CATALOGUE

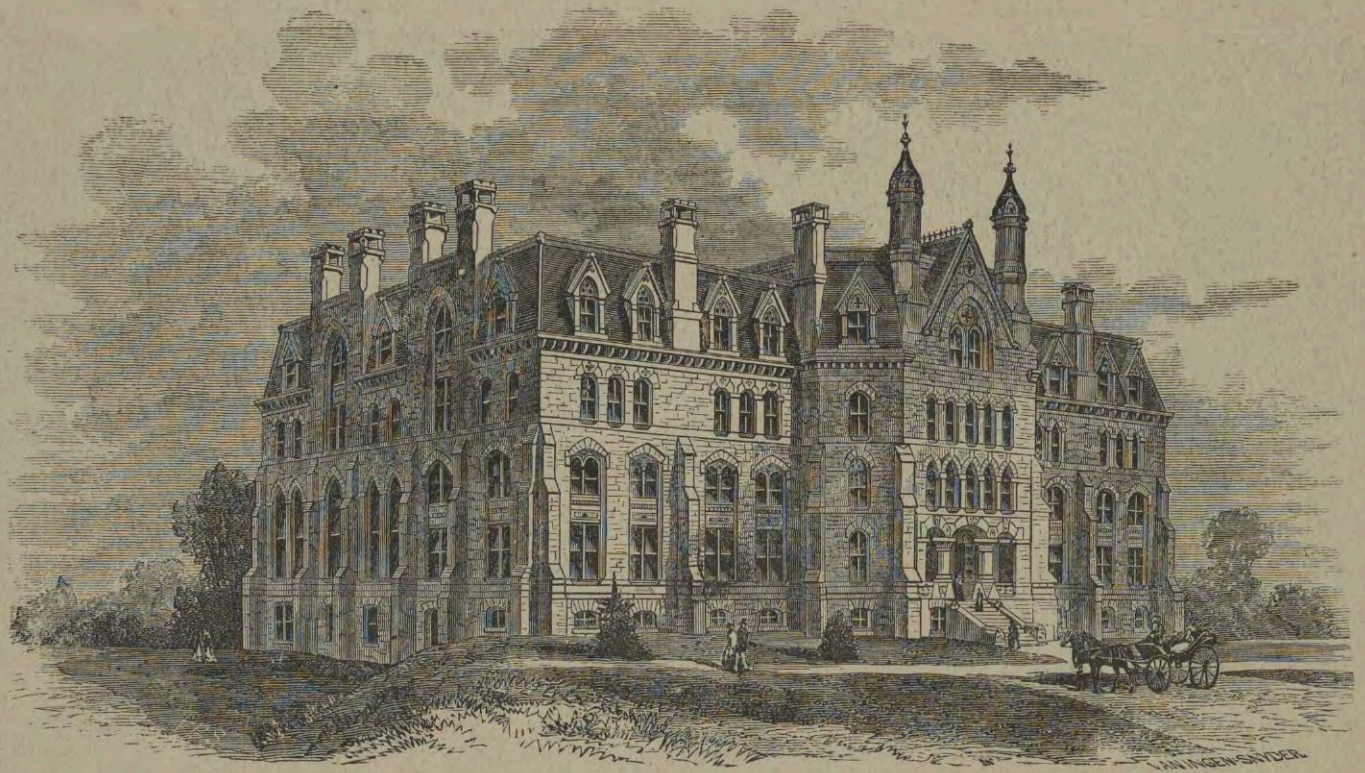
OF THE

TRUSTEES, OFFICERS, AND STUDENTS

OF THE

UNIVERSITY OF PENNSYLVANIA.

1877-78.



UNIVERSITY OF PENNSYLVANIA.

Medical Department.

T. W. RICHARDS, ARCHT.

CATALOGUE

OF THE

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UNIVERSITY OF PENNSYLVANIA.

1877-78.

PHILADELPHIA:
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1877.

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BISHOP STEVENS,
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Committee on the Department of Law.

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MR. McCALL,
MR. HARRISON.

Committee on the Towne Scientific School.

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Office, 404 Locust Street.

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1331 Spruce Street.

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3900 Spruce Street.

HARRISON ALLEN, M.D.,
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John Rhea Barton Professor of Surgery, and Clinical Professor of Surgery.
1611 Chestnut Street.

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SAMUEL B. HOWELL, M.D.,
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Professor of Civil Engineering. 3910 Baltimore Avenue.

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

WILLIAM GOODELL, M.D.,
Professor of Clinical Gynæcology. Preston Retreat, 20th and Hamilton Streets.

WILLIAM F. NORRIS, M.D.,
Clinical Professor of Diseases of the Eye. 1534 Locust Street.

GEORGE STRAWBRIDGE, M.D.,
Clinical Professor of Diseases of the Ear. 1616 Chestnut Street.

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GEORGE A. KŒNIG, PhD. (Heidelberg),
Assistant Professor of Chemistry.
(Instructor in Metallurgy and Technical Chemistry.) 4318 Osage Avenue.

SAMUEL P. SADTLER, PhD. (Göttingen),
Assistant Professor of Chemistry.
(Instructor in General and Organic Chemistry.) 3723 Locust Street.

JAMES TYSON, M.D.,
Professor of General Pathology and Morbid Anatomy. 1506 Spruce Street.

LOUIS A. DUHRING, M.D.,
Clinical Professor of Skin Diseases. 1416 Spruce Street.

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Professor of the Science of Music. 223 S. 38th Street.

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Professor of the Greek Language and Literature. 4307 Walnut Street.

	RESIDENCE.
JOSEPH T. ROTHROCK, M.D., B.S., Professor of Botany.	University.
WILLIAM D. MARKS, PhB., C.E., Whitney Professor of Dynamical Engineering.	University.
THEODORE G. WORMLEY, M.D., LL.D., Professor of Chemistry.	University.
JOHN ASHHURST, Jr., M.D., Professor of Clinical Surgery.	2000 W. De Lancy Place.
OTIS H. KENDALL, A.M., Assistant Professor of Mathematics.	3826 Locust Street.
JOSEPH G. RICHARDSON, M.D., Professor of Hygiene.	1835 Chestnut Street.
——— ——— Professor of Physiology.	

ASSISTANTS.

EDGAR F. SMITH, PhD. (Göttingen), Assistant in Analytical Chemistry.	3269 Sansom Street
JOHN HENRY HARDEN, Assistant in Geology and Mining Engineering.	613 Union Street.
THOMAS FRENCH, PhD. (Heidelberg), Assistant in Physics.	3313 Spring Garden Street.

G. ATKINS RYDER,
Janitor.

UNDERGRADUATES, 1877-78.

DEPARTMENT OF ARTS.

SENIOR SOPHISTERS.

Rufus Howard Bent,	Pennsylvania.	Philadelphia.
William Sergeant Blight, Jr.,	do.	do.
William Pratt Breed, Jr.,	do.	do.
George Ethan Brooks,	do.	do.
Edward Swift Buckley, Jr.,	do.	do.
William Anthony Bullock,	do.	do.
Clarence Monroe Clark,	do.	Germantown.
James Clark Corry,	do.	Philadelphia.
James Chalice Craven,	do.	do.
Alan Hale Harris,	do.	Chestnut Hill.
Charles Philip Henry,	do.	Philadelphia.
Josiah Ogden Hoffman,	do.	do.
William Norton Johnson,	do.	Germantown.
Clarence Kennedy,	do.	Philadelphia.
Joseph Jones Knowles,	do.	do.
Edward Garrett McCollin,	do.	do.
Harry McDowell,	New Jersey.	Camden.
Henry Albert Mackubbin,	Pennsylvania.	Philadelphia.
Thomas Prichett,	do.	do.
Augustus Janney Rudderow,	do.	Oaks, Montgomery [Co.
John Morin Scott,	do.	Philadelphia.
Richard Bowden Shepherd,	do.	do.
Isaac Scott Smyth,	do.	Germantown.
William Henry Stetler,	do.	Philadelphia.

Seniors, 24.

JUNIOR SOPHISTERS.

William Bowen Boulton,	Pennsylvania.	Philadelphia.
William Wainwright Britton,	do.	do.
John Douglass Brown, Jr.,	do.	do.
Charles Claxton,	do.	do.
Charles Howard Colket,	do.	do.
Benjamin Bartis Comegys, Jr.,	do.	do.
Henry Taylor Dechert,	do.	do.
George Stewart Fullerton,	do.	do.
John Marshall Gest,	do.	do.
John Aloyisius Giltinan,	do.	do.
George Wood Hunt,	do.	do.
Horace Fort Jayne,	do.	do.
Henry La Barre Jayne,	do.	do.
Henry Scott Jefferys,	New Jersey.	Camden.
Horace Hoffman Lee,	Pennsylvania.	Philadelphia.
William McElroy,	do.	do.
Emlen Hare Miller,	do.	do.
William Egbert Mitchell,	do.	Roxborough.
Richard Montgomery,	do.	Philadelphia.
James Cheston Morris, Jr.,	do.	do.
Charles Wordsworth Nevin,	do.	do.
Henry Sargent Prentiss Nichols,	do.	Hartsville, Bucks Co.
Charles Santee Pauly,	do.	Philadelphia.
Alexander Aden Powell, Jr.,	New Jersey.	Gloucester City.
William Meredith Ralston,	Pennsylvania.	Chestnut Hill.
Edmund Elliott Read,	New Jersey.	Camden.
Thomas Reath,	Pennsylvania.	Philadelphia.
George Wood Bissell Roberts,	New Jersey.	Riverton.
Henry Foster Stewart,	Pennsylvania.	Philadelphia.
William Moore Stewart, Jr.,	do.	do.
Thomas Wharton,	do.	do.
		Juniors, 31.

SOPHOMORES.

Harry Clifton Adams,	Pennsylvania.	Philadelphia.
Edward Watson Anstice,	do.	do.
Morris Rex Bockius,	do.	Germantown.

Henry Houston Bonnell,	Pennsylvania.	Philadelphia.
John Henry Burroughs,	do.	do.
Charles Henry Castle,	do.	do.
Hilary Missimer Christian,	do.	do.
John Travis Cochran,	do.	do.
James Stuart Dickson,	do.	do.
Christian Lee Gaul,	do.	do.
William Purves Gest,	do.	do.
Bernardo De Souza Frank Harrah,	do.	do.
Oliver Hopkinson, Jr.,	do.	do.
George Junkin, Jr.,	do.	do.
Leon Landauer,	do.	do.
Charles Howard Lodor,	do.	do.
Elihu Spencer Miller, Jr.,	do.	do.
Huston Hammill Milligan,	do.	do.
George Hunter Murphy,	do.	Germantown.
Erskine Neide,	do.	Pottstown.
Samuel Peltz,	do.	Philadelphia.
John Perot,	do.	Germantown.
George Read Savage, Jr.,	do.	Philadelphia.
Theodore Emanuel Schmauk,	do.	Allentown.
James Burr Shreve,	Mississippi.	Port Gibson.
Edwin Ford Schively,	Pennsylvania.	Germantown.
John Reed Smucker,	do.	Philadelphia.
Joseph Stokes,	New Jersey.	Moorestown.
Andrew Voigt, Jr.,	Pennsylvania.	Philadelphia.
Charles Wadsworth, Jr.,	do.	Norristown.
Richard Norris Williams,	do.	Philadelphia.
Robert Erskine Wright,	do.	Frankford.
		Sophomores, 32.

FRESHMEN.

William Louis Abbott,	Pennsylvania.	Philadelphia.
Elihu Spencer Blight,	do.	do.
John Marion Bradford,	do.	do.
Joseph Sill Clark,	do.	Germantown.
William Allison Cochran,	do.	Philadelphia.
John Moss Cohen,	do.	do.
John Francis Foulke,	do.	do.
William Henry Fox,	do.	do.

George Howard Freedley,	Pennsylvania.	Philadelphia.
George Christian Gardner,	do.	Allentown.
William Jones Gregory,	New Jersey.	Blairstown.
George Herman Gross,	Pennsylvania.	Philadelphia.
Percival Smith Hill,	do.	do.
John Hall Ingham,	do.	do.
Morris Jastrow,	do.	do.
John Eaton Le Conte,	do.	do.
Howard Jones Lukens,	do.	do.
Rufus Bicknell Marks,	do.	do.
Robert Kennedy Matlock,	New Jersey.	Woodbury.
James Claytor Montgomery,	Pennsylvania.	Philadelphia.
Lewis Neilson,	do.	do.
Clifford Pemberton, Jr.,	do.	do.
Eli Kirk Price, Jr.,	do.	do.
James Hamilton Robins,	do.	do.
Pearson Peterson Sentman,	do.	Germantown.
Howard Draper Speakman,	New Jersey.	Woodbury.
Eversley Haynes Thomas,	Pennsylvania.	Philadelphia.
Charles Loss Thompson,	New Jersey.	Beverly.
Samuel Tobias Wagner,	Pennsylvania.	Manayunk.
William Crowell Watt,	do.	Philadelphia.

Freshmen, 30.

PARTIAL STUDENTS.

Frederick Bain,	Pennsylvania.	Philadelphia.
Henry Blackwell Bartow,	do.	Bristol.
Morris Weyl Brinkmann,	do.	Philadelphia.
Evans Rogers Dick,	do.	do.
Frank Madison Dick,	do.	do.
Harry Connelly Groome,	do.	do.
Reginald Lawrence Hart,	do.	do.
Harry Reed Hatfield,	do.	do.
George Trott Hazlehurst,	do.	do.
Bertram Hughes,	do.	do.
Davidson Kennedy,	do.	do.
Edward Shippen McIlvaine,	do.	do.
David Milne,	do.	do.
Chas. Cotesworth Pinckney Norris,	do.	Chestnut Hill.

George Tucker Sank,	Pennsylvania.	Philadelphia.	
George Chapman Thayer,	do.	do.	
Herbert Berg Walker,	do.	do.	
		Partial Students,	17.

DEPARTMENT OF ARTS.

Seniors		24
Juniors		31
Sophomores		32
Freshmen		30
	Total	117
Partial Students		17
	Total Matriculates in the Department of Arts	134

TOWNE SCIENTIFIC SCHOOL.

POST-GRADUATE STUDENTS.

1.	*Fred. Augustus Genth, Jr., B.S.,	Pennsylvania.	Philadelphia.
1.	Henry Carvill Lewis, M.A.,	do.	Germantown.
3.	Arthur Whitcomb Sheafer, B.S.,	do.	Pottsville.
4.	Charles Sumner Williamson, B.S.,	do.	Philadelphia.

Post-Graduates, 4.

SENIORS.

4.	Arthur Latham Church,	Pennsylvania.	Germantown.
2.	Edward Vincent d'Invilliers,	do.	do.
2.	William Patten Elwell,	do.	Philadelphia.
2.	William Edward Helme,	do.	do.
3.	Henry Howard Houston,	do.	Germantown.
3.	William Cousty Johns,	do.	Philadelphia.
3.	Charles Frederick Moore,	do.	do.
2.	William Lee Rowland,	Massachusetts.	Springfield.
3.	Nelson Oliver Whitney,	Pennsylvania.	Philadelphia.

Seniors, 9.

JUNIORS.

3.	Edward Hurst Brown,	Pennsylvania.	Philadelphia.
3.	James Wilkinson Dale, Jr.,	do.	Media.
4.	Samuel Hall Day,	do.	Philadelphia.
3.	John Stuart Elliott,	Georgia.	Savannah.
4.	Frank Theodore Freeland,	Pennsylvania.	Philadelphia.
1.	Antone Miskey Hance,	do.	Germantown.
2.	William Keating Hewson,	do.	Philadelphia.
3.	Tosui Imadate,	Japan.	Echizen.
1.	Walter Hahn Jarden,	Pennsylvania.	Philadelphia.

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

4. George Hail Lewis,	Pennsylvania.	Philadelphia.
1. William Lorenz, Jr.,	do.	Chestnut Hill.
3. Charles Henry Page,	do.	Philadelphia.
4. John Curtis Patterson,	do.	do.
3. Percy Eugene Rihl,	do.	do.
2. Robert Adair Shillingford,	do.	do.
3. James Hulme Smith,	do.	do.
2. Newberry Allen Stockton,	do.	Huntingdon Valley.
2. Clifford Smith Thomas,	do.	Bellefonte.

Juniors, 18.

SOPHOMORES.

Charles Adamson,	Australia.	Melbourne.
Joseph Wright Adamson,	do.	do.
Charles Walton Bache,	Pennsylvania.	Philadelphia.
Samuel Morris Barker,	do.	Germantown.
William Stavely Cornell,	do.	Philadelphia.
Edwin Ford Dawson,	do.	do.
Conrad Baker Day, Jr.,	do.	do.
Francis Louis Fassitt,	do.	do.
Samuel Sebastian Evans,	do.	Wild Brier, Chester
Charles Steinman Foltz,	do.	Philadelphia. [Co.
George Jesper Harding,	do.	do.
John Warner Henderson,	do.	do.
Carl Otto Hering,	do.	do.
Harry Livingston Kelley,	do.	do
Edward Kneass Landis,	do.	Chestnut Hill.
Henry Philip Lincoln,	do.	Philadelphia.
William Supplee Lloyd,	do.	do.
Robert William Neilson,	do.	do.
William Baird Patton,	do.	Germantown.
William Cresson Prichett,	do.	Philadelphia.
Harry Sherman Righter,	do.	Merion, Montgom'y
Charles Frederick Seeger,	do.	Philadelphia. [Co.
Thomas Wilson Sharpless,	do.	do.
Abel Lukens Stout,	do.	do.
Francis Lincoln Wayland,	do.	do.
Edward Willard, Jr.,	do.	do.
Charles Augustus Wilson,	do.	do.

Sophomores, 27.

FRESHMEN.

Richard I. Downing Ashbridge,	Pennsylvania.	Downington.
Joseph Trowbridge Bailey, Jr.,	do.	Philadelphia.
Ellis Ames Ballard,	do.	do.
George Blow Beale,	do.	do.
Eugene Borda, Jr.,	do.	do.
Louis Cornette Brastow, Jr.,	do.	Wilkesbarre.
Charles Creighton Stratton Carpenter,	do.	Philadelphia.
Robert McCurdy Coyle,	do.	do.
Frank Hoskins Easby,	do.	Media.
John Barker Ellison,	do.	Philadelphia.
Howard Beck Felton,	do.	Olney, Philadelphia
William Henry Allen Fitz,	do.	Philadelphia.
Caleb Fellowes Fox,	do.	do.
Willis Edward Hall,	do.	do.
Theodore Henry Hart,	do.	do.
Richard Percy Heckscher,	do.	do.
George Ludwig Heins,	do.	do.
Charles Montgomery Hill, Jr.,	do.	do.
Orville Horwitz,	do.	do.
John Jay Lafayette Houston,	do.	do.
Samuel Jamison,	do.	do.
Constant Eakin Jones,	do.	do.
Hermann Augustus Keller,	do.	do.
Henry Frederick Keller,	do.	do.
Arthur Lytton Knight,	do.	do.
Charles Brandes Lane,	do.	do.
Edwin Clifford Lewis,	do.	do.
Edward Vincent Maitland,	do.	do.
William Albert McGonagle,	do.	Conshohocken.
Francis Lanier Potts,	do.	Philadelphia.
Severo Mallet-Prevost,	New Jersey.	amden.
Daniel Detwiler Price,	Pennsylvania.	Philadelphia.
Eugene Willard Richardson,	do.	do.
George Everett Richardson,	do.	do.
Harry Riley,	do.	do.
William Thomas Robinson,	do.	do.
William White Seitzinger,	do.	do.
Henry Clement Smith,	do.	Media.
Nathaniel Wiley Thomas,	do.	Philadelphia.

Lawrence Townsend,	Pennsylvania.	Philadelphia.
Benjamin Chew Tilghman,	do.	do.
Lienau Walden,	do.	Spring Hill, Dela.
Edward Anderson White,	do.	Philadelphia. [Co.
Edward Kern Wolgamuth,	do.	do.
Uriah Yeakel,	do.	do.

