The Medical Lectures begin on the first Monday in October, and end on the last day of February ensuing.

The Commencement for conferring the Degree of Doctor of Medicine is held by a special mandamus of the Board of Trustees during the month of March.

The following are the Rules in force in relation to the Degree of Doctor of Medicine:—

I. The candidate must have attained the age of twenty-one years,

have applied himself to the study of Medicine for three years, and been, during that time, the private pupil for two years, at least, of a respectable practitioner of Medicine.

II. The candidate must also have attended two complete courses of the following Lectures in this Institution:—

Theory and Practice of Medicine,
Anatomy,
Materia Medica and Pharmacy,
Chemistry,
Surgery,
Obstetrics and the Diseases of Women and Children,
Institutes of Medicine.

III. Medical students who have attended one complete course in a respectable Medical School, where the attendance on two complete courses is necessary to a degree, and where the same branches are taught as in this, and which is placed upon the *ad eundem* of this school, are permitted to become candidates by an attendance here for one full course; the rules of graduation being in other respects observed. They are also exempted from the payment of fees upon attending a second term.*

IV. When a candidate applies to the Dean for examination he must exhibit his tickets to prove that the above rules have been complied with.

V. The candidate, at the time of his application, must deliver to the Dean of the Medical Faculty a Thesis, composed by himself, on some medical subject. This Thesis is referred to one of the Profes-

* To induce as many students as possible to prolong and systematize their studies, the Faculty have adopted the following additional Rule:—

STUDENTS WHO HAVE ATTENDED TWO FULL COURSES OF LECTURES ON ANATOMY, CHEMISTRY, MATERIA MEDICA, AND THE INSTITUTES OF MEDICINE, MAY BE EXAMINED UPON THESE SUBJECTS AT THE END OF THEIR SECOND COURSE.

During their third course such students may devote themselves exclusively to the Lectures upon the THEORY AND PRACTICE OF MEDICINE AND CLINICAL MEDICINE, SURGERY, and OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN. In their final Examination for the Degree of M. D., they will be examined upon the last named subjects only; but their standing will be determined by the combined results of both examinations.

sors, who shall examine the candidate upon it, and make his report thereon to the Medical Faculty.

VI. When a candidate is rejected, his essay will be retained by the Medical Faculty.

VII. The essay must be in the candidate's own handwriting, and must be written uniformly on letter-paper of the same size, the alternate pages being left blank.*

VIII. Bad spelling in a Thesis, or evidences of a want of literary culture, will preclude a candidate from examination for a degree.

IX. A Thesis may be published by the candidate if he desire it, the permission of the Professor by whom he was examined thereon being first obtained; but no alteration shall be made in such Thesis without the consent of the said Professor.

X. The voting on the case of each candidate is by ballot. Candidates who have not been successful upon a first examination will be permitted to have a second, when all the classes have been disposed of by the Faculty. The second examination will be conducted in full meeting of the Professors.

XI. The candidate shall pay the graduation fee on the presentation of his Thesis, or before receiving notice of having successfully passed his examinations. Upon receiving such notice, he will enter his name on the register for the purpose of being reported to the Board of Trustees and included in the mandamus for a degree.

XII. Candidates who have passed their examination, and in other respects complied with the regulations, are to be reported by the Dean to the Provost, who will communicate such report to the Board of Trustees, in order that, if approved of by them, their mandamus be issued for conferring the Degree.

XIII. The Degree will not be conferred upon a candidate who absents himself from the Public Commencement, except by special permission of the Medical Faculty.

XIV. Graduates of Medical Schools, on the *ad eundem* list, by attending one complete course in this Institution, and complying

* The essays should be written upon Thesis paper, for the purpose of convenient binding together into volumes. It is recommended that the candidate prepare his thesis before the commencement of his last course of lectures.

with the above regulations, are put upon the same footing with students who have attended two complete courses here; that is, they may present themselves as candidates for graduation: but if they attend a second course, their tickets will be free. Such graduates, of five years' standing, are permitted to attend the course of Lectures, upon a general ticket of admission, free of expense, except the cost of the matriculating ticket. But this general ticket does not qualify for graduation.

EXPENSES.

Fees for the Course of Lectures (paid in advance)	\$140
Matriculating Fee (paid once only)	5
Graduating Fee	30

* * * No scholarships are sold by the UNIVERSITY OF PENNSYLVANIA.

The Lectures of the Session of 1877-8 will commence on the first Monday (1st) of October, and close on the last day of February ensuing.

II.

TEXT-BOOKS AND WORKS OF REFERENCE.

- On Practice of Medicine*: Wood's, Bristow's, or Roberts' Practice of Medicine; Stillé's Therapeutics; Walshe on the Heart and Lungs; Rindfleisch, or Green, on Morbid Anatomy.
- On Anatomy*: Leidy's Elementary Treatise on Human Anatomy; Sharpey and Quain's Anatomy; Wilson's Anatomy; Gray's Anatomy; Kölliker's Microscopical Anatomy; Stricker's Manual of Histology.
- On Materia Medica*: H. C. Wood's Therapeutics; Geo. B. Wood's Therapeutics; Wood and Bache's Dispensatory.
- On Chemistry*: Fowne's, Attfield's, or Wilson's Elementary Chemistry; Johnston's Turner's Chemistry; Brande and Taylor's Chemistry; Lehmann's Physiological Chemistry, by Rogers; Taylor's Toxicology; Reese's Manual of Toxicology.
- On Surgery*: Agnew's Surgery; Smith's Principles and Practice of Surgery; Erichsen's Surgery; Paget's Surgical Pathology; Macleod's Surgical Diagnosis.
- On Obstetrics*: Hodge's Obstetrics; Hodge on Diseases Peculiar to Women; West on Diseases of Women; West on Diseases of Children; Meigs and Pepper on Diseases of Children.
- On Institutes of Medicine*: Carpenter's Physiology, by Smith; Kuss' Manual.

III. MUSEUM AND CABINETS.

The WISTAR AND HORNER MUSEUM, which was founded nearly ONE HUNDRED YEARS ago, and has been annually augmented, is unequalled in the United States for the number and variety of its specimens of the normal and the morbid anatomy of every part of the human body. It also contains a large number of preparations in comparative anatomy, and an extensive collection of artistic models, which are used in illustrating the several courses of lectures delivered in the Medical Department. The ticket of matriculation in this Department entitles the holder to admission to the Museum, which is open on Wednesday and Saturday of each week, from 9 to 12 A. M., throughout the session.

The CABINET of the Professor of Theory and Practice of Medicine, collected by Dr. George B. Wood while he held that chair, and generously placed by him at the service of his successors, contains an extensive series of wet preparations, drawings, and models in wax and other materials, which together form a collection unrivalled in extent and value, for illustrating diseases of the internal organs and of the skin.

Through the kind interest felt for the School by the late distinguished Professor of Obstetrics, Dr. HUGH L. HODGE, its means of Instruction have been enriched by the gift of his valuable Cabinet adapted for illustrating that special branch.

Through a like liberality of Dr. Henry H. Smith, Emeritus Professor of Surgery, the University has received an extensive and valuable gift of models, specimens, and drawings, for the use of the Professor of Surgery.

The spacious and elegant apartments devoted to these collections in the new building have greatly improved their display, and rendered them more accessible for examination.

The CHEMICAL AND PHYSICAL APPARATUS, the property of the Professor of Chemistry, is the most extensive private collection, it is believed, in the country, and is in every way adapted for practical teaching.

IV.

LIBRARY.

A MEDICAL LIBRARY, containing upwards of three thousand volumes, has been founded by the Professor of Theory and Practice of Medicine and of Clinical Medicine, for the purpose of promoting a spirit of scientific research and literary culture. It will be accessible to advanced students and graduates of the Medical Department under appropriate regulations.

V.

DEMONSTRATIVE AND CLINICAL INSTRUCTION.

The annual lecture term of the Medical Department of the University embraces about five months, but the time which may be employed by the student who desires to avail himself of all the advantages afforded by the school is really twice as great, or more than ten months in each year.

During the Spring and Summer students of the Medical Department are entitled to attend the Lectures of the Auxiliary Faculty on subjects which form a scientific basis for medicine, and illustrate several of its branches. Those who have attended two full courses and passed a satisfactory examination upon them, receive the degree of Ph.D. (Doctor of Philosophy). The lectures of the Auxiliary Faculty are delivered in the afternoon. The forenoon is occupied in part by the Medical and Surgical Clinics, and by special clinical lectures upon Physical Diagnosis, Diseases of the Eye, of the Urinary Organs, of Women and Children, and of the Skin, at the UNIVERSITY HOSPITAL. Lectures on Regional Anatomy, and on Microscopy and Urinary Chemistry, complete the programme. For about a month before the opening of the Winter Session, Clinical and Demonstrative lectures of the same general character are delivered.

The different courses of lectures have been so arranged as to enable students to pursue a systematic plan of study, in which the younger may give themselves up wholly to didactic instruction, while the more advanced have the opportunity of seeing the scientific principles and the art of medicine practically illustrated and applied.

VI.

THE HOSPITAL OF THE UNIVERSITY
OF PENNSYLVANIA.

The University Hospital is now in full operation. It is an elegant and commodious edifice, constructed according to the best established principles of hospital architecture, provided with all the appliances pertaining to such institutions of the first class, is adjacent to the new Medical Hall, and forms an integral portion of the Medical Department. Attendance on the Clinical Lectures delivered in its amphitheatre and its wards is a part of the daily duties of the students, and ample opportunities are afforded to the more advanced among them to gain a personal and practical acquaintance with Clinical Medicine, Surgery, Obstetrics, and Specialities. These subjects are taught by the several Professors in the Hospital.

VII.

OTHER HOSPITALS AND HOSPITAL CLINICS.

In addition to the official clinical lectures delivered at the University Hospital and the other diversified means of acquiring practical knowledge and skill which that Institution affords, medical students have the opportunity of attending clinical lectures in other Hospitals, as well as private classes formed for the special study of disease.

The PHILADELPHIA HOSPITAL is contiguous to the grounds of the University, contains 900 beds, and is the only large hospital in the United States where all the medical attendants are continuously on duty; in it Clinical lectures are delivered twice a week on Medicine, Surgery, and the Diseases of Women and Children. Lectures on Clinical Medicine and Surgery are also delivered twice a week during the whole year by the Medical Staff of the PENNSYLVANIA HOSPITAL. At both of these institutions students are admitted without charge. During the spring and summer *private* classes are also formed for Clinical Instruction, for which a moderate fee is required. In these classes students are fully instructed in the art of recording

cases, and in the various methods of physical examination employed in Clinical Medicine.

The PRESBYTERIAN HOSPITAL, situated in West Philadelphia at a convenient distance from the University, may be added to the list of institutions which are especially accessible to the students.

Among the other Hospitals where Clinical Instruction is given, and which are open to students, may be mentioned: The EPISCOPAL, WILLS (Eye Hospital), CHILDREN'S, LYING-IN, ST. JOSEPH'S, ST. FRANCIS, GERMAN, and JEWISH HOSPITALS.

The following Dispensaries are also available for students, many of whom are systematically instructed in practice by the visiting physicians: The PHILADELPHIA, The SOUTHERN, The NORTHERN, and The MOYAMENSING DISPENSARIES.

Appointments of RESIDENT PHYSICIANS are made annually in the different Hospitals of the city, and are open to competition by the graduates of the school, of whom a large number have filled these valuable situations.

From the preceding summary it is evident that a prolonged residence in the city must be of the utmost value to the student, by enabling him to pursue a systematic course of study and to become practically familiar with the scientific methods of investigating disease, and with the principles and results of its treatment.

VIII.

PRACTICAL ANATOMY.

The DISSECTING ROOMS of the University are open throughout the year (except July and August), under the superintendence of the Professor of Anatomy and the Demonstrator.

In building the new Medical Hall of the University, care has been taken to provide Dissecting Rooms which contain everything that experience has suggested as being necessary or desirable. The Rooms are unusually large and high. Their *ventilation* is of the most perfect kind, and adapted both to winter and summer. The *light* is strong and equably diffused over the whole space by means of extensive skylights and side-windows. There are gas burners

over every table for work by night. Every table has a *stone* top, which cannot absorb the discharges and can be kept perfectly clean. There are numerous washstands, and many private closets. *Cleanliness* is rigidly enforced. The preservation of the *cadaver* has been so successfully accomplished as almost to do away with the dangers of dissecting wounds. Dissection is legalized in Pennsylvania, and therefore the cost of *material* is very small.

IX.

PRACTICAL SURGERY.

The OPERATING ROOM is open during the Session, under the supervision of the Professor of Surgery and his Assistants. Every student is here thoroughly instructed and practically trained in the application of bandages and surgical apparatus, and in the performance of operations upon the cadaver. Instruments, splints, and bandages are supplied free of cost.

X.

PRACTICAL CHEMISTRY.

The WORKING LABORATORY for PRACTICAL CHEMISTRY, under the supervision of the Professor of Chemistry and his Assistant, is open during the Winter Session, and a portion of each spring and autumn.

The instruction here given is in harmony with the Chemical Lectures of the WINTER SESSION, and is conducted in such a manner as to secure to the student a PRACTICAL familiarity with the apparatus, materials, processes, and reactions which are the subjects of his professional study, and which are to be employed in his subsequent practice.

The courses are arranged under three heads, according to the preparation of the pupil and his own especial wants and choice.

