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**COLLINS, PRINTER.**
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<td>Sept. 15, Monday</td>
<td>College Year begins. 10 A.M.</td>
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<tr>
<td>Oct. 1, Wednesday</td>
<td>First Term begins, Department of Law.</td>
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<td>&quot; 6, Monday.</td>
<td>First Term begins, Department of Music.</td>
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<tr>
<td>Nov. 27, Thursday</td>
<td>Thanksgiving Day. (Holiday.)</td>
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<tr>
<td>Dec. 8, Monday.</td>
<td>Lectures of the Auxiliary Faculty of Medicine begin. 12 Noon.</td>
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<tr>
<td>&quot; 24, Wednesday.</td>
<td>Christmas Recess begins.</td>
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<td>1885. Jan. 2, Friday</td>
<td>Christmas Recess ends. 9 A.M.</td>
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<tr>
<td>&quot; 29, Thursday.</td>
<td>Mid-Year Examinations end, College Department.</td>
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<tr>
<td>&quot; 30, Friday.</td>
<td>First Term ends, College Department. Chapel at 10 A.M.</td>
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<tr>
<td>&quot; 30, &quot;</td>
<td>First Term ends, Department of Law.</td>
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<tr>
<td>Feb. 2, Monday.</td>
<td>Second Term begins, College Department. 10 A.M.</td>
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<td>&quot; 2, &quot;</td>
<td>Second Term begins, Department of Law.</td>
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<tr>
<td>April 1, Wednesday</td>
<td>Easter Recess begins, College Department. P.M.</td>
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<tr>
<td>&quot; 3, Friday.</td>
<td>Good Friday. (Legal Holiday.)</td>
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<tr>
<td>May 1, Friday.</td>
<td>Annual Commencement, Departments of Medicine and Dentistry. 12 Noon.</td>
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<tr>
<td>&quot; 6, Wednesday.</td>
<td>Spring Session opens, Departments of Medicine and Dentistry. 11 A.M.</td>
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<tr>
<td>&quot; 15, Friday.</td>
<td>Announcement of Results, Senior Examinations, College Department. 10 A.M.</td>
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<tr>
<td>&quot; 20, Wednesday.</td>
<td>Examination begins, Department of Law.</td>
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<tr>
<td>&quot; 30, Saturday.</td>
<td>Second Term ends, Department of Law.</td>
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<tr>
<td>June 12, Friday.</td>
<td>Announcement of Results, Annual Examinations, College Department. 10 A.M.</td>
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<tr>
<td>&quot; 15, Monday.</td>
<td>Annual Commencement, College Department, Department of Law, and Auxiliary Department of Medicine. 11 A.M.</td>
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<td>&quot; 16 to 23.</td>
<td>Entrance Examinations, College Department, 9 A.M. each day.</td>
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<tr>
<td>Sept. 7 to 12.</td>
<td>Entrance Examinations, College Department. 9 A.M. each day.</td>
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<td>&quot; 14, Monday.</td>
<td>College Year begins. 10 A.M.</td>
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<td>&quot; 14, &quot;</td>
<td>Preliminary Course opens, Departments of Medicine, Dentistry, and Veterinary Medicine. 11 A.M.</td>
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<td>&quot; 25, Friday.</td>
<td>Competitive Examination for Medical Scholarships. 12 Noon.</td>
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<tr>
<td>&quot; 28, Monday.</td>
<td>Examinations for Admission to Advanced Standing, and Re-examination of Undergraduates, Departments of Medicine and Dentistry. 12 Noon.</td>
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<tr>
<td>&quot; 29, Tuesday.</td>
<td>Entrance Examination, Departments of Medicine and Veterinary Medicine. 12 Noon.</td>
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<tr>
<td>Oct. 1, Thursday.</td>
<td>Winter Session opens, Departments of Medicine, Dentistry, and Veterinary Medicine. 12 Noon.</td>
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<td>First Term begins, Department of Law.</td>
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<td>&quot; 5, Monday.</td>
<td>First Term begins, Department of Music.</td>
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<td>&quot; 5, &quot;</td>
<td>Lectures of the Auxiliary Faculty of Medicine begin.</td>
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JOHN H. SALVADOR,
Clerk to the Faculty of Veterinary Medicine.

SAMUEL H. LAWSON,
Clerk to the Faculty of Biology.
GENERAL STATEMENT.

The University of Pennsylvania is the successor of the College of Philadelphia, which was founded chiefly through the influence of Dr. Benjamin Franklin and Dr. William Smith. Dr. Smith, the first Provost, is conspicuous in American college history for establishing here in 1757 the curriculum of study that was adopted substantially by all the colleges of later foundation. The College of Philadelphia was chartered in 1755, and is therefore the sixth in the order of succession of American colleges. Instruction is given in nine Departments, viz.:

THE COLLEGE DEPARTMENT, including
THE COURSE IN ARTS   Established in 1755.
THE TECHNICAL COURSES IN SCIENCE "  1872.

    (The Towne Scientific School).
THE COURSE IN PHILOSOPHY "  1885.
THE COURSE IN FINANCE AND ECONOMY "  1881.

    (The Wharton School).
THE COURSE IN MUSIC "  1877.
THE DEPARTMENT OF MEDICINE "  1765.
THE DEPARTMENT OF LAW "  1789.
THE AUXILIARY DEPARTMENT OF MEDICINE "  1865.
THE DEPARTMENT OF DENTISTRY "  1878.
THE DEPARTMENT OF PHILOSOPHY "  1882.
THE DEPARTMENT OF VETERINARY MEDICINE "  1883.
THE DEPARTMENT OF BIOLOGY "  1884.
THE DEPARTMENT OF PHYSICAL CULTURE "  1884.

The buildings and grounds occupy over thirty acres of land in West Philadelphia. The situation is very healthy, and free access of both light and air is assured, since the buildings stand on high ground and at wide intervals from each other. The University is so remote from the more crowded business and manufacturing sections of the city as to insure the quiet indispensable for study and health. There are no objectionable surroundings near either the University itself or the numerous comfortable boarding-houses in which the students commonly live.

The fine athletic grounds, occupying 3½ acres, immediately adjoining the University, will be ready for the use of students during the coming spring.
COLLEGE DEPARTMENT.

FACULTY AND INSTRUCTORS.

WILLIAM PEPPER, M.D., LL.D., Provost of the University, and ex-officio President of the Faculty.

E. OTIS KENDALL, LL.D., Vice-Provost, ex-officio Dean of the Faculty, and Thomas A. Scott Professor of Mathematics.

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

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

J. PETER LESLEY, LL.D.,* Professor of Geology and Mining.

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

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

J. I. CLARK HARE, LL.D., Professor of Constitutional Law.

Rev. ROBERT E. THOMPSON, A.M., John Welsh Centennial Professor of History and English Literature.

FREDERICK A. GENTH, Ph.D., Professor of Chemistry.

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

LEWIS M. HAUP, A.M., C.E., Professor of Civil Engineering.

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

GEORGE A. KOENIG, Ph.D., Assistant Professor of Chemistry, and Acting Professor of Geology and Mining.

SAMUEL P. SADTLER, Ph.D., Assistant Professor of Chemistry.

HUGH A. CLARKE, Professor of the Science of Music.

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

JOSEPH T. ROTHRICK, M.D., B.S., Professor of Botany.

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

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

ANDREW J. PARKER, M.D., Ph.D., Professor of Comparative Anatomy and Zoology.

MORTON W. EASTON, Ph.D., Professor of Comparative Philology, and Instructor in French and in Elocution.

FREDERICK A. GENTH, Jr., M.S., Assistant Professor of Chemistry.

ALBERT S. BOLLES, Ph.D., Professor of Mercantile Law and Practice.

EDMUND J. JAMES, Ph.D., Professor of Finance and Administration.

JOHN B. MCMASTER, A.M., Professor of American History.

HORACE JAYNE, M.D., Professor of Vertebrate Morphology.

BENJAMIN SHARPE, M.D., Professor of Invertebrate Morphology.

* Absent on leave.
The College Faculty, comprising the Faculties of Arts, of Science, of Finance and Economy, of Biology, and of Music, conducts the following Courses of study: the Course in Arts, the five Technical Courses in the Towne Scientific School, the Course in Finance and Economy in the Wharton School, the Course in Philosophy, and the Course in Music.

These courses permit a student to take, in Freshman and Sophomore years, either the ancient classical or the modern languages, with English, History, Mathematics, etc., and to elect at the close of Sophomore Year, between the Courses in Arts, Philosophy and Finance and Economy; while those intending to complete their course in the Towne Scientific School then make their election between the five technical courses. The graduate receives at the close of his course the degree he would have received had he completed the course in which he took his Freshman and Sophomore studies; except that a student who takes the Freshman and Sophomore years in the Scientific Course, and who elects any one of the three courses named above, receives the degree of B.S. An additional election is allowed in Freshman and Sophomore years of the Course in Philosophy between a part of the Mathematics and additional History for students intending to take the Wharton School Course.

Particular statements of the instruction given in these Courses will be found after the following general statement.

Persons of both sexes are admitted without examination to the following courses of lectures given in this Department:

On German Literature, by Professor Seidensticker.
On the Older English Classics, by Professor McElroy.*
On Norse History in the Early Middle Ages, by Professor Thompson.
On Physics and Astronomical Physics, by Professor Barker.
On Inorganic and Organic Chemistry, by Professor Sadler.
On Goethe and his Works, by Professor James.
The instruction in Analytical Chemistry, including practical work in the laboratory, under Professor Genth, is also open to the public.
The lectures begin about February 1st. The fee for each course is five dollars; for the instruction in Analytical Chemistry, two hundred dollars a year.
Application for admission or for further information respecting this instruction may be made to the Dean or to the Secretary of any of the Faculties.

FEES.

The Tuition Fee, except for the last three years in the Towne Scientific School and for the course in Music, is one hundred and fifty dollars a year, payable to the Treasurer of the University in two instalments, on October 1st and February 1st. For the last three years in the Towne School, it is two hundred dollars a year, payable as above; for the course in Music, thirty dollars a year. An additional fee of five dollars is charged to all students, except those in Music, for the maintenance of the department of Physical Culture. The Graduation Fee is twenty dollars. A Certificate Fee of ten dollars is payable by special and partial students on the completion of their course. For the Master's degree the graduation fee is ten dollars. A deposit of twenty dollars is required from all students in the chemical laboratories, repayable at graduation (or when the student leaves the University), less the cost of apparatus broken or not returned.

ACCOMMODATIONS.

Good board can be had near the University at from five to seven dollars a week; and a list of recommended boarding-houses can be seen on application to the Rev. Jesse Y. Burk, Secretary of the Board of Trustees, at the University.

* This course consists chiefly of Readings, with critical commentary.
EXPENSES.

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<th>Item</th>
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<tr>
<td>Board, thirty weeks*</td>
<td>$150 00</td>
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<td>Tuition (according to Department and Year of the Course)</td>
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<td>Text-books</td>
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SCHOLARSHIPS.

I. THE PENN SCHOLARSHIPS, two in number, are filled by the Governor of the State from time to time as vacancies occur. They exist by virtue of a privilege reserved by Thomas Penn, Proprietary of Pennsylvania.

II. A limited number of Free Scholarships (about five in each class) are granted to deserving and needy students in this Department, under the following regulations:

Each candidate must present written testimonials to the Dean of the Faculty, at or before the entrance-examinations in June or September. He must pass these examinations, or (in case he is already in the classes) the annual examinations, with credit. He will then be recommended for admission to the proper committee of the Board of Trustees. The scholarships are granted for one year only, renewable by the decision of the committee, on the recommendation of the Dean.

III. THE PUBLIC SCHOOL PRIZE SCHOLARSHIPS.—Under a contract with the City of Philadelphia, Fifty Free Scholarships have been permanently established in the University for the benefit of pupils from the Public Schools of the city. The candidates for these scholarships are sent up by the Board of Public Education to the annual examinations for admission, in the month of June. They are examined at the same hours and on the same subjects as other candidates, but not necessarily on the same papers. The scholarships are bestowed upon those of their number (not exceeding the number of existing vacancies) who reach the highest grade in their examination, provided that grade be at least sixty-five out of a possible hundred.

Of these,—

THE BENJAMIN FRANKLIN SCHOLARSHIPS, three in number, and the SAMUEL V. MERRICK SCHOLARSHIP have been endowed.