Freshmen, 45.

SPECIAL COURSES.

1.	Mary Elfreth Allen, M.D.,	Pennsylvania.	Philadelphia.
1.	Anna Lockhart Flanigen,	do.	do.
6.	William Henry Grant,	do.	do.
4.	William Hemphill Ingram,	do.	do.
4.	Henry Atlee Ingram,	do.	do.
3.	Frederick Humphreville Lewis,	do.	do.
1.	Harry Grattan McCarter,	New York.	New York. [Phila.
2.	John Hassinger Murphy,	Pennsylvania.	Rising Sun Lane,
4.	William Henry Norris,	do.	Philadelphia.
1.	Gertrude Klein Peirce,	do.	do.
4.	Charles Alfred Rutter,	do.	do.

1.	Oscar Charles Sumner Carter,	Pennsylvania.	Norristown.
1.	George Austin Haines,	New Jersey.	Mount Holly.
3.	Frederick Vanleer Jarden,	Pennsylvania.	Philadelphia.
1.	Saunders Lewis, Jr.,	do.	do.
1.	Charles Henry Lüders,	New Jersey.	Mount Holly.
4.	George McCall,	Pennsylvania.	West Chester.

Special Students, 16.

TOWNE SCIENTIFIC SCHOOL.

Post-Graduates	4
Seniors	9
Juniors	18
Sophomores	27
Freshmen	45
Special Courses	17
Total	120

DEPARTMENT OF MUSIC.

STUDENTS OF THE SECOND YEAR.

Mrs. E. S. Cooper,	Pennsylvania.	Philadelphia.
Miss J. C. Foulke,	do.	do.
E. G. McCollin,	do.	do.
Miss E. H. Miller,	do.	do.
A. A. Outerbridge,	do.	do.
Miss M. H. Sinclair,	do.	do.

STUDENTS OF THE FIRST YEAR.

Miss A. R. Brown,	Pennsylvania.	Philadelphia.
Miss E. E. Genth,	do.	do.
O. H. Kendall,	do.	do.
T. G. Knauff,	do.	do.
M. Wetherill,	do.	do.

Students of the second year	6
Students of the first year	5
Whole number	11

RECAPITULATION.

Students in the Department of Arts	134
Students in the Towne Scientific School	120
Students in the Department of Music	11
Whole number	265

GENERAL STATEMENT.

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

THE DEPARTMENT OF ARTS.
THE TOWNE SCIENTIFIC SCHOOL.
THE DEPARTMENT OF MEDICINE.
THE DEPARTMENT OF LAW.
THE DEPARTMENT OF MUSIC.

BUILDING, APPARATUS, ETC.

The Trustees of the University have erected, for the accommodation of the Departments of Arts and of The Towne Scientific School, one of the largest and most conveniently arranged college buildings in the country. 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.—By the recent action of the Board of Trustees, it has been decided that all future matriculates in the Department of Medicine shall attend three courses of lectures previous to their examination for a degree. These courses will, as heretofore, be of five months' duration, and the studies will be so graded as to allow the constant introduction of new matter as the student advances, and at the same time will secure for him at least as much repetition of the more essential subjects as in the former system of teaching. In short, the present reform in the University of Pennsylvania is designed chiefly to introduce into the official curriculum of medical study the methods which have long been used in European schools, and which, in all other departments of science, have given vitality and practical utility to the older didactic systems.

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 Modern 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, and on Communism, by PROFESSOR THOMPSON.
On Rhetoric and 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 KŒNIG.
On French Literature, by PROFESSOR BRÉGY.
On German Literature, by PROFESSOR SEIDENSTICKER.

Professor McElroy also instructs a Voluntary Class of Seniors and Juniors in the critical study of one of the older English Classics. At present the Class is engaged upon the *Julius Cæsar* of Shakspeare.

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., Assistant Professor of 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 Composition, including English Etymology (as in Sargent's *Manual*) and Emphasis in Reading. [Bain's *Grammar as Bearing upon Composition*, and Abbott's *How to Parse* are recommended in preparation for this examination.]

GREEK.—Greek Grammar. Greek Prose Composition (as much as is contained in *Arnold* to the end of Exercise 34). *Xenophon* (Four Books of the Anabasis). *Homer* (First three Books of the Iliad).

LATIN.—Latin Grammar. Cæsar (*Three Books of the Gallic War*). Virgil (*Six Books of the Æneid*). *Cicero* (Four Orations against Catiline). Horace (*First Book of the Odes*). Arnold's Latin Prose Composition, *First Sixteen exercises.*

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

The examinations of Candidates for admission will be held for the current year on Monday, Tuesday, Wednesday, Thursday, and Friday, June 17th, 18th, 19th, 20th, and 21st, 1878, 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 Saturday, June 22d, at twelve o'clock, to learn the result of their examinations.

ON MONDAY, JUNE 17TH, 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 11¼ to 1¼—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 TUESDAY, JUNE 18TH, from 9 to 11—A written examination in *English Grammar,* and the *Elements of English Composition* (including English Etymology and Emphasis in Reading).

From 11¼ to 12¼—A written examination in *Ancient and Modern Geography.*

From 12½ to 2—A written examination upon the *first sixteen exercises* in ARNOLD'S LATIN PROSE COMPOSITION.

ON WEDNESDAY, JUNE 19TH, 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 1—A written examination upon *six books of Virgil's Æneid,* and upon the *Structure and Scanning of Hexameter Verse.*

ON THURSDAY, JUNE 20TH, from 9 to 11—A written examination in *Greek Grammar* and ARNOLD'S GREEK PROSE COMPOSITION.

From 11¼ to 1¼—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 FRIDAY, JUNE 21ST, beginning at 9 o'clock—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 FRIDAY, JUNE 21ST, 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 Twenty-first and Twenty-second Books;* with the notes and explanations 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 *Alsop's Algebra* (to the end of Chapter XII.): And in *Geometry* (*Davies' Legendre* or *Chauvenet*).

IN HISTORY—Upon *Freeman's General Sketch of History.*

IN ENGLISH—Upon *English Lessons for English People* (Abbott and Seeley), and *How to Write Clearly* (Abbott).

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.

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.

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

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 Astronomy, and Astronomical

and Terrestrial Physics; 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 admission to a *partial course* is to be considered an exceptional arrangement, made by the Faculty, to be granted and withdrawn, when and as it may be deemed expedient. At the termination of such a partial course, satisfactorily pursued, a certificate of proficiency will be awarded.

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.

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 15th 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 examina-

tion 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 may be conditionally attached to their class until they prove on re-examination that said deficiency has been fully made up. In case of persistent neglect of study, great irregularity of attendance, 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 completed.

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

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

ENGLISH.—Freeman's *General Sketch of History*, with Labberton's *Historical Atlas. English Lessons for English People* (Abbott and Seeley), and *How to Write Clearly* (Abbott).

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 or Æschylus.

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 (Lectures). Earle's *Philology of the English Tongue*, with Lectures. Compositions and Declamations.

GERMAN.—Plate's *German Studies*. Practical exercises in Translation. Guide to German Conversation.

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

CHEMISTRY.—Inorganic and Organic Chemistry (*Experimental Lectures, with Examinations*).

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*). Sophocles. Lysias, or Æschines in place of Demosthenes.

LATIN (*Elective* with *French*).—Selections from Juvenal. Cicero. (*De Officiis, De Finibus* or *De Amicitia*). Horace (*Epistles*). Reading at Sight.

PURE MATHEMATICS (*Elective* with *History and English Literature*).—Differential and Integral Calculus (*Olney*).

PHYSICS (*Required*).—Mechanics. Sound. Heat. (Ganot's *Physics.*) Experimental Lectures.

ENGLISH (*Required*).—Compositions and Declamations.

CHEMISTRY (*Required*).—Inorganic and Organic Chemistry, completed (*Experimental Lectures with Examinations*).

ENGLISH (*Elective* with *Pure Mathematics*).—History (*Student's Gibbon*). Green's *History of the English People.*

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*).—Isocrates. Xenophon (*Memorabilia*). Euripides. Plato (*Apology* and *Crito*).

LATIN (*Elective* with *French*).—Cicero (*Tusculanæ*). 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.* Modern 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.

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.

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.

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

F. A. GENTH, A.M., PH.D., Professor of Chemistry and Mineralogy.

LEWIS M. HAUPT, Professor of Civil Engineering.

THOMAS W. RICHARDS, A.M., Professor of Drawing and Architecture.

GEORGE A. KŒNIG, 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.

WILLIAM D. MARKS, PH.B., C.E., Whitney Professor of Dynamical Engineering.

OTIS H. KENDALL, A.M., Assistant Professor of Mathematics.

ASSISTANTS.

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; in MECHANICAL DRAWING and ARCHITECTURE, and in STUDIES PREPARATORY TO MEDICAL STUDY.

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. COURSE PREPARATORY TO MEDICAL STUDIES.

The Degree conferred by the University, on the completion of any one of these professional courses, in addition to the studies pursued by the whole class during the four years of the curriculum, and on the presentation of a satisfactory Thesis, is that of BACHELOR OF SCIENCE.

Special students may be received into any of the professional courses, when the Professor in charge of that course is satisfied of their competency to profit by his instructions. They take all those studies which the Professor thinks necessary to the completeness of the course, together with such others as the Faculty may require. At the end of two years of study, they will receive a CERTIFICATE OF PROFICIENCY on passing the examination required, and presenting a satisfactory Thesis.

Persons desirous of prosecuting any special study in any department of this school, can make arrangements for that purpose with the Professor in charge of that department, subject to the approval of the Faculty.

A POST-GRADUATE Course of Instruction in this School has been organized. For the *programme* of this course, see p. 45.

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 (see page 23), in English Grammar and 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 MONDAY, JUNE 17TH, from 9 to 11 o'clock.—A written examination in *Arithmetic* (*Elementary Rules*, *Compound Numbers*, *Fractions*, *Proportion*, *Percentage*, the *Extraction of Square and Cube Roots*, and the *Decimal System of Weights and Measures*).

From 11¼ to 1¼.—A written examination in *Algebra* (to the end of *Quadratic Equations*, as in *Alsop's Algebra*, to page 184, including *Proportion*, *Progression*, *Surds*, *Imaginary Quantities*, and the *Binomial Theorem*).

On Tuesday, June 18th, from 9 to 11.—A written examination in *English Grammar and Composition*, including *English Etymology* (*as in Sargent's Manual*) and *Emphasis in Reading*. [*Bain's Grammar as bearing upon Composition*, and *Abbott's How to Parse* are recommended in preparation for this examination.]

From 11¼ to 12¼.—A written examination in *Ancient and Modern Geography*.

From 12½ to 2½.—Oral examination in *Collot's French Reader* (first 100 pages), and in *French Grammar* (*Brégy*) *to the Irregular Verbs*.

On Wednesday, June 19th, from 9 to 10.—A written examination in *Geometry* (*through the first four books of Chauvenet's Geometry*).

Candidates for the Towne Prize Scholarships from the Public Schools will be examined on the same subjects and at the same hours, but not on the same papers, as other candidates for admission.

Candidates for admission to this 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 Wednesday, June 19th, from 10 to 2.—Written or oral examination upon the whole of *Alsop's* or *Olney's University Algebra*, *Chauvenet's Geometry*, and *Chauvenet's Plane Trigonometry*.

Also oral examinations upon the following subjects:—

In History.—Upon *Freeman's General Sketch of History*.

In English.—Upon *English Lessons for English People* (Abbott and Seeley), and *How to Write Clearly* (Abbott).

In Chemistry.—Upon *Inorganic Chemistry* (Barker's, Roscoe's, or Thorpe'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*).

In German.—Plate's *German Studies*.

A second examination of applicants for admission will be held, under the same conditions, before the opening of the collegiate year, in September. For dates etc., see Circular.

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 15th day 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.

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.

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.

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 have a course of fully illustrated Lectures, covering the whole ground of Inorganic Chemistry. In the Sophomore year one term is devoted to recitations on Theoretical Chemistry, one term to the outlines of Organic Chemistry, and the last term to practical exercises in a Laboratory specially devoted to this work. They have here a course in the manipulation of apparatus, and in the making and testing of some of the elementary gases. In the Junior Year commences their work in the Analytical Laboratories, while they also attend Lectures on 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 in the plotting of 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.

Students in CIVIL ENGINEERING will be required to pursue the course of studies indicated on pages 39 and 41 of the catalogue.

It is believed that the instruction in this department is so arranged by a combination of recitations, lectures, and practical work, as to develop to the best advantage, so far as it may be done in the schools, those mental, moral, and physical qualities required of the practical engineer.

The lectures are accompanied, whenever possible, by the use of the models, instruments, samples of materials, photographs, charts, and drawings with which the cabinets abound. The afternoons and Saturdays are devoted to drawing and practical work in shop or field; the latter exercises consisting either of surveying or visiting public or private works, manufactories, etc., for which the locality furnishes ample facilities.

The course in Drawing includes the projection of maps; various methods of representing Topography; conventional signs; problems in shades, shadows, and perspective; details of framing; composition; general drawings for constructions in wood, stone, and iron; special designs; working drawings for modelling; plotting; and drawing of profiles and cross sections.

To develop as far as possible that sense of personal responsibility so necessary in an engineer, the students are divided into sections for field practice and shop work, and one of their number detailed to assume entire control of their operations, subject always to the supervision of the Professor in charge. The same problems are generally assigned to both parties, and the results obtained by dif-

ferent methods compared to show defects either of manipulation or process.

The good effect of this system is manifested in the unusual interest taken in the work, the perfect discipline existing in the parties, and the accuracy of the results. The visits made to shops and manufactories are rendered profitable by requiring students to collect all the practical information possible, and embody it in a written report, noting particularly any new or special features for economizing time or materials, improved methods of assembling parts, etc., as well as the general plant, apparatus, and facilities for receiving and shipping materials. A special part of the report is previously assigned to each member of the section when practicable.

The programme for the present season will consist of an examination of brick kilns, with methods of manufacturing bricks by machinery; visits to the Edgemoor Iron Works; W. C. Allison's Car Shops; John Struthers & Sons' Stone Works, with Tilghman's Sand Blast; the Phœnix Iron Co.'s Works; the Moorehead Clay Works; the Midvale Steel Works, and the tunnel and bridges in the vicinity of the University.

The field practice embraces the various problems in Chain Surveying, the measurement of areas, and computation of results; line surveys and location, cross sections and levels for estimating quantities, hydrography, and the solution of such Geodesic problems as relate to the orientation of maps.

Students of Dynamical Engineering are required to give particular attention to the kinematics of mechanism, to the conditions under which work and power act, and the means of regulating and transmitting the same, to the problems of hydraulics or hydraulic motors, and to the mechanical theory of heat with its applications to the steam engine, etc., as will appear from the detailed course of study given below.

A workshop for modelling in wood and plaster is now established, where the student can construct from his own drawings models of a technical nature.

Special attention is given to the execution of drawings, first from designs of acknowledged excellence and from models, and afterwards from calculations previously made. Information is given of the methods of casting and working in iron, and of making and using machine tools.

The close proximity of numerous blast furnaces, foundries, machine shops, iron and steel rolling mills, as well as factories of almost every existing kind, will enable the student to acquire a practical knowledge of their methods of manufacture and processes.

Weekly visits of inspection will be made during the last year of the course to such objects of interest to the student as may be deemed profitable.

The instruction in PHYSICS extends over three complete years. In the Sophomore year the subjects of Elementary Mechanics, Sound, and Heat are considered, the class using a text-book, and the exercises consisting of recitations, illustrated by experiments, with occasional lectures. In the Junior year, the subjects treated are Light and Electricity, the instruction being by lectures, with occasional recitations, and examinations. In the third term a course of lectures is delivered to this class on Astronomical and Terrestrial Physics. The Senior class receives practical instruction in the Physical Laboratory throughout the year. The education of the eye and hand which is thus given, the familiarity with apparatus and the knowledge of methods of precise measurement thus acquired, cannot fail to prove valuable auxiliaries to success in subsequent practical life.

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 precedency 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 and other forms, showing the alterations of one species into another.

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 renowed "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*, each student is furnished with a working table, and with a set of such reagents as are constantly required for his 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, cathetometer, 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 be valuable in preparing the students for the regular analytical work in the main Laboratories which commences in the Junior year.

A Chemical Museum has been largely increased by collections of beautiful and rare chemicals, and the technical portions of it by

suites of specimens, illustrating the processes used on a large scale. 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. Contributions of sets of technical products and preparations, illustrating the different chemical processes, will be gratefully received and acknowledged.

The Metallurgical and Assay Laboratories, etc., are furnished with the requisite furnaces, also with numerous diagrams and models in 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 vertebrates) has been purchased of Prof. James Hall, of Albany, and presented to the Geological Department of the University. Prof. Hall has arranged it chronologically, in two suites, the first lithological, the second palæontological, for the purpose of showing not only the characteristic genera and species, but their changes in relation to the sediments containing them.

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.

The *Physical cabinet* contains an excellent collection of apparatus for illustrating the instruction given in this Department. The Lecture-room is supplied with every convenience for facilitating the fullest experimental demonstration. The Physical laboratory is furnished with instruments of precision, for physical measurement, which make it possible to give an extended course in Practical Physics, not only for Undergraduate, but also for Postgraduate instruction. The Photographic and Photometric-rooms are arranged for work in these directions. Among the apparatus recently added to the collection, may be mentioned a cathetometer, spark-micrometer, and spectrometer from Grunow, a dividing engine and com-

parator from Salleron, a Regnault chronograph from Kœnig, a Thomson galvanometer and quadrant electrometer from Elliott, a 20 band test plate from Nobert, and several diatom test plates from Möller.

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 have recently been added collections of Schröder's models illustrating problems in Descriptive Geometry and intersections of solids, and a large number of samples of the several varieties of iron and steel, showing the physical properties of those materials.

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: for demonstration in the kinematics of mechanism, trains of spur, bevel, mitre, annular, elliptical, and hyperboloidal gear wheels, the screw and wheel, parallel motions of various kinds, a Stephenson link and valve motion, a set of straight and angular pulleys for belts, a frame of movable and compound pulleys for cords, differential screw and variable crank motion with indices purchased from Schröder, of Darmstadt. Working models of locomotive, beam, and

marine engines, a trip-hammer, a dynamometer vacuum gauge, manometer purchased from Salleron, a governor with throttle-valve, a combination of the screw and toggle-joint, apparatus to illustrate the laws of friction, a suction and force pump, a rotary pump, a model illustrating the forms of least resistance for vessels, a working model of a turbine water-wheel, together with a large number of French lithographs, photographs, and Weissenborn's drawings of American machinery.

A collection (contributed for the purpose of illustration of their methods and products, by the manufacturers of Philadelphia and vicinity) of files showing all the processes and cuts, of pulleys, shafting, and couplings, etc., of the various shapes of rolled iron, wrought iron, tubing, bolts, nuts, etc., and of iron in its various stages of manufacture and qualities, and a collection of working drawings of constructed machinery.

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*. *English Lessons for English People* (Abbott and Seeley), and *How to Write Clearly* (Abbott).

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 (Minific).

CHEMISTRY.—Inorganic Chemistry (fully illustrated experimental Lectures).

GERMAN.—Plate's German Studies.

SOPHOMORE YEAR.

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

GERMAN.—Whitney's *German Grammar*. Schiller's *Wilhelm Tell*. Scientific Reading. Guide to German Conversation.

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

MATHEMATICS.—Spherical Trigonometry (*Chauvenet*). Descriptive Geometry (*Church*). 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.

CHEMISTRY.—Recitations on Theoretical Chemistry. Outlines of Organic Chemistry in Lectures. Laboratory Exercises in Chemical Manipulation.

PHYSICAL SCIENCE.—Mechanics, Sound, Heat. Systematic and Structural Geology.

JUNIOR YEAR.

STUDIES PURSUED BY THE WHOLE CLASS.

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

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

GEOLOGY.—The Coal and Iron deposits, mines, statistics, etc., of the United States.