I. MANIPULATION, in which each student himself prepares the apparatus, performs the various experiments, and traces the reactions, as shown and explained in the regular Winter Lectures of the Professor of Chemistry.

II. QUALITATIVE and QUANTITATIVE ANALYSIS, so far as relates to the wants of the Medical Practitioner. This includes an extensive range of *testing* for the discrimination between the various hurtful substances that may call for antidotes and those which are harmless; and embraces *Toxicology*, or the *practical separation* and detection of poisons in ORGANIC MIXTURES and TISSUES.

The student in this course is conducted *practically* through the manufacture of all the prominent ACIDS and SALTS, and the extraction or preparation of the important ALKALOIDS, ETHERS, and other ORGANIC PRODUCTS.

III. The EXAMINATION OF NORMAL and ABNORMAL PRODUCTS of the human body concerned in the diagnosis of disease, such as urine, urinary deposits, bile, blood, etc.

EXAMINATIONS.—In connection with these courses of instruction, the student is systematically examined upon the subjects of his study.

XI.

THE PHYSIOLOGICAL LABORATORY

Is under the charge of the Professor of the Institutes of Medicine, aided by Dr. William H. Klapp, Demonstrator of Physiology. Its main object is to afford the Student an opportunity to study Physiology by experiment and personal observation.

The functions of the various organs, and the sources, constitution, and destination of the secretions and excretions, are studied in the living and dead subject by the student, either singly or in classes.

The Use of the Microscope and Histology are also taught as a part of the system of instruction.

A full supply of all the necessary materials is afforded for the practical study of this Department.

XII.

THE ANATOMICAL LABORATORY

Is under the supervision of the Professor of Anatomy, and the direct guidance of his Assistant, Dr. Henry C. Chapman. The special

object of the Laboratory is to afford a limited number of students the opportunity of studying practical Comparative Anatomy in its relations with Human Anatomy and Physiology. It is proposed that the student shall make for himself dissections of at least one representative of each class of animals from the lowest to the highest. The microscope will be in constant aid of the study.

XIII. PRIZES.

TWO PRIZES of One Hundred Dollars each will be awarded to the members of the Graduating Class of 1876-77 for the two best Essays upon Medical subjects, provided such Essays are of sufficient merit to be worthy of publication.

One of these prizes has been instituted by the SOCIETY OF THE ALUMNI of the Medical Department of the University.

The other has been authorized by HENRY CAREY LEA, ESQ., of Philadelphia.

PRACTICAL CHEMISTRY PRIZE.—A *Gold Medal* will be awarded by the Professor of Chemistry to the Graduating Student who shall furnish the best Essay based on Original Investigation conducted in the Working Laboratory of the Medical Department: said Essay to be worthy of publication.

ANATOMICAL PRIZES.—A *Gold Medal* will be awarded by the Demonstrator of Anatomy to the student who shall exhibit the greatest diligence, care, and skill in the practical study of anatomy.

A Prize of THIRTY DOLLARS will also be awarded by the Demonstrator to the student who shall present the best record of the anomalies found in the anatomical rooms during the year.

The names of those to whom the prizes are awarded will be announced at the Annual commencement of the Medical Department.

Alumni of the Medical Department of the University, and others who desire to receive the Catalogue and Announcement, are requested to send their addresses to the Dean, P. O. Box 2838, Philadelphia.

HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA.
CLINICAL LECTURES.

HOSPITAL STAFF.

ALFRED STILLÉ, M.D., Professor of the Theory and Practice of Medicine, and of Clinical Medicine, }
 D. HAYES AGNEW, M.D., Professor of Surgery, } *Ex-officio*;
 R. A. F. PENROSE, M.D., Professor of Obstetrics and of the Diseases of Women and Children, }
 WILLIAM PEPPER, M.D., Professor of Clinical Medicine ;
 D. HAYES AGNEW, M.D., Professor of Clinical Surgery ;
 JOHN NEILL, M.D., Professor of Clinical Surgery ;
 WILLIAM GOODELL, M.D., Clinical Professor of the Diseases of Women and Children ;
 WILLIAM F. NORRIS, M.D., Clinical Professor of Diseases of the Eye ;
 GEORGE STRAWBRIDGE, M.D., Clinical Professor of Diseases of the Ear ;
 HORATIO C. WOOD, M.D., Clinical Professor of Nervous Diseases ;
 LOUIS A. DUHRING, M.D., Clinical Professor of Skin Diseases ;
 JAMES TYSON, M.D., Professor of General Pathology and Anatomy.

MEDICAL DISPENSARY SERVICE.

ROLAND G. CURTIN, M.D., Chief of the Medical Dispensary.
 BENJ. B. YOCUM, } Assistant Physicians.
 JAMES A. OGDEN, }
 CHARLES K. MILLS, M.D., Chief of the Dispensary for Nervous Diseases.
 SAMUEL D. RISLEY, M.D., Chief of the Dispensary for Diseases of the Eye.
 ARTHUR VAN HARLINGEN, M.D., Chief of the Dispensary for Skin Diseases.
 JOHN S. PEARSON, M.D., Chief of the Dispensary for Diseases of the Ear.

SURGICAL DISPENSARY SERVICE.

CHARLES T. HUNTER, M.D., Chief of the Surgical Dispensary.

ASSISTANTS TO SURGICAL DISPENSARY SERVICE.

WILLIAM ASHBRIDGE, M.D., HOLLINGSWORTH NEILL, M.D.,
 DE FOREST WILLARD, M.D., J. WILLIAM WHITE, M.D.

ASSISTANT DEMONSTRATORS OF ANATOMY.

LEONARDO S. CLARK, M.D., THOMAS M. LLOYD, M.D.,
 CHARLES B. NANCREDE, M.D., FRANK EYRE, M.D.,
 ABRAHAM A. McDONALD, M.D., THOS. GETTY RICKETTS, M.D.
 ALBERT M. CURRY, M.D., JNO. H. MUSSER, M.D.,
 CHARLES B. GOLDSBOROUGH, M.D., ONAN B. GROSS.

DEMONSTRATORS OF PRACTICAL SURGERY.

CHARLES T. HUNTER, M.D., Demonstrator.

ASSISTANTS.

J. WILLIAM WHITE, M.D., H. REDWOOD WHARTON, M.D.,
 J. HENRY C. SIMES, M.D., J. MONRO MURRAY, M.D.

DEMONSTRATOR OF PRACTICAL CHEMISTRY.

GEORGE M. WARD, M.D.

DEMONSTRATOR OF PHYSIOLOGY.

WILLIAM H. KLAPP, M.D.

ASSISTANTS TO THE PROFESSOR OF OBSTETRICS.

WM. F. JENKS, M.D., DANIEL BRAY, M.D.

ASSISTANTS TO THE PROFESSOR OF INSTITUTES OF
MEDICINE.

WILLIAM H. KLAPP, M.D., ROBERT M. SMITH, M.D.

ASSISTANT TO THE PROFESSOR OF ANATOMY.

HENRY C. CHAPMAN, M.D.

AUXILIARY DEPARTMENT OF MEDICINE.

FACULTY.

HARRISON ALLEN, M.D., *Professor of Comparative Anatomy and Zoölogy.*

JOHN J. REESE, M.D., *Professor of Medical Jurisprudence and Toxicology.*

SAMUEL B. HOWELL, M.D., *Professor of Mineralogy and Geology.*

JOSEPH T. ROTHROCK, M.D., *Professor of Botany.*

HORACE BINNEY HARE, M.D., *Professor of Hygiene.*

The AUXILIARY DEPARTMENT OF MEDICINE was constituted by the Board of Trustees, in the year 1865, for the purpose of supplementing the ordinary course of medical instruction by lectures given during the spring months on certain collateral branches of science.

This Department, although not incorporated with that of Medicine proper, conveys instruction upon various subjects whose study is strongly recommended by the trustees as essential to the thorough education of the physician. On this account the lectures of the Auxiliary Department of Medicine are made free to all the matriculates and graduates of the Medical Department of the University. To others, a fee of ten dollars is charged for each professor's ticket, or thirty-five dollars for the whole course.

Although these lectures are open to all students under the above regulations, it is especially advised that one of the two courses required shall be attended after graduation in medicine.

On graduates of the Medical Department of the University, or of other medical schools on the *ad eundem* list, who shall have attended two full courses of lectures in the Auxiliary Department of Medicine, and passed a satisfactory examination before its Faculty, the trustees will confer the degree of Doctor of Philosophy (Ph.D.) at the annual commencement.

The Faculty desire it to be understood that their examination standard for this degree is necessarily a high one; to lower it would only render the degree worthless to the recipient, and a discredit to the University. As a further stimulus to the student, the "Alumni Association of the Auxiliary Department of Medicine" have lately founded an annual prize—the "George B. Wood prize"—to be bestowed on that candidate who shall pass the best examination, and who shall present the best original thesis on an experimental subject which shall be satisfactory to the Faculty.

The next session will commence on Monday, March 19th, and continue until the latter part of June. Three lectures a week will be given by each professor. The lectures are accessible to all gentlemen, whether engaged in the study of medicine or not. Tickets may be obtained from the Dean, either for the whole course of lectures, or for those on a single branch.

The following is a *brief* summary of the different branches taught by the Faculty:—

COMPARATIVE ANATOMY AND ZOÖLOGY.

PROF. HARRISON ALLEN, M.D.

The lectures on Comparative Anatomy will embrace:—

1. An outline of the classes of animals. 2. A succinct account of the anatomy of the vertebrata. 3. Explanations of "varieties" of human anatomy, and the proper method of studying deformations. 4. A description of human parasites. 5. An account of the more important sources of those articles of the materia medica derived from the animal kingdom.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

PROF. JOHN J. REESE, M.D.

In this department the following topics will be included, embracing especially those subjects of legal medicine on which the physician may be called upon to give evidence in a court of justice:—

Signs of Death; Personal Identity (*identification of the living and the dead*); Feigned Diseases; Violent Deaths (*homicidal and suicidal*) from (a) *wounds*; (b) *hanging*; (c) *strangling*; (d) *suffocation*; (e) *drowning*; (f) *heat*; (g) *cold*; (h) *starvation*; (i) *lightning*; (k) *poisoning*.

Infanticide and Criminal Abortion; Signs of Pregnancy and of Delivery; Legitimacy; Rape; Survivorship.

The Jurisprudence of Insanity (*civil and criminal responsibility; feigned insanity; rights of the insane; plea of insanity as a bar to judicial punishment*).

The Legal Rights and Liabilities of Physicians; Medical Experts—their rights and compensation.

Life Insurance in its medico-legal relations.

The lectures on Toxicology will embrace a thorough examination of all the points connected with *poisoning*, with special reference to *testing*; and also the modes of procedure in order to determine the presence of poisons in cases of homicide and suicide.

MINERALOGY AND GEOLOGY.

PROF. SAMUEL B. HOWELL, M.D.

In this department the following subjects will be included:—

Lectures on Descriptive Mineralogy. Practical determination of minerals by their physical properties. Qualitative analysis by the blowpipe, in connection with reactions in the humid way, for the rapid determination of minerals, ores, soils, and mineral waters. Use of the spectroscope in qualitative determinations.

Under Geology will be embraced: Lithological Geology—condition, structure, and arrangement of Rock Masses.

General outline of Historical Geology. Dynamical Geology—Mineral Springs. Geographical Distribution of Disease Realms. Probable remote causes of Malaria. Soils in relation to Malaria—Climatology. Influence of Climate on Man.

BOTANY.

PROF. JOSEPH T. ROTHROCK, M.D.

In the botanical course the effort is to make the students practical botanists, and to teach botanical physiology thoroughly. To do this, not only are the necessary lectures delivered, but frequent practical instructions will be given in analytical botany.

The Herbarium numbers about 25,000 specimens, and illustrates fully the Flora of North America. It also fairly represents the principal vegetable types of the globe.

It is the desire of the Professor of Botany to render it serviceable for practical instruction to any pupils who wish to prosecute their studies outside the lecture-room; and to this end extra assistance will be given cheerfully.

It is advised that those contemplating systematic study in Analytical Botany provide themselves with a "Gray's Botanical Microscope."

HYGIENE.

PROF. HORACE BINNEY HARE, M.D.

In this course full consideration will be given to all the conditions necessary to individual and public health, including the study of the causation of epidemic and other diseases, with a view to their prevention.

The Course of 1877 will commence with Etiology—*i. e.*, the causation of diseases; Public Hygiene will follow next; and then Personal Hygiene. In treating the last named of these departments of sanitary science, a physiological classification will be followed, with some variation of arrangement, from year to year.

The Museum of the Auxiliary Department of Medicine embraces a collection of minerals, containing three thousand specimens, systematically arranged; a collection of rocks, fossils, and casts, arranged according to their geological succession; a valuable philosophical apparatus; a growing collection of specimens of Comparative Anatomy and Zoölogy; chemical preparations and apparatus, illustrative of Toxicology; diagrams, etc. These collections are arranged in the rooms of the Faculty.

The principal text-books used are:—

Allen's Outlines of Comparative Anatomy and Zoölogy.

Mivart's Elements of Anatomy.

Taylor's Medical Jurisprudence (American edition by Reese), and Reese's Manual of Toxicology.

Dana's System of Mineralogy.

Elderhorst's Manual of Qualitative Blowpipe Analysis.

Dana's Manual of Geology.