* The session in some of the Departments is from five to nine weeks longer.
IV. The income of The Bloomfield Moore Fund is appropriated to enable women (not exceeding six in any year) who are teaching, or who propose to teach, to receive free instruction in the subjects open to the public.

ANNUAL EXAMINATIONS

Are held in the month of January, and, for the Senior Class, in May, for the lower classes, in June. At the end of each term, students who attain a certain standing are classed as "distinguished." Students shown by their term-average to be deficient in any of their studies may be conditionally attached to their class, until the 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, the student may be dropped from the rolls.

PRIZES.

I. THE FACULTY PRIZES:

1. A prize of twenty dollars for the best Essay in Intellectual and Moral Philosophy by a member of the Junior Class. Subject: The "Meditations" of Des Cartes.

2. A prize of twenty dollars for the best examination on the Oration of Æschines contra Ctesiphontem, to be read with the Professor of Greek by members of the Junior Class.

3. A prize of ten dollars for the best examination by a member of the Freshman Class on Greek Prose Composition with the Accents. The examination will be on Arnold's Greek Prose Composition, from the Relative to the end of the book.

4. A first prize of fifteen dollars, and a second prize of ten dollars, for the best examination on the Lectures on Quaternions given to the Voluntary Junior Class.

5. A prize of thirty dollars for the best English Essay in History and English Literature by a member of the Senior Class. Subject: Colbert.

6. A prize of twenty dollars for the best English Essay by a member of the Junior Class. Subject: Wellington.

7. A prize of fifteen dollars for the best Declamation by a member of the Sophomore Class.

8. A first prize of fifteen dollars, and a second prize of ten dollars, for the best special examinations in the Elements of Latin
Prose Composition, by Freshmen on entering College. The examinations must reach a satisfactory standard of excellence. In 1885, they will be upon the first fifty-five exercises in *Arnold's Latin Prose Composition*. Certificates will be presented to all competitors whose examinations reach a satisfactory standard.

9. Two prizes of the same value as those offered for Latin Prose Composition for the best special examinations in Greek Prose Composition. In 1885, the examination will be on *Jones's Greek Exercises*, with the Accents.

10. A prize of twenty dollars to a member of the Scientific Classes for improvement in Drawing, and general good conduct and application.

II. The "Henry Reed Prize," founded by the Alumni of the University in memory of Professor Henry Reed, for the best English Essay by a member of the Senior Class (Department of Arts). It entitles the successful competitor to one year's interest on six hundred dollars (Philadelphia City Loan), and to an accompanying Diploma of Merit. The essays must be handed to the Dean for transmission to the Board of Trustees by the first day of May. Subject: *Carlyle*.

III. The Society of the Alumni Prizes:

1. A prize for the best Latin Essay, by a member of the graduating class. It entitles the successful competitor to one year's interest on nine hundred dollars (Philadelphia City Loan). The essays must be handed to the Dean by the first day of May, for transmission to a Committee of Examiners appointed by the Society.

2. A prize for the best Original Declamation by a member of the Junior Class. It entitles the successful competitor to one year's interest on three hundred dollars (Philadelphia City Loan).

IV. A prize, founded by Henry La Barre Jayne, of the Class of 1879, for the best English Composition by a member of the Freshman Class. It entitles the successful competitor to one year's interest on two hundred dollars. Subject: *William Penn*.

V. "The Joseph Warner Yardley Memorial Prize," founded by the Class of 1877, in memory of their classmate, for the best thesis in Political Economy by a member of the Senior Class. It entitles the successful competitor to one year's interest on five hundred dollars, and to an accompanying Diploma of Merit. Sub-

VI. A prize founded by D. Van Nostrand, Esq., for the member of the Junior Class in Civil Engineering who attains the highest general average of scholarship. It consists of certain technical works.

LIBRARIES.

The Library contains (1) The Wetherill Library of Works on Chemical Science; (2) the Colwell Library of Works on Social Science, one of the most complete in the world in its own department; (3) the Carey Library, comprising the library of the late Henry C. Carey, especially rich in the department of statistics; (4) the Allen Libraries of Classical Literature, Bibliography, Shakspeare, and Military Science; (5) the Rogers Library of Civil Engineering.

Besides these, there is a large collection of works on History, Science, and General Literature, some of them the gifts of the friends of the University during the last century (Benjamin Franklin, Dr. Richard Peters, Louis XVI.). The income of the Tobias Wagner Library Fund is expended in the purchase of books in the department of History. The Libraries of the Literary and Scientific Societies are of considerable value.

SOCIETIES.

The Philomathean (Literary) Society, founded in 1813, holds meetings weekly during the college-year, in its rooms at the University. All undergraduates of the College Department are eligible to membership. The order of exercises includes orations, essays, and a debate, besides the usual general business, which affords excellent practice in the principles of parliamentary law. A large and valuable library is owned by the Society.

The Scientific Society holds weekly meetings at its rooms in the University throughout the college-year. All undergraduates of the University are eligible to membership. Scientific essays are read, discussions are held, and a general comparison of observations and experiments is had. Besides a considerable scientific library, large collections of minerals, fossils, ornithological specimens, and other objects of scientific interest are owned by the Society. A course of lectures, under the management of the Society, is delivered annually.
THE COURSE IN ARTS.

ENTRANCE EXAMINATIONS.

For the Freshman Class, candidates are examined in—


ENGLISH.—Grammar and Composition. Abbott's How to Parse or Whitney's Essentials of English Grammar indicates the amount required in Grammar. The subject of composition will be taken from the last-named of the following books, all of which must have been read by each candidate: viz., Milton's Comus, Irving's Conquest of Granada, Hawthorne's Marble Faun, and Macaulay's History of England, Chaps. VII. to XII. (inclusive).

In 1886 and thereafter, the examination in Composition will include a paper on the first sixty-three pages of Abbott's How to Write Clearly. The subject of composition in 1886 will be taken from the last-named of the following works, all of which must have been read by each candidate, viz: Macaulay's History of England, Chaps. VII. to XII. (inclusive), Hawthorne's Marble Faun, Froude's Essay on Education (Short Studies, 2d Series), and Scott's Marmion.

GEOGRAPHY.—Ancient and Modern Geography. (Mitchell's New Ancient Geography and Ancient Atlas are recommended.)

HISTORY.—Ancient History (Freeman's General Sketch of History, Chaps. I.–VI.). History of the United States. (Higginson or Scudder is suggested.)


For Advanced Standing, candidates must pass satisfactorily in all the subjects pursued by the lower class or classes.

The examinations are held in June and September. Circulars stating the days and the subjects of examination for each day can be had, after April 1st, on application to Mr. J. B. Webster, Clerk to the College Faculty.

COURSE OF STUDY.

FRESHMAN CLASS.

GREEK.—Xenophon's Hellenics. Æschylus. Arnold's Greek Prose Composition, completed.

LATIN.—Selections from Livy and Horace's Satires.


HISTORY.—Freeman's General Sketch of History.

SOPHOMORE CLASS.

PHILOSOPHY.—Logic. (Jevon’s Lessons.)

GREEK.—Thucydides (Sicilian Expedition). Euripides or Aristophanes. Greek Composition.

LATIN.—Tacitus (Agricola, Germania, or Annals). Cicero (De Senectute or De Officiis).

ENGLISH.—McElroy’s Structure of English Prose. Lounsbury’s English Language. Compositions and Declamations.

MATHEMATICS.—Wentworth’s Plane and Spherical Trigonometry, with applications. Bowser’s Analytical Geometry.

PHYSICS.—Mechanics.

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

JUNIOR CLASS.

REQUIRED,—

PHILOSOPHY.—Ethics. Murray’s Outlines. Hamilton’s Philosophy.

PHYSICS.—Sound, Heat, Light, Electricity. (Stewart’s Physics.)

ENGLISH.—Compositions and Declamations.

HISTORY.—History of English Literature.

ELECTIVE,*—

GREEK.—Sophocles. Lysias or Isocrates. Theocritus or Pindar.

LATIN.—Selections from Juvenal. Cicero (De Officiis, De Finibus, or De Amicitia).


FRENCH.—Corneille and Racine.

HISTORY.—Johnson’s American Politics (with a critical study of Pamphlets and Political Documents).

SENIOR CLASS.

REQUIRED,—


ASTRONOMY.—Newcomb’s Astronomy.

HISTORY.—History of English Literature. (Lectures.)

ENGLISH.—Compositions and Original Declamations.

SOCIAL SCIENCE.—International Law (Lectures). Thompson’s Elements of Political Economy.

ELECTIVE,—

GREEK.—Demosthenes de Coronâ. Plato (Apology and Crito, or Phædo).

LATIN.—Cicero (Tuscullane), or Lucretius (Selections). Horace (Ars Poetica). Reading at Sight.


GERMAN.—Goethe’s Torquato Tasso. Lessing’s Dramaturgie. Reading at Sight. Schiller’s Poems. Translations into German. History of German Literature.


PURE MATHEMATICS.—Integral Calculus.

* In Junior and Senior years, Greek is elective with German, Latin with French, and Pure Mathematics with History and English.
PARTIAL COURSES.

A student may take any portion of the above course which the Faculty may sanction; but admission to a partial course is to be considered an exceptional arrangement, and may be withdrawn when deemed expedient. At the termination of such a course, satisfactorily pursued, a Certificate will be awarded, stating what studies have been pursued.

DEGREES.

The Degree of Bachelor of Arts is conferred upon students who complete the full course.

The degree of Master of Arts is conferred on Alumni of the University, Bachelors of Arts of three years' standing, who have pursued liberal studies since their graduation, and who present a satisfactory Thesis to the Faculty. This Thesis must be sent to the Dean by the first Friday in April.

For further information address Prof. E. O. Kendall, L.L.D., Dean of the Faculty.

THE TECHNICAL COURSES IN THE TOWNE SCIENTIFIC SCHOOL.

AIM OF THE SCHOOL.

The aim of this School, founded in 1872 (and endowed in 1875 by John Henry Towne, Esq., of Philadelphia), is to give, in addition to a liberal education, a thorough professional training in the following subjects:

I. CHEMISTRY AND MINERALOGY.
II. GEOLOGY AND MINING.
III. CIVIL ENGINEERING.
IV. DYNAMICAL ENGINEERING.
V. MECHANICAL DRAWING AND ARCHITECTURE.

The Course extends through five years.

ENTRANCE EXAMINATIONS.

For the Freshman Class candidates are examined in the following subjects:

ENGLISH.—Grammar, Composition, and Etymology (Greek and Latin Roots). Abbott's How to Parse or Whitney's Essentials of English Grammar indicates the amount required in Grammar, and Sargent's Manual the amount in Etymology. The subject of composition will be taken from the last-named of the following books, all of which must have been read by each candidate, viz.: Milton's Comus, Irving's Conquest of Granada, Hawthorne's Marble Faun, and Macaulay's History of England, Chaps. VII. to XII. (inclusive).

In 1886 and thereafter, the examination in Composition will include a paper on the first sixty-three pages of Abbott's How to Write Clearly. The subject of composition in 1886 will be taken from the last-named of the following works, all of which must have been read by each candidate, viz.: Macaulay's History of England, Chaps. VII. to XII. (inclusive), Hawthorne's Marble Faun, Froude's Essay on Education (Short Studies, 2d Series), and Scott's Marmion.

FRENCH.—Harrison's French Syntax (first forty-five Practical Exercises), and Télémagique (Three Books).

GERMAN.—Ahn's Method, Fischer's edition (First Course, pp. 1-100 and 135-140; Second Course, pp. 1-64).

GEOGRAPHY.—Modern Geography.

HISTORY.—Ancient History (Freeman's General Sketch of History, Chaps. I.-VI.). History of the United States. (Higginson or Scudder is suggested.)

For Advanced Standing, candidates must pass satisfactorily in all the studies pursued by the lower class or classes.

SPECIAL COURSES.

Special students, not candidates for a Degree, may be received into any of the courses, when the Professor in charge of that course is satisfied of their competency to profit by his instruction. They take all the studies that the Professor thinks necessary to complete the course, together with such others as the Faculty may require. At the end of the course, upon passing the examinations required, and presenting a satisfactory thesis, they receive a Certificate of Proficiency. Application should be made to the Professor in charge of the course which the student wishes to take, and definite arrangements may be made with him,—subject, however, to the approval of the Faculty.