1. Studies pursued by the Chemical Section.

Organic Chemistry.—Organic Analysis and methods. Making of organic chemical preparations.

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 to Metallurgy.—Theory of Metallurgical Processes; theory and construction of furnaces and other Metallurgical apparatus. Dressing of ores considered theoretically and practically.

Assaying of ores and fuels, with special application of volumetric analysis.

Demonstration of the principal metallurgical processes by furnace practice.

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.

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

2. Studies pursued by the Geological Section.

Chemistry, Metallurgy, and Mineralogy—same as Chemical Section.
Copper, Lead, Silver, Gold, Salt, Petroleum, etc., in the United States, and elsewhere.
Practice in mapping and modelling.
Surveying—same as for students in Department No. 3.

3. Studies pursued by the Civil Engineering Section.

MATHEMATICS.—Differential and Integral Calculus. Shades, Shadows, and Perspective. Spherical Projections and Isometrical Perspective (Church). 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, Coffer-dams, Trestles, Bents, etc., from working drawings.

4. Studies pursued by the Dynamical Engineering Section.

MATHEMATICS.—Differential and Integral Calculus.

STATICS.—The application of the principles of Statics to Rigid bodies. The Elasticity and Strength of materials. Forms of uniform strength. Theory of framed structures. Stability of structures. Theory of the arch. Strains in parts of mechanism. The Equilibrium and Pressure of fluids, as water, air, steam, etc. The equilibrium of fluids with other bodies; stability of vessels; determination of specific gravity; use of Hydrometers, Manometers, Gauges, etc.

KINEMATICS.—Laws of motion. Elementary combinations of Pure Mechanism. Pulleys and belts. Trains of gearings and forms of teeth of wheels. Parallel motions. Link and valve motions, with a consideration of the various forms of valves.

DRAWING.—Copies of Bolts and Nuts; rivetting; gudgeons, pivots, axles, shafts, couplings, pillow-blocks; shaft-hangers, pulleys, sheaves, and gear wheels; connecting rods and cranks, working beams, crossheads, pipe connections, valves, steam cylinders, pistons, stuffing boxes, and glands, etc. etc.

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

MINERALOGY.—Lectures on the physical properties of minerals, with examination of natural specimens.

GEOLOGY.—Lectures on Structural Geology.

CHEMISTRY.—Qualitative Analyses in Laboratory.

ARCHITECTURE.—Orders and Ornaments. Shading in India Ink.

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

MATHEMATICS.—Differential and Integral Calculus. 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 Building 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 Frame-work; Materials; Construction.

6. Studies in the Course preparatory to Medical Studies.

CHEMISTRY.—Laboratory Practice in Qualitative Analysis. Organic Chemistry.

MINERALOGY.—Determinative Practice, with the Blowpipe.

BOTANY.—Systematic Botany with Excursions.

ZOOLOGY.—Vertebrate and Invertebrate Zoology.

LATIN.—Reading of Latin Authors.

SENIOR CLASS.

STUDIES PURSUED BY THE WHOLE CLASS.

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

ASTRONOMY.—Gummere's Astronomy.

PHYSICAL SCIENCE.—Practical Physics, Instruction in the Physical Laboratory.

GEOLOGY.—Structural Geology of the United States, taken in the order of States and Territories, with the principal minerals and fossils, distribution of metals and fuels in other countries. History of Geology.

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 of cost.

Practical determination of minerals by their physical properties.

2. Studies pursued by the Geological Section.

Course of Mining Engineering.

Museum Practice in Palæontology.

Writing of Professional Reports and their illustration by diagrams, maps, and pictures.

Field practice in surveying.

Chemistry, *Metallurgy*, and *Mineralogy*—same as Chemical Section.

3. Studies pursued by the Civil Engineering Section.

ENGINEERING.—Strength and properties of materials. *Recitations* from Mahan's Civil Engineering, Gillespie's Roads and Railroads, Haupt's Engineering Specifications and Contracts, and Wellington's Economic Theory of Location, accompanied by *lectures* on Calculations of Strains by Moments, Resolution of Forces, and Graphical Solutions; Tunnelling, blasting, and excavating in earth. Earthwork Computations; Preparation of estimates and contracts for special works. Reports on Tours of inspection.

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.

GEODESY.—Measurement of Bases, Triangulation, Determination of Meridian, Latitude, Longitude, Time, and Azimuth.

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.

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

4. Studies pursued by the Dynamical Engineering Section.

THE ANALYSIS and SYNTHESIS of MECHANISM.—Machine Tools and their principles. Lectures on forging, rivetting, pattern making, and moulding.

DYNAMICS.—Lectures on the conditions under which work and power act, and the means of regulating and transmitting the same. The Efflux of Fluids. The Flow of Fluids through pipes. The Impulse and Resistance of Fluids. Theory of Oscillation of Fluids. Lines of least resistance. Hydraulic Motors. Turbine, overshot, breast, and undershot water-wheels.

THERMODYNAMICS.—Values of Fuels. Strength, safety, and evaporative power of boilers. Steam and its properties. The Mechanical Theory of Heat. Stationary locomotive and marine Steam Engine. Lectures on the proper proportions of the various parts of the Steam Engine.

CONSTRUCTION and PRACTICAL APPLICATIONS.—Weekly visits of inspection will be made to blast furnaces, foundries, machine shops, iron and steel rolling mills, ship-yards, steam and hydraulic forges, etc. etc.

DRAWING.—Original designs. Designs and calculations for special machines. Detailed working drawings with specifications.

ARCHITECTURE.—Shading in Colors. Decorations, etc.

MINERALOGY.—Determinative Mineralogy.

METALLURGY.—Chemical Technology and Metallurgy.

CHEMISTRY.—Qualitative Analysis.

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 in the Course preparatory to Medical Studies.

CHEMISTRY.—Laboratory Practice in Quantitative Analysis. Physiological and Toxicological Chemistry.

BOTANY.—Structural Botany. Use of the Microscope.

ANATOMY.—Comparative Anatomy. Animal Mechanics.

PHYSIOLOGY.—Elementary Physiology. Application of Physics.

GEOLOGY.—Lectures.

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.	6. Preparatory to Medical Studies.
General Chemistry	1	1	..	..	..	2
Applied Chemistry	10	9	2	2	2	8
Mineralogy	2	2	2	2	2	4
Metallurgy and Assaying	4	4	2	2	2	..
Physics	4	4	4	4	4	4
Geology	1	5	1	1	1	..
Botany	..	..	..	..	..	2
Zoology	..	..	..	..	..	2
Mathematics	..	..	4	4	4	..
Theoretical Mechanics	..	..	2	6	3	..
Mechanical Drawing	..	..	..	2	..	..
Engineering Drawing	..	..	2	..	3	..
Surveying	..	5	4	..	..	..
Shades, Shadow, and Perspective	..	..	2	..	..	..
Architectural Drawing	..	..	4	4	7	..
Intellectual and Moral Philosophy (Logic)	2	2	2	2	2	2
Latin	..	..	..	..	..	2
Number of Hours	24	32	31	29	30	26

SENIOR YEAR—STUDENTS IN

	1. Chemistry.	2. Geology and Mining.	3. Civil Engineering.	4. Mechanical Engineering.	5. Architecture.	6. Preparatory to Medical Studies.
Applied Chemistry	18	11	4	2	2	14
Metallurgy and Assaying	6	6	6	6	6	..
Geology	3	9	2	1	1	1
Botany	..	..	..	..	..	2
Physiology	..	..	..	..	..	4
Anatomy	..	..	..	..	..	2
Physical Laboratory	4	4	4	4	4	4
Mathematics	2	2	2	2	2	..
Mech. Engineering	..	..	..	5	2	..
Mechanical Drawing and Modelling	..	..	..	4	..	..
Civil Engineering, Drawing, and Modelling	..	..	8	..	3	..
Surveying (field-practice)	..	..	4	..	..	..
History, etc.	3	3	3	3	3	3
Architectural Drawing	..	..	2	3	12	..
Number of Hours	36	35	35	30	35	30

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 or Thorpe's Text-Book of Inorganic Chemistry, and Schorlemmer'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 Organic Chemistry: organic analysis, with determination 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 modelling 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—

First Year.

The History of the Inductive Sciences—An extended application of higher analysis to the problems of dynamics and kinematics—Analytical mechanics—Experimental research and the construction of machines from working drawings under the direction of the Professor.

Advanced studies in the Dynamical Theory of Heat and additional acquirements in Pure Mathematics, Physics, and Metallurgy.

Second Year.

Advanced Mathematics and Physics continued—Experimental research continued—Original designs for special machines—Planning of workshops and factories—A thesis giving evidence of high attainment in some special direction.

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.

GENERAL INFORMATION.

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.

Arrangements have also been made to assist persons of limited means, who are in earnest in their desire to gain a College education, by a partial or total remission or postponement of the payment of the College fees. For information in regard to these arrangements, candidates should apply *in person* to the PROVOST.

Women are now admitted, in the Towne Scientific School, to the Lectures on Modern History, given to the Seniors, to those on General Chemistry, given to the Freshmen and Sophomores, to those on Physics, given to the Sophomores, and to the instruction in Analytical Chemistry, given to the Juniors and Seniors in one of the Laboratories. Women are also admitted to the instruction in the Science of Music; see p. 20.

Those desiring to attend the instruction on any of these subjects should apply to the Provost. They should have the same preparation, in order to profit by the instruction, as that required of the young men pursuing the study of the same advanced subjects.

A public Commencement for conferring degrees is held on the 15th of June, unless that date should fall on Saturday or Sunday. In such case the Commencement is held on the Friday preceding.

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 ex-

tensive 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 Literary and the Franklin Scientific Societies of the University are also open to their members.

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: "*Descartes.*"

2. In the DEPARTMENT OF GREEK LANGUAGE AND LITERATURE, a prize of $20 for the best examination upon the "Oration of Æschines contra Ctesiphontem," to be read with the Professor, by members of the Junior Class.

3. A prize of the value of $10 for the best examination, by a member of the Freshman Class, upon Greek Prose Composition with the Accents. The examination will be upon the latter part of Arnold's Greek Prose Composition, from the Relative to the end of the book.

4. 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 members of the Senior Class.

5. 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.

6. 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: "*Historical Influence of Cities on the Progress of Liberal Ideas.*"

7. A prize of the value of $20 for the best English Essay, by a member of the Junior Class. Subject: "*Franklin as a Discoverer.*"

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

9. 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 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 examinations 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 1878 will be upon the first forty, and in 1879 upon the first fifty-five exercises in Part I. of Arnold's Latin Prose Composition. Certificates 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 1878 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 Professor 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 "*The Relations between Modern Scientific Thought and the Poetic Faculty.*"

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.

VI. Through the liberality of a friend of the University, a prize is offered annually for the best English Composition by a member of the Freshman Class, entitling the successful competitor to one year's interest on the sum of $200.

VII. "THE JOSEPH WARNER YARDLEY MEMORIAL PRIZE," founded by the Class of 1877, in the Department of Social Science, in memory of their Classmate, JOSEPH WARNER YARDLEY, will be annually awarded on and subsequent to Commencement Day, 1879, to that member of the Senior Class who shall prepare the best thesis upon such subject as the Professor of that Department shall each year designate, and entitle the successful candidate to one year's interest upon the sum of $500, and also to an accompanying Diploma of Merit.

DEPARTMENT OF MEDICINE.

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

FACULTY.

CHARLES J. STILLÉ, LL.D.,
Provost of the University and *ex-officio* President of the Faculty.

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

HENRY H. SMITH, M.D.,
Emeritus Professor of Surgery.

FRANCIS GURNEY SMITH, M.D.,
Emeritus Professor of the Institutes of Medicine.

JOHN NEILL, M.D.,
Emeritus Professor of Clinical Surgery.

JOSEPH LEIDY, M.D., LL.D.,
Professor of Anatomy.

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

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

D. HAYES AGNEW, M.D., LL.D.,
John Rhea Barton Professor of Surgery and of Clinical Surgery.

HORATIO C. WOOD, M.D.,
Professor of Materia Medica, Pharmacy, and General Therapeutics.

WILLIAM PEPPER, M.D.,
Professor of Clinical Medicine.

WILLIAM GOODELL, M.D.,
Professor of Clinical Gynæcology.

JAMES TYSON, M.D.,
Professor of General Pathology and Morbid Anatomy, and Secretary of the Faculty.

THEODORE G. WORMLEY, M.D., LL.D.,
Professor of Chemistry.

JOHN ASHHURST, JR., M.D.,
Professor of Clinical Surgery.

———— ————,
Professor of Physiology.*

All communications should be addressed to

JAMES TYSON, M.D.,
Secretary of the Faculty of Medicine,
University of Pennsylvania.

* The course on Physiology during the next session will be delivered by Prof. TYSON.

DEMONSTRATORS.

H. LENOX HODGE, M.D.,
Demonstrator of Anatomy.

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

J. H. C. SIMES, M.D.,
Demonstrator of Pathological Histology.

ADOLPH W. MILLER, M.D.,
Demonstrator of Practical Pharmacy.

JOSEPH G. RICHARDSON, M.D.,
Demonstrator of Normal Histology.

GRIFFITH E. ABBOT, PH.D. JENA,
Demonstrator of Practical Chemistry.

B. F. LAUTENBACH, M.D.,
Demonstrator of Experimental Physiology.

DANIEL BRAY, M.D.,
Assistant to the Professor of Obstetrics.

HENRY F. FORMAD, M.D.,
Assistant Demonstrator of Pathological Histology.

GEORGE A. PIERSOL, FREDERICK T. ABEL,
Assistant Demonstrators of Normal Histology.

J. H. C. SIMES, M.D.,
HARRY B. REED, M.D.,
WM. BARTON HOPKINS, M.D.,
W. M. L. ZIEGLER, M.D.,
DAVID DAVIDSON, M.D.,
} Assistant Demonstrators of Surgery.

LECTURERS IN THE SPRING SESSION.

H. LENOX HODGE, M.D., Regional Anatomy.
CHARLES T. HUNTER, M.D., Operative and Minor Surgery.
J. WM. WHITE, M.D., Venereal Diseases.
DE FOREST WILLARD, M.D., Orthopædic Surgery.
R. G. CURTIN, M.D., Physical Diagnosis.
JOHN GUITÉRAS, M.D., General Symptomatology.
S. D. RISLEY, M.D., Ophthalmoscopy.
E. O. SHAKESPEARE, M.D., Refraction and Accommodation of the Eye, and Operative Ophthalmic Surgery.
ADOLPH W. MILLER, M.D., Practical Pharmacy.
J. H. C. SIMES, M.D., Histology.
ELLIOTT RICHARDSON, M.D., Practical Obstetrics.
DANIEL BRAY, M.D., Operative Obstetrics.
C. K. MILLS, M.D., Electro-Therapeutics.
JOHN M. KEATING, M.D., Diseases of Children.
CARL SEILER, M.D., Laryngoscopy.
——— ——— Experimental Physiology.

HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA.

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,
R. A. F. PENROSE, M.D., Professor of Obstetrics and of the Diseases of Women and Children,
} *ex-officio.*

WILLIAM PEPPER, M.D., Professor of Clinical Medicine;
D. HAYES AGNEW, M.D., Professor of Clinical Surgery;
WILLIAM GOODELL, M D., Professor of Clinical Gynæcology;
JAMES TYSON, M.D., Professor of General Pathology and Morbid Anatomy;
JOHN ASHHURST, JR., M.D., Professor of Clinical Surgery;
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.

DISPENSARY SERVICE.

ROLAND G. CURTIN, M.D., Chief of the Medical Dispensary.
CHARLES T. HUNTER, M.D., Chief of the Surgical Dispensary.
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.
B. F. BAER, M.D., Chief of the Dispensary for the Diseases of Women and Children.

BENJAMIN B. YOCUM, M.D.,
JAMES A. OGDEN, M.D.,
LOUIS E. GILLIARD, M.D.,
SAMUEL M. MILLER, M.D.,
} Assistant Physicians in the Medical Dispensary.

HOLLINGSWORTH NEILL, M.D.,
WM. BARTON HOPKINS, M.D.,
J. H. C. SIMES, M.D.,
} Assistant Surgeons in the Surgical Dispensary.

WM. L. TAYLOR, M.D., Assistant Physician to the Dispensary for Diseases of Women and Children.

CARL SEILER, M D., Assistant in the Medical Dispensary in Charge of Diseases of the Throat.

DE FOREST WILLARD, M.D., Assistant in the Surgical Dispensary in Charge of Orthopædic Department.

J. WILLIAM WHITE, M.D., Assistant in the Surgical Dispensary in Charge of Venereal Department.

GEORGE J. CLUNAS, M.D.,
WM. B. CHRISTINE, M.D.,
DOWLING BENJAMIN, M.D.,
} Assistant Physicians in the Dispensary for Nervous Diseases.

DEPARTMENT OF MEDICINE.

This Department was founded in 1765, by Drs. WILLIAM SHIPPEN, JOHN MORGAN, ADAM KUHN, BENJAMIN RUSH, and THOMAS BOND. From its establishment to the present time its reputation has been maintained by worthy successors of these eminent men; among whom may be mentioned Barton, Wistar, Chapman, Physick, Dewees, Horner, Hare, Gibson, Jackson, and Hodge. Through their labors, the circle of the School's influence has constantly been growing wider, and at the present time the roll of its graduates reaches TEN THOUSAND.

The Department of Medicine occupies an edifice, on an elevated site in the midst of extensive grounds in West Philadelphia, which is noteworthy for the beauty of its architecture, its size, and the completeness of its appointments. In America there is no such building used for a similar purpose. The lecture rooms are large, well ventilated and lighted; the dissecting room, ample, retired, and abundantly lighted from above, leaves little to be desired; the museum is unrivalled on this continent; the various laboratories afford ample space for the practical work of each student in Pharmacy, Chemistry, Histology, Physiology, and Pathological Anatomy. The peculiar situation of the Institution affords the clinical and other advantages of a large city, while it secures the scarcely less valuable surroundings of a semi-rural district. Fifteen minutes' ride in the street cars will place the student in the very heart of the metropolis; whilst the pure air, the quiet, the freedom from interruption, and the absence of temptations to idleness have not only greatly tended to preserve the health of the classes, but also to foster those habits of industry which are so essential to study, and form the basis of professional success. Moreover, no other medical school in Philadelphia is in such close proximity to so many large hospitals. Immediately adjacent to the Medical Building is the University Hospital; and, separated from it only by a street, is

the great municipal, or Philadelphia Hospital, with its 1000 beds available for practical instruction. At the distance of about half a mile are the Presbyterian and Children's Hospitals, and within easy walking distance, the celebrated Pennsylvania Hospital offers its abundant opportunities for clinical instruction.

Last year the Trustees and Faculty of Medicine of the University took the bold and decisive step of prolonging the course of medical study to three years, and of making the various improvements in the curriculum rendered practicable by such an extension. The result has been most gratifying, and has justified the Trustees and Faculty in their reliance upon the progressive spirit, not only of the Medical Alumni of the University, but also of the medical profession of the country.