Ganot's Éléments de Physique, translated by E. Atkinson, Ph.D., F.C.S.

Gray's Text-book and Manual of Botany.

Parke's or Wilson's Manual of Hygiene.

Cameron on Health.

Pavy or Chambers on Diet.

SAMUEL B. HOWELL, M.D., *Dean,*
1513 Green Street.

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PEET, RALPH A. (M.D.)	New York.	
PHYSICK, EMLÉN	Pennsylvania.	R. E. Rogers.
PIERSOL, GEORGE A.	Pennsylvania.	D. S. Gloninger.
PILKINGTON, HORATIO	Pennsylvania.	E. F. Leake.
PLUM, HENRY A. (M.D.)	Pennsylvania.	
POLIS, GEORGE S., JR.	Pennsylvania.	Thos. G. Morton.
PORTEUS, JAMES S. (M.D.)	Pennsylvania.	
POWELL, JAMES B. R.	Delaware.	A. M. Day.
PRICE, GEORGE	Pennsylvania.	Chas. Long.
PRICE, JOSEPH	Virginia.	Mordecai Price.
PUENTE, MARCOS DE LA	Cuba, W. I.	J. Guiteras & Associates.
PUGH, WINFIELD S.	Pennsylvania.	F. G. Smith.
QUAINTANCE, OSCAR R. (M.D.)	Virginia.	

NAME.	STATE.	PRECEPTOR.
RAKERD, A. T. STIRLING	Pennsylvania.	Thos. H. Van Valzah.
RAMIREZ, FRANK P.	Cuba, W. I.	Wm. Pepper.
RAMIREZ, JOSEPH J.	Cuba, W. I.	
RAMSAY, ROBERT N.	Pennsylvania.	A. H. Halberstadt.
RAYNOR, NATHAN H. (A.B.)	Pennsylvania.	J. F. Holt.
REBER, W. WORRALL	Pennsylvania.	N. B. Reber.
REDEKER, WILIAM F.	Pennsylvania.	G. W. Metzger.
REED, CHARLES H. (A.B.)	Pennsylvania.	Thos. S. Reed.
REED, LOUIS W.	New Jersey.	I. D. Clawson.
REED, W. BOARDMAN	Pennsylvania.	M. J. Grier.
REGAR, HORACE K.	Pennsylvania.	Wm. L. Taylor.
REICHERT, EDWARD T.	Pennsylvania.	T. H. & T. M. Allison.
REYNOLDS, J. PAUL	New York.	A. Sidney Reynolds.
RICE, NEWTON S.	Pennsylvania.	I. S. Moyer.
RICE, WILLARD M., JR.	Pennsylvania.	J. M. Boisnot & F. B. McDowell.
RICKETTS, THOMAS GETTY (A.B.)	Maryland.	C. Brackett & H. Lenox Hodge.
RISK, CLARENCE H. (Ph.G.)	Pennsylvania.	Wm. H. Risk.
RISK, J. BOYD	Pennsylvania.	Wm. H. Risk.
ROBERTS, A. SYDNEY, JR.	Pennsylvania.	Wm. W. Keen.
ROGERS, HORACE B.	Pennsylvania.	C. C. McGlaughlin.
RUTHERFORD, CYRUS	Illinois.	H. Rutherford.
SAEGER, GEORGE C. (M.D.)	Pennsylvania.	
SAMPSEL, JAMES W.	Pennsylvania.	J. F. Kanawal.
SANDOE, JACOB L.	Pennsylvania.	Lucian Banks.
SANTEE, LEON B. (A.B.)	Pennsylvania.	Jesse Miller.
SAUL, CHARLES H.	Pennsylvania.	G. F. Mish.
SAVAGE, FRANK STEWART (Ph.G.)	Pennsylvania.	J. W. Jones.
SAYRE, CLIFFORD	Nova Scotia.	R. J. Metcalfe.
SCHIEDT, PHILIP M.	Pennsylvania.	Joseph Carson.
SCROGGS, JOSEPH	Pennsylvania.	J. & J. Scroggs.
SCOTT, FRANK F.	New Jersey.	Chas. T. Hunter.
SEABROOK, CLARENCE C.	Pennsylvania.	H. L. Orth.
SEARS, WILLIAM H.	North Carolina.	
SELTZER, CHARLES M.	Pennsylvania.	Chas. T. Hunter.
SERFASS, JOHN J.	Pennsylvania.	Traill Green.
SHAW, CHARLES S.	Pennsylvania.	T. W. Shaw.
SHAW, JOSEPH B. (Ph.G.)	Pennsylvania.	Edwin Collins.
SHAW, SAMUEL G. (M.D.)	West Virginia.	
SHEETZ, J. LAWRENCE	Pennsylvania.	J. Breitenbach.
SHEPPARD, FREDERICK C.	New Jersey.	Wm. W. Keen.
SHERICK, NEHEMIAH	Pennsylvania.	J. L. & W. M. L. Zeigler.

NAME.	STATE.	PRECEPTOR.
SHERRON, CLIFF M.	New Jersey.	Jno. Kirby & H. Lenox Hodge.
SHIPPS, WILLIAM H.	New Jersey.	H. H. Longstreet.
SHORT, WARREN B. (A.M.)	North Carolina.	M. J. De Rossett.
SHULTZ, WILLIAM M.	Illinois.	J. W. Brewer.
SKILLERN, PENN G.	Pennsylvania.	S. K. Skillern.
SLAGLE, BERNARD W.	Iowa.	R. J. Mohr.
SLOCUM, HARRY A.	Pennsylvania.	Mordecai Price.
SMITH, ALEXIS D.	Pennsylvania.	Francis G. Smith.
SMITH, FRANKLIN B. (A.B.)	Maryland.	Charles Smith.
SMITH, J. ROSS	Nova Scotia.	A. T. Clarke.
SMITH, WILLIAM C., JR.	Pennsylvania.	Wm. C. Smith.
SMITH, WILLIAM O.	Pennsylvania.	Thorly, Betz, & Miller.
SMYTH, SAMUEL E.	Delaware.	C. W. Jones.
SNYDER, ALBERT C.	Pennsylvania.	M. G. Lesh.
SOWERBY, JOSEPH J. (M.D.)	United States Navy.	
SPRINGER, FRANCIS L.	Delaware.	Willard Springer.
STAUFFER, JOHN C. D.	Pennsylvania.	Benj. W. Stauffer.
STEEL, CHARLES	Pennsylvania.	P. M. Senderling.
STEEL, FRANCIS C.	Pennsylvania.	Geo. Reuter & H. O. Orris.
STERRETT, WOODS	Pennsylvania.	Samuel Maclay.
STEVENS, HENRY LEE	Wisconsin.	Burt G. Wilder.
STITES, GEORGE, (M.D.)	Pennsylvania.	
STONE, CYRUS	Massachusetts.	
STONE, J. SUMNER	West Virginia.	W. J. Bates, Sr.
STOVER, CHARLES	New York.	Harrison Allen.
STRETCH, RICHARD G. (M.D.)	Pennsylvania.	[rott.
SUESSEROTT, LEWIS F.	Pennsylvania.	Wm. Thomson & J. L. Suesse-
SUTER, HENDERSON, JR.	Virginia.	T. M. Bowyer.
SUTHERLAND, JOHN (M D.)	Prince Edward Island.	
SWACKHAMER, DAVID	New Jersey.	J. T. Fritts.
SWALM, THOMAS W.	Pennsylvania.	F. W. Boyer.
SWOYER, OSCAR D.	Pennsylvania.	I. G. Heilmun.
SOWERLY, JOSEPH J. (M.D.)	United States Navy.	
TAGGART, DAVID, JR.	Pennsylvania.	Joseph Priestly.
TANTUM, JAMES D.	New Jersey.	T. H. Mackenzie.
TAYLOR, JOHN MADISON (A.B.)	Pennsylvania.	Walter F. Atlee.
TAYLOR, J. RICHARD	Pennsylvania.	A. G. B. Hinkle.
THOMAS, ELI J.	Pennsylvania.	R. J. Linderman.
TOMPKINS, L. DOUGLAS	New Jersey.	H. P. & E. L. Welling.
TONNER, JOHN A. (M.D.)	California.	
TORRE, IGNACIO DE LA	Cuba, W. I.	Jno. Guiteras.
TOWNSEND, EUGENE	Pennsylvania.	Wm. W. Keen.

NAME.	STATE.	PRECEPTOR.
TREGO, CYRUS (A.B.)	Pennsylvania.	C. W. Larison.
TREXLER, LESHER A.	Indiana.	P. H. Wertz.
TUCKER, F. PRESTON	North Carolina.	M. D. Kimbrough.
TULL, HENRY (M.D.)	North Carolina.	[rill, Jr.
TURNER, WILLIAM F.	Pennsylvania.	Philip H. Grier & Thos. Ter-
VILA, DIEGO LOPEZ	Cuba, W. I.	
VONSTEIN, JAMES POLK	Pennsylvania.	A. Enfield.
WADE, FRANK H.	Pennsylvania.	King & Le Moyne.
WAGENSELLER, FRANK J.	Pennsylvania.	B. F. Wagenseller.
WALK, JAMES WILSON (A.B.)	Pennsylvania.	A. Harshberger and Thos. M.
WALKER, JOHN T. (M.D.)	Pennsylvania.	[Drown.
WALL, W. HOLLISTER	New Jersey.	C. K. I. Miller.
WALLACE, JAMES	Pennsylvania.	Amos Griffith.
WALSH, JAMES	Prince Edward Isl.	J. T. Jenkins.
WALSH, JAMES J.	Pennsylvania.	D. L. Ross.
WALTON, THOMAS C.	Pennsylvania.	D. D. and W. Walton.
WARREN, HARRY B.	Pennsylvania.	J. L. Warren.
WEAVER, MYRON H. C.	Pennsylvania.	A. B. Brumbaugh.
WEAVER, WILLIAM GWYNNE	Pennsylvania.	J. A. Murphey & O. F. Harvey.
WEEKS, CARLISLE B.	New Jersey.	D. D. Richardson.
WESTON, JOHN B. (A. B.)	Pennsylvania.	Wm. W. Keen.
WETHERILL, HORACE G.	New Jersey.	Wm. Wetherill.
WETHERILL, HENRY M., JR.	Pennsylvania.	Thos. G. Morton.
WETHINGTON, RICHARD T.	Florida.	S. S. Adams.
WHALAND, CHARLES H. (M.D.)	Maryland.	
WHARTON, H. REDWOOD (M.D.)	Pennsylvania.	
WIGGINS, STEPHEN L.	New Brunswick.	J. U. Burnett.
WILKINSON, GEORGE WALTER	Pennsylvania.	D. H. Agnew.
WILLIAMS, FRANKLIN E.	New Jersey.	R. E. Rogers.
WILLITS, CHARLES H.	Pennsylvania.	Oliver Rex.
WILSON, HOWARD D.	Nova Scotia.	J. K. Wilson.
WILSON, JOHN G. (M.D.)	New Jersey.	
WISHART, C. AMMON (M.D.)	Pennsylvania.	
WITMER, ELIAS H.	Pennsylvania.	S. T. Davis.
WROTH, JAMES H.	New Jersey.	D. Hayes Agnew.
YERETZIAN, V. AVEDIS	Turkey—Asia.	D. H. Agnew.
YINGST, MOSES A.	Pennsylvania.	Wm. H. Seibert.
ZENTMAYER, LOUIS	Pennsylvania.	James Tyson.
ZIMMERMAN, GUSTAVUS A. (Ph.G.)	Pennsylvania.	J. Steer & E. W. Jameson.

Of the foregoing there were from:—

Alabama	1	Mississippi	1
Arkansas	1	Missouri	1
Belgium	1	Nevis Island, W. I.	1
Brazil, S. A.	5	New Brunswick	2
California	5	New Jersey	43
Canada	1	New York	10
Chili, S. A.	1	North Carolina	9
Connecticut	1	Nova Scotia	4
Cuba, W. I.	8	Ohio	4
Delaware	9	Oregon	1
District of Columbia	1	Pennsylvania	293
England	1	Prince Edward Island	3
Florida	1	Rhode Island	1
Illinois	4	Roumania	1
Indiana	5	Scotland	1
Indian Territory	1	Texas	2
Iowa	4	Turkey	3
Ireland	1	United States Navy	3
Maine	2	Venezuela, S. A.	1
Massachusetts	1	Virginia	8
Maryland	10	West Virginia	4
Mexico	2	Wisconsin	2
Michigan	1	Wyoming Territory	1
Minnesota	1	Total	467

MATRICULATES OF THE AUXILIARY COURSE OF MEDICINE, 1876.