METHODS OF STUDY.

For the first two years, all studies are required, and are the same for all students. The technical courses begin with the Junior year.

Instruction is thoroughly practical. It is given by lectures and recitations, and in the Laboratorics and the Drawing and Model Rooms. These are open to the students all day, and work is required of the higher classes in the afternoon as well as in the morning hours.
In Chemistry, the Juniors have a course of fully illustrated Lectures, covering the whole ground of Inorganic Chemistry, and another on Mineralogy and Metallurgy. At the same time, they begin work in the Analytical Laboratories. In the Senior and Post-Senior years, studies in Qualitative and Quantitative Analysis and Lectures on Organic Chemistry are combined with the making of Chemical Preparations and practical work in Metallurgy and other Technical subjects.

Students in Geology and Mining Engineering are trained with special reference to the management of mines. The practical study of rocks and minerals in the Laboratory and Museum, as well as in the field; the training in the construction and management of ore-concentrating machinery; the illustrative discussion of difficult problems in the development of mines, such as the rectification of faults in the veins and strata; the drainage and ventilation of mines;—these and similar questions are considered the most essential features of the course. Importance is attached rather to the economical occurrence and distribution of ores throughout the United States, than to the discussion of theories and hypothetical opinions.

Students in Civil Engineering are instructed by recitations, lectures, and practical work, in order to develop the qualities most required of the practical engineer. Afternoons and Saturdays are devoted to drawing and practical work in the shop, or to surveying or visiting public or private works, manufactories, etc.

In visiting shops and manufactories, students are required to collect all the practical information possible, and to 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.

The field practice embraces the various problems in chain surveying, the measurement of areas, and the computation of results; line surveys and location, cross sections and levels for estimating quantities, hydrography, topography with the plane-table, and the solution of such geodetic problems as relate to the orientation of maps.

The Course in Drawing includes the projection of maps; various methods of representing Topography; conventional signs; prob-
lems in shades, shadows and perspective; details of framing; com-
position; general drawings for constructions in wood, stone, and
iron; special designs; working drawings for modelling; plotting;
drawing of profiles and cross sections and for theses.

Students of DYNAMICAL ENGINEERING are required to give par-
ticular 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 and 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 elsewhere.

Special attention is given to the execution of drawings, first from
designs and models, and afterwards from calculations; and also to
the methods of casting and working in iron, and of making and
using machine tools.

Adequate instruction is also provided in Marine Engineering and
Naval Architecture.

Weekly visits of inspection will be made during two years of
the course to blast-furnaces, foundries, machine-shops, and iron and
steel rolling-mills.

The instruction in PHYSICS extends over three years. In the
Junior year the subjects treated are Sound, Heat, Light, and Elec-
tricity, the exercises consisting of lectures, illustrated by experi-
ments, with recitations. In the Senior year, special instruction is
given in Advanced Physics. Practical instruction in the Physical
Laboratory is given throughout the year. The course is optional,
and is intended for such students only as are competent to take it
with advantage.

LIBRARY.

The Rogers Engineering Library is composed of standard works
treating of drawing, mathematics, astronomy, physics, surveying
and explorations, technical works on roads, strength and properties
of materials, railroads, tunnels, canals, water supply, drainage,
arithmetic, mechanics, navigation, harbor improvements, and park
and landscape engineering; together with a valuable collection of
Reports of American, English, and French Engineering Societies,
periodicals, Coast Survey and hydrographic charts, maps, diagrams,
and drawings.
COURSE OF STUDY.

FRESHMAN YEAR.


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

HISTORY.—Freeman's General Sketch of History.

ENGLISH.—Prose Composition (Abbott's How to Write Clearly Welsh's Essentials of English).


SOPHOMORE YEAR.


PHYSICS.—Mechanics.


HISTORY.—


GERMAN.—Whitney's Reader and Short Studies.

FRENCH.—Modern Prose (continued). Molière.

JUNIOR YEAR.

STUDIES PURSUED BY THE WHOLE CLASS.

CHEMISTRY.—Inorganic Chemistry (Experimental Lectures). Exercises in Analytical Chemistry, with recitations.

PHYSICAL SCIENCE.—Sound, Heat, Light, and Electricity.

MINERALOGY.—Crystallography and General Description of Minerals.

MATHEMATICS.—Descriptive Geometry.


FRENCH.—Racine or Corneille. Molière.

ENGLISH.—Compositions and Declamations.

1. Studies pursued by the Chemical Section.

MINERALOGY.—Special description of species, and practical exercises in determining minerals by their physical properties.

BOTANY.—Structure of Woods.

2. Studies pursued by the Geological and Mining Section.

GEOLOGY.—Elements of Geology. Construction of parts of mines, of mining machinery, etc., from notes and sketches.

MINERALOGY.—Same as 1st section.

BOTANY.—Structure of Woods.

MATHEMATICS.—Differential Calculus.
3. Studies pursued by the Civil Engineering Section.

ENGINEERING.—Railroad Location. Graphical Statics.

MATHEMATICS.—Differential Calculus.

DRAWING.—Topographical Charts. Problems in map projections. Perspective. Details of frames, joints, etc.

ARCHITECTURE.—Classical Architecture.

SURVEYING.—Field Practice; including Chain Surveying, Use of Compass, Transit and Plane Table in measuring lines and areas, Traversing, Location of Roads, Drains, etc., on Topographical Charts. Recitations from Gillespie's Land and Higher Surveying, and Earthwork Formula.

4. Studies pursued by the Dynamical Engineering Section.

MATHEMATICS.—Differential 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; determinations of specific gravity; use of Hydrometers, Manometers, Gauges, etc. The Equilibrium of Funicular Structures.

DRAWING.—Copies of bolts and nuts; riveting; 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, glands, etc. etc.

ENGINEERING.—Graphical Statics.

5. Studies pursued by the Architectural Section.


MATHEMATICS.—Differential Calculus.

ENGINEERING.—Graphical Statics.

SENIOR YEAR.

STUDIES PURSUED BY THE WHOLE CLASS.

PHYSICAL SCIENCE.—Special Advanced Physics.

ASTRONOMY.—Newcomb's Astronomy.

PHILOSOPHY.—Atwater's Logic. Intellectual and Moral Philosophy.

ENGLISH.—Compositions and Declamations.

HISTORY.—History of English Literature (Lectures).

DESCRIPTIVE AND DETERMINATIVE MINERALOGY.


1. Studies pursued by the Chemical Section.


Qualitative Analysis by the blowpipe, in connection with reactions in the humid way for the rapid determination of Minerals and Ores.

Theoretical Chemistry.

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 rarer elements and organic constituents of bodies. Introduction to Quantitative Analysis. Use of the spectroscope in qualitative determinations.

2. Studies pursued by the Geological and Mining Section.

LITHOLOGY AND PALEONTOLOGY.—Examination and determination of Rocks and of Fossil Organic forms.
DRAWING AND MODELLING.
DYNAMICAL ENGINEERING.—Statics and Dynamics of rigid bodies. Determination of centres of gravity; moments of flexure, rupture, etc. Practical exercises in constructing and drawing machines.
SURVEYING.—At the beginning of summer vacation a complete mine survey will be executed in the coal regions.

ANALYTICAL CHEMISTRY, METALLURGICAL PRACTICE AND ASSAYING.—The same as the Chemical Section.

MATHEMATICS.—Differential and Integral Calculus.
Field excursions into the neighboring mineral districts for the demonstration of practical Geology.

3. Studies pursued by the Civil Engineering Section.

MATHEMATICS.—Differential and Integral Calculus.
DRAWING.—Shades, Shadows, and Perspective; Platting field notes; Engineering Construction and Stereotomy.
SURVEYING.—Spherical Projections, a complete course in practical topography, including special instruments and field sketching. 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.


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 Dynamical Engineering Section.

MATHEMATICS.—Differential and Integral Calculus.
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, illustrated by working models.
DRAWING.—From the model and original design.

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

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

MATHEMATICS.—Differential and Integral Calculus.


ENGINEERING.—Same as Section 3, so far as to include strength and properties of materials.

POST-SENIOR CLASS.

STUDIES PURSUED BY THE WHOLE CLASS.

ENGLISH.—Compositions. Declamations.

HISTORY.—Lectures.

SOCIAL SCIENCE.—International Law. Thompson’s Elements of Political Economy.

GEOLOGY.—Structural Geology of North America with reference to that of Europe, and with the principal minerals and fossils, distribution of metals and fuels. History of Geology.

1. Studies pursued by the Chemical Section.

Theoretical Chemistry.

Lectures on the Applications of Organic Chemistry in the Useful Arts.


Determination of the constituents of cast-iron and steel. Practice in Agricultural Chemistry, and Analysis of Manures.


Practical determination of minerals by their physical properties.

2. Studies pursued by the Geological and Mining Section.

GEOLOGY.—The Ore and Coal deposits of the United States in their topographical and structural relations.

MINING ENGINEERING.—Ventilation and Drainage of Mines. Description and construction of Mining Machinery.

DYNAMICAL ENGINEERING.—Motors and Principles of Mechanism.

SURVEYING.—The survey made during the previous vacation will be mapped.

METALLURGY AND ANALYTICAL CHEMISTRY.—Same as Section 1.

PRACTICE IN LITHOLOGICAL DETERMINATION by means of microscopic sections and microchemical tests.

CONSTRUCTION AND APPLICATION OF GEOLOGICAL SECTIONS relating to problems of mining.
3. Studies pursued by the Civil Engineering Section.


DRAWING.—Details of Engineering Works, Composition, Plans, Sections, Elevations; Profiles and Cross-sections. Working drawings.


4. Studies pursued by the Dynamical Engineering Section.


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

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

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


DEGREES.

The degree of Bachelor of Science is conferred on students who complete any one of these professional courses, in addition to the studies pursued by the whole class during the five years of the curriculum, and who present a satisfactory thesis, with the special degree of Mining Engineer, Civil Engineer, Mechanical Engineer, Architect, or Practical Chemist.

For further information address Professor E. O. Kendall, LL.D., Dean of the Faculty.
THE COURSE IN PHILOSOPHY.

AIM OF THE COURSE.
This course provides instruction in Latin, English, French, and German, Mathematics, Natural Science, and Biology. During the Junior and Senior years, a large amount of time is devoted to Biological studies, with practical laboratory work, under Prof. Joseph Leidy, the Director of the Biological Department, and the other members of the Biological Faculty. The new Biological Building, with its lecture-room, laboratories for general and special work, its cabinets, herbaria, library, and abundant supplies of material for practical work, affords ample facilities for these studies.

ENTRANCE EXAMINATIONS.
For the Freshman Class, candidates are examined in all subjects required for admission to the Towne Scientific School, and in the Latin required for the Course in Arts, or its equivalent.
For Advanced standing, candidates must pass satisfactorily in all the subjects pursued by the lower class or classes. The examinations are held in June and September. Circulars stating the days and the subjects of examination for each day can be had after April 1st, on application to Mr. J. B. Webster, Clerk of the College Faculty.

COURSE OF STUDY.

FRESHMAN CLASS.

LATIN.—Selections from Livy.
FRENCH.—Modern French Prose.
HISTORY.—Freeman's General Sketch of History.
DRAWING.—Freehand Drawing.

SOPHOMORE CLASS.

LATIN.—Horace (Selected Odes or Satires).
ENGLISH.—Elements of Rhetoric (Lectures). Compositions and Declamations. Lounsbury's English Language.
FRENCH.—Modern French Prose. Molière.
HISTORY.
MATHEMATICS.

PHYSICS.—Mechanics.

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

JUNIOR CLASS.

ENGLISH.—Critical Reading of English Authors with Special Reference to Composition. (Mino's Manual.)

HISTORY.


PHYSICS.—Sound, Heat, Light, Electricity. (Stewart's Physics.)

CHEMISTRY.—Inorganic Analytical Chemistry.


MAMMALIAN ANATOMY.—(Lectures and laboratory exercises.) Mivart's The Cat. Wilder's Anatomical Technology.


SENIOR CLASS.


ASTRONOMY.—Newcomb's Astronomy.

GEOLOGY.—Systematic and Stratigraphic Geology.

MINERALOGY.—Descriptive Mineralogy.