It would be a work of supererogation to portray the defects of the old plan of teaching, or to reason upon the advantages of the new; the condemnation of the former method has been so earnest and general, and the recognition of the superiority of the improved plan which has been adopted so hearty and widespread as to render elaborate comparison superfluous. For the sake, however, of those about entering upon the study of medicine, a few brief remarks seem allowable. With but two courses, of five months each, of lectures, it is impossible to grade the studies so that the student shall be advanced from one to the other as he increases in knowledge—the beginner and the man on the eve of graduation receiving the same instruction. Further, it is equally impossible to give sufficient practical teaching, either in the laboratory or at the bedside. By prolonging the period of medical study, the authorities of the University have been enabled to so arrange the curriculum as to allow of the constant introduction of new matter as the student advances, and at the same time is secured at least as much repetition of the more essential subjects, as in the former system of teaching. A prominent feature of the present curriculum is systematic laboratory work in the fundamental medical sciences, as well as the personal teaching of each student in practical subjects of the greatest importance—such as physical diagnosis, clinical medicine, clinical surgery, and clinical gynæcology. Henceforth, a graduate of the Medical Department of the University will not only have been trained in the theory of medicine, but also taught to perform the chemical, pharmaceutical, and microscopic manipulations required by his calling;

to diagnose and treat medical and surgical diseases, and to recognize their post-mortem appearances. Exclusively didactic teaching has been universally abandoned in every branch of scientific and technical education, save the medical. Therefore, in inaugurating the reform, the Trustees and the Medical Faculty of the University felt that they were only adopting a method which, in other departments of science, had produced the most valuable fruits. The result shows, that, sooner or later, medical teaching in this country must be conformed to the system which has long been recognized as the only suitable one in the great medical centres of Europe. Day by day the line which separates the graduates of superior or advanced schools from those of institutions clinging to the old standard becomes more and more distinct. The attention of the community is fully aroused, and it is unquestionable that the future graduates of the University and of schools upon a similar basis will not only be entitled to, but will also receive, a larger share of the confidence of the community than will be given to those which have pursued a more theoretical and less thorough course of study.

MEDICAL FACULTY.

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

The Provost, *ex-officio*, PRESIDENT,

A Professor of ANATOMY,

A Professor of CHEMISTRY,

A Professor of PHYSIOLOGY,

A Professor of GENERAL PATHOLOGY AND MORBID ANATOMY,

A Professor of MATERIA MEDICA, PHARMACY, AND GENERAL THERAPEUTICS,

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

A Professor of SURGERY,

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

A Professor of CLINICAL MEDICINE,

A Professor of CLINICAL SURGERY,

A Professor of CLINICAL GYNÆCOLOGY.

CURRICULUM.

FIRST YEAR.

			Total hours per week.
Anatomy	4 lectures per week.	14 hours dissection.	18
Histology		2 " laboratory.	2
Materia Medica and Pharmacy	1 " "	1 " "	2
General Chemistry	3 " "	3 " "	6
Physiology	3 " "		3
General Pathology and Morbid Anatomy	2 " "		2
General Clinics—Medical and Surgical			8

Final examinations at the end of the Course: General Chemistry, Materia Medica and Pharmacy.

SECOND YEAR.

Anatomy	4 lectures per week.	4 hrs. ev'ing dissection.	8
Topographical Anatomy	2 " "		2
Medical Chemistry	1 " "	2 hours laboratory.	3
Physiology*	3 " "		3
General Pathology and Morbid Anatomy	2 " "	1 hour "	3
Therapeutics	3 " "		3
Theory and Practice of Medicine	4 " "		4
Surgery	4 " "		4
Obstetrics	3 " "		3
General Clinics—Medical and Surgical			8

Final examinations at the end of the Course: Anatomy, Medical Chemistry, Physiology, General Pathology and Morbid Anatomy.

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* Opportunities for practical work in the physiological laboratory will be afforded to those who desire them. A fee of $5 a month is charged.

THIRD YEAR.

			Total hours per week.
Topographical Anatomy	2 lectures per week.		2
Therapeutics	3 " "		3
Theory and Practice of Medicine	4 " "		4
Surgery	4 " "		4
Obstetrics	3 " "		3
Operative Surgery, Minor Surgery, and Bandaging	1 " "	2 hours' practice.	3
Diseases of Women and Children	1 " "		1
Didactic Gynæcology	1 " "	1 hr. bedside teaching.	* 2
*Bedside Instruction in Practical Medicine (including Physical Diagnosis)	1 " "	1 " "	2
*Bedside Instruction in Practical Surgery		1 hr. practical instruc.	1
*Practical Ophthalmology		1 " "	1
* " Otology		1 " "	1
* " Dermatology		1 " "	1
* " Electro-therapeutics		1 " "	1
General Clinics—Medical and Surgical			8
Special Clinics (Nervous Diseases, Diseases of Skin, Eye, Ear, Diseases of Women and Children)			5

Final examinations for Degree at the end of the Course: Therapeutics, Theory and Practice of Medicine, Surgery, and Obstetrics.

TEXT-BOOKS AND WORKS OF REFERENCE.

On Anatomy: Leidy's Elementary Treatise on Human Anatomy; Sharpey and Quain's Anatomy; Gray's Anatomy; Stricker's Manual of Histology.

On Chemistry: Fowne's or Attfield's Chemistry; Reese's Manual of Toxicology; Tyson's Practical Examination of Urine. Wormley's Micro-Chemistry of Poisons; Beilstein's Chemical Analysis.

On Physiology: Carpenter's Physiology, by Smith; Foster's Physiology, with Frey's Compendium of Histology; Tyson's Cell Doctrine.

On General Pathology and Morbid Anatomy: Orth's Diagnosis in Pathological Anatomy; Green, or Rindfleisch, on Morbid Anatomy.

On Materia Medica: H. C. Wood's Therapeutics; Geo. B. Wood's Therapeutics; Wood and Bache's Dispensatory.

On Practice of Medicine: Wood's, Bristowe's, or Roberts' Practice of Medicine; Stillé's Therapeutics; Walshe on the Heart and Lungs; Gee on Auscultation and Percussion; Duhring on Diseases of the Skin.

On Surgery: Agnew's Surgery; Ashhurst's Surgery; Smith's Principles and Practice of Surgery; Erichsen's Surgery; Billroth'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 Gynæcology: Barnes or Hewitt on Diseases of Women.

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* For these courses the class will be divided into sections, so that each student may receive direct personal instruction. *The Courses on Ophthalmology, Otology, Dermatology, and Electro-Therapeutics are optional, and for each a special fee of $10 will be charged.*

STUDIES OF THE FIRST YEAR.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9 A.M.	General Chemistry.	General Chemistry.		General Chemistry.		
10 A.M.			Chemical Laboratory, Div. A.			Chemical Laboratory, Div. B.
11 A.M.	Anatomy.	Chemical Laboratory, Div. A.	Chemical Laboratory, Div. A.	Normal Histology, Laboratory. One section two hours. Others dissect.	Chemical Laboratory, Div. B.	Chemical Laboratory, Div. B.
12 M.	Materia Medica.	Normal Histology, Laboratory. One section two hours. Others dissect.	Normal Histology, Laboratory. One section 2 hrs. Others dissect.		Normal Histology, Laboratory. One section 2 hrs. Others dissect.	Normal Histology, Laboratory. One section 2 hrs. Others dissect.
1 P.M.	General Pathology and Morbid Anatomy.			General Pathology and Morbid Anatomy.		
3½ P.M.	Dissection One and a half hours.	Anatomy.	Dissection One and a half hours.	Anatomy.	Anatomy.	Dissection One and a half hours.
4½ P.M.		Dissection One and a half hours.		Dissection One and a half hours.	Dissection One and a half hours.	
5 P. M.	Physiology.		Physiology.			Physiology.
7½ P.M.		Pharmacy, Laboratory. Chemical Laboratory Div. C.		Pharmacy, Laboratory.		

U. H. University Hospital.

The Class is divided into sections for the study of Practical Histology, one of which is occupied for a period of four or five weeks—the remainder dissect or attend clinics as provided for.

STUDIES OF THE SECOND YEAR.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
8 A. M.			Medical Chemistry Laboratory.			Medical Chemistry Laboratory.
9 A. M.					Medical Chemistry	
10 A. M.	Practice.	Practice.	Philadelphia or Penna. Hospital, Med. and Surgical Clinics.	Practice.	Practice.	Philadelphia or Penna. Hospital, Med. and Surgical Clinics.
11 A. M.	Anatomy.	Topographical Anatomy.		Topographical Anatomy.		
12 M.	Surgery.	Surgery.	Pathol. Histology, Laboratory, U. H. One section 2 hrs. Others attend Gynæcological and General Surgical Clinic, U. H.	Surgery.	Surgery.	Pathol. Histology, Laboratory, U. H. One section 2 hrs. others attend Clinic on Nervous Dis. and Gen. Surg. Clinic, U. H.
1 P. M.	General Pathology and Morbid Anatomy.	Pathol. Histology, Laboratory, U. H. One section 1 hr. others attend Clinic on Skin Dis. U. H.		General Pathology and Morbid Anatomy.	Pathol. Histology, Laboratory, U. H. One section 1 hr. Others attend Gen. Med. Clinic.	
2½ P. M.	Medical Chemistry Laboratory.					
3½ P. M.		Anatomy.		Anatomy.	Anatomy.	
4 P. M.	Obstetrics.		Obstetrics.			Obstetrics.
4½ P. M.		Therapeutics.		Therapeutics.	Therapeutics.	
5 P. M.	Physiology.		Physiology.			Physiology.

U. H. University Hospital.

The Class is divided into sections for the study of Pathological Histology, one of which is occupied at a time—the remainder attend Clinics.

STUDIES OF THE THIRD YEAR.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
10 A. M.	Practice.	Practice.	Philadelphia or Pennna. Hospital, Med. and Surg. Clinics.	Practice.	Practice.	Philadelphia or Penna. Hospital, Medical and Surg. Clinics.
11 A. M.		Topographical Anatomy.		Topographical Anatomy.		
12 M.	Surgery.	Surgery.	Clinic, Diseases of Women and Children, U. H.	Surgery.	Surgery.	Ward Class, in Medicine, U. H. Clinic on Nervous Diseases, U. H.
1 P. M.	Clinic, Diseases of the Ear, U. H.	Clinic, Diseases of the Skin, U. H. Ward Class in Surgery, U. H.	Surgical Clinic, U. H.	Clinic, Diseases of the Eye, U. H.	Medical Clinic, U. H. Practical Gynæcology, U. H.	Surgical Clinic, U. H.
3½ P. M.		Didactic Gynæcology.		Dis. of Women and Children.		
4 P. M.	Obstetrics.		Obstetrics.			Obstetrics.
4½ P. M.		Therapeutics.		Therapeutics.	Therapeutics.	
5 P. M.	Practice in Minor and Oper. Surgery and Bandaging.		Lecture on Minor and Oper. Surgery and Bandaging.			Practice in Minor and Oper. Surg. and Bandaging.

U. H. University Hospital.

Special Classes for graduates and third year men will be formed for practical work in Electro-therapeutics, Ophthalmology, Otology, and Dermatology. The Classes will be limited in size, and a fee of $10 will be charged.

RULES AND REQUIREMENTS FOR GRADUATION.

I. The candidate for the Degree of Doctor of Medicine must have attained the age of twenty-one years, and be of good moral character. He must have applied himself to the study of medicine for three years, and have attended at least his last course of instruction in this school; have prepared a satisfactory thesis,* and have passed the required examinations.

II. Students who have attended one course in a regular† medical school shall be admitted as students of the second course in the University of Pennsylvania, after having satisfactorily passed an examination in General Chemistry and Materia Medica and Pharmacy. Students who have attended two courses in a regular medical school, shall be admitted as students of the third course in this institution, after having satisfactorily passed an examination in General and Medical Chemistry, Materia Medica and Pharmacy, Anatomy, and Physiology.‡

Graduates of other regular medical schools in good standing shall be admitted as students of the third course in this institution without any examination.

Graduates of Colleges of Pharmacy and Dental Colleges in good standing are admitted to the second course of this institution without an examination.

III. When a candidate applies to the Secretary of the Faculty for examination, he must give satisfactory evidence that the above rules have been complied with.

IV. 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 dis-

* The thesis must be in the candidate's own handwriting, and should be written on thesis paper, the alternate pages being left blank. It is recommended that the candidate prepare his essay before the commencement of the last course of lectures.

A thesis may be published by the candidate if he desires it, the permission of the professor by whom he was examined thereon having been first obtained; but no alteration shall be made in such thesis without the consent of the said professor.

† Homœopathic and Eclectic schools are not recognized as being in this category.

‡ These examinations for admission to advanced standing in the next year will be held on Wednesday, September 25th, 1878, at 12 M.

posed of. The second examination will be conducted in the presence of the Faculty.

V. The candidate shall pay the graduation fee on the presentation of his Thesis, or before receiving notice of having successfully passed his final examination. Upon receiving such notice, he will enter his name on the register for the purpose of being reported to the Board of Trustees.

VI. Candidates who have passed their examination, and in other respects complied with the regulations, are reported by the Secretary of the Faculty to the Provost of the University, who communicates such report to the Board of Trustees, in order that, if approved of by them, their mandamus may be issued for conferring the Degree.

VII. The Commencement for conferring the Degree of Doctor of Medicine is held during the month of March.

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

ARRANGEMENT OF SESSIONS.

The *Winter Session*, upon which alone attendance is obligatory, begins on the first day of October, and ends on the last week day of February ensuing.

The *Preliminary Session* begins on the second Monday (9th day) in September, and ends on the Saturday preceding the first Tuesday in October.

The *Spring Session* begins on the fourth Monday (25th day) of March, and ends June 15, 1878.

The Lectures of the Winter Session of 1878-79 will begin on Tuesday, October 1, 1878.

EXPENSES.

Matriculation Fee (paid once only)	$5
Fee for the first Course of Lectures	140
" second " "	140
" third " "	100
Dissection ticket (DISSECTING MATERIAL FREE)	10
Operating " Third year (" ")	10
Graduating Fee	30

FEES FOR SPECIAL COURSES.

(Gentlemen taking special or partial courses, if not graduates of the school, are required to pay the matriculation fee, in addition to the fees named below.)

Fee for the full third Course to graduates of this school	$50
" " " " " of other schools	100
" a single Course of Lectures, except Materia Medica and General Pathology and Morbid Anatomy	20
" Course on Materia Medica	10
" Course on General Pathology and Morbid Anatomy	15
" Practical Course in the Chemical Laboratory	25
" Practical Physiology, $5 per month.	
" Course in Practical Gynæcology	25
" Course in Practical Ophthalmology, Dermatology, Otology, and Neurology	10
" any one of the remaining practical Courses	15

Graduates of the school are admitted to the LECTURES free of charge, but the above fees are charged for the practical courses.

At the beginning of the first course, students will be required to make a deposit of $10 with the Professor of Chemistry to cover "breakage" and materials used in the Chemical Laboratories. Any balance remaining will be returned.

All fees are payable in advance to the Secretary of the Faculty, who will issue a general ticket of admission to all the lectures. No promissory notes will be received. The only free scholarships granted will be under the regulations named below.

Board can be obtained in Philadelphia for $4 per week and upwards.

SCHOLARSHIPS.

There will be held at the Medical Hall, on Wednesday, September 25, 1878, at 11 o'clock, a competitive examination of candidates to fill a limited number of free scholarships created by the Board of Trustees. The candidates will be required—

First. To furnish satisfactory evidence that they are without means to defray the expenses of a medical education.

Second. To write a brief autobiography, not exceeding a page of foolscap, which will serve as a test of their qualifications in orthography and grammar.

Third. To pass an examination in Latin prose, for which French and German may, however, be substituted; and an examination in elementary Physics. Additional credit will be given where a candidate is willing to be examined in Greek, German, and French, or any of the languages in addition to Latin.

Candidates who conclude to present themselves for examination will send their names to the *Secretary of the Faculty of Medicine*, and appear without further notice at the hour and place above named.

PRELIMINARY SESSION—1878.

This Session, beginning September 9, 1878, and continuing until the commencement of the Winter Term, although not obligatory upon students, is strongly recommended to those who can attend it. It includes lectures, didactic and clinical, by members of the Faculty, together with selected lectures on the more important subjects taught by the Lecturers in the Spring Session.

No fee is charged for this session.

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 A. M. to 12 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 STILLÉ MEDICAL LIBRARY.

This Library, which was founded by Prof. Alfred Stillé for the purpose of promoting a spirit of scientific research and literary culture, now contains upwards of three thousand volumes. During the Winter and Spring Courses it is accessible to advanced students and graduates of the Medical Department under appropriate regulations.

CLINICAL AND LABORATORY INSTRUCTION.

The course of education is so arranged that the opportunity is given to all students to attend throughout the second and third years the general medical and surgical clinics at the University Hospital, at the Philadelphia Hospital, which is immediately adjacent to the University, and at the Pennsylvania Hospital; but special clinical facilities are provided for the third year. In this year each student is furnished bedside instruction in clinical medicine and surgery, in auscultation and percussion, and in gynæcology. Opportunities are afforded to those who desire them for practical study of diseases of the eye, ear, throat, and skin, and for acquiring proficiency in the use of the various instruments employed in their treatment. In effecting this, the third-year class will be divided into sections of convenient size, each of which will receive from the members of the Faculty direct personal instruction in the various practical subjects above mentioned.

The practical instruction in chemistry, pharmacy, and normal and pathological histology, which is described in the subsequent sections of the announcement devoted to each of these subjects, is now a part of the regular course, and without extra expense. It is co-ordinated with the didactic teaching in such a manner as to repeat and illustrate the subjects taught in the lectures.

Opportunities will also be given to advanced students to make original researches not only in the pharmaceutical, chemical, and pathological laboratories, but also in that of physiology.

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. There were treated in its various departments, during 1876, 5251 cases, representing almost all of the known medical, surgical, and gynæcological affections. Owing to its being situated within a very short distance of the great railroad depots, the Hospital is especially rich in cases of severe injury, and its acute surgery is almost unrivalled. 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, Gynæcology, and Specialties. These subjects are taught by the several Clinical Professors.

OTHER HOSPITALS AND HOSPITAL CLINICS.

In addition to the official clinical lectures and bedside instruction 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 1000 beds; 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 greater part of the year by the Medical Staff of the PENNSYLVANIA HOSPITAL. Instruction in Clinical Surgery is also given at the CHILDREN'S HOSPITAL. At all 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.

Appointments of RESIDENT PHYSICIANS, amounting to twenty-five or more, 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. The resident physicans of the University Hospital are every year selected by competitive examination from among the graduating class of the University.

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.

THE ANATOMICAL AND HISTOLOGICAL LABORATORY

Is under the supervision of the Professor of Anatomy, and the direct guidance of the Demonstrator of Histology. The special object of the Laboratory is to afford students the opportunity of studying practical Histology in its relations with Human Anatomy and Physiology.

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. *Clean-*

liness 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 *no charge is made for material.*

PRACTICAL SURGERY.

The OPERATING ROOM is open during the Session, under the supervision of the Professor of Surgery and the Demonstrator of Surgery. 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.

PRACTICAL CHEMISTRY.

1. The *Working Laboratory* for Practical Chemistry, under the supervision of the Professor of Chemistry and the Demonstrator with competent assistants, is open for students of the First Year, for the study of General Chemistry. The course includes chemical manipulations and the detailed study of the chemical reactions of the principal metals, acids, and their combinations; with the general principles of Qualitative Analysis, especially as they relate to the detection and separation of metals and compounds of interest to the physician. Each student is provided with a separate table and apparatus, and is required to exhibit by formula, on paper, all reactions involved in his tests.

2. Students of the Second Year will devote 2 hours per week to practical work in the laboratory. The course embraces an introduction to the general principles of Quantitative Analysis and the principles of Volumetric Analysis, with the practical examination of urine and animal fluids, and the recognition and recovery of poisons from the animal body and complex mixtures.

PRACTICAL PHYSIOLOGY.

The Physiological Laboratories have been entirely refitted, and furnished with all the modern appliances necessary for the practical study of this subject. The Professor of Physiology, aided by the Demonstrator, personally superintends the laboratories.

The chief purpose of the Laboratories is to encourage graduates and students to make original researches on some of the many subjects in Physiology still undetermined. To this end courses will be given in which the student will be instructed in the fundamental facts of this science.

The Laboratories are open throughout the entire year, except July and August.

PATHOLOGICAL LABORATORY.

This Laboratory, under the direction of the Professor of General Pathology and Morbid Anatomy, and the Demonstrator of Pathological Histology, was opened in 1874, in the new Hospital building, and has already attracted, from remote sections of the country, physicians and students who desire special preparation in microscopic technology and normal and pathological histology. It is suitably furnished with microscopes, and all appliances requisite for practical study of these subjects, and for making original researches; also with a library of standard works on normal and pathological histology.

It is open throughout the entire year, except July and August.