NAME.	POST-OFFICE.	STATE.
ABBOTT, GRIFFITH E.	Philadelphia,	Pennsylvania.
ALLEN, ARTHUR G.	Philadelphia,	Pennsylvania.
ALMEIDA, GABRIEL DE T. PIZA	Sao Paulo,	Brazil.
ANDERS, JAMES M.	Fairviewville,	Pennsylvania.
BAER B. FRANKLIN (M.D.)	Harrisburg,	Pennsylvania.
BAKER, WASHINGTON H.	Philadelphia,	Pennsylvania.
BARROS, JOSÉ DE L.	Sao Paulo,	Brazil.
BENJAMIN, DOWLING	Baltimore,	Maryland.
BISSELL, JAMES H.	Philadelphia,	Pennsylvania.
BROWN, CHRISTIAN H.	Lancaster,	Pennsylvania.
BURNS, ANTHONY M.	Carroll,	Indiana.
BURNS, WILLIAM A. (M.D.)	Philadelphia,	Pennsylvania.
BURPEE, W. ATLEE	Philadelphia,	Pennsylvania.
BUTLER, JOHN D.	Philadelphia,	Pennsylvania.
CARDEZA, JOHN D. M.	Claymont.	Delaware.
CERNA, DAVID	San Buenaventura,	Mexico.
CLUNAS, GEORGE J.		Maryland.
COHEN, ESDAILE P.	Philadelphia,	Pennsylvania.
COMBS, ROBERT S. M. (M.D.)	Philadelphia,	Pennsylvania.
COOPER, JOHN L.	Philadelphia,	Pennsylvania.
CRUMBAUGH, JOHN W.	Lancaster.	Pennsylvania.
CRYER, MATTHEW H. (D.D.S.)	Southport,	England.
DAVIS, WILLIAM G.	Philadelphia,	Pennsylvania.
DEAN, G. EDGAR	Scranton,	Pennsylvania.
DEATS, WM.	Middagh's,	Pennsylvania.
DULLES, C. WINSLOW (M.D.)	Philadelphia,	Pennsylvania.
EDWARDS, W. FITZ HUGH	Hagerstown,	Maryland.
EYRE, FRANK	Philadelphia,	Pennsylvania.
FITHIAN, HENRY C.	Bridgeton,	New Jersey.
FORMAD, F. HENRY	Jassy,	Roumania.

NAME.	POST-OFFICE.	STATE.
FOULKROD, JOHN K.	Philadelphia,	Pennsylvania.
FRACE, JOHN M.	Pittstown,	New Jersey.
GABLE, ISAAC C.	York,	Pennsylvania.
GARRETT, E. FRANK	Philadelphia,	Pennsylvania.
GIFFORD, DAVID L.	Principio.	Maryland.
GILLIARD, LOUIS E.	Philadelphia,	Pennsylvania.
GROSS, ONAN B.	Camden,	New Jersey.
HALBERSTADT, GEO. H.	Pottsville,	Pennsylvania.
HARTE, RICHARD H.	Rock Island,	Illinois.
HAUPT, HERMAN, JR.	Philadelphia,	Pennsylvania.
HAZLEHURST, SAMUEL F. (M.D.)	Philadelphia,	Pennsylvania.
HEATH, WM. HOBSON	Philadelphia,	Pennsylvania.
HENDERSON, W. CHURCH	Philadelphia,	Pennsylvania.
HEREFORD, WM. S.	Los Angeles,	California.
HERRON, THOMAS G. (M.D.)	Allegheny City,	Pennsylvania.
HERSH, JNO. G. (M.D.)	Pennsburg,	Pennsylvania.
HORTER, J. WYCE (M.D.)	Philadelphia,	Pennsylvania.
HUTCHINSON, ROBERT C.	Yardville,	New Jersey.
IRWIN, FAIRFAX	Beltsville,	Maryland.
JAY, SEPTIMUS D.	Aberdeen,	Maryland.
JUSTIN, JOEL G.	Syracuse,	New York.
KINNEY, JAMES B. (M.D.)	New York,	New York.
KIRK, LEWIS H.	Lancaster,	Pennsylvania.
KLAPP, WILLIAM H.	Philadelphia,	Pennsylvania.
KLUDGIAN, Y. SIMON	Tocat,	Turkey.
KNOX, JOHN	Princeton,	Iowa.
LADD, CHAS. K.	Towanda,	Pennsylvania.
LEIB, THOMAS N.	Philadelphia,	Pennsylvania.
LENKER, CHRISTIAN	Northumberland,	Pennsylvania.
LINN, G. WILDS (M.D.)	Philadelphia,	Pennsylvania.
LITTLEFIELD, J. DANA	San Francisco,	California.
LLOYD, J. MORTIMER (M.D.)	Salem,	New Jersey.
LOOSE, DAVID N.	Myerstown,	Pennsylvania.
MARSH, WILLIAM G.	Danville,	Pennsylvania.
MCCOY, JAMES W.	Fort Sill,	Ind. Territory.
MCCRACKEN, GEORGE I. Y.	Philadelphia,	Pennsylvania.
MC ELROY, BERNARD F.	Minersville,	Pennsylvania.
MCILWAINE, CHAS. H.	Natchez,	Mississippi.

NAME.	POST-OFFICE.	STATE.
MILLER, D. J. MILTON	Frankford,	Pennsylvania.
MILLER, JAMES R.	Allowaystown,	New Jersey.
MILLER, J. CRAIG	Philadelphia,	Pennsylvania.
MILLER, SAMUEL M.	Philadelphia,	Pennsylvania.
MOORE, JOSEPH C.	Cheyenne,	Wyoming Territory.
MORGANSTERN, EDMUND	Philadelphia,	Pennsylvania.
MORRIS, CASPAR, JR.	Philadelphia,	Pennsylvania.
MORRIS, SPENCER (M.D., Ph.D.)	Philadelphia,	Pennsylvania.
MORRISON, STERLING	Philadelphia,	Pennsylvania.
MURDOCH, ANDREW N. MCD.	Pittsburg,	Pennsylvania.
MURRAY, J. MONRO	Philadelphia,	Pennsylvania.
MUSSEER, JOHN H.	Strasburg,	Pennsylvania.
NICOLAS, FRANK M.	Matanzas,	Cuba.
NURIAN, HAGOB K.	Adrianople,	Turkey.
OLIVER, CHAS. A. (M.D.)	Philadelphia,	Pennsylvania.
OLIVER, GEO. P. (M.D.)	Philadelphia,	Pennsylvania.
O'NEILL, JAMES WILKS	Philadelphia,	Pennsylvania.
O'REIDY, PATRICK F.	Killarney,	Ireland.
OSBORNE, A. EDGAR	Media,	Pennsylvania.
PEARSON, RICHARD	Palmyra,	Wisconsin.
PERKINS, FRANCIS M.	Philadelphia,	Pennsylvania.
PIERSOLL, GEORGE A.	Philadelphia,	Pennsylvania.
PRICE, JOSEPH	New Market,	Virginia.
REGAR, HORACE K.	Philadelphia,	Pennsylvania.
REID, R. HARVEY	Dalton,	Ohio.
REYNOLDS, A. SIDNEY	Philadelphia,	Pennsylvania.
REYNOLDS, J. PAUL	Philadelphia,	Pennsylvania.
RICHARDSON, DAVID D. (M.D.)	Philadelphia,	Pennsylvania.
RICKETTS, THOMAS G.	Princeton,	New Jersey.
RISK, CLARENCE H.	Philadelphia,	Pennsylvania.
SAVAGE, FRANK S.	Philadelphia,	Pennsylvania.
SCHIEDT, PHILIP M.	Philadelphia,	Pennsylvania.
SCOTT, FRANK F.	Hammonton,	New Jersey.
SHERRICK, NEHEMIAH	Mount Joy,	Pennsylvania.
SHIPPS, WM. H.	Bordentown,	New Jersey.
SHORT, WARREN B. (A.M.)	Wilmington,	North Carolina.
SIMPSON, ROBERT	Philadelphia,	Pennsylvania.
SKILLERN PENN G.	Philadelphia,	Pennsylvania.
SLOCUM, CHAS. E. (M.D.)	Defiance,	Ohio.

NAME.	POST-OFFICE.	STATE.
SLOCUM, HARRY A.	Philadelphia,	Pennsylvania.
SMITH, ROBERT MEADE	Philadelphia,	Pennsylvania.
STANLEY, CHAS E. (M.D.)	Camden,	New Jersey.
STOVER, CHAS.	Amsterdam,	New York.
SUTHERLAND, JOHN (M.D.)	Stanley Bridge,	P. E. Island.
SWACKHAMER, DAVID	White House,	New Jersey.
TOWNSEND, STEPHEN (M.D.)	Philadelphia,	Pennsylvania.
VANDERBECK, C. C.	Philadelphia,	Pennsylvania.
WADE, FRANK H.	Pittsburg,	Pennsylvania.
WALL, MICHAEL	Somerset,	P. E. Island.
WALLACE, JAMES	Philadelphia,	Pennsylvania.
WALSH, J. FRANCIS	Camden,	New Jersey.
WARNER, JOHN C.	New York,	New York.
WESTON, JOHN B.	Chester,	Pennsylvania.
WHARTON, H. REDWOOD	Philadelphia,	Pennsylvania.
WHITE, BARCLAY, JR.	Philadelphia,	Pennsylvania.
WILLIAMS, FRANKLIN E.	Haddonfield,	New Jersey.
WILLSON, WM. G. G.	Baltimore,	Maryland.
WILSON, JOHN G.	Philadelphia,	Pennsylvania.*
WROTH, JAMES H.	Camden,	New Jersey.
YERETZIAN, V. AVEDIS	Cæsarea,	Turkey.

TOTAL, 127.

LAW DEPARTMENT.

FACULTY.

- P. PEMBERTON MORRIS, A.M., *Professor of Practice, Pleading, and Evidence at Law and in Equity.*
- HON. J. I. CLARK HARE, LL.D., *Professor of the Institutes of Law, including, inter alia, International, Constitutional, and Commercial Law.*
- E. COPPÉE MITCHELL, LL.D., *Professor of the Law of Real Estate and Conveyancing, and Equity Jurisprudence.*
- JAMES PARSONS, A. M., *Professor of the Law of Personal Relations and Personal Property.*
- JOHN J. REESE, M.D., *Professor of Medical Jurisprudence.*

E. C. MITCHELL, *Dean of the Law Faculty,*
518 Walnut Street, Philadelphia.

It is the design of this Department to aid in preparing gentlemen for admission to the Bar, and, also, to offer to those who have not the Bar in view, an opportunity of acquiring knowledge in any one or all of the branches of legal learning. The Conveyancer and the Merchant may attend, with profit, the particular lectures appropriate to their respective pursuits.

Instruction is conveyed by lectures, and by books and portions of books upon the subjects of the lectures, which are recommended by the Professors. The students are frequently and carefully examined.

Moot courts are held, at which questions, prepared by the Professors, are argued. These courts will meet once a week during both terms of the annual session. A special evening is assigned to each case, so that a continuous discussion can be had of the points raised for argument.

And the Law Academy of Philadelphia, an institution of long standing, to which not only students, but many practising lawyers, belong, gives opportunity for debate and argument which has been found of the greatest practical advantage.

The Supreme Court of Pennsylvania, the County Courts, and the Federal Courts are in session in Philadelphia during a great part of the year, so that students can have ample facilities for observing judicial proceedings.

The Faculty is composed as follows:—

1. A Professor of the Institutes of Law, to whom are assigned the subjects of International Law, Constitutional Law, Conflict of Laws, Criminal Law, Contracts, including Promissory Notes and Bills of Exchange, Suretyship and Guaranty.

2. A Professor of Personal Relations and Personal Property, to whom are assigned the subjects of Personal Relations, Corporations, Agency, Partnership, Insurance, Title to Personal Property, Contracts of Sale, Bills of Lading, Bailment, Common Carriers, Pledges and Chattel Mortgages, Executors and Administrators.

3. A Professor of Real Estate, Conveyancing, and Equity Jurisprudence, to whom these subjects are assigned.

4. A Professor of Practice, Pleading, and Evidence at Law and in Equity, to whom these subjects are assigned.

5. A Professor of Medical Jurisprudence, to whom that subject is assigned.

The Full Course occupies two years.

There are two terms each year. The first term begins on the first of October, the second on the first of February. Each term continues four months. From the first day of June to the first of October is vacation. The course is so arranged that a student entering at the commencement of any October term will complete his term of study in two academical years. The arrangement for the next year will be found upon a subsequent page.

The Tuition Fee for the full course with all the Professors (except the Professor of Medical Jurisprudence) is \$40 for each term. Each Professor will issue separate tickets for his own lectures to such students as do not desire to attend the full course, for such fee as he shall determine. Each student taking the full course is required also

to pay, upon entering, a matriculation fee of \$5, which will entitle him to a diploma (if he shall receive the degree of Bachelor of Laws), without further charge. There are no other charges made.

Students who have attended the lectures of any of the Professors without taking the full course, may receive from such Professors certificates of proficiency.

Those who have received the degree of Bachelor of Laws may attend all future lectures free of charge.

A hall has been assigned for the exclusive use of the Law Department, in the University Building, which will be open for the use of the students for the purpose of pursuing their studies in private, in day time, under proper regulations.

DEGREES.

The following regulations, fixing the qualifications of candidates for graduation, were adopted by the Board of Trustees in the year 1875:—

“In order to obtain the degree of Bachelor of Laws there shall be required of every candidate—

“1. That he shall have attended upon the full course of instruction (both Lectures and Examinations) given in the Law Department, except the lectures on Medical Jurisprudence.

“2. He shall have prepared and submitted to the Faculty, at some time to be fixed by them, an essay, composed by himself, on some legal subject, sufficient in merit to satisfy the Faculty of his fitness to receive the degree.

“3. He shall have passed an examination at the end of each session upon the subjects of study during that session. The examination shall be conducted by the Faculty, either orally or in writing as they may determine, in the presence of such of the members of the committee on the said Law Department belonging to this Board as may choose to attend. And the members of the Board of Examiners appointed by the Courts of Philadelphia, may be present at the examination if they desire to do so.”