BOTANY.—I. (a) Medical Botany; the plants used in Medicine, adulteration of foods and drugs, or (b) Vegetal Morphology. 2. The life histories of plants. (Practical exercises.) Bessey's Botany, Sach's Textbook of Botany.

ZOOLOGY.—The outlines of General Zoology and Comparative Anatomy. The classification and distribution of animals. (Lectures.) Claus' Lehrbuch der Zoologie. Gegenbauer's Comparative Anatomy.

ANIMAL HISTOLOGY.—(Lectures and laboratory exercises on Microscopic Anatomy.) Schäfer's Histologie and the Microscope.

EMBRYOLOGY.—(Lectures and laboratory exercises and the development of the chick.) Foster and Balfour's Elementary Embryology.

PHYSIOLOGY.—The Elements of Physiology. (Lectures and practical work.) Foster and Langley's Elementary Physiology. Sanderson's Physiological Text-book.

At the close of Sophomore Year, students may elect to enter the Junior Class in the Course in Arts or in the Wharton School. The Degree of Bachelor of Philosophy is conferred upon students who complete the full course.

Instruction is given by lectures and recitations, and in the Laboratories of the College and Biological buildings. These latter are open all day, and in the higher classes, a part of the work is done...
in the afternoon. Latin, History, Philosophy, Mathematics, and the Physical Sciences are assigned in proportions suitable to the general purpose of the Course. French and German receive special attention in the first two years, with a view to the effective use of text-books in these languages in the Junior and Senior years.

The study of the English Language and Literature extends over the four years, and is intended to be thorough and critical. In Chemistry, the Sophomores attend illustrated lectures on Inorganic and Organic Chemistry, followed in the Junior year by a course of analytical work in the Laboratory.

The instruction in General Biology is in the form of practical laboratory exercises accompanied by explanatory lectures, and comprises the study of the structure, functions, and development of a series of plants and animals. The student in this manner gains a general knowledge of the vital phenomena manifested in the different forms of living matter before beginning the study of either Botany or Zoology. The series studied are, (1) Amoeba, Paramaecium, Vorticella, Bacterium, Yeast-plant, and Protococcus, as unicellular forms of life; (2) Moulds, Chara, Braken-fern, and Bean-plant as exhibiting the structure and activities of plants. (3) These compared with Sponge, Hydra, Starfish, Earthworm, Leech, Cyclops, Crayfish, Cockroach, Clam, Squid, Amphioxus, Skate, Cod, Frog, Snake, Terrapin, Pigeon, and Rabbit as animals.

The course in Mammalian Anatomy consists of lectures on the methods of anatomical investigation, a detailed description of the anatomy of one of the higher mammals, and comparisons with human anatomy. In the laboratory the class carefully dissects the cat.

The work in Botany, during the Junior year, consists in exercises in the determination and classification of plants, and begins in the second term after the student has finished the first half of the course in General Biology, and has acquired a sufficient knowledge of vegetal structure and physiology. In the first term of the Senior year some choice is permitted. The student may take up Medical Botany, if intending to study medicine, or may devote his attention to more advanced work in plant structure. During the second term the class studies the life histories of plants, their development, growth, and reproduction.

General Zoology and Comparative Anatomy embrace the study
of the differences between organic and inorganic bodies; animals
and plants; individuals and colonies; cells and cell aggregates; a
short account of the tissues; growth and division of labor; organs,
their structure; reproduction, general facts of embryology; meta-
morphosis, alternation of generation, polymorphism and heterog-
ony; systems of classification; the Darwinian theory; species and
varieties; a succinct account of the various groups of animals, their
anatomy, development, and distribution.

Histology is taught, during the first term in the Senior year,
mainly by practical work with the microscope. The structure of
animal tissues and organs and the methods of examining and pre-
paring microscopic specimens are thoroughly studied.

Embryology is taught in the second term, and the student is
instructed in the processes by which the complex tissues and organs
are built up from the simple egg. The instruction consists in lec-
tures on the Embryology of the chick, with laboratory exercises in
the preparation and study of the principal stages of development.

The instruction in the elements of Human and Comparative
Physiology embraces the study of the phenomena of nutrition, of
food-stuffs and digestion; circulation; respiration; reproduction;
muscular function, including locomotion, speech, etc.; and the
functional activity of nerve and brain.

THE COURSE IN FINANCE AND ECONOMY
IN THE
WHARTON SCHOOL.

AIM OF THE SCHOOL.

This School aims to give a thorough general and professional
training to young men who intend to engage in business or to
manage their own or other's property. It also equips more com-
pletely persons who are preparing for the profession of law, for
journalism, or for public service. The Founder of the School
has remarked that "a great boon would be bestowed upon the
nation if its young men of inherited intellect, means and refine-
ment could be drawn into careers of unselfish legislation and
administration; and, as the possession of any power is usually accompanied by taste for its exercise, it is reasonable to expect that adequate education in the principles underlying successful civil government would aid in producing such a class of men."

The Wharton School, therefore, has a well-defined aim not possessed by any other educational institution. Its instruction is of immediate practical importance to persons who are looking forward to a business career, or who wish to know how to manage their own affairs; to legal students desirous of acquiring the best preparation possible for successful practice, and to those who are pressing into the ranks of journalism, such instruction is scarcely less important; while to persons who aim to serve the public in a legislative or administrative capacity, it should be indispensable. The success of the lawyer is often due as much to an extensive acquaintance with business, as to a knowledge of legal principles. For those who are desirous of becoming proficient in economic and financial science—especially for those who expect to teach political science—the Wharton School provides a more complete course than is furnished elsewhere. By adding a comprehensive knowledge of business to an extended knowledge of economic principles, the foundation is laid for a correct political economy, which must command the respect of those thoughtful business men who are skeptical concerning the worth of the political economy taught at the present time in most American colleges.

LIBRARY.

The University possesses one of the largest and most complete libraries of works relating to finance and political economy existing in any educational institution of the world. The foundation was laid by the great collection of the late Stephen Colwell, comprising between seven and eight thousand volumes, and including nearly every important book on these subjects in the English, French, and Italian languages, besides many in German. This has been supplemented (1) by the gift from Mr. McCalmont, of London, of a collection of about three thousand English pamphlets, covering the period from the close of the seventeenth century to our own time, and bound in chronological order; (2) by the bequest of the library of the late Henry C. Carey, which includes many works and pamphlets that appeared since Mr. Colwell's death, and
is especially rich in statistical literature, European government reports, and the like.

Original research by the students, under the direction of the professors, is a part of the work of the School.

**COURSE OF STUDY.**

The course of study extends through four years, and embraces the following studies.

**FRESHMAN YEAR.**

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

**ENGLISH.**—Prose Composition. (Abbott's *How to Write Clearly.* Welch's *Essentials of English.*)

**FRENCH.**

**GERMAN.**

**MATHEMATICS.**

**SOPHOMORE YEAR.**

**HISTORY.**—English and American History.

**ENGLISH.**—Rhetoric (McElroy's *Structure of English Prose.* Lounsberry's *English Language.*)

**FRENCH.**

**GERMAN.**

**MATHEMATICS.**

**PHYSICS.**—Mechanics.

**CHEMISTRY.**—Inorganic Chemistry. (Lectures.)

**JUNIOR YEAR.**

**FIRST TERM.**

**POLITICAL SCIENCE.**—Theory of the State. Public Functions. (Lectures and Textbook. Mulford's *Nation.* Selected portions of Bagehot's *Physics and Politics.* Crane and Moses's *Comparative Politics.*) [2.*]


**POLITICAL ECONOMY.**—Thompson's *Elements of Political Economy.* Walker's *Political Economy.* [2.]

**ENGLISH.**—Critical Study of Prose Writers with Special Reference to Composition. (Minto's *Manual.*) [2.]

**LOGIC.**—Jevon's *Logic.* [2.]

**PHYSICAL SCIENCE.**—Elementary Physics, Sound and Heat. (Lectures.) [4.]


**INTERNATIONAL LAW.**—Lectures. (Optional.)

* The numeral indicates hours per week.
SECOND TERM.


AMERICAN POLITICS.—Jackson to Arthur. (Sumner's *Jackson.* J. F. Clark's *Anti-Slavery Days.* ) [3.]

POLITICAL ECONOMY.—Thompson and Walker completed. Laveleye's *Éléments d'Économie politique.* [2.]

ENGLISH.—(Same as first term.) [2.]

MORAL PHILOSOPHY.—Whewell's *Elements.* [2.]

PHYSICAL SCIENCE.—Elementary Physics. Light and Electricity. [4.]

BOOK-KEEPING.—Exposition of Systems of Book-keeping in Factories, Banks, and other Corporations, and in Municipalities. (Lectures.) [4.]

SENIOR YEAR.

FIRST TERM.

EXPOSITION OF LEADING PRINCIPLES OF POLITICAL ECONOMY AND THEIR APPLICATIONS.—Compositions and Lectures. [3.]

MERCANTILE PRACTICE.—Lectures. Bolles's *Practical Banking.* [4.]

AMERICAN CONSTITUTIONAL HISTORY.—First period, 1789-1825. Lectures. (Von Holst's *Constitutional History of the United States.* Young's *American Statesman.* ) [3.]


ENGLISH CONSTITUTIONAL HISTORY.—Stubb's *Constitutional History of England.* (Optional.)

SECOND TERM.

EXPOSITION OF LEADING PRINCIPLES OF POLITICAL ECONOMY AND THEIR APPLICATIONS.—Composition and Lectures. (Continued.) [3.]

MERCANTILE LAW.—Parsons's *Laws of Business.* [4.]

RAILROADS.—Kirkman's *Railway Expenditures, their Extent, Object, and Economy.* (Ten Lectures.)

AMERICAN CONSTITUTIONAL HISTORY.—Second Period, 1825-1885. (Lectures and Text-books.) [3.]


CIVIL GOVERNMENT.—Principles and Comparative Methods of Public Administration—general and local. (Lectures.) [2.]

STATISTICS.—Principles and Methods of Statistical Science. (Ten Lectures.)

CONSTITUTIONAL LAW.—(Optional.)*

ROMAN LAW.—(Optional.)*

PREPARATION OF THESIS.

* These courses are given in the Law School, but are open to Wharton School students.
The course in the Freshman and Sophomore years is nearly parallel with that in the Towne Scientific School; but more attention is given to the study of History and less to Mathematics. Enough Mathematics, however, is required of all students to enable them to pursue satisfactorily their studies in Physics.

The instruction in political economy during the Junior year is that which is usually given to the junior and senior classes in colleges. During the Senior year instruction in this branch of knowledge is given through compositions and discussions by the class, followed by a review, exposition and application of principles by the professor who teaches the subject.

Instruction in European Finance comprises the history, and a description and comparison of the financial systems of the principal countries of Europe. American Finance comprises a history of the national, state and municipal systems, and a comparison of them with foreign systems.

The subject of Legislation and Administration is treated comparatively, including the practice of all the principal European countries and our own, beside the varying practice of the several States of the Union.

Instruction in Statistics embraces an investigation of the sphere and function of statistics, with practical training in the proper method of collecting and arranging them.

The course in American Politics, during the first term, covers the period from the formation of the Constitution to the close of Jackson's administration. This subject is studied with the aid of text-books and special works; and essays are required on collateral topics. The Senior year is devoted to the Constitutional History of the United States. Much of the work is done by the students in libraries. A series of lectures is given on the more important Constitutional questions, and essays thereon are prepared by the students and read in the class-room.

Instruction in Railroads pertains to their organization, cost of construction and operation, and their relation to other industries.

Mercantile Practice covers the usages and methods of business, the management of property and the administration of trusts, and is supplemented and completed by an exposition of the leading principles of Mercantile Law.
Practical Book-keeping is taught orally and by requiring each student to keep a set of books according to the most approved forms.

EXAMINATIONS FOR ADMISSION AND ADVANCED STANDING.

Candidates for admission to the Freshman class must pass the same examination as is required for admission to the course in Philosophy. Students in the Department of Arts, the Towne Scientific School or the Course in Philosophy who enter the Wharton School Course at the beginning of the Junior year, receive, at graduation, the degree of A.B., B.S., or Ph.B., according to the course from which they have come. Students from other colleges are admitted on the same conditions. Graduates in any course of colleges in good standing may enter the Senior Class without preliminary examination.