PHARMACEUTICAL LABORATORY.

The Pharmaceutical Laboratory is in charge of the Professor of Materia Medica and Pharmacy, and the Demonstrator of Pharmacy. It is furnished with suitable tables and all necessary apparatus. In it the student will learn not only the various pharmaceutical processes, but also that familiarity with drugs which can only be acquired by handling them.

LABORATORY OF EXPERIMENTAL THERAPEUTICS.

This Laboratory, under the direction of the Professor of Materia Medica and Therapeutics, is furnished with kymographion, electrical apparatus, calorimeter, and other instruments necessary for the study of the physiological action of medicines.

PRIZES.

Two Prizes of One Hundred Dollars each will be awarded to the members of the Graduating Class of 1877–78 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 C. Lea, Esq., of Philadelphia.

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.

Chemical Prize.—A *Gold Medal* will be awarded by the Demonstrator of Practical Chemistry to the student of the first or second year who passes the best written and practical examination in analytical chemistry.

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

SPRING COURSE OF LECTURES, 1878.

In order still further to extend the opportunities for thorough preparation, and to provide facilities for research and experiment to advanced students and graduates, the various laboratories in connection with the University are open during the spring and early summer.

The clinics and lectures are continued at the Hospital, and the Faculty have further established a spring course on important subjects by a special corps of instructors. It will be observed that the instruction given relates to all the departments of medicine, and includes REGIONAL ANATOMY; HISTOLOGY; EXPERIMENTAL PHYSIOLOGY; GENERAL SYMPTOMATOLOGY; PHYSICAL DIAGNOSIS; OPERATIVE and MINOR SURGERY; ORTHOPÆDIC SURGERY; OPHTHALMOSCOPY; REFRACTION and ACCOMMODATION OF THE EYE, and OPERATIVE OPHTHALMIC SURGERY; PATHOLOGY OF THE URINE; VENEREAL DISEASES; PRACTICAL OBSTETRICS; OPERATIVE OBSTETRICS; PRACTICAL PHARMACY; ELECTRICAL THERAPEUTICS; LARYNGOSCOPY; CLINICAL MEDICINE; CLINICAL SURGERY; CLINICAL GYNÆCOLOGY; DISEASES OF CHILDREN; DISEASES OF THE NERVOUS SYSTEM; DISEASES OF THE EYE; DISEASES OF THE EAR; and DISEASES OF THE SKIN.

The lectures and clinics, together with the lectures of the Auxiliary Faculty of medicine, the clinical facilities, bedside instruction, etc., at the Philadelphia Hospital and at the Pennsylvania Hospital, afford a valuable post-graduate course. *The course for* 1878 *opens Monday, March* 25*th.*

UNIVERSITY HOSPITAL LECTURES IN SPRING COURSE.

WILLIAM PEPPER, M.D., Clinical Medicine and Physical Diagnosis.
D. HAYES AGNEW, M.D., LL.D., Clinical Surgery.
H. C. WOOD, JR., M.D., Diseases of the Nervous System.
JAMES TYSON, M.D., Pathology of the Urine.
WILLIAM F. NORRIS, M.D., Diseases of the Eye.
GEORGE STRAWBRIDGE, M.D., Diseases of the Ear.
LOUIS A. DUHRING, M.D., Diseases of the Skin.
WILLIAM GOODELL, M.D., Clinical Gynæcology.
JOHN ASHHURST, JR., M.D., Clinical Surgery.

OTHER LECTURES IN THE SPRING COURSE.

H. LENOX HODGE, M.D., Regional Anatomy.
CHARLES T. HUNTER, M D., Operative and Minor Surgery.
J. WM. WHITE, M.D., Venereal Diseases.
DE FOREST WILLARD, M.D., Orthopædic Surgery.
R. G. CURTIN, M.D., Physical Diagnosis.
JOHN GUITÈRAS, M.D., General Symptomatology.
S. D. RISLEY, M.D., Ophthalmoscopy.
E. O. SHAKESPEARE, M.D., Refraction and Accommodation of the Eye, and Operative Ophthalmic Surgery.
ADOLPH W. MILLER, M.D., Practical Pharmacy.
J. H. C. SIMES, M.D., Histology.
ELLIOTT RICHARDSON, M.D., Practical Obstetrics.
DANIEL BRAY, M.D., Operative Obstetrics.
C. K. MILLS, M.D., Electro-Therapeutics.
JOHN M. KEATING, M.D., Diseases of Children.
CARL SEILER, M.D., Laryngoscopy.
——— ——— Experimental Physiology.

The only Fee for this course is a Registration Fee of $5.

AUXILIARY DEPARTMENT OF MEDICINE.

FACULTY.

CHARLES J. STILLÉ, LL.D., Provost and *ex-officio* President of the 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., B.S., Professor of Botany.
JOSEPH G. RICHARDSON, M.D., Professor of Hygiene.

The AUXILIARY FACULTY OF MEDICINE was constituted a distinct Department by the Board of Trustees in the year 1865, for the purpose of supplementing the ordinary winter 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, the nature of the subjects taught is such that for their proper understanding it is desirable that the student should have previously attended at least two sessions of the usual winter lectures. In fact, this course may be regarded as essentially a *post-graduate course;* hence, the Faculty earnestly recommend that at least one of its sessions should be attended, if possible, after graduation in medicine.

Inasmuch as this course of instruction, although strictly collateral to medicine, is largely scientific in its character, the Trustees of the University have decided to confer the degree of *Doctor of Philosophy* (Ph.D.) upon those graduates in medicine of the University, or of other recognized schools, who shall have attended two full courses of lectures in the Auxiliary Department of Medicine, and have passed a satisfactory examination before the Faculty, and presented an original thesis on some one of the subjects taught.

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.

When a candidate applies to the Dean for examination, he must exhibit his medical diploma and the tickets of this Faculty, to show that the regulations have been complied with.

A thesis may be published by the candidate, if he desires it, on obtaining the permission of the Faculty.

The candidate shall pay the graduation fee of ten dollars, on the presentation of his thesis.

The degree will not be conferred upon a candidate who absents himself from the public commencement, except by special permission of the Faculty.

The session for 1878 will commence on Monday, March 11th, and continue until the early part of June. Three lectures a week will be given by each professor.

These lectures are equally accessible to those who are not engaged in the study of medicine; and they afford an excellent opportunity to teachers and others, who may be desirous of acquiring a knowledge of the subjects taught. 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. Explanation 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., B.S.

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 35,000 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 themsveles with a "Gray's Botanical Microscope."

HYGIENE.

PROF. JOSEPH G. RICHARDSON, 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 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 thouand specimens, systematically arranged; a collection of rocks, fossils, and casts, arranged according to their geological succession; a valuable philosophical apparatus; an Herbarium of about 35,000 specimens; 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.

PRIZES AWARDED.

At the Commencement, held in June, 1877, the "George B. Wood Prize" of the Alumni Association of the Auxiliary Department of Medicine was awarded to J. M. Anders, M.D., Ph.D., of Pennsylvania, for his thesis, entitled 'Transpiration of Plants," and *Honorable Mention* was made of Herman Haupt, M.D., Ph.D., of Pennsylvania, for his thesis, entitled "On the Structure and Physiological Peculiarities of the Heart of the Rana Mugiens."

MEDICAL DEPARTMENT.

MATRICULATES, 1877–78.

STUDENTS ON THE OLD PLAN.

NAME.	STATE.	PRECEPTOR.
Abbot, Griffith E. (A.M., Ph.D., Jena)	Pennsylvania.	H. Evans.
Abbott, Harvey N.	Pennsylvania.	D. D. Richardson.
*Albright, Joseph W.	Pennsylvania.	C. E. Albright.
*Allan, Arthur G.	Pennsylvania.	University of Penna.
Allport, Hobart	Pennsylvania.	R. G. Curtin.
Appleman, Parmenus	Pennsylvania.	R. G. Curtin.
*Atherton, Joseph	Pennsylvania.	J. S. Porteus.
Baker, Thomas H.	Pennsylvania.	University of Penna.
*Barber, Isaac (A.B.)	New Jersey.	Traill Green.
Barr, James D.	Pennsylvania.	D. S. Hays.
*Barros, José de P. Leite	Brazil.	University of Penna.
Baughm, Kindred	North Carolina.	C. G. C. Moore.
Bemus, William M.	Pennsylvania.	T. B. Lashells and Wm. Church.
*Bennett, George D.	New York.	J. F. Whitbeck.
*Bertolette, Martin L.	Pennsylvania.	J. N. Jack.
*Bispham, Charles, Jr.	New Jersey.	G. R. Morehouse.
*Bissell, James H.	Pennsylvania.	Joseph Leidy.
*Blair, Samuel C.	Pennsylvania.	R. Simpson.
*Bloom, Homer C.	Pennsylvania.	F. G. Bloom.
Borneman, John S.	Pennsylvania.	Orlando Fegley.
*Bovard, William C. (A.B.)	Pennsylvania.	University of Penna.
Boyer, Hiram L.	Pennsylvania.	A. N. Leinbach.
*Brown, Christian H.	Pennsylvania.	University of Penna.
*Brown, Oliver H.	Pennsylvania.	Horace De Young.
Bryan, Cornelius G.	North Carolina.	C. G. C. Moore.
*Burk, William Hinds	Pennsylvania.	M. Price.
Capp, John A.	Pennsylvania.	E. R. Umberger.

NAME.	STATE.	PRECEPTOR.
Clark, William A., Jr.	New Jersey.	Jno. Woolverton.
*Cohen, Esdaile Philip	Pennsylvania.	F. Gurney Smith.
*Crawford, S. Morrow	Pennsylvania.	F. G. Bloom.
Croll, Mercer B. (A.B.)	Pennsylvania.	Thos. J. Dunott.
*Crumbaugh, John W.	Pennsylvania.	University of Penna.
Curtis, Emmet P.	Pennsylvania.	A. A. Lape.
Darlington, Horace H.	Pennsylvania.	T. D. Ingram.
Deaver, John B.	Pennsylvania.	J. M. and R. W. Deaver.
De Puy, William H.	New York.	Jno. F. Whitbeck.
*Dolan, William K.	Pennsylvania.	J. B. Lathrop.
*Dowlin, Clifton	Pennsylvania.	Jas. S. Everton.
Dum, John M.	Pennsylvania.	H. Orande Orris.
Dundor, Darius W.	Pennsylvania.	D. D. Deppen.
Eberman, Henry F.	Pennsylvania.	H. E. Muhlenberg, Jr.
*Edwards, Wm. Fitz-Hugh	Maryland.	Chas. P. Turner.
*Foulkrod, John K.	Pennsylvania.	J. C. Hall.
*Fritchey, John A.	Pennsylvania.	C. B. and J. H. Fager.
Gaston, Trapier Brumby	Brazil.	J. McF. Gaston.
Glasgow, Robert B.	Pennsylvania.	I. N. Evans.
*Gleason, Edward B. (S.B.)	Pennsylvania.	C. W. Gleason.
Good, Franklin H.	Pennsylvania.	J. C. Cooper.
*Graber, Leon J.K.(Ph.G.)	Pennsylvania.	D. D. Richardson.
*Gross, John H.	Ohio.	S. B. Emersen.
*Gross, Onan B.	New Jersey.	Reynall Coates.
*Hagerman, John A.	Pennsylvania.	Geo. W. Jackson.
*Hain, William J.	Pennsylvania.	S. C. De Veny.
*Halberstadt, George H.	Pennsylvania.	W. F. Norris and A. H. Halberstadt.
*Hallock, William E.	Pennsylvania.	M. O. Jones.
Hamill, Robert Hugh	Pennsylvania.	J. Y. Dale and C. T. Hunter.
*Harrison, James M.	Minnesota.	C. G. Goodrich.
Hart, Edgar	New Jersey.	Israel Hart.
*Harte, Richard H.	Illinois.	C. T. Hunter.
*Harvey, Henry D.	Pennsylvania.	C. T. Hunter and Associates.
*Heller, Jacob B., Jr. (A.M.)	Pennsylvania.	C. C. Field.
Hicks, Thomas F.	Ohio.	E. Booth.
Hirshfield, Henry P.	Alabama.	University of Penna.
Hubler, Simon	Pennsylvania.	P. F. Hubler.
Hudson, Robert D.	Pennsylvania.	Robert Dickey.

NAME.	STATE.	PRECEPTOR.
Huff, Henry C. (A.M.)	Michigan.	W. H. Muhlenberg and C. T. Hunter.
*Hughes, Donnel	Pennsylvania.	Isaac W. Hughes.
Hughes, Levi B.	Pennsylvania.	J. F. Bird.
*Hutchinson, Henry A.	New Jersey.	Jno. Woolverton.
*Hutchinson, Robert C.	New Jersey.	E. L. Duer.
Irwin, Robert C.	Pennsylvania.	Crawford Irwin.
Jackson, Edward	Pennsylvania.	M. Price.
Jefferis, Edgar P.	Pennsylvania.	T. N. Jefferis.
Jefferis, James E.	Delaware.	E. G. Shortlidge.
*Jewell, Charles A.	New Jersey.	Wm. Wetherill.
*Johnson, Henry T.	New Jersey.	Mayhew Johnson.
Johnson, William C.	Maryland.	Geo. Johnson.
*Jones, William W.	Illinois.	M. O. Jones.
*Keller, Albert P. (Ph.G.)	Pennsylvania.	J. F. Trenchard.
*Kille, Chalkley J. (Ph.G.)	Pennsylvania.	W. M. Mann.
*Krupp, Franklin	Pennsylvania.	M. Price.
Lathrop, Homer B.	Pennsylvania.	I. B. Lathrop.
Lawrence, Thomas B.	North Carolina.	W. W. Cozart.
Leib, Thomas N.	Pennsylvania.	M. E. Johnson.
Leonard, Alfred D.	Pennsylvania.	Geo. B. Curtis.
Lewis, James B.	Pennsylvania.	Armstrong and Hayward.
Linn, Hugh James (D.D.S.)	Pennsylvania.	G. Wilds Linn.
Littell, George	Pennsylvania.	A. Rittenhouse.
Little, William Raby (M.S.)	Pennsylvania.	T. D. Ingram.
*Lloyd, James Hendrie (A.M.)	Pennsylvania.	W. Scott Hendrie.
*Long, William S.	Pennsylvania.	M. A. Long.
*MacBride, George W. V.	Pennsylvania.	Isaac MacBride.
Macfarlane, James W.	Pennsylvania.	Jas. McCann.
*Mackie, Fergus M.	Pennsylvania.	University of Penna.
*Maine, Frank E.	New York.	A. P. Maine.
Marshall, John	Pennsylvania.	Jos. J. Yocum.
Martin, Truman J.	Pennsylvania.	Chas. L. Martin.
Mifflin, Houston	Pennsylvania.	F. Hinkle.
*Miller, D. J. Milton	Pennsylvania.	C. T. Hunter.
*Miller, Edwin S.	Pennsylvania.	N. B. Reber.
Miller, George	Pennsylvania.	B. H. Detwiler.
Miller, James R.	New Jersey.	T. J. Yarrow, Sr.
Miller, J. Wayne T.	Pennsylvania.	J. Warren Royer.
*Millikin, Benjamin L.	Ohio.	Julian Harmon.

NAME.	STATE.	PRECEPTOR.
Mish, Mason P.	Pennsylvania.	P. B. Mish.
Moore, Isaac H.	Pennsylvania.	Joseph Lawrence.
*Moore, Joseph C.	Wyoming.	J. A. Lippincott.
*Morejon, Abraham	Cuba.	Joseph J. Bisbe.
*Morrison, Sterling (A.B.)	Pennsylvania.	J. Cheston Morris.
Mosquera, Bernardino	Venezuela.	University of Caracas.
Murphey, Walter A.	Pennsylvania.	Andrews Murphey.
*McCamy, Robert H.	Pennsylvania.	J. M. Boisnot.
McGough, Peter, Jr.(A.M.)	Pennsylvania.	W. S. Welsh.
McKinney, Dennis Leroy	Pennsylvania.	H. M. Moody.
*Nelson, Adonis	New Jersey.	H. M. Griffee.
*Nicolas, Frank M.	Cuba.	J. Guiteras & Associates.
Nunez, Jose de la et C. (A.B.)	Cuba.	J. Guiteras.
*Nurian, Hagob K.	Turkey.	H. Lenox Hodge.
Oettiker, James	Wisconsin.	B. G. Wilder.
O'Reidy, Patrick F.	Ireland.	E. P. Bernardy.
Palmer, Charles F.	Pennsylvania.	S. G. Lane.
Patterson, Harry	Pennsylvania.	S. D. Risley.
*Physick, Emlen	Pennsylvania.	University of Penna.
Pilkington, Horatio	Pennsylvania.	E. F. Leake.
*Polis, George S., Jr.	Pennsylvania.	T. G. Morton and H. J. Evans.
Powell, James B. R., Jr.	Delaware.	A. M. Day.
Price, George	Pennsylvania.	Chas. Long.
*Puente, Marcos de la	Cuba.	University of Penna.
Pugh, Winfield S.	Pennsylvania.	F. G. Smith.
Rakerd, A. T. Stirling	Pennsylvania.	T. H. Van Valzah.
*Ramirez, Frank P.	Cuba.	Wm. Pepper.
*Reber, W. Worrall	Pennsylvania.	N. B. Reber.
*Reed, Charles H. (A.B.)	Pennsylvania.	Thos. S. Reed.
Reed, Wm. Boardman	Pennsylvania.	M. J. Grier.
*Regar, Horace K.	Pennsylvania.	Wm. L. Taylor.
*Reichert, Edward T.	Pennsylvania.	T. H. and T. M. Allison.
*Reynolds, J. Paul	Pennsylvania.	A. S. Reynolds.
*Salvador, John H.	Pennsylvania.	Joseph J. Bisbe and H. F. Formad.
Sampsell, James W.	Pennsylvania.	J. F. Kanawel.
Sandoe, Jacob L.	Pennsylvania.	L. Banks.
Santee, Leon B.	Ohio.	Jesse Miller.
Saul, Charles H.	Pennsylvania.	George F. Mish.
*Scott, Frank F.	Pennsylvania.	C. T. Hunter & Assoc'es.
Sears, William H.	North Carolina.	J. F. Lewter.

NAME.	STATE.	PRECEPTOR.
*Seltzer, Charles M.	Pennsylvania.	C. T. Hunter.
*Serfass, John J. (A.B.)	Pennsylvania.	Traill Green.
*Sheetz, J. Lawrence	Pennsylvania.	J. Breitenbach.
*Shipps, Wm. Helveston	New Jersey.	H. H. Longstreet.
*Shultz, William M.	Illinois.	J. W. Brewer.
*Slocum, Harry A.	Pennsylvania.	M. Price.
Smith, Franklin B.	Maryland.	Chas. Smith.
Smith, J. Ross	Nova Scotia.	A. T. Clark.
Smith, Wm. C., Jr.	Pennsylvania.	W. C. Smith.
Smith, William O.	Pennsylvania.	Thorly, Betz, and Miller.
Smyth, Samuel E.	Delaware.	C. W. Jones.
Stauffer, John C. D.	Pennsylvania.	B. W. Stauffer.
*Steck, Charles T.	Pennsylvania.	P. M. Senderling.
*Suesserott, Louis F.	Pennsylvania.	Thomson and Suesserott.
Swoyer, Oscar D.	Pennsylvania.	I. G. Heilman.
Taggart, David	Pennsylvania.	Jos. Priestley.
*Tantum, James D.	New Jersey.	Thos. H. Mackenzie.
Taylor, John Madison	Pennsylvania.	John Ashhurst, Jr.
Taylor, J. Richard	Pennsylvania.	A. G. B. Hinkle.
Trego, Cyrus	Pennsylvania.	C. W. Larison.
Turner, William F.	Pennsylvania.	Ph. H. Grier.
Wagenseller, Frank J.	Pennsylvania.	B. F. Wagenseller.
*Walk, James Wilson (A.B.)	Pennsylvania.	A. Harshberger and T. M. Drown.
*Wallace, James	Pennsylvania.	A. W. Griffiths.
*Walton, Thomas C.	Pennsylvania.	D. D. and Wm. Walton.
Warren, Harry B.	Pennsylvania.	Jno. L. Warren.
Weaver, Wm. Gwynne	Pennsylvania.	J. A. Murphy and O. F. Harvey.
*Weston, John B. (A.B.)	Pennsylvania.	W. W. Keen.
*Wetherill, Horace G.	New Jersey.	Wm. Wetherill.
Wethington, Richard T.	Florida.	S. S. Adams.
*Wilkinson, G. Walter	Pennsylvania.	D. Hayes Agnew.
Williamson, Alexander	New Jersey.	J. H. Wikoff.
Wilson, Howard, D.	Nova Scotia.	J. K. Wilson.
*Yeretzian, V. Avedis	Turco-Armenia.	D. Hayes Agnew.
Yingst, Moses A.	Pennsylvania.	Wm. H. Seibert.
Zimmerman, Gustavus A. (Ph.G.)	Pennsylvania.	J. Steer & E. W. Jamison.