The essay required from each candidate must be handed to the Dean of the Faculty on or before the 15th day of May, preceding the commencement.

Bad spelling or bad grammar in an essay, or other evidence of the want of a good English education, will preclude a candidate from receiving a degree.

The examinations are both written and oral, and are held during the last week in May in each year.

It will be noticed that no provision is made in these regulations for students entering upon advanced standing. The degree, therefore, cannot be conferred upon any one who has not actually attended the full course of two years.

THE "SHARSWOOD PRIZE."

The Alumni of this Department have established a prize of fifty dollars called the "Sharswood Prize," to be competed for by the Graduating Class in each year for the best graduating essay—the merits of the essay to be passed upon by the Faculty.

The Prize for the best graduating essay in 1876, was awarded to *Dwight M. Lowrey, Esq.*, a graduate of that year, for an essay on Contingent Estates.

ADMISSION TO THE BAR.

Graduates of this Department, having complied with the rules of court, are admitted to practise in the Courts of Common Pleas and Orphans' Court of Philadelphia, in accordance with the following rule adopted in June, 1875:—

"Any citizen of the United States, of full age, who shall have been graduated Bachelor of Laws by the University of Pennsylvania, after the course of study required in the University, may be admitted to practise as an attorney of this court, if he shall have complied with the rule now in force as to the preliminary examination and been registered for one year in the Prothonotary's office as a student of law in said University by the Dean of the Law Faculty thereof."

The preliminary examination referred to in this rule is conducted by the Board of Examiners appointed by the courts, and embraces all the branches of a good English education.

Students may matriculate at any stage of their professional preparation. Except as required by the courts from those who expect to use their diplomas as a means of gaining admission to the bar, they are not examined for matriculation, nor is it possible to require, peremptorily, a college degree, or any previous line of study. This must be left to circumstances, to the views of the student, and to the influences which control him.

Application for admission, and for information, should be made to the Dean of the Faculty, at his office, 518 Walnut Street, Philadelphia.

ARRANGEMENT OF THE COURSE.

PROFESSOR MORRIS.

- First Term, from Oct. 1, 1877, to Feb. 1, 1878, Evidence.
 Second Term, from Feb. 1, 1878, to June 1, 1878, Practice and Pleading in Equity.
 Third Term, from Oct. 1, 1878, to Feb. 1, 1879, Practice and Pleading at Law.
 Fourth Term, from Feb. 1, 1879, to June 1, 1879, Practice and Pleading at Law.

PROFESSOR HARE.

- | | |
|------------------------|---|
| First term, as above, | Contracts, Bills of Exchange and Promissory Notes, and Bills of Lading. |
| Second term, as above, | Suretyship and Guaranty. |
| Third term, as above, | Insurance (Fire and Marine) and Constitutional Law. |
| Fourth term, as above, | Conflict of Laws, and Criminal Law. |

PROFESSOR MITCHELL.

- | | |
|------------------------|-----------------------|
| First term, as above, | Equity Jurisprudence. |
| Second term, as above, | Equity Jurisprudence. |
| Third term, as above, | Real Estate. |
| Fourth term, as above, | Conveyancing. |

PROFESSOR PARSONS.

- | | |
|------------------------|---|
| First term, as above, | Agency, Partnership, Corporations, and International Law. |
| Second term, as above, | International Law (concluded), Bailment, Common Carriers, Pledges, Chattel Mortgages, and Life Insurance. |
| Third term, as above, | Domestic Relations; Executors and Administrators. |
| Fourth term, as above, | Title to Personal Property; Civil Law, and Contract of Sale. |

PROFESSOR REESE

Will deliver the Course of Lectures on Medical Jurisprudence, each year, beginning about the 15th of March, and ending about the 15th of June.

LAW DEPARTMENT—CLASS OF 1876-77.

NAME.	RESIDENCE.	PRECEPTOR.
ANDERSON, EDWARD A.	Philadelphia.	U. P.
BAKER, RICHARD R.	"	D. M. Fox.
BAKER, WM. HOWARD	"	Geo. L. Crawford.
BARLOW, JOHN B.	"	D. M. Fox.
BRÉGY, LOUIS	"	F. Amédée Brégy, Jr.
BROMLEY, B. GORDON	"	Patterson & Cuyler.
BRYAN, GEO. J.	Easton, Pa.	Read & Pettit.
BUMM, ALBERT A.	Philadelphia.	H. C. Thompson.
CAMPBELL, WILLIAM J.	"	John L. Shoemaker.
CARSKADDON, BENJAMIN W.	"	C. H. Williamson.
CHAMBERS, FRANK T.	Wilmington, Del.	W. H. Rawle.
CHESEBROUGH, EDWARD F.	Philadelphia.	John L. Shoemaker.
CRAWFORD, ALEX. C.	Kittanning Pa.	E. C. Mitchell.
COOPER, JAS. CALVIN	Philadelphia.	M. Arnold.
DERR, ANDREW F.	Wilkesbarre, Pa.	G. W. Biddle.
DISBROW, THEODORE C.	Towanda, Pa.	Read & Pettit.
DOUGHERTY, DANIEL W.	Philadelphia.	D. Dougherty.
EASTBURN, HUGH B.	New Hope, Bucks Co., Pa.	Admitted.
ELLIS, VICTOR A.	Philadelphia.	H. Fritz.
FABLE, EDMUND, JR.	"	E. Hunn, Jr.
FITTON, WALTER H.	"	M. Arnold.
FOX, JOSEPH W.	"	L. H. Redner.
FOX, HENRY K.	"	R. M. Logan.
FULLERTON, ALEXANDER	"	C. B. Penrose.
FURTH, EMANUEL	"	A. M. Burton.
GILPIN, BERNARD	"	Chas. Gilpin.
GRANT, JEREMIAH K.	Boyertown, Berks Co., Pa.	W. H. Livingood.
GREENE, HARRY R.	Philadelphia.	C. M. Husbands.
HAMMERSLY, EDMUND G.	"	Admitted.
HARRIS, ALBERT H.	"	Henry G. Harris.
HEILNER, SAMUEL	"	W. G. Foulke.

NAME.	RESIDENCE.	PRECEPTOR.
HEISLER, JOHN J.	Philadelphia.	Conveyancer.
HODGE, J. ALBERT	"	A. I. Fish.
HOOVER, GEORGE J.	Norristown, Pa.	Charles Hunsicker.
HOPPER, HARRY S.	Philadelphia.	J. R. Rhoads.
HUNT, WILLIAM	"	Geo. W. Biddle.
INGHAM, ELLERY P.	Laporte, Pa.	J. A. Clay.
JAMES, ALBERT, JR.	Philadelphia.	C. H. Jones.
JONES, RAY W.	"	Chas. Gilpin.
KEATING, J. PERCY	"	P. McCall.
KEELY, THOMAS	"	W. D. Comegys.
KEEN, BARTON L.	"	James Parsons.
KELLY, WM. D., JR.	"	West & McCarthy.
KNITTEL, CHARLES	"	J. Fletcher Budd.
KNOWLES, CHARLES R.	"	A. A. Outerbridge.
LARZELERE, NICHOLAS H.	Norristown, Pa.	Hon. B. M. Boyer.
MAGEE, FRANK H.	Philadelphia.	E. C. Mitchell.
MARTIN, ROBERT S.	Goheenville, Armstrong Co., Pa.	D. Sanders.
MERCER, GEORGE G.	Philadelphia.	M. H. Todd.
MIDDLETON, TIMOTHY J.	"	
MONAGHAN, PETER J.	"	
MORRIS, EFFINGHAM B.	"	P. P. Morris.
MORRIS, J. TYSON	"	P. P. Morris.
MOWLDS, THOMAS D.	"	Admitted.
MUNROE, WILLIAM W.	"	W. W. Wiltbank.
MCCAFFREY, J. CARROLL	"	J. D. O'Bryan.
MCCAFFREY, JOHN B.	"	H. C. Townsend.
MCCOUCH, H. GORDON	"	John C. Bullitt.
MCGEOGH, JAMES	"	W. Gorman.
MCGLATHERY, THOMAS D.	"	Wm. Ernst.
MCKENNA, JOSEPH G.	"	J. D. O'Bryan.
NICKERSON, JAMES S.	"	B. H. Brewster.
NUTTALL, D. RUSSELL	"	T. A. Gummey.
ORAM, JOHN A.	"	John Hanna.
PANCOAST, CHARLES E.	"	C. S. Pancoast.
PENDLETON, GARNETT	Upland, Del. Co., Pa.	E. C. Mitchell.
PHILLER, WILLIAM R.	Philadelphia.	R. L. Ashhurst.
QUIN, AUGUSTINE	"	E. C. Quin.
QUIN, CHARLES T.	"	E. C. Quin.
REYNOLDS, ALEXANDER, JR.	Kittanning, Pa.	E. C. Mitchell.
RITER, FRANK M.	Philadelphia.	E. C. Mitchell.
RODMAN, WALTER C.	"	Jos. R. Rhoads.
SCHRAM, JOHN M.	Ridgway, Elk Co., Pa.	Rufus Lucore.

NAME.	RESIDENCE.	PRECEPTOR.
SCOTT, HARRY J.	Philadelphia.	A. J. Maloney.
SHOWAKER, JOHN GORDON	"	H. E. Wallace.
SMITH, WALTER GEORGE	Torresdale, Pa.	F. Sheppard.
SOBERNHEIMER, FREDERICK A.	Philadelphia.	Theo. D. Rand.
SONNEBORN GEORGE A.	"	A. S. Letchworth.
STEDMAN, FREDERICK B.	Warsaw, N. Y.	James Parsons.
STEHR, GEORGE W.	Philadelphia.	A. I. Fish.
STORK, THEOPHILUS B.	"	Admitted.
TILTON, CURTIS	"	E. C. Shapley.
WAGNER, GEORGE M.	"	C. M. Wagner.
WEAVER, PHILIP V.	Hazleton, Luzerne Co., Pa.	James Parsons.
WEEKS, HORACE F.	Philadelphia.	E. C. Mitchell.
WHITE, THOMAS E.	"	G. M. Dallas.
WILKINSON, CHARLES B.	"	A. L. Smith.
WILLIAMS, ALBERT B.	"	Edward Hopper.
WILSON, JOHN L.	"	R. L. Ashhurst.
WOOLMAN, FRANKLIN C.	Burlington, N. J.	D. J. Panceast.
ZACHERLE, ALBERT E.	Philadelphia.	G. E. Buckley.

TOTAL 91

RECAPITULATION.

PROFESSORS.

Department of Arts	12
“ “ Science	14
“ “ Medicine	11
“ “ “ (Auxiliary Faculty)	5
“ “ “ (Hospital)	11
“ “ Law	5
Professor of Comparative Philology	1
Professor of Music	1
Emeritus Professors	2
	<hr/>
	62
Of these nineteen give instruction in more than one department	19
	<hr/>
	43

LECTURERS, INSTRUCTORS, ETC.

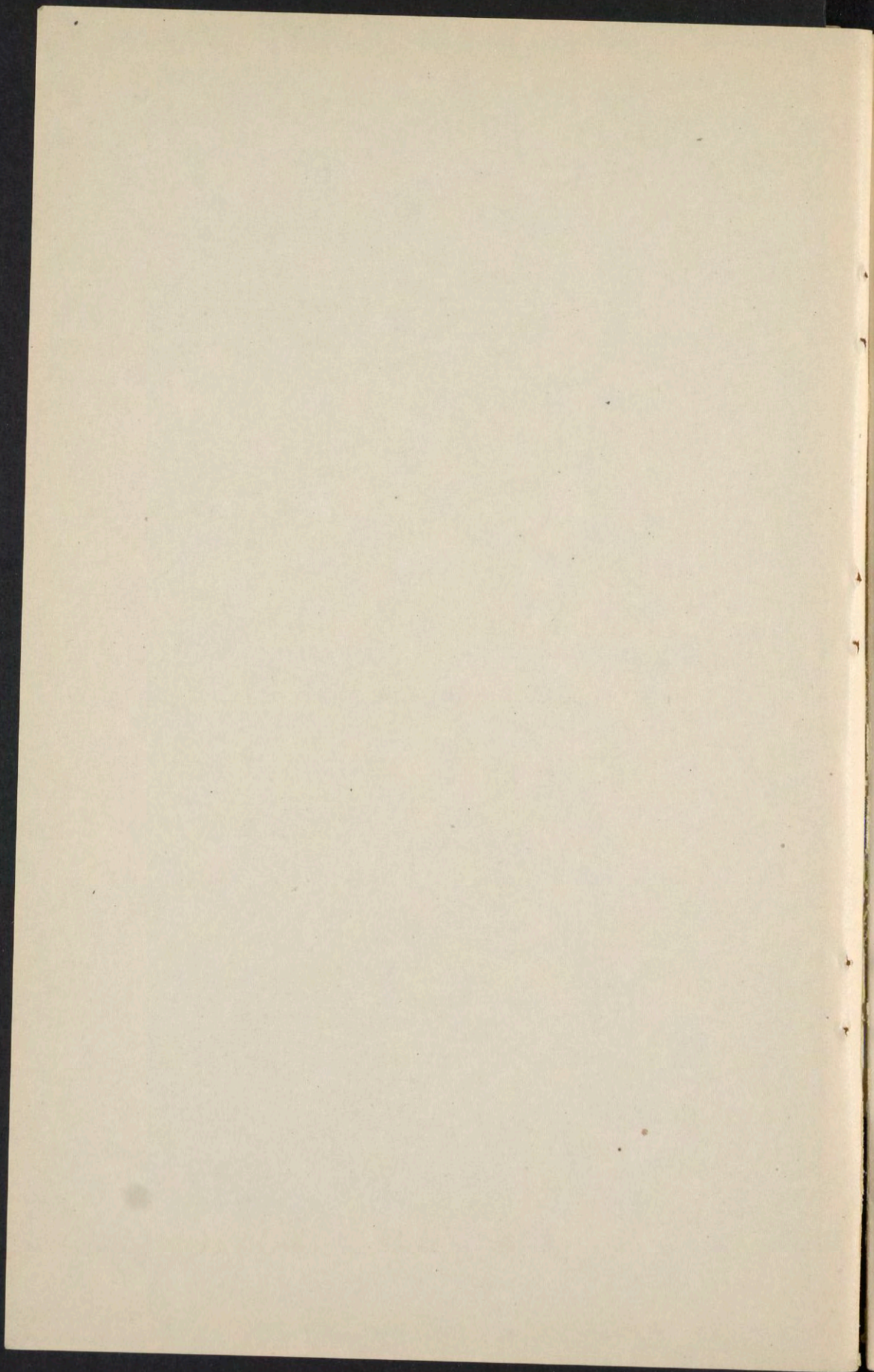
Department of Arts	1
“ of Science	5
	<hr/>
	6

TEACHERS.