Students who do not desire to pursue the full course, and who are properly qualified, may take either a special or a partial course in any subject or subjects taught in the School.

DEGREES.

The degree of Bachelor of Philosophy (Ph.B.) is conferred after satisfactory examination on all who have pursued the four years' course, and on graduates in Arts of the University of Pennsylvania or of colleges of equal standing who have pursued the course in this School for the senior year.

Persons who are desirous of additional information, with the view of entering the School or of preparing therefor, are invited to confer with the Secretary, Professor Albert S. Bolles, who will give such advice and suggestions as are needful in each particular case.
### COURSES OF STUDY IN THE COLLEGE FACULTY.

Arabic Figures denote Hours per Week; Roman Numerals Special Courses in the T. S. S.

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1 Elective.  
2 Plus Original Work.  
3 Plus Saturday.  
4 Plus Machine Shop.
THE COURSE IN MUSIC.

The qualifications required to enter the department are, first, a knowledge of the rudiments of music, and, second, the ability to play on some instrument—preferably the piano or organ.

The course extends over two years. The year begins on the first Monday in October, and is divided into three terms of ten weeks each. The first year is devoted to Harmony, the second to Counterpoint and Composition.

Persons of both sexes are admitted. The fees are ten dollars ($10) for each term, payable in advance.

Students who take the whole course will receive a certificate to that effect, if in the judgment of the Professor their acquirements entitle them to it. At any subsequent time, they may receive the degree of Bachelor of Music (Mus. Bac.), on the following conditions:

1. They must be examined in Harmony, Counterpoint, and Composition, by three examiners appointed by the Professor, subject to the approval of the Provost; the examination to be oral or written, or both, at the discretion of the examiners.

2. They must submit to the examiners an original composition in the form of a cantata for solos and chorus, with an accompaniment of at least a quintette of string-instruments.

3. This composition must be of such length as to require at least twenty minutes for its performance; it must contain a four-part fugue; and the accompaniment must be independent, except in the fugue.

4. The composition must be accompanied by a written statement that it is the student's own unaided effort.

For detailed information, apply to Prof. H. A. Clarke, 223 S. 38th Street.
UNDERGRADUATES 1884-5.

POST-SENIORS.

TOWNE SCIENTIFIC SCHOOL.

3. Llywellyn Howard Jenks, do.
2. Lucien Vernon Leach, do.
3. Charles Elder Lindsay, do.

SENIORS.

DEPARTMENT OF ARTS.

Harrison White Biddle, Philadelphia.
Samuel Laurence Bodine, do.
George Rosengarten Bower, Riverton, N. J.
James Fry Bullitt, Philadelphia.
Marks Wilks Collet, Germantown.
Howard Lowe Cresswell, Philadelphia.
Naudain Duer, do.
Randolph Faries, do.
Leonard Finletter, do.
William Linton Landreth, do.
Robert Grier Le Conte, do.
Charles Lester Leonard, do.
Herman T. Lukens, do.
William Emott Maison, do.
Edward de Veaux Morrell, do.
George Gelbach Emanuel Neuber, Germantown.
William Woodbridge Noble, Philadelphia.
Joseph Allison Scott, Pottsville.
Henry Sheafer, Philadelphia.
George Ard Shoemaker, Andalusia.
Arthur Donaldson Smith, Philadelphia.
Henry Austie Smith, do.
David Porter Stoever, do.
William George Thomson, Germantown.
Samuel Welsh, 3d, Philadelphia.
John Rhea Barton Willing, Germantown.
Lewis Wynne Wister, Philadelphia.
Edward Yarnall, Overbrook.

TOWNE SCIENTIFIC SCHOOL.

3. Enoch Jones Acker, Chester Co.
1. William Henry Bower, Riverton, N. J.
1. George Howland Chase, do.
2. Samuel Williamson Cheyney, do.
3. Allen Brooks Cuthbert, Beverly, N. J.
3. Howard Godey, do.
3. Stephen Harris, Germantown.
2. John Lincoln Harvey, Ridley Park.
4. Herman Siegfried Hering, do.
1. Herman Herzog, Jr., do.
3. Thomas Hill Brinton Jacobs, Exton.
4. Wilmer Francis Lubbe, Conshohocken.
4. Lino Francesco Rondinella, Philadelphia.
do.
4. Francis Thibault, do.
4. Herbert Coleman Whitaker, do.
2. William Schmele Wolfe, do.

WHARTON SCHOOL OF FINANCE AND ECONOMY.

George Dennis Bright, Philadelphia.
Miers Busch, Jr., do.
William Wilson Carlile, Germantown.
Roland Post Falkner, Philadelphia.
Henry La Barre Jayne, A.B., do.
James Collins Jones, do.
David Milne, A.M., do.
Milton Cooper Work, A.B., do.

JUNIORS.

DEPARTMENT OF ARTS.

David Sands Brown Chew, Germantown.
James Burnet Crane, Rome, Italy.
George Christian Eisenhardt, Philadelphia.
William West Frazier, 3d, do.
William Thompson Graham, do.
James Biddle Halsey, do.
Crawford Dawes Hening, do.
Robert Murray Hogg, do.
George Quintard Horwitz, do.
John Chester Hyde, Jr., Bristol.
Edward Miller Jefferys, Philadelphia.
Samuel Stryker Kneass, Philadelphia.
Irvin Poley Knipe, Norristown.
George Petry, Frankford.
William Campbell Posey, Philadelphia. do.
Jacob Martin Rommel, Jr., do.
Edwin Jaquett Sellers, do.
Walter Moore Shaw, Norristown.
Frederick Thibault, Philadelphia. do.
Howard James Truman, do.
Joseph Price Tunis, do.
Thomas Holmes Walker, Philadelphia. do.
George Wilmer Wilgus, do.
Charles Baeder Williams, Hatboro'.
Charles Elmer Woodruff, Philadelphia. Camden, N. J.
Samuel Megargee Wright, Philadelphia.

TOWNE SCIENTIFIC SCHOOL.

4. Edgar Augustus Alcott, Mt. Holly, N. J.
2. Amos Peaslee Browp, Jr., Germantown.
1. Abram Trimble Eastwick, Wissahickon.
3. William Salter Freeman, Beverly, N. J.
2. Enon Major Harris, Jr., do.
3. Charles Herman Haupt, do.
3. Gerald Holsman, do.
3. Francis Emlen Hoskins, do.
2. James Harmer Knight, do.
4. Leon Kraft, do.
2. Jacob Lychenheim, do.
2. Percy McGeorge, Lower Merion.
3. Henry Jackson Mullen, do.
3. Edward Arnott Pearson, do.
3. Abraham Bunn Ross, Germantown.
2. Joseph Sailer, Jr., do.
3. Harry Randolph Stoops, do.
3. Earl Thomson, Camden, N. J.
| 3. | Henry Davis Todd, Jr. | Annapolis, Md. |
| 5. | William Daniel Weikel | Merch'tville, N. J. |
| 7. | Samuel Jennings White | do. |
| 8. | Edmund Wright, Jr. | do. |

WHARTON SCHOOL OF FINANCE AND ECONOMY.

Gustavus Adolphus Edward Kohler, do. Juniors, 70

SOPHOMORES.

DEPARTMENT OF ARTS.

<table>
<thead>
<tr>
<th>Name</th>
<th>City</th>
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<tbody>
<tr>
<td>David Werner Amram</td>
<td>do.</td>
</tr>
<tr>
<td>William Sinclair Ashbrook</td>
<td>do.</td>
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<tr>
<td>John Ashhurst, 3d</td>
<td>do.</td>
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<tr>
<td>William Francis Audenried</td>
<td>do.</td>
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<tr>
<td>Chauncey Ralston Baugh</td>
<td>do.</td>
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<tr>
<td>Joseph Spencer Brock</td>
<td>do.</td>
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<tr>
<td>Edgar French Brown</td>
<td>do.</td>
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<tr>
<td>Charles Tyler Cowperthwait</td>
<td>Chestnut Hill.</td>
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<tr>
<td>Edwards Sanford Dunn</td>
<td>Philadelphia.</td>
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<tr>
<td>George Fetterolf</td>
<td>do.</td>
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<tr>
<td>John Sims Forbes</td>
<td>do.</td>
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<td>George Harrison Frazier</td>
<td>do.</td>
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<tr>
<td>Frederic Wm. Wilson Graham</td>
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<tr>
<td>John McArthur Harris</td>
<td>Germantown.</td>
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<tr>
<td>Samuel Frederic Houston</td>
<td>do.</td>
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<tr>
<td>Oliver Huckel</td>
<td>Frankford.</td>
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<tr>
<td>Joseph Siegmund Levin</td>
<td>Philadelphia.</td>
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<tr>
<td>Walter Rodman Lincoln</td>
<td>do.</td>
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<tr>
<td>Walter Biddle Lowry</td>
<td>do.</td>
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<td>John Lynch</td>
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<tr>
<td>Christopher Magee, Jr.</td>
<td>Pittsburg.</td>
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<tr>
<td>Edward Alden Miller</td>
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<tr>
<td>James Alan Montgomery</td>
<td>West Chester.</td>
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<td>Hyland Clarke Murphey</td>
<td>Phenixville.</td>
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<td>William Romaine Newbold</td>
<td>Montclair, N. J.</td>
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<td>George Wharton Pepper</td>
<td>Philadelphia.</td>
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<tr>
<td>Washington Mallet-Prevost</td>
<td>do.</td>
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<td>Francis John Pryor, Jr.</td>
<td>do.</td>
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<tr>
<td>Theodore Wood Reath</td>
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<tr>
<td>Alexander Wilson Russell</td>
<td>do.</td>
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<tr>
<td>Robert Bowen Salter</td>
<td>do.</td>
</tr>
</tbody>
</table>
André William Séguin,
Henry Daniel Emanuel Siebott,
Henry Naglee Smaltz,
James Somers Smith, Jr.,
Witmer Stone,
George Flowers Stradling,
Charles Cooper Townsend,
William Stetler Wright,

TOWNE SCIENTIFIC SCHOOL.

Philadelphia.
New Orleans, La.
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FRESHMEN.

DEPARTMENT OF ARTS.

William Wordsworth Cleveland,  
Walter Budd Keen,  
Bradford Knight,  
Theodore William Kretschmann,  
Edmund Theophilus Kuendig,  
Stuart Douglas Lansing,  
James Barton Longacre,  
William Wilson Longstreh,  
Samuel Geo. Morton Montgomery,  
William Salter Porter,  
*John Hermann Raht,  
James Martin Raker,  
Horace Clark Richards,  
Randolph Potter Russell,  
John David Samuel,  
Lawrence Savery Smith,  
Carrow Thibault,  
Lightner Witmer,  

Philadelphia.  
do.  
do.  
Germantown.  
Reading.  
Burlington, N. J.  
Philadelphia.  
do.  
West Chester.  
Media.  
Philadelphia.  
do.  
do.  
do.  
do.  
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do. 
do.  

TOWNE SCIENTIFIC SCHOOL.

Frank Henry Bachman,  
James Cornell Biddle, Jr.,  
Henry Bennett Buck,  
Eugene Delano Cleaver,  
Caleb Frederick Cope,  
Tunis Augustus Craven,  
Francis Cadwallader Dade, Jr.,  
Julian Hiland Dewey,  
Harry John Doyle,  
Robert Edward Glendinning,  
Joseph Hildeburn Gumbes,  
George Brodhead Harris,  
Franklin Derstine Hartzell,  
Oliver Hough,  
Franklin Davinport Howell, Jr.,  
Sydney Emlen Hutchinson,  
Frederick Merwin Ives,  
Edgar Francis Jordan,  
Herbert Moses Kauffmann,  
Edwin Robert Keller,  
Edward Lukens Kennedy,  
Bertram Leopold,  
Minford Levis,  
Lewis Crozer Lewis,  
Jacob Frank Loeb,  
Adam Keith Luke,  
Howard Mellor,  
William Elton Mott,  

Philadelphia.  
do.  
do.  
do.  
do.  
do.  
Baltimore, Md.  
Berwyn Ch'ter Co.  
Philadelphia.  
do.  
do.  
do.  
do.  

Pottstown.  
Germantown.  
Sellersville.  
Philadelphia.  
do.  
do.  
do.  
do. 
do.  