Total, 180.

Names marked thus * are those of Students who voluntarily elected to attend three courses of Lectures at date of Matriculation.

MATRICULATES ON THE NEW PLAN.

STUDENTS OF THE THIRD YEAR.*

NAME.	STATE.	PRECEPTOR.
Beary, Eli S.	Pennsylvania.	A. M. Mecray and L. M. Service.
Cardeza, John D., M.D., University of Pa.	Delaware.	J. T. M. Cardeza.
Leiser, Jacob Jay, M.D., University of Pa.	Pennsylvania.	
Megargee, Calhoun	Pennsylvania.	W. W. Keen.
Morris, Caspar, Jr. (A.B.)	Pennsylvania.	J. Cheston Morris.
Seabrook, Clarence C.	Pennsylvania.	H. L. Orth.
Williams, Franklin E.	New Jersey.	C. T. Hunter.
Wroth, James H.	New Jersey.	D. Hayes Agnew.

Total 8.

STUDENTS OF THE SECOND YEAR.†

Beates, Henry, Jr.,	Pennsylvania.	C. T. Hunter.
Blithe, Henry (Ph.G.)	Pennsylvania.	University of Penna.
Brodie, William Biddle	Pennsylvania.	Wm. L. Knight.
Brown, John C.	New Jersey.	R. E. Brown and D. D. Richardson.
Carbonell, Louis Ph. (Ph.G.)	Cuba.	Jos. J. Bisbe.
Casselberry, William E.	Pennsylvania.	Wm. Pepper.
Cathcart, Thomas Holmes	Pennsylvania.	Wm. Pepper.
Cerna, David	Mexico.	Thomas S. Butcher.
Conrad, J. Reed	Pennsylvania.	J. H. Conrad.
Davis, William G.	Pennsylvania.	C. T. Hunter.
Dawson, Oliver B.	Pennsylvania.	G. D. O'Farrell.
Ellinger, Theophile J.	Missouri.	L. S. Reber.

* These include graduates in medicine, taking the third year of the new plan and third course students, who, having passed their examinations in Anatomy, Physiology, Chemistry, and Materia Medica, elected to take the third year of the new plan.

† These include second course students on the old plan who were admitted to the second year of the new plan on passing an examination on General Chemistry.

NAME.	STATE.	PRECEPTOR.
Faught, G. Granville	Pennsylvania.	R. Stewart and E. T. Bruen.
Ferguson, William N. (A.B.)	Pennsylvania.	A. M. Neyman.
Frazier, Jacob M.	Texas.	R. W. Park.
Freedley, H. Stiles	Pennsylvania.	C. S. Baker.
Gallaher, Robert C.	Pennsylvania.	T. J. Gallaher.
Graff, Charles H.	Pennsylvania.	University of Penna.
Griffin, Frederic H.	Pennsylvania.	W. W. Keen.
Griffith, Abner	Pennsylvania.	Wm. Lemmon.
Hudders, Clarence	Pennsylvania.	J. B. Walker and associates.
James, Eugene Harold	Pennsylvania.	G. W. C. James.
Keller, William	Pennsylvania.	J. F. Alexander.
MacGowan, D. Granville	Pennsylvania.	J. L. Zeigler.
Mattison, Rich'd V. (Ph.G.)	Pennsylvania.	University of Penna.
Mulford, Clarence H.	New Jersey.	C. T. Hunter and assoc.
Milliken, Frederick H.	Pennsylvania.	James B. Walker.
McGill, Peter	Pennsylvania.	S. C. De Veny.
Nagle, Frank O.	Pennsylvania.	J. B. Walker.
Ramsay, Robert N.	Pennsylvania.	A. H. Halberstadt.
Raynor, Nathan H.	Pennsylvania.	J. F. Holt.
Risk, J. Boyd (A.B.)	Pennsylvania.	Wm. H. Risk.
Shaw, Charles Stoner	Pennsylvania.	T. W. Shaw.
Sheppard, Frederick C.	New Jersey.	Wm. W. Keen.
Sherron, Cliff M.	New Jersey.	John Kirby & H. Lenox Hodge.
Stone, J. Sumner	West Virginia.	W. J. Bates.
Walsh, James J.	Pennsylvania.	David L. Ross.
Willits, Charles H.	Pennsylvania.	A. P. Rex.
Wheaton, Theodore C. (Ph.G.)	New Jersey.	C. D. Hottenstein.
Zentmayer, Louis	Pennsylvania.	James Tyson.

Total 40.

STUDENTS OF THE FIRST YEAR.

Acheson, Harry M.	Pennsylvania.	T. McKennan.
Albuquerque, Antonio F.d.	Brazil.	D. D. Richardson.
Alexander, John J.	Pennsylvania.	R. M. Cruice and J. M. Keating.
Allison, Edward W.	Pennsylvania.	Samuel K. Ashton.

NAME.	STATE.	PRECEPTOR.
Armstrong, William C.	Pennsylvania.	H. Lenox Hodge.
Ashton, William E.	Pennsylvania.	Samuel K. Ashton.
Bailey, Edwin C.	Pennsylvania.	J. B. Brooke.
Beltz, Franklin M.	Pennsylvania.	Cyrus Wanner.
Berens, Bernard, Jr.	Pennsylvania.	Joseph Berens, Jr.
Bissey, Herman S.	Pennsylvania.	C. D. Fretz.
Bonar, Barnet L.	Pennsylvania.	T. McKennan.
Bower, Charles W.	Pennsylvania.	N. B. Reber.
Brown, George C.	New York.	Thomas F. Cullen.
Burt, Horace B.	Pennsylvania.	University of Penna.
Cadwallader, D. Willis	Pennsylvania.	Wm. S. Janney.
Campbell, William F.	Pennsylvania.	University of Penna.
Castillo, Joaquin del	Cuba.	University of Penna.
Causse, Carlos O. de	Cuba.	University of Penna.
Chance, T. Mitchell	Pennsylvania.	W. W. Keen.
Christine, Gordon M. (A.B.)	Pennsylvania.	S. D. Risley.
Clark, Addison M.	Pennsylvania.	M. H. Clark.
Craig, Thomas C.	Pennsylvania.	Samuel G. Lane and C. T. Hunter.
Curley, John M.	Delaware.	G. D. O'Farrell.
Currie, Charles A. (A.B.)	Pennsylvania.	John H. Packard.
Curtis, Henry L. (A.B.)	Pennsylvania.	University of Penna.
Curtis, Lloyd W.	New Jersey.	H. R. Wharton.
Dickson, John R. (A.B.)	Pennsylvania.	R. Horner and J. M. Radebaugh.
Dimock, Daniel W.	Nova Scotia.	R. J. Metcalf.
Downs, Presley S.	Delaware.	E. B. S. Shoemaker.
Dyer, Paris Packer	Pennsylvania.	H. L. Orth.
Edgar, John M.	Pennsylvania.	S. S. Stryker.
Egbert, Joseph C. (B.S.)	Pennsylvania.	H. R. Wharton.
Ehrenfeld, N. Frank	Pennsylvania.	J. W. Purington.
Fairfield, John H.	Minnesota.	C. G. Goodrich and C. T. Hunter.
Finley, R. Patterson	Pennsylvania.	C. K. I. Miller.
Fonseca, Antonio M.	Brazil.	H. Lenox Hodge.
Fulton, John F.	Pennsylvania.	Wm. Smith.
Garrison, Daniel	New Jersey.	J. D. Smith.
Ghriskey, Albert A.	Pennsylvania.	University of Penna.
Gibb, Joseph S.	Pennsylvania.	John M. Keating.
Gillespie, John, Jr.	Pennsylvania.	J. J. Levick and C. T. Hunter.

NAME.	STATE.	PRECEPTOR.
Griffiths, William P.	Pennsylvania.	R. G. Curtin.
Hallowell, Charles E.	Pennsylvania.	University of Penna.
Hallowell, William H.	Pennsylvania.	University of Penna.
Haynes, Robert W.	Pennsylvania.	F. L. Haynes.
Heckel, George B.	Pennsylvania.	E. B. Heckel.
Helffenstein, A. Ernest	Pennsylvania.	University of Penna.
Hendrickson, Daniel D.	New Jersey.	E. F. Taylor.
Hepburn, William M.	Pennsylvania.	J. W. White and J. P. McVicker.
Hiett, George W.	Indiana.	R. M. O'Ferrall.
Hill, Willard B.	Pennsylvania.	George W. Metzger.
Hoagland, Lewis B.	Pennsylvania.	H. W. Newcomet.
Hoch, William R. (A.B.)	Pennsylvania.	John T. Carpenter.
Holmes, Edmund W. (B.A.)	Pennsylvania.	University of Penna.
Hooper, Peter (A.B.)	New Jersey.	Louis Mosher.
Hughes, Frank W. (A.B.)	North Carolina.	I. W. Hughes.
Hughes, William E.	Pennsylvania.	N. G. Thompson.
Hunt, Roger.	Pennsylvania.	M. E. Hornbeck.
Hutchinson, George H.	New Jersey.	W. W. L. Phillips.
Jaggard, William W. (A.B.)	Pennsylvania.	H. C. Wood.
Jenkins, Frank T.	Dist. Columbia.	J. Wm. White and assoc.
Johnson, Charles A.	Indiana.	E. B. Glick.
Kelly, Howard A. (B.A.)	Pennsylvania.	University of Penna.
Kite, J. Alban.	Pennsylvania.	Wm. H. Hutt.
Lee, William F.	Pennsylvania.	Wm. B. Brinton.
Lewis, George T., Jr.	Tennessee.	W. R. Dunton.
Lewis, William C., Jr.	New Jersey.	E. L. Welling.
Logan, Harry V. (A.B.)	Pennsylvania.	H. Lenox Hodge.
Lopez, Augustin	Cuba.	University of Penna.
Mabon, John S.	Pennsylvania.	Thomas Mabon.
Marcondes, Moyses	Brazil.	University of Penna.
Marshall, Edwin Bell	Pennsylvania.	J. C. Johnston.
Merritt, James B., Jr.	Delaware.	Wm. Aschcraft.
Millikin, Charles W.	Ohio.	T. M. and L. S. Ebright.
Moore, Albert H.	Pennsylvania.	Dav. Burpee.
Moore, John	New Jersey.	University of Penna.
Morrison, William H.	Pennsylvania.	J. Burd Peale.
McElree, George A.	Pennsylvania.	C. E. Woodward.
McKnight, William C., Jr.	Pennsylvania.	J. L. Suesserott.
McLaughlin, Dennis J.	Pennsylvania.	H. Haupt.
Nagura, Osam	Japan.	University of Penna.

NAME.	STATE.	PRECEPTOR.
Neilson, Thomas R (B.A.)	Pennsylvania.	John Ashhurst, Jr.
Newton, Frederick G.	Pennsylvania.	E. D. Payne and D. N. Newton.
Norris, Henry L., Jr.	Pennsylvania.	University of Penna.
Northrop, Edward L.	Pennsylvania.	R. Stretch.
Norton, Horace G.	New Jersey.	C. M. Slack.
Oliphant, Nelson B.	New Jersey.	W. W. L. Phillips.
Parsons, Richard H.	New Jersey.	Francis Ashhurst.
Patrick, Elwood	Pennsylvania.	H. Evans.
Peardon, Philip	Wisconsin.	Rich. Peardon.
Price, Henry R. (C.E.)	Pennsylvania.	John T. Carpenter.
Proctor, John C.	New York.	E. M. Moore, Jr.
Ramirez, Joseph J.	Cuba.	University of Penna.
Randall, B. Alexander	Maryland.	D. Murray Cheston.
Read, Harry C.	Pennsylvania.	Charles K. Mills.
Reed, Samuel A.	Pennsylvania.	Wm. Herron.
Rittenhouse, George S.	Pennsylvania.	A. Rittenhouse.
Robins, Robert P. (A.B.)	Pennsylvania.	Wm. H. Klapp.
Robison, Milton A.	Pennsylvania.	B. S. Erwin.
Rohrer, George R.	Pennsylvania.	John L. Atlee, Jr.
Romine, George L.	New Jersey.	L. C. Rice.
Roseburg, John A.	Pennsylvania.	S. R. Sutton.
Rousseau, Emile	Cuba.	University of Penna.
Rue, Henry B.	New Jersey.	Charles F. Deshler.
Sharp, Benjamin	Pennsylvania.	J. M. Leedom.
Sheets, John	New Jersey.	H. Lenox Hodge.
Smith, J. Holmes	Maryland.	J. M. Magraw.
Spear, F. Dexter	New York.	B. F. Dexter.
Stem, Preston E. (A.B.)	Pennsylvania.	V. G. Huebner.
Streets, D. Reese	Delaware.	University of Penna.
Sturge, Ernest A.	New Jersey.	University of Penna.
Symmes, Henry C. (A.B.)	New Jersey.	J. C. Holmes.
Taylor, Lewis H.	Pennsylvania.	L. D. Harlow.
Taylor, M. Stanton	Pennsylvania.	Frank Eyre.
Thomas, Frank W.	Pennsylvania.	J. H. Wehner.
Throp, Frank W.	Pennsylvania.	Wm. Wetherill.
Tomlinson, Harry A.	Pennsylvania.	Charles L. Lyon.
Torre Ignacio de la	Cuba.	Jno. Guiteras.
Trueman, Harmon S.	Canada.	W. R. McBride.
Van Deusen, Edwin	Pennsylvania.	University of Penna.
Van Mater, John H.	New Jersey.	E. F. Taylor.

NAME.	STATE.	PRECEPTOR.
Warnock, William	New Jersey.	L. Van Rensselaer.
Watson, Arthur W.	Pennsylvania.	University of Penna.
Weaver, Clinton H.	Connecticut.	A. Pratt.
Weaver, Robert T.	Pennsylvania.	F. W. Boyer.
Weidemann, Charles A.	Pennsylvania.	L. K. Baldwin.
Weymouth, William C.	Pennsylvania.	University of Penna.
Whitcomb, Harry H.	Pennsylvania.	Wm. Pepper.
Whitehead, John (A.B.)	North Carolina.	M. Whitehead.
White, Robert	New Jersey.	E. L. Welling.
Williams, James B	Pennsylvania.	D. D. Richardson.
Willits, Isaac Pearson	Pennsylvania.	W. Scott Hendrie.
Wills, Joseph H. (A.M.)	New Jersey.	University of Penna.
Wollerton, Samuel H.	Pennsylvania.	Wm. B. Brinton.
Wuchter, George H.	Ohio.	University of Penna.
Ziegler, James P. (A.M.)	Pennsylvania.	J. L. & W. M. L. Ziegler.

Total 136.

GENTLEMEN TAKING SPECIAL COURSES.

Bagg, John S., M.D , University of Pa.	Massachusetts.	
Havens, Herbert E.	Pennsylvania.	Thos. J. Yarrow.
Robinson, Wm. Duffield (G.Ph.)	Pennsylvania.	University of Penna.

Total, 3.

GRADUATES OF THE SCHOOL ATTENDING LECTURES.

Cryer, Matthew H.	Pennsylvania.
Erskine, Sterling	Pennsylvania.
Herron, Thomas G.	Pennsylvania.
Lutz, Charles A. V.	Pennsylvania.
McGowan, William D.	Pennsylvania.
Milner, Robert H.	Maryland.
Morey, John S., Jr.	Pennsylvania.
Peltz, Benjamin R.	Pennsylvania.

Total, 8.

SUMMARY.

Alabama	1	Missouri	1
Brazil	5	New Jersey	41
Canada	1	New York	6
Connecticut	1	North Carolina	6
Cuba	12	Nova Scotia	3
Delaware	9	Ohio	5
District of Columbia	1	Pennsylvania	255
Florida	1	Tennessee	1
Illinois	3	Texas	1
Indiana	2	Turkey	2
Ireland	1	Venezuela	1
Japan	1	West Virginia	1
Maryland	6	Wisconsin	2
Massachusetts	1	Wyoming	1
Mexico	1		
Michigan	1	Total	375
Minnesota	2		

AUXILIARY DEPARTMENT OF MEDICINE.

MATRICULATES, 1877.

NAME.	RESIDENCE.	STATE.
Abbot, Griffith E.	Philadelphia,	Pennsylvania.
Allan, Arthur G.	Philadelphia,	Pennsylvania.
Allport, Hobart	Philipsburg,	Pennsylvania.
Anders, James M.	Norristown,	Pennsylvania.
Barros, José de P. L.	San Paulo,	Brazil.
Baum, Charles	Philadelphia,	Pennsylvania.
Benjamin, Dowling	Baltimore,	Maryland.
Bissell, James H.	Philadelphia,	Pennsylvania.
Bowen, George W.	Philadelphia,	Pennsylvania.
Boyer, Hiram L.	Bethlehem,	Pennsylvania.
Brodie, William B.	Philadelphia,	Pennsylvania.
Brown, C. Henry	Lancaster,	Pennsylvania.
Butler, John D.	Philadelphia,	Pennsylvania.
Cardeza, John D. M.	Claymont,	Delaware.
Carson, George L.	Philadelphia,	Pennsylvania.
Casselberry, William E.	Philadelphia,	Pennsylvania.
Cathcart, Thomas H.	Philadelphia,	Pennsylvania.
Cerna, David	San Buenaventura,	Mexico.
Christine, William B.	Philadelphia,	Pennsylvania.
Clunas, George John	Annapolis,	Maryland.
Conrad, J. Reed	Philadelphia,	Pennsylvania.
Croll, Mercer B.	Middletown,	Pennsylvania.
Crumbaugh, John W.	Lancaster,	Pennsylvania.
Cryer, Matthew	Southport,	England.
Davis, William G.	Philadelphia,	Pennsylvania.
Dawson, Oliver B.	Philadelphia,	Pennsylvania.
Dean, G. Edgar	Providence,	Pennsylvania.
Deats, William	Philadelphia,	Pennsylvania.
Deck, Darius J.	East Hanover,	Pennsylvania.
Dillman, Jared W.	United States Navy.	
Dowlin, Clifton	Downingtown,	Pennsylvania.