In Charity Schools	3
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STUDENTS.

Department of Arts	131
“ “ Science	105
“ “ Medicine	467
“ “ “ (Auxiliary)	127
“ “ Law	91
Charity (English) Schools	101
	<hr/>
Total	922



ACADEMIC DEGREES,

HONOURS, PRIZES, ETC.

1875-76.

HONORARY DEGREES.

Commencement, June 29th, 1876.

DOCTORS OF LAWS.

M. A. DE WOLF HOWE, D.D., Bishop of the Diocese of Central Pennsylvania.
SAMUEL S. HALDEMAN, Professor of Comparative Philology in the University.

DEGREES (IN COURSE), HONOURS, ETC. IN THE ARTS AND IN SCIENCE.

Commencement, June 29th, 1876.

BACHELORS OF ARTS.

CHARLES PENROSE BLIGHT,	LAWRENCE LEWIS,
WILLIAM CHRISTIAN BULLITT,	JOHN JAY JOYCE MOORE,
GEORGE CHRISTIAN FREDERICK HAAS,	BENJAMIN MITCHELL NEWBOLD,
ADDINELL HEWSON, JR.,	WILLIAM HENRY PATTERSON,
LUCIUS SCOTT LANDRETH,	ROBERT PATTERSON ROBINS.

BACHELORS OF SCIENCE.

JOSEPH ALEXANDER,	HUGO ALBERT RENNERT,
WILLIAM GOODWILL BUTTON,	WILLIAM LAWRENCE SAUNDERS,
FREDERICK AUGUSTUS GENTH, JR.,	WILLIAM FERRIS SELLERS,
EUGENE RUSSELL HUDDERS,	HORACE RUPERT STEPHENS,
FRANK WEST IREDELL,	DAVID TOWNSEND,
FRANK HAMILTON MAGEE,	GEORGE TURNER, JR.,
CARL MONTAGUE MOODY,	JAMES WILLIAM VAN OSTEN, JR.,
WILLIAM FRANK NEWELL,	BENJAMIN FRANKLIN WARREN,
WILLIAM MCCLEERY POTTS,	CHARLES CHANCELLOR WENTWORTH,
SAMUEL FREEDLY PRINCE, JR.,	OTTO CHARLES WOLF.
PHINEAS KENNEDY REEVES,	

A Certificate of Proficiency to

JOHN HOWARD CAMPBELL,	ALFRED PEARCE,
WALTER ALLEN FELLOWS,	PEDRO GROTJAN SALOM.
HARRY HUNTER SMITH HANDY,	

MASTER OF ARTS.

HARRY CARLTON ADAMS,	ALFRED LEE, JR.,
ROBERT ANDERSEN,	HENRY CARVILL LEWIS,
WILLIAM MORRIS BARKER,	RANDAL MORGAN,
THEO. DANIEL FREDERICK BECK,	JOSEPH SEAL NEFF,
EDWARD JORDAN BELL,	RUDOLPH LEE NEFF,
GUSTAVUS SMITH BENSON, JR.,	ALEXANDER BLACK PORTER,
SAMUEL TAYLOR BODINE,	ROBERT MEADE SMITH,
ROBERT BOND,	WALTER GEORGE SMITH,
WILLIAM BOYD, JR.,	THEOPHILUS BAKER STORK,
JOHN WILLIAM BROCK,	HARRY REDWOOD WHARTON,
WILLIAM WILKINS CARR,	WILLIAM FORCE WHITAKER,
FREDERICK BROWN ESLER,	BERNARD HENRY WOOD.
ALEXANDER EMSLIE HARVEY, JR.,	

MASTER OF SCIENCE.

CHARLES ALDRICH BESSON,	COLEMAN SELLERS, JR.,
HOWARD GRANT JONES,	CHARLES ADAMS YOUNG.

At the Examination of the Senior Class for DEGREES, *honours* were awarded as follows:—

To Graduates in THE ARTS—

Honours of the *First Class* to GEORGE CHRISTIAN FREDERICK HAAS and LAWRENCE LEWIS, JR., and CARROLL SMYTH.

Of the *Second Class* to CHARLES PENROSE BLIGHT.

Of the *Third Class* to BENJAMIN MITCHELL NEWBOLD.

To Graduates in the TOWNE SCIENTIFIC SCHOOL—

Honours of the *First Class* to BENJAMIN FRANKLIN WARREN and WILLIAM FRANK NEWELL.

Honours of the *Second Class* to SAMUEL FREEDLY PRINCE, JR.

Of the *Third Class* to DAVID TOWNSEND, OTTO CHARLES WOLF, HUGO ALBERT BENNET, WILLIAM FERRIS SELLERS, EREDERICK AUGUSTUS GENTH, JR., and JOSEPH ALEXANDER.

At the Annual Examination, *Distinctions of the First Class* were awarded as follows:—

In the DEPARTMENT OF ARTS—

Juniors—CLAES AUGUST OSCAR ROSELL and JOSEPH WARREN YARDLEY.

Sophomores—WILLIAM SERGEANT BLIGHT, JR., CHARLES PHILIP HENRY, HARRY MCDOWELL, and RICHARD BOWDEN SHEPHERD.

Freshmen—JOHN MARSHALL GEST, WILLIAM MOORE STEWART, JR., HENRY SARGENT PRENTISS NICHOLS, ARTHUR EMLÉN NEWBOLD, and JAMES STRATTON CARPENTER.

In the TOWNE SCIENTIFIC SCHOOL—

Freshmen—EDWART HURST BROWN, FRANK THEODORE FREELAND, and TOSUI IMADATE.

PRIZES for voluntary exercises, over and above the regular course, were awarded to Students in The Arts and in Science as follows:—

In the Department of Intellectual and Moral Philosophy: Junior Prize, for the best Essay on "*The Philosophical School of Belief*," to CLAES AUGUST OSCAR ROSELL, with honourable mention of CHARLES SPALDING FARNUM.

In the Department of Greek Language and Literature: Senior Prize, for the best examination on "*Oration of Demosthenes on the Crown*," read with the Professor in addition to the regular course, to GEORGE CHRISTIAN FREDERICK HAAS, JR., with honourable mention of ROBERT PATTERSON ROBINS.

Junior Prize for the best examination in "*The Oration of Æschines contra Ctesiphontem*," to JOSEPH WARREN YARDLEY.

Freshman Prize, for the best examination on "*Greek Prose Composition with the Accents*," to JOHN MARSHALL GEST.

In the Department of Mathematics: Freshman Prizes, for the best extra work and examination in "*The Solution of Geometrical Problems*:" the first prize to JOHN MARSHALL GEST, the second to FRANK THEODORE FREELAND.

In the Department of History and English Literature: The Sophomore Prize, for the best *Original Declamation*, equally, to HENRY SCOTT JEFFERYS and HENRY ALBERT MACKUBBIN.

The *Matriculate Greek Prizes*, for the best examination by members of the Freshman Class, immediately after admission to College, upon the "*Elements of Greek Prose Composition*:" of the First Rank to JOHN MARSHALL GEST, of the Second Rank to HENRY LA BARRE JAYNE.

The *Matriculate Latin Prize*, for the best examinations by members of the Freshman Class, immediately after their admission to College, upon the "*Elements of Latin Prose Composition*:" of the Second Rank to HENRY TAYLOR DECHERT.

The Prize offered by the Board of Trustees to the Scientific Classes, for "improvement in Drawing, and general good conduct and application," to FRANK THEODORE FREELAND, of the Freshman Class.

The Prize founded by the Society of the Alumni, for the best *Original Declamation* by a member of the Junior Class, to FRANCIS ALBERT LEWIS, JR., with honourable mention of JOHN NELL, JR.

The Prize founded by the Society of the Alumni, for the best *Latin Essay* by a member of the Graduating Class (the subject to be selected by the writer), to GEORGE CHRISTIAN FREDERICK HAAS, for his essay "*De Desideriis*."

DEGREES, PRIZES, ETC., IN MEDICINE.

At the Commencement, March 10, 1876, the Degree of

DOCTOR OF MEDICINE

was conferred upon the following gentlemen: the ceremonies closing with a Valedictory Address to the Students by ALFRED STILLÉ, M.D., Professor of Theory and Practice of Medicine and of Clinical Medicine.

NAME.	POST-OFFICE.	STATE.
ALEXANDER, HAMILL M.	Lewisburg,	Pennsylvania.
ALMEIDA, GABRIEL DE T. PIZA	San Paula,	Brazil.
AMICK, J. H. BRUCE	St. Clairsville,	Pennsylvania.
BAER, B. FRANKLIN	Harrisburg,	Pennsylvania.
BALLARD, JOHN C.	Gatesville,	North Carolina.
BATDORFF, HENRY	Bethel,	Pennsylvania.
BECHTEL, JOHN C.	Rehrersburg,	Pennsylvania.
BENTON, JAMES H.	Newton Grove,	North Carolina.
BERTOLET, EDWIN B.	Oley,	Pennsylvania.
BEST, FREDERICK	Windsor,	Nova Scotia.
BIDDLE, THOMAS, JR.	Philadelphia,	Pennsylvania.
BISBE, JOSEPH J.	Santiago,	Cuba.
BOND, ROBERT	Columbia,	New Jersey.
BRECHEMIN, LOUIS, JR.	Philadelphia,	Pennsylvania.
BROWN, H. CLAY	Lewisburg,	Pennsylvania.
BURGIN, GEORGE H.	Philadelphia,	Pennsylvania.
BURWELL, ROBERT L.	West River,	Maryland.
CAMPBELL, JOHN G.	Amherst,	Nova Scotia.
CAZENOVE, LOUIS A.	Alexandria,	Virginia.
CHAPMAN, EDWARD D.	Chicopee,	Massachusetts.
CHRISTMAN, JEFFERSON D.	Pennsburg,	Pennsylvania.
COOK, HOWARD	Chetopa,	Kansas.
COOPER, SMITH	Felton,	Delaware.
COVINGTON, WINSTON WALL	Rockingham,	North Carolina.
DAVIS, WILLIAM A.	Smyrna,	Delaware.
DE ARMOND, JOHN A.	Davenport,	Iowa.
DEPPEN, WILLIAM P.	Wernersville,	Pennsylvania.
DETCHEON, IRWIN AGNEW	Crawfordsville,	Indiana.
DICKINSON, BYARD	Gap,	Pennsylvania.
DICKINSON, JOSEPH T.	Lapp's,	Pennsylvania.
DOZIER, BARTON	San Francisco,	California.
EMERSON, GOUVERNEUR	Milford,	Pennsylvania.
ERDMAN, FRANK C.	Centre Valley,	Pennsylvania.
EVANS, A. MASON	Middleway,	Virginia.
EYRE, FRANK	Philadelphia,	Pennsylvania.