Rome, Italy.  
Philadelphia.  
do.  
do.  
do.  
do.  
do.  

Chester.  
Philadelphia.  
Rockland, Del.  
Philadelphia.  
Burlington, N. J.

* Deceased.
<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>David Pacheco</td>
<td>Brazil</td>
</tr>
<tr>
<td>Horace Phillips</td>
<td>Philadelphia</td>
</tr>
<tr>
<td>William Thompson Plummer</td>
<td>do</td>
</tr>
<tr>
<td>Louis Frederick Psotta</td>
<td>do</td>
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<tr>
<td>Thomas Robinson Reaney</td>
<td>do</td>
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<tr>
<td>Albert Layton Register</td>
<td>do</td>
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<tr>
<td>Croft Register</td>
<td>do</td>
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<tr>
<td>Charles Everett Ross</td>
<td>Chester</td>
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<tr>
<td>Harry Sanderson</td>
<td>Thurlow, Del. Co.</td>
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<td>John Richard Savage, Jr.</td>
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<td>William James Smith</td>
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<tr>
<td>Isaac Starr, Jr.</td>
<td>do</td>
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<tr>
<td>William Caner Wiedersheim</td>
<td>do</td>
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<tr>
<td>John Edgar Williams</td>
<td>do</td>
</tr>
<tr>
<td>Edward Hand Williamson, Jr.</td>
<td>do</td>
</tr>
<tr>
<td>Maurice Davidson Wilt</td>
<td>Freshman, 69</td>
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**MUSIC.**

**SECOND YEAR.**

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Roland Wetherill Mott</td>
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</tr>
<tr>
<td>Elizabeth Gale Chance</td>
<td>do</td>
</tr>
<tr>
<td>Mary Elizabeth Davey</td>
<td>do</td>
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<tr>
<td>Jane Miller Wilson</td>
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**FIRST YEAR.**

<table>
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<tr>
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<tr>
<td>Francis Smith</td>
<td>Dover, Del.</td>
</tr>
<tr>
<td>Henry M. White</td>
<td>Philadelphia</td>
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**SPECIAL STUDENTS.**

**TOWNE SCIENTIFIC SCHOOL.**

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>2. Edward Sinclair Campbell, Jr.</td>
<td>Philadelphia, Campinas, Brazil</td>
</tr>
<tr>
<td>3. Arthur Gilluno Krug</td>
<td>Philadelphia</td>
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<tr>
<td>1. Harry Spencer Lucas</td>
<td>Marietta</td>
</tr>
<tr>
<td>3. David Rinehart Mchaffey</td>
<td>Philadelphia</td>
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<tr>
<td>1. Frederick Gad Myhlertz</td>
<td>Wilmington, Del.</td>
</tr>
<tr>
<td>1. Frank Roop Smith</td>
<td>Philadelphia</td>
</tr>
<tr>
<td>1. William Leeds Barker</td>
<td>do</td>
</tr>
<tr>
<td>1. John Myers</td>
<td>do</td>
</tr>
<tr>
<td>3. John Manuel Nobré</td>
<td>do</td>
</tr>
<tr>
<td>1. William Colladay Robinson, Jr.</td>
<td>do</td>
</tr>
<tr>
<td>3. Frederick Charles Joseph Smith</td>
<td>do</td>
</tr>
<tr>
<td>3. Paul Thompson</td>
<td>do</td>
</tr>
<tr>
<td>3. Frederick G. Thorn, Jr.</td>
<td>do</td>
</tr>
<tr>
<td>3. James Cokey Travilla</td>
<td>do</td>
</tr>
<tr>
<td>3. William Downes Wilson</td>
<td>do</td>
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</table>
2. William Holmes Cookman, do.  
0. Thomas Sydenham Reed Flickwir, do.  
5. William Davenport Goforth, Chelten Hill.  
6. Frank Bird Gummey, Germantown.  
3. Oscar D. Ridings, New Castle, Del.  

Special Students, 22.

PARTIAL STUDENTS.

DEPARTMENT OF ARTS.

Charles Howard Hagert, Philadelphia.  
Grant Lee Knight, do.  
Edmund Austin Stewardson, Chestnut Hill.  
Harry Gibbs Clay, Jr., Philadelphia.  
Richard Wilson, do.  
Norton Buel Young, Chestnut Hill.  
Robert George Magee, Conshohocken.

TOWNE SCIENTIFIC SCHOOL.

Otto Leonardo Kehrwieder, Germantown.  
Jacob Neafie Whitaker, Philadelphia.

WHARTON SCHOOL OF FINANCE AND ECONOMY.

George Bartleson Benners, Philadelphia.  
Norman Ellison, do.  
John Simpson Fernie, do.  
William de Rochbrune Souder, Burlington, N. J.  
George Vaux, Jr., Philadelphia.  
Charles Irwin Travelli, Pittsburg.  
William Robert White Hentz, Philadelphia.  
George J. Hopkins, Jr., Parkesburg, W.Va.  
Julius Louis Lewin, Philadelphia.  
George Bourdillion Stewart, Fort Madison, O.

Partial Students, 23.

SUMMARY.

<table>
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</table>
DEPARTMENT OF MEDICINE.

FACULTY.

WILLIAM PEPPER, M.D., LL.D., Provost of the University, and ex-officio President of the Faculty.
HENRY H. SMITH, M.D., Emeritus Professor of Surgery.
ALFRED STILLÉ, M.D., LL.D., Emeritus Professor of the Theory and Practice of Medicine, and of Clinical Medicine.
JOSEPH LEIDY, M.D., LL.D., Professor of Anatomy.
RICHARD A. F. FENROSE, M.D., LL.D., Professor of Obstetrics and of the Diseases of Women and Children.
D. HAVES AGNEW, M.D., LL.D., John Rhea Barton Professor of Surgery, and Professor of Clinical Surgery.
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WILLIAM GOODELL, M.D., Professor of Clinical Gynaecology.
JAMES TYSON, M.D., Professor of General Pathology and Morbid Anatomy.
HORATIO C. WOOD, M.D., LL.D., Professor of Materia Medica, Pharmacy, and General Therapeutics.
THEODORE G. WORMLEY, M.D., LL.D., Professor of Chemistry and Toxicology.
JOHN ASHHURST, Jr., M.D., Professor of Clinical Surgery.
HARRISON ALLEN, M.D., Professor of Physiology.
WILLIAM OSLER, M.D., Professor of Clinical Medicine.

CLINICAL PROFESSORS.

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., LL.D., Clinical Professor of Nervous Diseases.
LOUIS A. DUHRING, M.D., Clinical Professor of Skin Diseases.
LOUIS STARR, M.D., Clinical Professor of Diseases of Children.

ASSISTANT PROFESSOR.

EDWARD T. BRUEN, M.D., Assistant Professor of Physical Diagnosis.

AUXILIARY PROFESSORS.

JOHN J. REESE, M.D., Professor of Medical Jurisprudence, including Toxicology.
JOSEPH G. RICHARDSON, M.D., Professor of Hygiene.

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ROLAND G. CURTIN, M.D., Lecturer on Physical Diagnosis.
CHARLES K. MILLS, M.D., Lecturer on Mental Diseases.
ADOLPH W. MILLER, M.D., Lecturer on Materia Medica and Pharmacy, and Demonstrator of Practical Pharmacy.
DE FOREST WILLARD, M.D., Lecturer on Orthopedic Surgery.
ELLIOTT RICHARDSON, M.D., Lecturer on Clinical and Operative Obstetrics, and Demonstrator of Operative Obstetrics.
JOHN MARSHALL, M.D., Nat.Sc. D., Demonstrator of Practical Chemistry.
BENJAMIN F. BAER, M.D., Demonstrator of Clinical Gynaecology.
J. WILLIAM WHITE, M.D., Demonstrator of Surgery, and Lecturer on Venereal Diseases.
HARRY R. WHARTON, M.D., Demonstrator of Clinical Surgery.
JOHN B. DEAVER, M.D., Demonstrator of Anatomy.
HENRY F. FORMAD, M.D., Demonstrator of Morbid Anatomy and Pathological Histology, Lecturer on Experimental Pathology, and Librarian of the Stillé Medical Library.
EDWARD T. REICHERT, M.D., Demonstrator of Experimental Physiology.
GEORGE A. PIERSOL, M.D., Demonstrator of Normal Histology.
WILLIAM M. GRAY, M.D., Assistant Demonstrator of Normal Histology.
RICHARD H. HARSE, M.D., Assistant Demonstrators of Anatomy.
THOMAS R. NEILSON, M.D., EDMUND W. HOLMES, M.D., WM. BARTON HOPKINS, M.D., Assistant Demonstrators of Surgery.
WILLIAM M. GRAY, M.D., Assistant Demonstrators of Surgery.
ALBERT L. A. TOBOLDT, M.D., Assistant Demonstrator of Practical Pharmacy.
WILLIAM A. EDWARDS, M.D., Assistant Demonstrators of Clinical Medicine.
JUDSON DALAND, M.D., N. ARCHER RANDOLPH, M.D., Assistant Demonstrator of Physiology.
WASHINGTON H. BAKER, M.D., Assistant to the Professor of Obstetrics.
J. P. CROZER GRIFFITH, M.D., Assistant Demonstrator of Normal Histology.
GEORGE E. DE SCHWEINITZ, M.D., Prosector to the Professor of Anatomy.
SAMUEL D. RISLEY, M.D., Instructor in Ophthalmology.
W. M. L. ZIEGLER, M.D., Instructor in Otolaryngology.
CARL SEILER, M.D., Instructor in Laryngology.
FRANCIS X. D'ERCOM, M.D., Instructor in Nervous Diseases.
J. HENDRICK LLOYD, M.D., Instructor in Electro-Therapeutics.
A. SYDNEY ROBERTS, M.D., Instructor in Orthopedic Surgery.
HENRY W. STEWART, M.D., Instructor in Dermatology.
ROBERT P. ROBINS, M.D., Assistant Demonstrator of Clinical Medicine.
WILLIAM E. HUGHES, M.D., Assistant Demonstrators of Clinical Medicine.
HOBART A. HARE, M.D., Assistants in Physical Diagnosis.
SAMUEL G. DIXON, Assistant Demonstrator of Physiology.

The following-named graduates of the school conduct the admission examinations in the several cities in which they reside:

Dr. C. H. MASTIN, 110 St. Francis Street, Mobile, Ala.
Dr. P. V. SCHEINCK, 2732 Washington Avenue, St. Louis, Mo.
Dr. JOS. M. TOWLER, 6 N. Main Street, Columbia, Tenn.
Dr. EUGENE A. GRISOM, North Carolina Insane Asylum, Raleigh, N. C.
Dr. C. D. FISHBURN, 70 McMicken Avenue, Cincinnati, Ohio.
Dr. E. C. BULLARD, 185 Harrison Avenue, Boston, Mass.
Dr. J. W. WHITBECK, 125 East Avenue, Rochester, N. Y.
HOSPITAL STAFF.

WILLIAM PEPPER, M.D., LL.D., Professor of Clinical Medicine.
D. HAYES AGNEW, M.D., LL.D., Professor of Clinical Surgery.
WILLIAM GOODELL, M.D., Professor of Clinical Gynecology.
JAMES TYSON, M.D., Professor of General Pathology and Morbid Anatomy.
JOHN ASHHURST, JR., M.D., Professor of Clinical Surgery.
WILLIAM OSLER, M.D., Professor of Clinical Medicine.
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., LL.D., Clinical Professor of Nervous Diseases.
LOUIS A. DUHRING, M.D., Clinical Professor of Skin Diseases.
LOUIS STARR, M.D., Clinical Professor of Diseases of Children.
ROLAND G. CURTIN, M.D., } Assistant Physicians.
EDWARD T. BRUEN, M.D.,
J. WM. WHITE, M.D.,
H. R. WHARTON, M.D., } Assistant Surgeons.
RICHARD H. HARTE, M.D.,
SAMUEL D. RISLEY, M.D., Assistant Ophthalmic Surgeon.
WALTER M. L. ZIEGLER, M.D., Assistant Aural Surgeon.
HENRY W. STELWAGON, M.D., Assistant Dermatologist.
RICHARD T. CADBURY, Superintendent of the Hospital.
WILLIAM E. HUGHES, M.D., Medical Registrar.
GEORGE E. DE SCHWEINITZ, M.D., Surgical Registrar.
HENRY F. FORMAD, M.D., Pathologist.
JUDSON DALAND, M.D., Curator.
GWILLYM G. DAVIS, M.D., Surgical Anaesthetizer.
W. A. CULPEPPER, M.D.,
C. W. RICHARDSON, M.D., } Resident Physicians.
HENRY SYKES, M.D.,
JOSEPH C. ROGERS, Ph.G., Apothecary.