NAME.	RESIDENCE.	STATE.
DuBois, Henry O.	Philadelphia,	Pennsylvania.
Edwards, Joseph F.	Philadelphia,	Pennsylvania.
Edwards, W. Fitz-Hugh	Hagerstown,	Maryland.
Eyre, Frank	Philadelphia,	Pennsylvania.
Finck, Anthony R.	Philadelphia,	Pennsylvania.
Fithian, Henry C.	Bridgeton,	New Jersey.
Fonseca, Antonio M.	San Paulo,	Brazil.
Formad, Henry F.	Jassy,	Roumania.
Foulkrod, John K.	Philadelphia,	Pennsylvania.
Frazier, Jacob M.	Waco,	Texas.
Freedley, Harry Stites	Philadelphia,	Pennsylvania.
Gaston, Trapier Brumby	San Paulo,	Brazil.
Gillespie, John, Jr.	Philadelphia,	Pennsylvania.
Glasgow, Robert Brodie	Warminster,	Pennsylvania.
Gleason, Edward B.	Philadelphia,	Pennsylvania.
Goodno, Charles F.	Philadelphia,	Pennsylvania.
Graber, Leon J. K.	Philadelphia,	Pennsylvania.
Graff, Charles H.	Worthington,	Pennsylvania.
Griffin, Frederic H.	Philadelphia,	Pennsylvania.
Hain, William J.	Williamstown,	Pennsylvania.
Harte, Richard H.	Rock Island,	Illinois.
Haupt, Herman, Jr.	Philadelphia,	Pennsylvania.
Hereford, William S.	Los Angelos,	California.
Horter, Jacob W.	Philadelphia,	Pennsylvania.
Hudders, Clarence	Philadelphia,	Pennsylvania.
Huff, Harry C.	White Pigeon,	Michigan.
Hughes, Donnel	Philadelphia,	Pennsylvania.
Jackson, Edward	West Chester,	Pennsylvania.
Jay, Septimus D.	Aberdeen,	Maryland.
Jefferis, James E.	Wilmington,	Delaware.
Jones, William W.	Chicago,	Illinois.
Krupp, Franklin	Philadelphia,	Pennsylvania.
Ladd, Charles K.	Towanda,	Pennsylvania.
Lathrop, Homer B.	Springville,	Pennsylvania.
Lenker, Christian	Northumberland,	Pennsylvania.
Lewis, James B.	Chadd's Ford,	Pennsylvania.
Little, William Raby	West Chester,	Pennsylvania.
Lutz, Charles A. V.	Philadelphia,	Pennsylvania.
MacGowan, D. Granville	Philadelphia,	Pennsylvania.
Maine, Frank E.	Three Mile Bay,	New York.
Marsh, William G.	Danville,	Pennsylvania.

NAME.	RESIDENCE.	STATE.
Milliken, Frederic H.	Philadelphia,	Pennsylvania.
Moore, Isaac H.	Philadelphia,	Pennsylvania.
Morejon, Abraham	Mantanzas,	Cuba.
Morris, Caspar, Jr.	Philadelphia,	Pennsylvania.
Morris, Spencer	Philadelphia,	Pennsylvania.
Morrison, John W.	Martin's Ferry,	Ohio.
Mulford, Clarence H.	Bridgeton,	New Jersey.
Murray, F. Marion	Key West,	Florida.
Musser, John H.	Strasburg,	Pennsylvania.
McCoy, James W.	Fort Sill,	Indian Territory.
McIlvaine, Charles H.	Natchez,	Mississippi.
Nagle, Frank O.	Philadelphia,	Pennsylvania.
Neel, Harry A. P.	Philadelphia,	Pennsylvania.
Nicolas, Frank M.	Matanzas,	Cuba.
Nurian, Hagob K.	Adrianople,	Turkey.
Oettiker, James	Belmont,	Wisconsin.
Oliver, Charles A.	Philadelphia,	Pennsylvania.
Oliver, George P.	Philadelphia,	Pennsylvania.
Osborne, A. Edgar	Philadelphia,	Pennsylvania.
Patterson, Harry	Philadelphia,	Pennsylvania.
Price, Abel F.	Philadelphia,	Pennsylvania.
Pilkington, Horatio	Philadelphia,	Pennsylvania.
Puente, Marcos de la	Havana,	Cuba.
Ramirez, Frank P.	Santiago de Cuba,	Cuba.
Ramirez, Joseph J.	Santiago de Cuba,	Cuba.
Raynor, Nathan H.	Philadelphia,	Pennsylvania.
Read, Harry C.	Philadelphia,	Pennsylvania.
Reber, W. Worrall.	Lehighton,	Pennsylvania.
Redeker, William F.	Philadelphia,	Pennsylvania.
Reed, Wm. Boardman	Philadelphia,	Pennsylvania.
Reynolds, A. Sidney	Philadelphia,	Pennsylvania.
Reynolds, J. Paul	Philadelphia,	Pennsylvania.
Regar, Horace K.	Philadelphia,	Pennsylvania,
Ricketts, Thomas G.	Elkton,	Maryland.
Savage, Frank S.	Philadelphia,	Pennsylvania.
Schiedt, Philip M.	Philadelphia,	Pennsylvania.
Scott, Frank S.	Hammonton,	New Jersey.
Seltzer, Charles M.	Philadelphia,	Pennsylvania.
Sheppard, Frederick C.	Bridgeton,	New Jersey.
Sherron, Cliff M.	Salem,	New Jersey.
Shipps, Wm. Helveston	Bordentown,	New Jersey.

NAME.	RESIDENCE.	STATE.
Slocum, Charles E.	Defiance,	Ohio.
Slocum, Harry A.	Philadelphia,	Pennsylvania.
Smith, Franklin B.	Frederick,	Maryland.
Smith, Uselma C.	Philadelphia,	Pennsylvania.
Springer, Francis L.	Hockessen,	Delaware.
Stephenson, Franklin B.	United States Navy.	
Swalm, Thomas W.	Mahanoy City,	Pennsylvania.
Swoyer, Oscar D.	Allentown,	Pennsylvania.
Taggart, David, Jr.	Northumberland,	Pennsylvania.
Tantum, James D.	Trenton,	New Jersey.
Taylor, J. Richard	Philadelphia,	Pennsylvania.
Townsend, Stephen	Philadelphia,	Pennsylvania.
Vanderbeck, Charles C.	Philadelphia,	Pennsylvania.
Walk, James Wilson	Philadelphia,	Pennsylvania.
Wallace, James	Philadelphia,	Pennsylvania.
Walsh, James J.	Philadelphia,	Pennsylvania.
Weston, John B.	Chester,	Pennsylvania,
Willits, Charles H.	Lancaster,	Pennsylvania.
Wishart, C. Ammon	Pittsburg,	Pennsylvania.
Wroth, James H.	Camden,	New Jersey.
Yeretzian, V. Avedis	Cæsarea,	Turkey.
Zentmayer, Louis	Philadelphia,	Pennsylvania.
Zimmerman, Gustavus A.	Johnstown,	Pennsylvania.

Total, 136.

LAW DEPARTMENT.

FACULTY.

CHARLES J. STILLÉ, LL.D., PROVOST OF THE UNIVERSITY, and *ex-officio* President of the 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.

The students in this Department are allowed also to attend upon all the Lectures given in the other Departments—with the exception of certain special exercises in practical chemistry—free of charge. Some of these, especially the Lectures on English History and Literature, Rhetoric, Intellectual and Moral Philosophy, and Social Science, are of value to the lawyer, and an opportunity is thus offered to those whose previous training has been to some extent limited, to make up the deficiency.

The law students have also the free use of the University Library, under the usual regulations.

DEGREES.

The following statute, fixing the qualifications of candidates for graduation, was 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 March, 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 required by the statute 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 1877, was awarded to *I. Tyson Morris, Esq.*, a graduate of that year, for an essay on "Accommodation Paper."

A prize of fifty dollars has been established by the Faculty, to be given to the student who shall pass the best written examination with all the Professors. The answers to the questions proposed to be completed within a limited time.

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 by those courts 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, 1878, to Feb. 1, 1879, Practice and Pleading at Law.
Second Term, from Feb. 1, 1879, to June 1, 1879, Practice and Pleading at Law.
Third Term, from Oct. 1, 1879, to Feb. 1, 1880, Evidence.
Fourth Term, from Feb. 1, 1880, to June 1, 1880, Practice and Pleading in Equity.

PROFESSOR HARE.

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

PROFESSOR MITCHELL.

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

PROFESSOR PARSONS.

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

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 1877-78.

NAME.	RESIDENCE.	PRECEPTOR.
Abbott, Edward	Philadelphia,	M. H. Todd.
Alleman, John S.	Selin's Grove, Pa.	E. S. Miller.
Anderson, Edward A.	Philadelphia,	E. C. Mitchell.
Atkins, Alfred C.	do.	S. B. Huey.
Andrews, Henry W.	do.	
Bakewell, James K.	Pittsburg, Pa.	George Harding.
Bell, J. Snowden	Philadelphia,	H. Baldwin.
Bradley, Patrick	Chester, Pa.	P. M. Washabaugh.
Brady, Charles A.	Philadelphia,	C. H. T. Collis.
Bregy, Louis	do.	F. A. Bregy.
Brown, Francis Shunk	Dover, Del.	F. Sheppard.
Brown, W. Ross	Chester, Pa.	E. S. Miller.
Burkholder, Geo. W.		W. H. Livingood.
Carroll, Thomas J.	Philadelphia,	P. E. Carroll.
Chesnut, John H.	do.	H. P. Wilbur.
Corson, Robert T.	do.	C. H. T. Collis.
Cunningham, Francis A.	do.	T. H. Diehl.
Curtis, Thomas C.	Point Pleasant, N. J.	C. S. Pancoast.
Daly, Eugene S.	Philadelphia,	D. B. Meany.
De Bow, Robert S.	Philadelphia,	A. M. Burton.
Deveney, Andrew C.	York, Pa.	W. H. Kain.
Disbrow, Theodore C.	Towanda, Pa.	Read & Pettit.
Dougherty, D. Webster	Philadelphia,	D. Dougherty.
Dougherty, Joseph N.	do.	W. A. Redding.
Dransfield, Joseph, Jr.	Upland, Pa.	B. L. Temple.
Endicott, Allen B.	May's Landing, N. J.	J. E. D. Abbott.
Etting, Theodore M.	Philadelphia,	H. R. Edmunds.
Eyre, Lincoln L.	do.	R. L. Ashhurst.
Fox, Henry K.	do.	R. M. Logan.
Furth, Emanuel	do.	A. M. Burton.
Garrison, Charles G.	Camden, N. J.	S. H. Grey.
Geiser, William D.	Waynesboro', Pa.	A. J. Fish.
Geyelin, H. Laussat	Philadelphia,	E. C. Mitchell.

NAME.	RESIDENCE.	PRECEPTOR.
Gilpin, Bernard	Philadelphia.	C. Gilpin.
Glenn, Harry R.	Frankford, Pa.	W. Hopple, Jr.
Greene, Harry R.	Philadelphia,	C. M. Husbands.
Hoagland, J. Milton	do.	James Parsons.
Hodge, J. Albert	do.	A. I. Fish.
Hopper, Harry S.	do.	J. R. Rhoads.
Horstmann, Henry F.	do.	J. D. Lee.
Howell, Charles B.	do.	A. Thompson.
Jones, Ray W.	do.	C. Gilpin.
Kauffman, Percival C.	Mechanicsburg, Pa.	McVeagh & Bispham.
Keating, J. Percy	do.	P. McCall.
Keator, John F.	Camden, N. J.	J. H. Heverin.
Keely, Thos. M.	Philadelphia,	W. D. Comegys.
Kelly, William D., Jr.	do.	W. N. West.
Knittel, Charles	do.	Admitted.
Larzelere, Nicholas H.	Norristown, Pa.	Admitted.
Lewis, Lawrence, Jr.	Philadelphia,	W. H. Rawle.
Lippman, Joseph	do.	J. S. Price.
Lowenstein, Samuel	Tamaqua,	Jno. Samuel.
McCouch, H. Gordon	Philadelphia,	J. C. Bullitt.
McKenna, Joseph G.	do.	J. D. O'Bryan.
Magee, Frank H.	do.	E. C. Mitchell.
Martin, J. Willis	do.	J. S. Price.
Martin, Robert S.	Goheenville, Pa.	J. Otterson.
Meier, Robert A.	Philadelphia,	Read & Pettit.
Miller, T. Campbell	do.	S. B. Huey.
Miller, Willard P.	New Jersey,	J. T. Thomas.
Monaghan, Peter J.	Philadelphia,	J. Parsons.
Morris, Effingham B.	do.	P. P. Morris.
Nuttall, D. Russell	do.	T. A. Gummey.
Patterson, W. Harry	do.	J. C. Bullitt.
Pendleton, Garnett	Upland, Pa.	E. C. Mitchell.
Philler, William R.	Philadelphia,	R. L. Ashhurst.
Pigott, H. Herbert	Woodbury, N. J.	G. C. Purves.
Quin, Augustine	Philadelphia,	E. C. Quin.
Redheffer, William	Morton, Pa.	W. H. Redheffer.
Riter, Frank M.	Philadelphia,	E. C. Mitchell.
Rittenhouse, Thomas W.	Rising Sun, Md.	Read & Pettit.
Rush, Murray	Philadelphia,	Admitted.
Sayre, Charles H.	do.	J. S. Gerhard.
Scott, Harry J.	do.	A. J. Maloney.

NAME.	RESIDENCE.	PRECEPTOR.
Schram, John M.	Ridgway, Pa.	Rufus Lucore.
Shanafelt, J. Newton	Chester, Pa.	W. H. Dickinson.
Sharp, Leedom	Philadelphia,	E. C. Mitchell.
Shoemaker, Franklin G.	do.	J. G. Brinkle.
Shoemaker, Joseph H.	do.	L. R. Fletcher.
Showaker, J. Gordon	do.	H. E. Wallace.
Siner, John A.	do.	G. S. Graham.
Smith, Herbert	do.	E. S. Miller.
Smith, Theodore DeK.	do.	
Smyth, George W.	do.	H. P. Wilbur.
Smyth, William J.	do.	J. W. Coulston.
Sobernheimer, Fred. A.	do.	T. D. Rand.
Spackman, Wm. M.	do.	U. P.
Sprogle, Howard O.	do.	W. H. Smith.
Stehr, George W.	do.	A. I. Fish.
Tower, Charlemagne, Jr.	do.	W. H. Rawle.
Townsend, Urie	do.	A. Stewart.
Truitt, Alexander J.	Kittanning, Pa.	E. S. Golden.
Twibill, Thomas P.	Philadelphia,	W. Gorman.
Van Buskirk, Geo. Miller	do.	Jos. R. Rhoads.
Vandergrift, George H.	do.	E. Hopper.
Van Dusen, George R.	do.	E. S. Miller.
Weaver, Philip V.	Hazleton, Pa.	James Parsons.
Weiser, Jay G.	Mifflintown, Pa.	L. E. Atkinson.
West, Joseph V.	Philadelphia,	D. Dougherty.
Whitworth, John F.	Apollo, Pa.	J. Freetly.
Willcox, William J.	Philadelphia,	H. Wharton.
Wirgman, Frank M.	do.	Neilson & Neilson.
Yerkes, Charles J.	do.	John L. Kinsey.

Total, 103.

RECAPITULATION.

PROFESSORS.

Department of Arts	13
" " Science	16
" " Medicine	11
" " " (Auxiliary Faculty)	5
" " " (Hospital)	11
" " Law	5
Professor of Comparative Philology	1
Professor of Music	1
Professores Emeriti	4
	67
Deduct those giving instruction in more than one department	19
	48

LECTURERS, INSTRUCTORS, ETC.

Department of Science	3
" " Medicine, including Hospital Service	41
	44

STUDENTS.

Department of Arts	134
" " Science	119
" " Medicine	375
" " " (Auxiliary)	136
" " Law	103
" " Music	11
Total	970

ACADEMIC DEGREES,

Honours, Prizes, Etc.

1876-77.

HONORARY DEGREES.

At the Commencement, held June 28, 1877—

The Honorary Degree of Master of Science was conferred upon Messrs. HENRY PETIT, JOSEPH M. WILSON, and HERMAN J. SCHWARZMANN, Engineers and Architects, in the service of the late Centennial International Exhibition.

The Honorary Degree of Doctor of Laws was conferred upon the Honourable MORTON MCMICHAEL, of Philadelphia.

The Honorary Degree of Doctor of Divinity was conferred upon the Reverend CHARLES GEORGE CURRIE, of Philadelphia.

DEGREES (IN COURSE), HONOURS, ETC.

The Degree of Bachelor of Arts was conferred upon the following members of the Senior Class (Department of Arts):—

Edward Prétot Anderson,
Robert Coburn Brodie, Jr.,
Walter Cox,
Edmund Austin Crenshaw, Jr.,
Charles Aitken Currie,
Charles Spalding Farnum,
Henry Laussat Geyelin,
John Howard Gibson,
John P. Crozer Griffith,
Charles Irvin Junkin,
Howard Atwood Kelly,
Ernest Law,
Francis Albert Lewis, Jr.,
Robert Taylor Middleton,
John Neill, Jr.,
Thomas Rundle Neilson,
George Stanley Philler,
Thomas Robins, 3d,
Claes August Oscar Rosell,
Edward Charles Sharkey,
Joseph Warner Yardley.

A Certificate of Proficiency in this Department was awarded to
John Ruckman Fell.

The Degree of Bachelor of Science was conferred upon

Lloyd Bankson, Jr.,
James Bond,
Edward Walter Clark,
Charles Benjamin Howell,
Hermann Adalbert Lewis,
William Pennock,
Howard Sellers,
Horace Wells Sellers,
Arthur Whitcomb Sheafer,
Charles Sumner Williamson.

A Certificate of Proficiency was awarded to the following members of the Towne Scientific School:—

Josiah Settle Graves,
Henry Trimble.

The Degree of Master of Arts was conferred upon the following named gentlemen, Bachelors of Arts of three years' standing:—

William Henderson Allison,
Louis Fitzgerald Benson,
Chauncey Augustus Bockoven,
John Evans Crew,
Christian Godfrey Fischer,
Joseph de Forest Junkin,
Martin Luther Kohler,
William Brashear Lane,
Louis Lindenstruth, Jr.,
Isaac Tyson Morris,
Nalbro Frazier Robinson,
Jacob Snare, Jr.

The Degree of Master of Science upon the following named gentlemen, Bachelors of Science of three years' standing, each having presented a satisfactory Thesis:—

Charles A. Ashburner,
John Francis Maher.

DEGREES IN THE LAW.

The Degree of Bachelor of Laws upon the following named gentlemen:—

B. Gordon Bromley,
Frank J. Chambers,
Alexander C. Crawford,
J. Calvin Cooper,
Walter H. Fitton,
Alexander Fullerton,
Samuel Heilner,
Ellery P. Ingham,
Barton L. Keen,
Charles P. Knowles,
George G. Mercer,
J. Tyson Morris,
William A. Munroe,
J. Carroll McCaffrey,
John B. McCaffrey,
Thomas D. McGlathery,
Charles E. Pancoast,
Charles T. Quin,
Walter C. Rodman,
Walter George Smith,
Theophilus B. Stork,
Curtis Tilton,
Horace N. Weeks,
Albert B. Williams.

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 JOHN P. CROZER GRIFFITH and CLAES AUGUST OSCAR ROSELL.

Of the *Second Class* to JOSEPH WARNER YARDLEY, HOWARD ATWOOD KELLY, CHARLES SPALDING FARNUM, THOMAS RUNDLE NEILSON, and FRANCIS ALBERT LEWIS, JR.

Of the *Third Class* to JOHN HOWARD GIBSON, ERNEST LAW, GEORGE STANLEY PHILLER, CHARLES IRVIN JUNKIN, EDMUND AUSTIN CRENSHAW, JR., JOHN NEILL, JR., CHARLES AITKEN CURRIE, THOMAS ROBINS, 3D, EDWARD CHARLES SHARKEY, and EDWARD PRÉTOT ANDERSON.

To Graduates in the TOWNE SCIENTIFIC SCHOOL.

Of the *Second Class* to ARTHUR WHITCOMB SHEAFER.

Of the *Third Class* to CHARLES SUMNER WILLIAMSON and LLOYD BANKSON, JR.

At the Annual Examination, *Distinctions of the First Class* were awarded to the following students, viz.:—

In the DEPARTMENT OF ARTS—

Juniors—HARRY M'DOWELL and WILLIAM SERGEANT BLIGHT, JR.

Sophomore—JOHN MARSHALL GEST.

Freshmen—LEON LANDAUER, WILLIAM PURVES GEST, ANDREW VOIGT, JR., JAMES STUART DICKSON, THEODORE EMANUEL SCHMAUK, JOSEPH STOKES, CHARLES HOWARD LODOR, and EDWARD WATSON ANSTICE.