NAME.	POST-OFFICE.	STATE.
FACKENTHALL, HOWARD	Rieglesville,	Pennsylvania.
FAGER, JOHN H.	Harrisburg,	Pennsylvania.
FAULDS, WILLIAM H.	Danville,	Pennsylvania.
FISHER, CYRUS A.	Pottersville,	New Jersey.
FISHER, WILLIAM E.	Philadelphia,	Pennsylvania.
FOX, CHARLES J.	Barrington,	Nova Scotia.
FRICK, GERHARD M.	Bethlehem,	Pennsylvania.
FRITCH, DAVID D.	Long Swamp,	Pennsylvania.
GANT, HARRIS A.	Water Valley,	Mississippi.
GERBERICH, ALFRED F. B.	East Hanover,	Pennsylvania.
GERBERICH, E. AMMON	East Hanover,	Pennsylvania.
GERHARD, ALFRED Y.	Coopersburg,	Pennsylvania.
GIBSON, ROBERT C.	Alleghany City,	Pennsylvania.
GILLIARD, LOUIS E.	Philadelphia,	Pennsylvania.
GINGRICH, AARON B.	Falling Waters,	West Virginia.
GOLDSBOROUGH, CHARLES B.	Philadelphia,	Pennsylvania.
GUTH, MORRIS S.	Allentown,	Pennsylvania.
HAY, GEORGE	Edinburgh,	Scotland.
HAZLEHURST, SAMUEL F.	Philadelphia,	Pennsylvania.
HENDERSON, W. CHURCH	Philadelphia,	Pennsylvania.
HENKEL, SOLOMON	New Market,	Virginia.
HERSH, JOHN G.	Pennsburg,	Pennsylvania.
HERRON, THOMAS G.	Alleghany City,	Pennsylvania.
HULL, GEORGE S.	Chambersburg,	Pennsylvania.
KEATH, JAMES W.	Shaefferstown,	Pennsylvania.
KINNEY, JAMES B.	New York,	New York.
KISTLER, ABRAHAM PALMER	Allentown,	Pennsylvania.
KLAPP, WILLIAM H.	Philadelphia,	Pennsylvania.
KYLE, EDMOND H.	Sharon,	Pennsylvania.
LAYTON, C. RODNEY, JR.	Georgetown,	Delaware.
LEE, EDMUND J.	Alexandria,	Virginia.
LEE, HENRY W.	Raleigh,	North Carolina.
LEE, THOMAS	Port Elizabeth,	New Jersey.
LESH, JOHN F.	Snydersville,	Pennsylvania.
LITTLEFIELD, JOSEPH DANA	San Francisco,	California.
LLOYD, THOMAS MORTIMER	Salem,	New Jersey.
MASSEY, GEORGE BETTON	Tallahassee,	Florida.
MELCHER, WILLIAM P.	Camden,	New Jersey.
MERIWETHER, WILLIAM D.	Guthrie City,	Kentucky.
MICHEL, RALPH S.	Springboro',	Ohio.
MILLER, J. CRAIG	Philadelphia,	Pennsylvania.
MURRAY, J. MONRO	Philadelphia,	Pennsylvania.
MCCRACKEN, GEORGE I. Y.	Philadelphia,	Pennsylvania.
MCDOWELL, WILLIAM O.	Murfreesboro',	North Carolina.
McFADYEN, JOHN	San Francisco,	California.
NASH, ALFRED B.	Dublin,	Pennsylvania.
NICHOLS, CHARLES G.	Green Bank,	New Jersey.
OLIVER, CHARLES A.	Philadelphia,	Pennsylvania.
O'NEILL, FRANK X.	Norristown,	Pennsylvania.

NAME.	POST-OFFICE.	STATE.
PEARSON, RICHARD	Palmyra,	Wisconsin.
PEARSON, JOHN S.	Philadelphia,	Pennsylvania.
PEET, RALPH A.	West Webster,	New York.
PERKINS, FRANCIS M.	Philadelphia,	Pennsylvania.
PLUM, HENRY A.	Hawley,	Pennsylvania.
PORTER, ANDREW	Amherst,	Nova Scotia.
REED, R. HARVEY	Dalton,	Ohio.
REYNOLDS, ALGERNON SIDNEY	Newark,	New Jersey.
ROSS, ANGUS	Dartmouth,	Nova Scotia.
ROTH, JOHN A.	Hoppenville,	Pennsylvania.
SAEGER, GEORGE C.	Muncy Station,	Pennsylvania.
SEIP, MICHAEL SERVETUS	Easton,	Pennsylvania.
SHOEMAKER, GEORGE G.	Emaus,	Pennsylvania.
SLIFER, HENRY F.	Souders,	Pennsylvania.
SMITH, ROBERT MEADE	Philadelphia,	Pennsylvania.
SNYDER, GEORGE B.	Hollidaysburg,	Pennsylvania.
STANLEY, CHARLES E.	Camden,	New Jersey.
STANLEY, LEWIS B.	Pulaski,	Tennessee.
STREETS, THOMAS H. (U.S.N.)	Smyrna,	Delaware.
STITES, HARRY	Millerstown,	Pennsylvania.
SUTHERLAND, JOHN	Stanley Bridge,	Prince Edward's Isl.
TAYLOR, WILLIAM L.	Philadelphia,	Pennsylvania.
THOME, WILLIAM B.	Mastersonville,	Pennsylvania.
TULL, HENRY	Kinston,	North Carolina.
URQUHART, GEORGE W.	Philadelphia,	Pennsylvania.
VOGLER, GEORGE W.	Philadelphia,	Pennsylvania.
WADDILL, FRANK A.	Cheraw,	South Carolina.
WALL, MICHAEL	Somerset,	Prince Edward's Isl.
WALSH, J. FRANCIS	Camden,	New Jersey.
WARE, JOHN D.	Salem,	New Jersey.
WEBB, N. SALISBURY	Utica,	New York.
WEST, ALSTON M.	Holly Springs,	Mississippi.
WHARTON, HENRY REDWOOD	Bryn Mawr,	Pennsylvania.
WHITE, BARCLAY, JR.	Philadelphia,	Pennsylvania.
WICKERT, HARVEY T.	Emaus,	Pennsylvania.
WILHELM, WILLIAM W.	Mooresville,	North Carolina.
WILSON, JOHN G.	Philadelphia,	Pennsylvania.
WOOD, CHARLES B.	Brownsville,	Pennsylvania.
		Total, 122.

DOCTORS OF PHILOSOPHY.

At the commencement June 29, 1876.

The Degree of Doctor of Philosophy upon

FRANK EYRE,

LOUIS E. GILLIARD,

JOEL G. JUSTIN,

T. MORTIMER LLOYD,

GEORGE I. Y. McCracken,

ALGERNON S. REYNOLDS,

GEORGE W. VOGLER.

PRIZES AWARDED.

The following gentlemen were awarded Prizes at the Commencement of March 10, 1876:—

CHARLES B. GOLDSBOROUGH, of Md.	ROBERT MEADE SMITH, of Pennsylvania.
WILLIAM H. KLAPP, of Pennsylvania.	JOHN FRANCIS WALSH, of New Jersey.
JAMES MUNRO MURRAY, of Pennsylvania.	

ANATOMICAL PRIZES.

CHARLES B. GOLDSBOROUGH, of Maryland, Gold Medal.
JOSEPH J. BISBE, of Cuba, \$30.

DISTINGUISHED MERIT.

LOUIS BRECHEMIN, JR., Pennsylvania.	GEORGE W. VOGLER, Pennsylvania.
GEORGE HAY, Scotland.	HARRY R. WHARTON, Pennsylvania.

HONORABLE MENTION.

EDWIN B. BERTOLET, Pennsylvania.	WILLIAM P. MELCHER, New Jersey.
THOMAS BIDDLE, JR., Pennsylvania.	CHARLES A. OLIVER, Pennsylvania.
JOSEPH J. BISBE, Cuba.	FRANCIS M. PERKINS, Pennsylvania.
FRANK EYRE, Pennsylvania.	R. HARVEY REED, Ohio.
LOUIS E. GILLIARD, Pennsylvania.	A. SIDNEY REYNOLDS, New Jersey.
C. RODNEY LAYTON, JR., Delaware.	ANGUS ROSS, Nova Scotia.
SAMUEL F. HAZLEHURST, Pennsylvania.	ALSTON M. WEST, Mississippi.

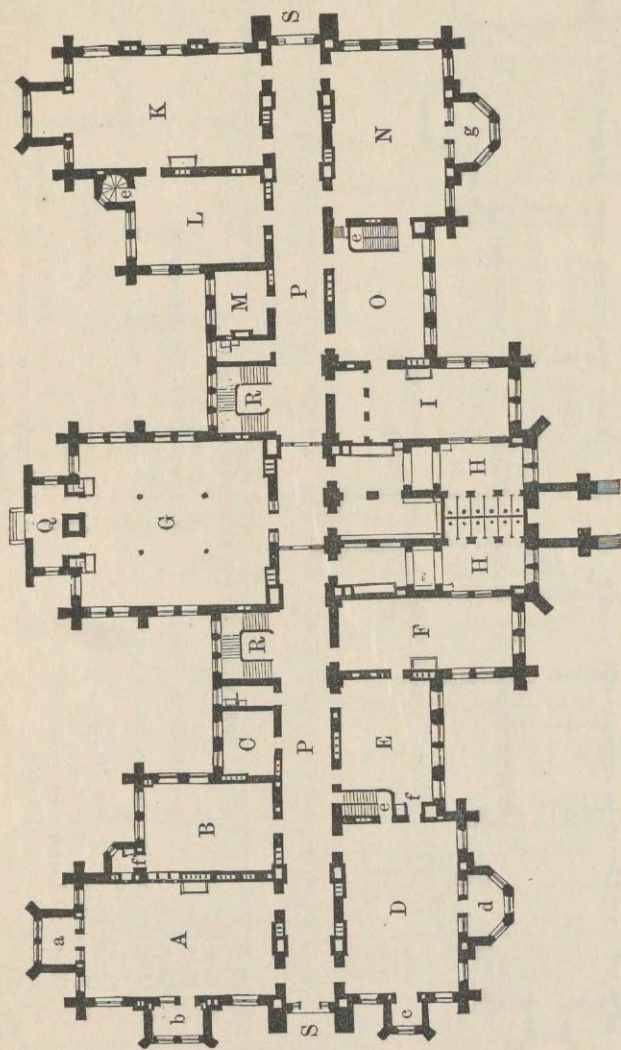
DEGREES IN THE LAW.

Commencement, June 29, 1876.

BACHELORS OF LAW.

The Degree of Bachelor of Law upon

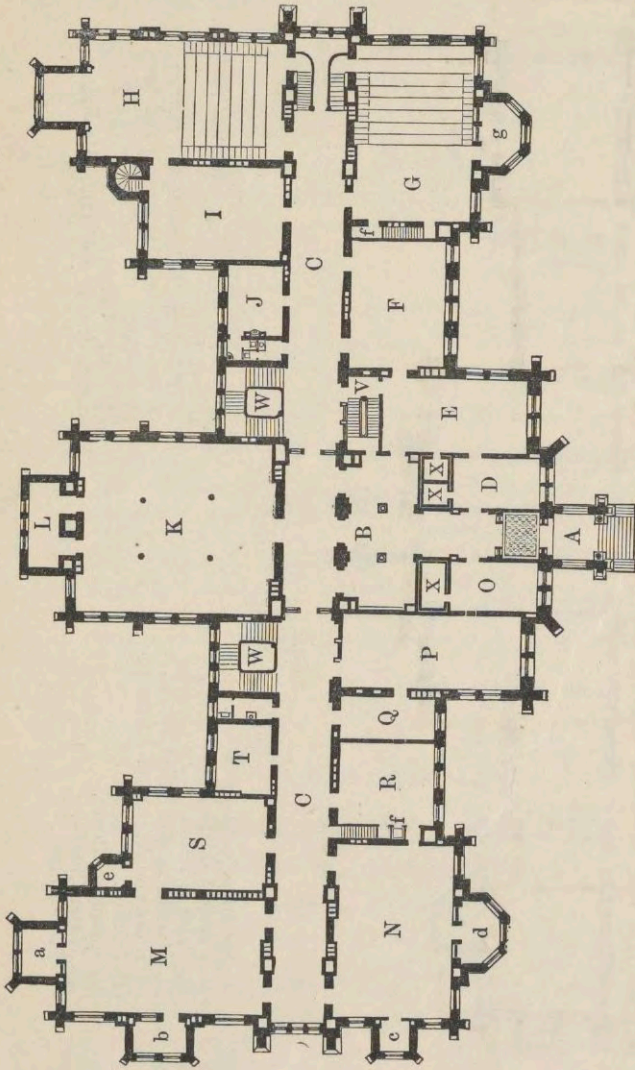
WILLIAM BURLING ABBEY,	JOSEPH P. GROSS,
PETER BOYD,	THOMAS P. JUDGE,
B. FRANK CLAPP,	DWIGHT M. LOWREY,
WILLIAM C. CRAIGE,	SAMUEL H. MURPHEY,
TIMOTHY M. DALEY,	RUDOLPH L. NEFF,
ALBERT T. GOLDBECK,	WILLIAM A. REDDING,
WILLIAM GORMAN,	JOHN RUSSELL,
FRANK D. GRAHAM,	OTTO WOLFF.



PLAN OF BASEMENT.

DEPARTMENTS OF ARTS AND OF SCIENCE.