DISPENSARY SERVICE.

SAMUEL D. RISLEY, M.D., Chief of the Dispensary for Diseases of the Eye.
WALTER M. L. ZIEGLER, M.D., Chief of the Dispensary for Diseases of the Ear.
BENJAMIN F. BAEER, M.D., Chief of the Dispensary for Diseases of Women.
J. WILLIAM WHITE, M.D., Chief of the Dispensary for Venereal Diseases.
JOHN H. MUSSEB, M.D., Chief of the Medical Dispensary.
CARL SEILER, M.D., Chief of the Dispensary for Diseases of the Throat.
FRANCIS X. DERCUM, M.D., Chief of the Dispensary for Nervous Diseases.
H. W. STELWAGON, M.D., Chief of the Dispensary for Diseases of the Skin.
M. HOWARD FUSSELL, M.D., Assistant Physician in the Medical Dispensary.
WM. BARTON HOPKINS, M.D.,
RICHARD H. HARTE, M.D.,
CHARLES W. DULLES, M.D., } Attending Surgeons in the Surgical Dispensary.
JOSEPH M. FOX, M.D.,
ORGANIZATION OF THE SCHOOL.

The Department of Medicine was founded, in 1765, by Drs. William Shippen, John Morgan, Adam Kuhn, Benjamin Rush, and Thomas Bond. Its reputation has been maintained by worthy successors, among whom may be mentioned Barton, Wistar, Chapman, Physick, Dewees, Horner, Hare, Gibson, Jackson, George B. Wood, Hodge, James B. Rogers, Carson, the elder Pepper, Francis Gurney Smith, and John Neill. At the present time the number of graduates is 9777.

ADMISSION.

Candidates for admission are required: First, to write an essay (not exceeding in length a page of foolscap), as a test in orthography and grammar; second, to pass an examination in Elementary Physics (Part I. of Fownes's Chemistry). But candidates who have either received a collegiate degree, or passed the matriculate examination of a recognized college, or who have a certificate covering the required subjects from a recognized normal or high school, or a duly organized county medical society that has instituted a preliminary examination,—such as that adopted by the
Medical Society of the State of Pennsylvania,—may enter without examination.

Students who have attended one course in a regular medical school are admitted to the second year of the University course, upon passing a satisfactory examination in General Chemistry and Materia Medica and Pharmacy. Students who have attended two courses in a regular medical school are admitted to the third year, upon passing satisfactorily an examination in General and Medical Chemistry, Materia Medica and Pharmacy, Anatomy, and Physiology.

Examinations for admission to advanced standing for Session 1884-5 will be held Tuesday, September 29th.

Graduates of regular medical schools in good standing are admitted to the third year without an examination.

Graduates of Colleges of Pharmacy and Dental Colleges in good standing are admitted to the second year upon passing the entrance examination only.

Students may report to the Secretary for examination at any time after the third Monday in September. Those who cannot conveniently appear before the opening of the winter session, can arrange for examination after the beginning of the term. Examinations may also be held at any time during the spring session.†

Attention is particularly called to the special advantages of the Course in Philosophy in the College Department of the University. Students who have pursued satisfactorily the last two years of the course will be exempted from the preliminary examination.

COURSE OF STUDY.

The first year is largely occupied with work in the various laboratories of Chemistry, Pharmacy, Osteology, Histology, Physiology, and in Dissection. The first year student may also attend clinical lectures in general medicine and surgery. In the second year, in addition to the didactic and clinical teaching, practical

* Homoeopathic and Eclectic schools are not recognized as being in this category.
† Examinations for admission will also be held annually during the last week in June in the cities of Boston, Mass., Rochester, N. Y., Raleigh, N. C., Columbia, Tenn., Atlanta, Ga., Mobile, Ala., Cincinnati, O., Chicago, Ill., Detroit, Mich., St. Louis, Mo., St. Paul, Minn., San Francisco, Cal. The student can, of course, be examined in Philadelphia, if he prefer.
instruction is furnished in Physical Diagnosis and Pathological Histology. Dissection is continued. Throughout the second and third years, the student is required to attend the general medical and surgical clinics at the University and Philadelphia Hospitals, and the clinics in special departments at the former. Special bedside instruction in Clinical Medicine, including Physical Diagnosis and Laryngology, in Surgery, and in Gynaecology is given in the third year, as well as opportunities for the 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. For this purpose, the third-year class is divided into sections of convenient size, each of which receives direct personal instruction.

In the fourth year, which is not obligatory, but for attendance on which, after passing a satisfactory examination, a certificate is granted in addition to the diploma, the instruction is almost purely practical in character.

The course of instruction is so arranged as to permit the constant introduction of new matter, while it also secures as much repetition of the more essential subjects as was secured by the older method of teaching. The laboratory instruction is so co-ordinated with the didactic teaching as to illustrate the subjects taught in the lectures.

Advanced students may make original researches in the laboratories of pharmacy, chemistry, physiology, pathology, and experimental therapeutics.

The effect of the adoption of the prolonged and graded course on the composition of the classes and on their proficiency has been most gratifying. A much larger proportion of the students have had a good education, either in colleges or in reputable academies, and their attention to study has been marked by increased seriousness and zeal. The annual examinations have steadily improved, those for graduation have shown a higher degree of merit, and a much larger proportion of graduation theses have given evidence of scientific knowledge as well as literary culture. The Medical Faculty are assured, therefore, that their advance towards a more perfect system of instruction has been sustained both by enlightened professional opinion and by the practical results. They are also convinced that further contemplated improvements, if judiciously made, will receive, not only the approval, but also the active co-operation and support of the medical profession.
ADDITIONAL INSTRUCTION—POST-GRADUATE COURSE.

Besides the required course and the voluntary fourth year, the general and special clinics and certain didactic lectures are continued after Commencement until the middle of June. There is, also, a special course for graduates throughout the academic year. All subjects connected with the fundamental departments of medicine, or with its several subdivisions determined by usage, are thoroughly taught in one or other of these courses; and it is strongly urged upon all students, especially those of the second and third years, to continue their studies during the spring and summer, and, if possible, to pursue the studies of the fourth year.

The new wing in the University Hospital, for the accommodation of cases of chronic diseases, especially of the heart and lungs, is completed, so that unusually good opportunities will be afforded for the study of these important affections. This wing has been erected by the liberality of Mr. Henry C. Gibson; and the beds, 100 in number, are rapidly being endowed by friends of the University. The Peter Hahn Ward, endowed by the late Dr. George B. Wood, has been opened for the admission of patients.

Students of one department of the University may attend, during hours otherwise unoccupied, and without additional charge, the lectures and recitations in any other department, provided that the consent of the Dean of such department has first been obtained.

OUTLINE OF THE COURSE.

FIRST YEAR.

<table>
<thead>
<tr>
<th>Course</th>
<th>Lectures per week</th>
<th>Total hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Topographical Anatomy</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Histology</td>
<td>2 1/2</td>
<td>2 1/2</td>
</tr>
<tr>
<td>Materia Medica and Pharmacy</td>
<td>1 lecture</td>
<td>3</td>
</tr>
<tr>
<td>General Chemistry, including Chemical Physics</td>
<td>2 lectures per week</td>
<td>4 hours laboratory</td>
</tr>
<tr>
<td>Physiology and Biology</td>
<td>3 lectures</td>
<td>6</td>
</tr>
<tr>
<td>General Pathology</td>
<td>1 lecture</td>
<td>4</td>
</tr>
<tr>
<td>Hygiene</td>
<td>1 lecture</td>
<td>1</td>
</tr>
<tr>
<td>General Clinics, Medical and Surgical</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

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

SECOND YEAR.

<table>
<thead>
<tr>
<th>Course</th>
<th>Lectures per week</th>
<th>Total hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Topographical Anatomy</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Medical Chemistry</td>
<td>1 lecture</td>
<td>5</td>
</tr>
<tr>
<td>Physiology</td>
<td>3 lectures</td>
<td>4</td>
</tr>
</tbody>
</table>

The Dean of such department has first been obtained.
<table>
<thead>
<tr>
<th>Course</th>
<th>Hours per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Pathology and Morbid Anatomy</td>
<td>2</td>
</tr>
<tr>
<td>Physical Diagnosis</td>
<td>1</td>
</tr>
<tr>
<td>Therapeutics</td>
<td>2</td>
</tr>
<tr>
<td>Theory and Practice of Medicine</td>
<td>3</td>
</tr>
<tr>
<td>Surgery</td>
<td>3</td>
</tr>
<tr>
<td>Obstetrics</td>
<td>2</td>
</tr>
<tr>
<td>General Clinics, Medical and Surgical</td>
<td>9</td>
</tr>
<tr>
<td>Special Clinics (Nervous Diseases, Diseases of Women and Children)</td>
<td>5</td>
</tr>
<tr>
<td>Total hours per week.</td>
<td>19</td>
</tr>
</tbody>
</table>

**Third Year.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Pathology and Morbid Anatomy</td>
<td>2</td>
</tr>
<tr>
<td>Demonstrations in Morbid Anatomy</td>
<td>1</td>
</tr>
<tr>
<td>Therapeutics</td>
<td>2</td>
</tr>
<tr>
<td>Theory and Practice of Medicine</td>
<td>3</td>
</tr>
<tr>
<td>Surgery</td>
<td>3</td>
</tr>
<tr>
<td>Operative Surgery, Minor Surgery, and Bandaging</td>
<td>3</td>
</tr>
<tr>
<td>Obstetrics</td>
<td>2</td>
</tr>
<tr>
<td>Operative Obstetrics</td>
<td>1</td>
</tr>
<tr>
<td>Diseases of Women and Children</td>
<td>1</td>
</tr>
<tr>
<td>Gynecology</td>
<td>1</td>
</tr>
<tr>
<td>General Clinics, Medical and Surgical</td>
<td>9</td>
</tr>
<tr>
<td>Special Clinics (Nervous Diseases, Diseases of the Skin, Eye, Ear, Gynecology at both University and Philadelphia Hospitals)</td>
<td>6</td>
</tr>
<tr>
<td>Total hours per week.</td>
<td>20</td>
</tr>
</tbody>
</table>

**Fourth Year.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Medicine and Physical Diagnosis, including Laryngology</td>
<td>2</td>
</tr>
<tr>
<td>Clinical Surgery</td>
<td>2</td>
</tr>
<tr>
<td>Operative Surgery and Venereal Diseases</td>
<td>1</td>
</tr>
<tr>
<td>Nervous Diseases and Electro-Therapeutics</td>
<td>1</td>
</tr>
<tr>
<td>Mental Diseases</td>
<td>2</td>
</tr>
<tr>
<td>Gynecology</td>
<td>1</td>
</tr>
<tr>
<td>Diseases of Children</td>
<td>1</td>
</tr>
<tr>
<td>Dermatology</td>
<td>1</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>1</td>
</tr>
<tr>
<td>Otology</td>
<td>1</td>
</tr>
<tr>
<td>Clinical and Operative Obstetrics</td>
<td>1</td>
</tr>
<tr>
<td>Orthopedic Surgery</td>
<td>1</td>
</tr>
<tr>
<td>Medical Jurisprudence and Toxicology</td>
<td>1</td>
</tr>
<tr>
<td>Total hours per week.</td>
<td>22</td>
</tr>
</tbody>
</table>

* For these courses the class is divided into sections, so that each student may receive direct personal instruction.
Students of the University who pursue a four years' course, and who pass a satisfactory examination in the studies of the fourth year, will be awarded a certificate in addition to the diploma. The degree of Doctor of Medicine will also be conferred on graduates of other medical schools in good standing who take the third year of the three years' curriculum, or who attend the fourth year, together with the didactic lectures on Morbid Anatomy, Therapeutics, Practice of Medicine, Surgery, and Obstetrics, and who pass a satisfactory examination. (For post-graduate courses, see p. 64.)