In the TOWNE SCIENTIFIC SCHOOL—

Sophomores—FRANK THEODORE FREELAND and EDWARD HURST BROWN.

Freshmen—EDWIN FORD DAWSON and CARL OTTO HERING.

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 "*Victor Cousin as a Philosopher*," to CHARLES PHILIP HENRY.

In the Department of Latin Language and Literature: Senior Prize, for the best Examination on "*Cicero's Oration for Cluentius*," read with the Professor in addition to the regular course, equally to CLAES AUGUST OSCAR ROSELL and JOSEPH WARNER YARDLEY.

In the Department of Mathematics: Freshman Prize for the best Examination in "*The Treatise on Modern Geometry contained in the Appendix to Chauvenet's Geometry:*" the First Prize to WILLIAM PURVES GEST, the Second, equally, to JOHN WARNER HENDERSON and JOSEPH STOKES.

In the Department of History and English Literature: the Senior Prize for the best Essay on "*The Lessons of the International Exhibition,*" to THOMAS ROBINS, 3D.

The Junior Prize for the best Essay on "*Robert Fulton as a Pioneer,*" equally to EDWARD VINCENT D'INVILLIERS and CHARLES PHILIP HENRY.

Sophomore Prize for the best *Original Declamation*, to HENRY TAYLOR DECHERT.

Freshman Prize for the best *Declamation*, to JOHN ARTHUR HENRY.

The *Matriculate Greek Prizes*, for the best Examination by members of the Freshman Class, immediately after their admission to College, on "*The Elements of Greek Prose Composition:*" the First Prize to LEON LANDAUER, the Second to ANDREW VOIGT, JR.

The *Matriculate Latin Prizes*, for the best examinations by members of the Freshman Class, immediately after their admission to College, upon "*The Elements of Latin Prose Composition:*" the First Prize to LEON LANDAUER, the Second to JOHN JOSEPH MCCAFFREY, with Honourable mention of ANDREW VOIGT, JR.

The Prize offered by the Board of Trustees for *excellence in Drawing* in the Towne Scientific School to CARL OTTO HERING 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 EDWARD SWIFT BUCKLEY, JR., with Honourable mention of HENRY ALBERT MACKUBBIN.

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): equally to EDWARD PRÉTOT ANDERSON and CLAES AUGUST OSCAR ROSELL.

The *Towne Prize Scholarships*, founded by the Honourable Board of Trustees, and open to the competition of pupils from the Public Grammar Schools, were awarded to the following candidates in the order of their scholarship for the year 1877—

I. URIAH YEAKEL, Hunter Grammar School.
II. ELLIS AMES BALLARD, South Western Grammar School.
III. HERMAN AUGUSTUS KELLER, North Eastern Grammar School.
IV. THEODORE HENRY HART, Wyoming Grammar School.
V. HENRY FREDERICK KELLER, North Eastern Grammar School.
VI. CHARLES CREIGHTON STRATTON CARPENTER, Newton Grammar School.
VII. WILLIAM HENRY ALLEN FITZ, Halliwell Grammar School.

DEGREES, PRIZES, ETC., IN MEDICINE.

At the Commencement, March 12, 1877, the Degree of

DOCTOR OF MEDICINE

was conferred by CHARLES J. STILLÉ, LL.D., Provost, upon the following gentlemen; after which an address was delivered by JOSEPH LEIDY, M.D., LL.D., Professor of Anatomy.

NAME.	POST-OFFICE.	STATE.
Adams, M. Vinton	Litchfield,	Maine.
Anders, James M.	Fairview,	Pennsylvania.
Ball, Frank P.	Lock Haven,	Pennsylvania.
Barham, Wm. Blount	Newsom's Depot,	Virginia.
Baum, Charles (A.B.)	Philadelphia,	Pennsylvania.
Benjamin, Dowling	Baltimore,	Maryland.
Birch, Thomas J.	New Haven,	Connecticut.
Bower, Charles C.	Middleburg,	Pennsylvania.
Boyd, James M.	Rockville,	Indiana.
Bradin, Edw. De Lancey	Salem,	New Jersey.
Brubaker, Abram S.	Ephrata,	Pennsylvania.
Bull, William H.	Philadelphia,	Pennsylvania.
Burrell, Jas. L. A. (A.B.)	Salona,	Pennsylvania.
Buzby, Benjamin F.	Moorestown,	New Jersey.
Calland, Elijah F.	Warren,	Rhode Island.
Cardeza, John D. M.	Claymont,	Delaware.
Cawley, James Irving	Allentown,	Pennsylvania.
Chamberlain, Wm., Jr.	Moorestown,	New Jersey.
Chambers, John T.	Ford's Depot,	Virginia.
Christine, Wm. B.	Paulsboro',	New Jersey.
Clunas, George John	Nairn,	Scotland.
Cooper, John L.	Philadelphia,	Pennsylvania.
Cressman, Albert J.	Reading,	Pennsylvania.
Cryer, Matthew H. (D.D.S.)	Southport,	England.
Davis, Sidney	Milton,	Pennsylvania.
Dean, George Calvin	Newport,	Pennsylvania.
Dean, G. Edgar	Providence,	Pennsylvania.
Deck, Darius J.	East Hanover,	Pennsylvania.
Dercum, F. Xavier (A.B.)	Philadelphia,	Pennsylvania.

NAME.	POST-OFFICE.	STATE.
Dewees, Wm. B. (M.A.)	Womelsdorf,	Pennsylvania.
Dodge, Albert Henry	San Francisco,	California.
Du Mars, Rufus A. (M.D.)	Peoria,	Illinois.
Eagleson, John S.	Meadville,	Pennsylvania.
Farquhar, Quintius C.	Bentleysville,	Pennsylvania.
Fithian, Henry C.	Bridgeton,	New Jersey.
Formad, Henry F. (B.M.)	Jassy,	Roumania.
Fox, Joseph M.	Philadelphia,	Pennsylvania.
Frace, John M.	Pittstown,	New Jersey.
Gable, Isaac C.	York,	Pennsylvania.
Gallant, Isidore	Charlottetown,	Prince Edward Is.
Gerhard, Milton U. (A.M.)	Lancaster,	Pennsylvania.
Gifford, David L.	Principio,	Maryland.
Gilbert, John E.	Gettysburg,	Pennsylvania.
Gloninger, Ellwood S.	Philadelphia,	Pennsylvania.
Gregory, William E.	Gilberts,	Pennsylvania.
Grossman, Daniel S. (M.E.)	Marion,	Pennsylvania.
Harding, James C.	Harford,	Pennsylvania.
Harris, Fred. W. (M.D.)	San Francisco,	California.
Haupt, Herman, Jr.(Ph.D.)	Philadelphia,	Pennsylvania.
Heath, Wm. Hobson	Valparaiso,	Chili.
Hedges, G. Beall	Bedington,	West Virginia.
Hereford, Wm. S. (B.S.)	Los Angelos,	California.
Hollopeter, Wm. C. (S.B.)	Muncy,	Pennsylvania.
Hubler, P. Frank	Mill City,	Pennsylvania.
Huidekoper, Rush Shippen	Meadville,	Pennsylvania.
Irwin, Fairfax	Beltsville,	Maryland.
Jay, Septimus D.	Aberdeen,	Maryland.
Johnson, Charles S.	Sergeantsville,	New Jersey.
Kirk, Lewis H.	Pleasant Grove,	Pennsylvania.
Kleckner, James	Hartleton,	Pennsylvania.
Kludgian, Y. Simon	Tocat,	Turkey.
Knox, John	Princeton,	Iowa.
Ladd, Charles K.	Towanda,	Pennsylvania.
Landis, Harry Z.	Wellsville,	Pennsylvania.
Lenker, Christian	Northumberland,	Pennsylvania.
Levengood, Wellington Y.	Pottstown,	Pennsylvania.
Linn, Samuel H. (D.D.S.)	Philadelphia,	Pennsylvania.
Long, Alfred A.	Honeybrook,	Pennsylvania.
Loose, David N. (A.B.)	Myerstown,	Pennsylvania.
Lutz, Charles A. V.	Philadelphia,	Pennsylvania.

NAME.	POST-OFFICE.	STATE.
Madara, Jas. W. (B.S., M.D.)	Camden,	New Jersey.
Madden, William B.	Harrisburg,	Pennsylvania.
Maior, Pedro de Souto	Pernambuco,	Brazil.
Marsh, William G.	Danville,	Pennsylvania.
Martin, Thomas T.	Allentown,	Pennsylvania.
Meredith, Hugh B.	Doylestown,	Pennsylvania.
Miller, Samuel M. (A.B.)	Philadelphia,	Pennsylvania.
Moraes, Antonio A. da S.	Peracicaba,	Brazil.
Morey, John S., Jr.	Royer's Ford,	Pennsylvania.
Morgan, Ethelbert C. (B.A.)	Washington,	Dist. of Columbia.
Morrison, John W.	Martin's Ferry,	Ohio.
Musser, John H.	Strasburg,	Pennsylvania.
McCoy, James W.	Fort Sill,	Indian Territory.
McElroy, Bernard F.	Minersville,	Pennsylvania.
McIlvaine, Charles H.	Natchez,	Mississippi.
McKenzie, W. Davison	Amherst,	Nova Scotia.
McLoon, Eugene	Wilkes-Barre,	Pennsylvania.
Neel, Harry A. P.	Philadelphia,	Pennsylvania.
Nelan, James R.	Brownville,	Pennsylvania.
Newell, Wm. Aug., Jr. (A.B.)	Allentown,	New Jersey.
O'Neill, James Wilks	Philadelphia,	Pennsylvania.
Ornelas, Plutarco	San Luis Potosi,	Mexico.
Osborne, A. Edgar	Media,	Pennsylvania.
Parker, Andrew J., Jr.	Philadelphia,	Pennsylvania.
Piersol, George A.	Philadelphia,	Pennsylvania.
Price, Joseph	New Market,	Virginia.
Reed, Louis W.	Woodstown,	New Jersey.
Ricketts, T. Getty (A.B.)	Elkton,	Maryland.
Risk, Clarence H.	Philadelphia,	Pennsylvania.
Roberts, A. Sydney, Jr.	Philadelphia,	Pennsylvania.
Rutherford, Cyrus	Oakland,	Illinois.
Savage, F. Stewart (Ph G.)	Philadelphia,	Pennsylvania.
Sayre, Clifford	River Philip,	Nova Scotia.
Schiedt, Philip M.	Philadelphia,	Pennsylvania.
Scroggs, Joseph	Beaver,	Pennsylvania.
Shaw, Joseph B. (Ph.G.)	Darby,	Pennsylvania.
Sherrick, Nehemiah	Mt. Joy,	Pennsylvania.
Short, Warren B. (A.M.)	Wilmington,	North Carolina.
Skillern, Penn G.	Philadelphia,	Pennsylvania.
Slagle, Bernard W.	Fairfield,	Iowa.
Snyder, Albert C.	Aquashicola,	Pennsylvania.

NAME.	POST-OFFICE.	STATE.
Springer, Francis L.	Hockessin,	Delaware.
Sterrett, Woods	Milroy,	Pennsylvania.
Suter, Henderson, Jr.	Liberty,	Virginia.
Tompkins, L. Douglas	Orange,	New Jersey.
Townsend, Eugene	Philadelphia,	Pennsylvania.
Wade, Frank H.	Pittsburgh,	Pennsylvania.
Walsh, James	Charlottetown,	Prince Edward Is.
Weaver, Myron H. C.	Huntingdon,	Pennsylvania.
Wetherill, Henry M., Jr.	Philadelphia,	Pennsylvania.
Witmer, Elias H.	Lancaster,	Pennsylvania.

Total, 121.

At the Commencement of June 28, 1877, the Degree of Doctor of Medicine was conferred upon—

Thomas Hanover Fenton, Monroe R. Karterman.
Lesher A. Trexler,

DOCTOR OF PHILOSOPHY.

At the Public Commencement, held June 28, 1877, the Degree of Doctor of Philosophy was conferred upon the following gentlemen, on the recommendation of the Auxiliary Faculty of Medicine:—

William Deats, M.D., Chas. E. Vanderbeck, M.D.,
James M. Anders, M.D., Stephen Townsend, M.D.,
Charles H. McIlwaine, M.D., Charles K. Ladd, M.D.,
Philip M. Scheidt, M.D., Francis Dercum, M.D.,
Herman Haupt, M.D., Andrew J. Parker, M.D.
Chas. E. Slocum, M.D.,

PRIZES AWARDED.

The following gentlemen were awarded Prizes for Theses containing the results of original investigations, at the Commencement of March 12, 1877:—

Andrew J. Parker, Pennsylvania. Henry F. Formad, Roumania.
George A. Piersol, Pennsylvania.

ANATOMICAL PRIZES.

Thos. G. Ricketts, Maryland, Gold Medal.
G. Edgar Dean, Pennsylvania, $30.

CHEMICAL PRIZE.

Wm. Chamberlain, Jr., New Jersey, Gold Medal.

The following gentlemen were announced as having presented Theses of DISTINGUISHED MERIT:—

Wm. C. Hollopeter, Pennsylvania. Rush S. Huidekoper, Pennsylvania
George J. Clunas, Scotland.

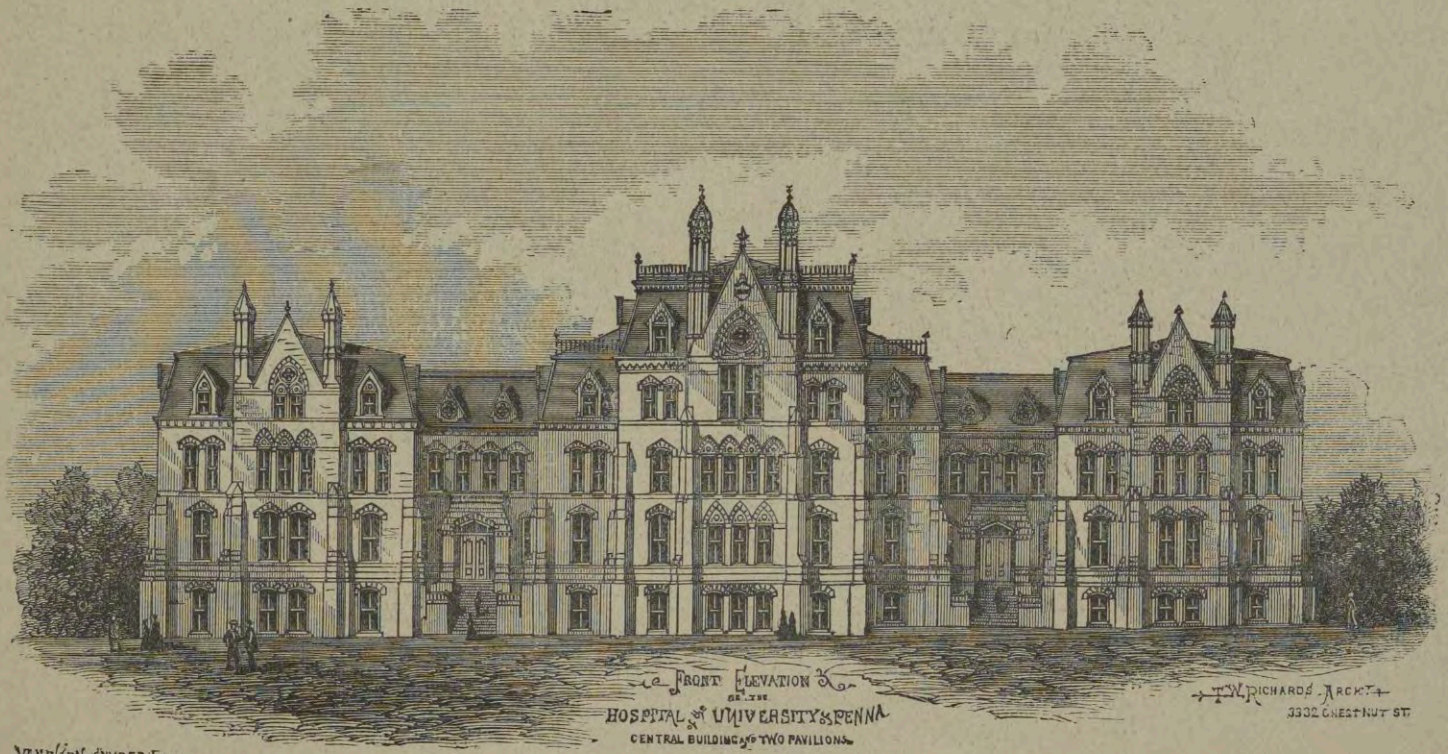
And the following Theses received HONOURABLE MENTION:—

Dowling Benjamin, Maryland.
Wm. B. Dewees, Pennsylvania.
Quintius C. Farquhar, Pa.
John E. Gilbert, Pennsylvania.
Ellwood S. Gloninger, Pa.
Herman Haupt, Pennsylvania.
Plutarco Ornelas, Mexico.
Thomas G. Ricketts, Maryland.
F. Stewart Savage, Pennsylvania.
Henry M. Wetherill, Pennsylvania.

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 Secretary, P. O. Box 2838, Philadelphia.

The Alumni Association has just published a complete Catalogue of the Graduates of the Medical Department, which may be obtained for $1, *sent to Dr. Horace Y. Evans, Secretary of the Society of the Alumni, Medical Department, N. E. corner Seventeenth and Green Streets, Philadelphia. Orders for copies should be sent at once.*

Alumni are requested to send to the Secretary of the Society of the Alumni notice of change of residence or other information likely to be of service in perfecting subsequent editions.



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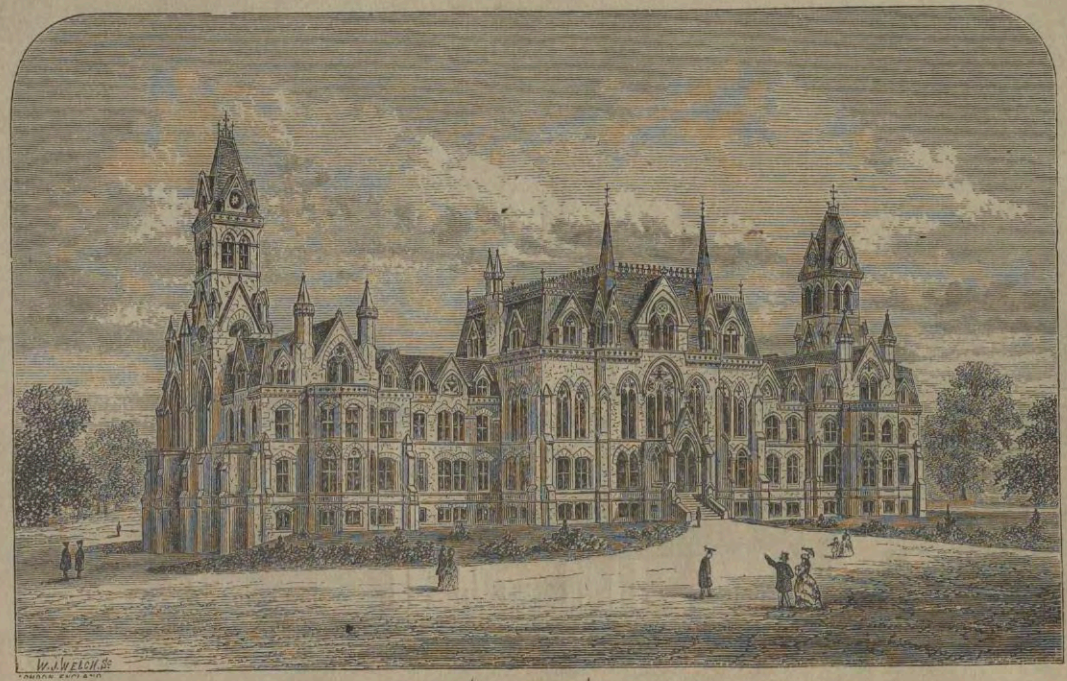

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COLLEGIATE AND SCIENTIFIC DEPARTMENTS.