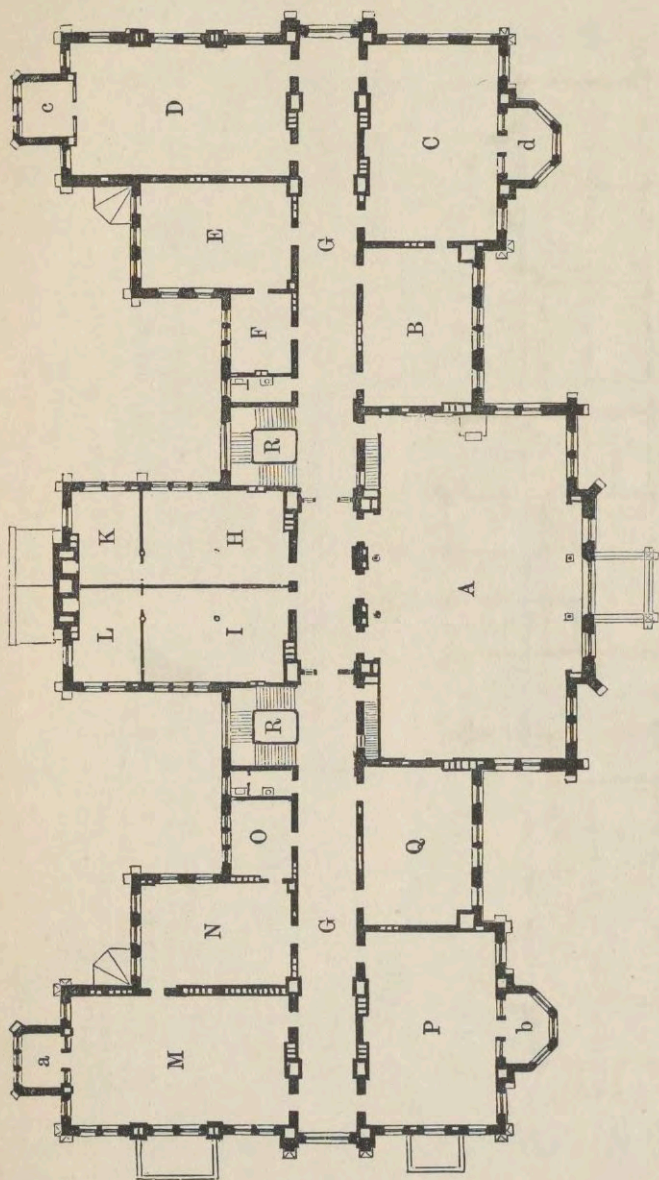
- A. Metallurgical Laboratory.
 B. Furnace Room.
 C. Balance Room.
 D. Machinery and Work Room.
 E. Store and Apparatus Room.
 F. Janitor.
 G. Assembly Room.
 H. Water Closets.
 I. Store Room.
 K. Physical Laboratory.
 L. Store Room—Department of Physics.
 M. Janitor.
 N. Preparing Laboratory—Chemistry.
 O. Store Room—Department of do.
 P. Corridor.
 R. Main Stairway.
 a, b, c, d, e, g. Assistants' Rooms.



PLAN OF FIRST FLOOR.

DEPARTMENTS OF ARTS AND OF SCIENCE.

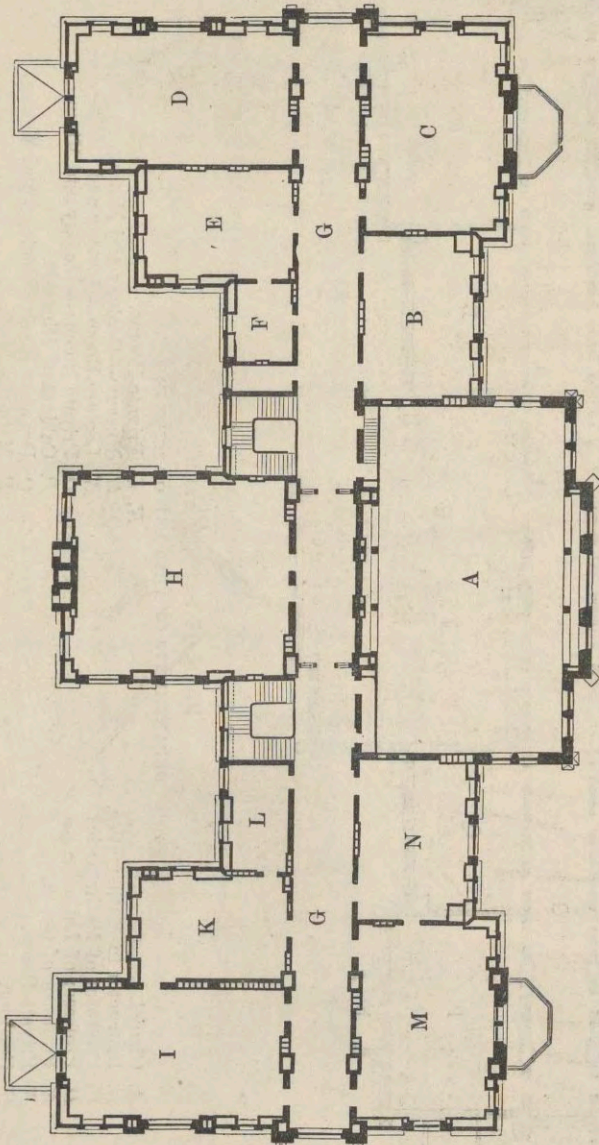
- | | | |
|--|---|---|
| A. Porch. | K. Library. | P. Professors' Private Laboratory. |
| B. Hall. | M. Quantitative Laboratory. | Q. Balance Room. |
| C. Corridor. | N. Quantitative do. | R. Room for Preparation of Chemicals. |
| D. Office of the Secretary of the Board of Trustees. | O. Office of the Dean of the Faculty—Department of Science. | S. Laboratory for Organic Analysis. |
| E. Trustees and Faculty Room. | P. Professors' Private Laboratory. | T. Balance Room. |
| F. Provost's Lecture Room. | Q. Balance Room. | a, b, c, d, e, f, g. Assistants' Rooms. |
| G. Chemical Lecture Room. | R. Room for Preparation of Chemicals. | |
| H. Lecture Room—Physics. | S. Laboratory for Organic Analysis. | |
| I. Apparatus Room—Physics. | T. Balance Room. | |
| J. Provost's Office. | | |



PLAN OF SECOND FLOOR.

DEPARTMENTS OF ARTS AND OF SCIENCE.

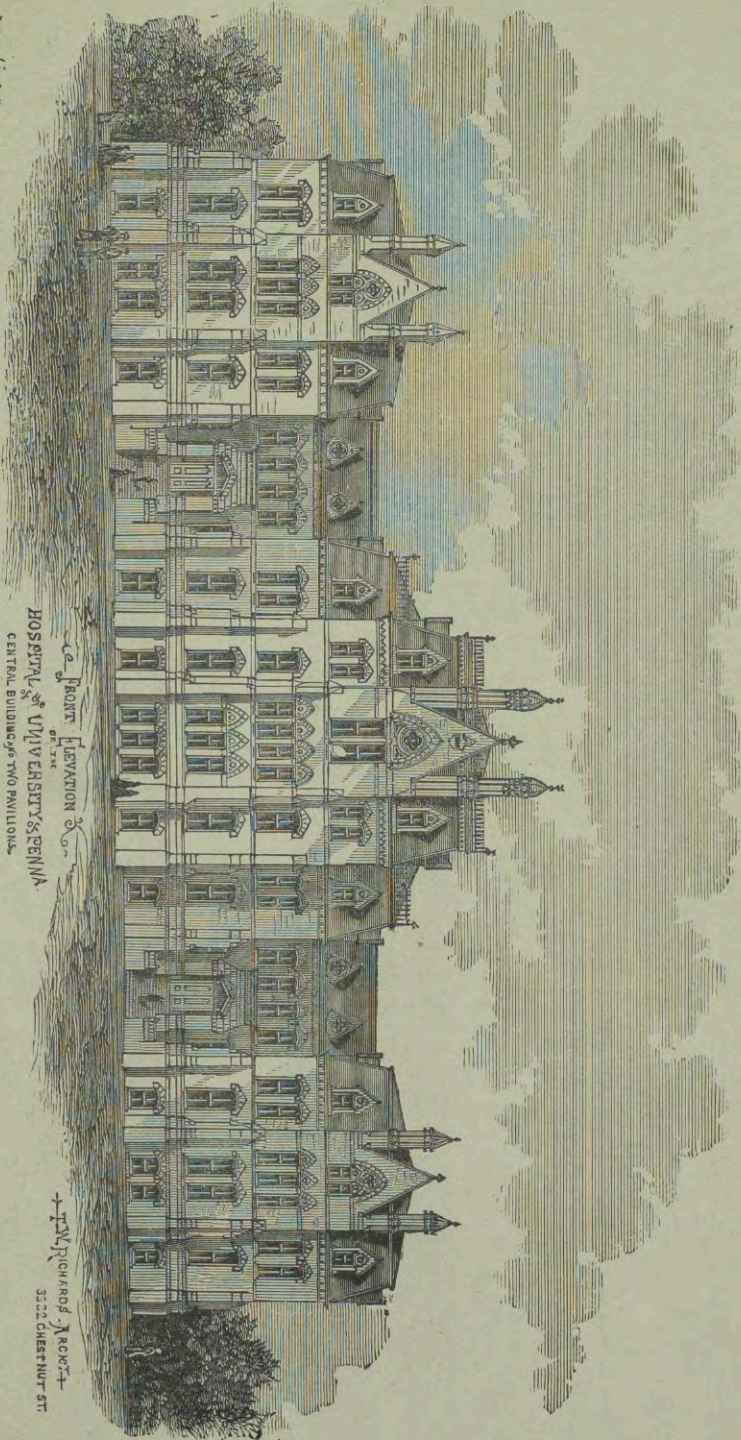
- A. Chapel.
 B. Instructor in Mathematics.
 C. Professor of Mathematics.
 D. Professor of Latin.
 E. Professor of Greek.
 F. Private Room.
 G. Corridor.
 H. Adjunct Professor of History.
 I. Professor of Intellectual and Moral Philosophy.
 K. Private Rooms.
 L. Museum—Geology and Mining.
 M. Lecture Room—Geology and Mining.
 N. Private Rooms—Geology and Mining.
 O. Cabinet of Minerals.
 P. Drawing Room—Geology and Mining.
 Q. Main Stairway.
 R. Assistant's Rooms.
 a, b, c, d. Assistant's Rooms.



PLAN OF THIRD FLOOR.

DEPARTMENTS OF ARTS AND OF SCIENCE.

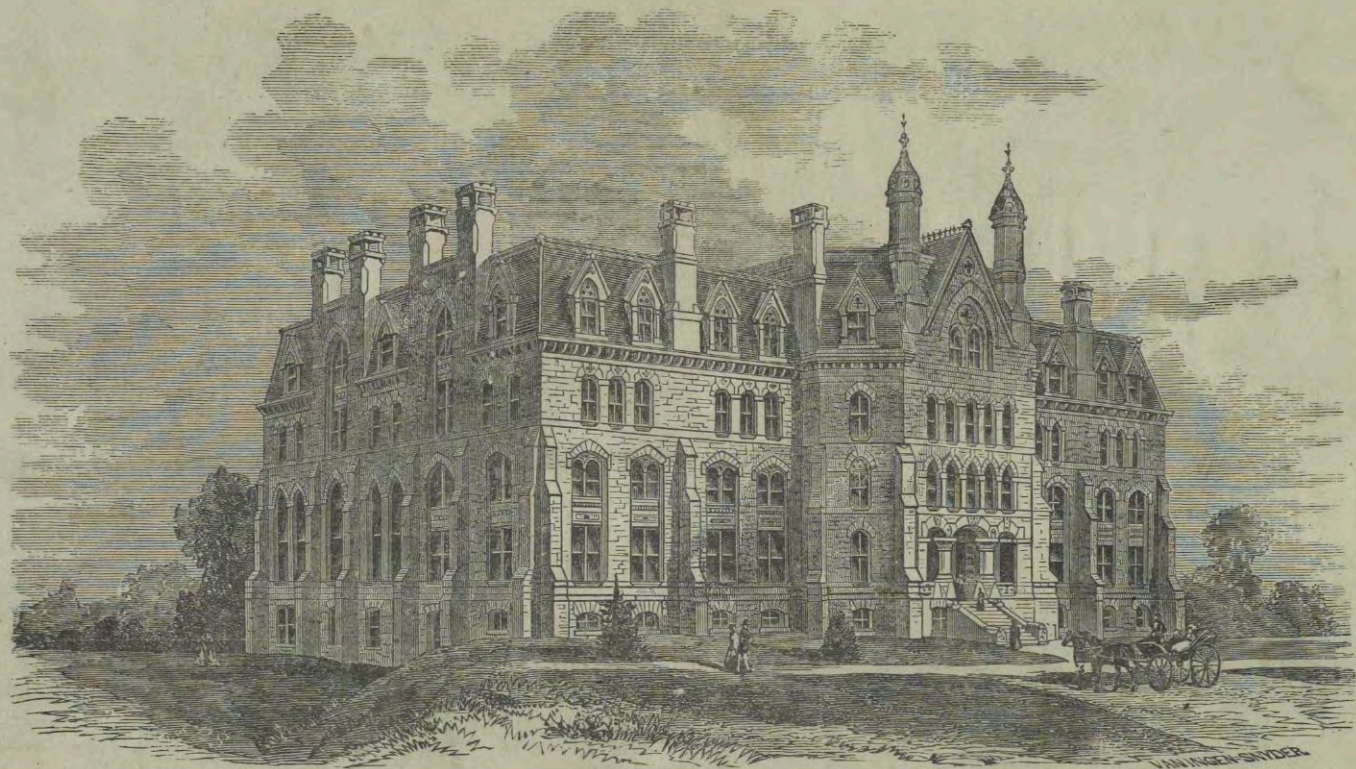
- A. Upper Part of Chapel.
- B. Drawing Room.
- C. Professor of French.
- D. Assistant Professor of Mathematics.
- E. Professor of German.
- F. Private Room.
- G. Corridor.
- H. Examination Hall.
- I, K. Department of Mechanical and Civil Engineering.
- L. Work and Model Room do.
- M, N. Drawing and Architecture.



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