**TEXT-BOOKS.**

**Chemistry:** Fownes's Chemistry; Muter's Analytical Chemistry.

**Materia Medica:** H. C. Wood.

**Anatomy:** Leidy; Gray; Schaeffer's Practical Histology.

**Physiology:** Kirke.

**General Pathology:** Rindfleisch's Elements of Pathology, translated by Mercur; Tyson's Cell Doctrine, pp. 127-152.

**TEXT-BOOKS.**

**COLLATERAL READING.**

**Wurts's Elements of Modern Chemistry;**

**Wood & Bache's Dispensatory.**

**Quain; Wilson; Allen; Stricker's Histology.**

**Carpenter; Foster.**

**SECOND AND THIRD YEARS.**

**Medical Chemistry:** Greene; Tyson's Practical Examination of Urine; Marshall & Smith's Chemical Analysis of Urine.

**Anatomy:** Leidy; Gray.

**Physiology:** Foster.

**General Pathology and Morbid Anatomy:** Rindfleisch's Elements; Coats's Manual of Pathology.

**Therapeutics:** H. C. Wood.

**Practice of Medicine:** Flint or Roberts; Bruen's Physical Diagnosis.

**Surgery:** Agnew; Ashhurst.

**Obstetrics:** Playfair's Midwifery.

**Gynecology:** Goodell's Lessons in Gynecology.

The cost of the necessary text-books is within $50, distributed over the three years.
<table>
<thead>
<tr>
<th>Hour</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 A.M.</td>
<td>General Chemistry,</td>
<td>General Chemistry,</td>
<td>Chemical Laboratory, two hours.</td>
<td>Practical Biology, Laboratory,</td>
<td>Physical Diagnosis, Laboratory,</td>
<td>Philadelphia Hospital, Medical</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>One section 2 hrs. Others Topo-</td>
<td>Anatomy at 10</td>
<td>and Surgical Clinics.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>graphical Anatomy at 11</td>
<td>Laboratory, Medical</td>
<td></td>
</tr>
<tr>
<td>10 A.M.</td>
<td>Practical Biology, Laboratory,</td>
<td>Chemical Laboratory, two hours.</td>
<td></td>
<td></td>
<td>Anatomy.</td>
<td></td>
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<tr>
<td></td>
<td>One section 2 hrs.</td>
<td></td>
<td></td>
<td></td>
<td>Anatomy.</td>
<td></td>
</tr>
<tr>
<td>11 A.M.</td>
<td>Others Topographical Anatomy at 11</td>
<td></td>
<td></td>
<td></td>
<td>Anatomy.</td>
<td></td>
</tr>
<tr>
<td>12 M.</td>
<td>Practical Normal Histology,</td>
<td>Practical Normal Histology,</td>
<td>Normal Histology, Laboratory,</td>
<td>Practical Normal Histology,</td>
<td>Practical Normal Histology,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Practice in Physical Diagnosis,</td>
<td>Practice in Physical Diagnosis,</td>
<td>One section 2 hrs. Others dissect</td>
<td>Practice in Physical Diagnosis,</td>
<td>Practice Normal Histology,</td>
<td></td>
</tr>
<tr>
<td>1 P.M.</td>
<td>3½ P.M. Anatomy.</td>
<td>4½ P.M. Physiology.</td>
<td></td>
<td></td>
<td>7½ to 10 P.M. Pharmacy, Laboratory</td>
<td></td>
</tr>
<tr>
<td>3½ P.M.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7½ to 10 P.M. Pharmacy, Laboratory</td>
<td></td>
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</tbody>
</table>

**SECOND YEAR.**

<table>
<thead>
<tr>
<th>Hour</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>8½ A.M.</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>9 A.M.</td>
<td>Practical Physiology, One section 2 hours.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>10 A.M.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 P.M.</td>
<td>Pract. Physiology, One section 1 hour. Others attend Clinic on Diseases of the Ear, U. H.</td>
<td>Pathol. Histology, Laboratory, One section 1 hour. Others attend Clinic on Diseases of the Ear, U. H.</td>
<td>Pathol. Histology, Laboratory, One section 1 hour. Others attend Clinic on Diseases of the Eye, U. H.</td>
<td>Pathol. Histology, Laboratory, One section 1 hour.</td>
<td></td>
<td>Pathol. Histology, Laboratory, One section 2 hrs. Others dissect or attend Clinic on Diseases of the Ear, U. H.</td>
</tr>
</tbody>
</table>
### THIRD YEAR.

<table>
<thead>
<tr>
<th>Hour</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 P.M.</td>
<td>Practice.</td>
<td>Practice.</td>
<td>Medical Clinic, U. H.</td>
<td>Medical Clinic, U. H.</td>
<td>Medical Jurisprudence.</td>
<td></td>
</tr>
</tbody>
</table>

### FOURTH YEAR.

<table>
<thead>
<tr>
<th>Hour</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
</table>

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U. H. University Hospital.

For the study of Histology, Osteology, Biology, Physiology, and of Pathological Histology the class is divided into sections, one of which is occupied at a time; those of the first-year students not thus engaged dissect, while those of the second year attend Clinics. See special roster.

For Ward Class instruction the third-year class is divided into sections. See special roster.
ROSTER OF BEDSIDE INSTRUCTION AND SPECIAL CLINICS FOR STUDENTS OF THE THIRD YEAR, SESSION 1884-5.

For attendance upon these Courses, the Third Year Class is divided into four sections, A, B, C, and D, which attend as follows:

*From Thursday, Oct. 1st, until Friday, Nov. 13th, inclusive.*

- **Prof. Osier:** A
- **Dr. Goodell:** B
- **Dr. Ashhurst:** C
- **Special Clinics:** D

*From Monday, Nov. 16th, to Friday, Jan. 8th, inclusive.*

- **Prof. Osier:** B
- **Dr. Goodell:** C
- **Dr. Ashhurst:** D
- **Special Clinics:** A

*From Monday, Jan. 11th, to Tuesday, Feb. 22d, inclusive.*

- **Prof. Osier:** C
- **Dr. Goodell:** D
- **Dr. Ashhurst:** A
- **Special Clinics:** B

*From Thursday, Feb. 26th, to Friday, April 10th, inclusive.*

- **Prof. Osier:** D
- **Dr. Goodell:** A
- **Dr. Ashhurst:** B
- **Special Clinics:** C

The instruction is given at the University Hospital at 1 o'clock. Prof. Osier will meet the sections of the Third Class in the Front Ward, Gibson Wing; Prof. Goodell in the Lower Lecture Room; and Prof. Ashhurst in the Front Ward, first floor. The Special Clinics are held in the upper Lecture-Room.

This arrangement enables each section to attend, during an equal portion of the term, the clinical lectures on special subjects, as follows:

1 P.M.

- **Monday.**
  - Prof. STRAWBRIDGE.
  - Dr. STELWAGON.
  - Prof. NORRIS.
  - Prof. WOOD.
- **Tuesday.**
  - Dermatology.
  - Ophthalmology.
  - Nervous Diseases.

SPECIAL ROSTER OF LABORATORY INSTRUCTION IN HISTOLOGY, BIOLOGY, OSTEOLOGY, AND SYNDESMOLOGY, FOR STUDENTS OF THE FIRST YEAR, SESSION 1884-5.

For instruction in these Laboratories the First Year Class is divided into four sections, A, B, C, D, which attend as follows:

<table>
<thead>
<tr>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Histology.</strong> Sec. A</td>
<td>12 to 2</td>
<td>12 to 2</td>
<td>12 to 2</td>
<td>12 to 2</td>
<td>12 to 2</td>
<td>—</td>
</tr>
<tr>
<td><strong>Biolog.</strong></td>
<td>10 to 12</td>
<td>—</td>
<td>9 to 11</td>
<td>—</td>
<td>12 to 2</td>
<td>—</td>
</tr>
<tr>
<td><strong>Osteology.</strong></td>
<td>12 to 1</td>
<td>—</td>
<td>12 to 1</td>
<td>12 to 1</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Phys. Diag., C &amp; D.</strong></td>
<td>1</td>
<td>1</td>
<td>—</td>
<td>1</td>
<td>10</td>
<td>—</td>
</tr>
</tbody>
</table>
2d Period.  From November 10th to January 12th, inclusive.

Histology, Sec. B 12 to 2 12 to 2 12 to 2 12 to 2 12 to 2
Biology, C 10 to 12 — — — 9 to 11 — 12 to 2
Osteology, D 12 to 1 — — 12 to 1 12 to 1
Phys. Diag., C & D I I I I 10

3d Period.  From January 12th to February 27th, inclusive.

Histology, Sec. C 12 to 2 12 to 2 12 to 2 12 to 2 12 to 2
Biology, D 10 to 12 — — 9 to 11 — 12 to 2
Osteology, A 12 to 1 — — 12 to 1 12 to 1
Phys. Diag., A & B I I I I 10

4th Period.  From February 27th to April 15th, inclusive.

Histology, Sec. D 12 to 2 12 to 2 12 to 2 12 to 2 12 to 2
Biology, A 10 to 12 — — 9 to 11 — 12 to 2
Osteology, B 12 to 1 — — 12 to 1 12 to 1
Phys. Diag., A & B I I I I 10

After the first period all students not occupied in the Laboratory of Normal Histology dissect from 12 to 2 daily.

GRADUATION.

At the close of the third year, students who have passed all their examinations satisfactorily receive the degree of Doctor of Medicine on the following conditions:—

I. The candidate must have attained the age of twenty-one years, and be of good moral character. He must have attended at least his last course of instruction in this school, and have prepared a satisfactory thesis.*

II. When he receives notice of having successfully passed his final examination, he must enter his name on the register of candidates for the degree.

III. He must be present at Commencement, unless excused by the Faculty.

ARRANGEMENT OF SESSIONS.

The Spring Session, 1885, begins on Wednesday, May 6th, and ends June 13th.

The Preliminary Session begins on Monday, September 14th, 1885, and ends on Wednesday, September 30th.

* The thesis must be in the candidate's own handwriting, and should be written on thesis paper, the alternate pages being left blank. It should be prepared before the commencement of the last course of lectures. It must be bound, and becomes after presentation the property of the Stillé Medical Library. In no case can it be returned or loaned; so that students who desire to make further use of their theses should prepare extra copies for such use.

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 Professor.
The Winter Session, 1885–86, upon which alone attendance is obligatory, begins on Thursday, October 1st, 1885, and ends with Commencement, May 1st, 1886.

**EXPENSES.**

**WINTER TERM.**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>EXPENSES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIRST YEAR</strong></td>
<td></td>
</tr>
<tr>
<td>Matriculation Fee</td>
<td>$5.00</td>
</tr>
<tr>
<td>For general ticket, admitting to all the lectures and laboratory work assigned to this year, including dissection</td>
<td>$1.50 a part.</td>
</tr>
<tr>
<td>Dissecting material</td>
<td></td>
</tr>
<tr>
<td><strong>SECOND YEAR</strong></td>
<td></td>
</tr>
<tr>
<td>For general ticket, admitting to all the lectures and laboratory work assigned to this year, including dissection</td>
<td>$1.50 a part.</td>
</tr>
<tr>
<td>Dissecting material</td>
<td></td>
</tr>
<tr>
<td><strong>THIRD YEAR</strong></td>
<td></td>
</tr>
<tr>
<td>For general ticket, admitting to all the lectures and practical work assigned to this year, including operating and bandaging (no graduation fee)</td>
<td>$1.50 a part.</td>
</tr>
<tr>
<td>Fee for the full third year course to graduates of other schools, including privilege of applying for graduation (no graduation fee)</td>
<td>$1.50</td>
</tr>
<tr>
<td>Material for operating</td>
<td></td>
</tr>
<tr>
<td><strong>FOURTH YEAR (VOLUNTARY).</strong></td>
<td></td>
</tr>
<tr>
<td>For general ticket, including all the practical courses of this year (no graduation fee)</td>
<td>$1.50 a part.</td>
</tr>
<tr>
<td>To graduates of other schools, with the privilege of attending the didactic courses of the third year, and applying for graduation (no graduation fee)</td>
<td>$2.00 a part.</td>
</tr>
</tbody>
</table>

**SPRING SESSION.**

<table>
<thead>
<tr>
<th>EXPENSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matriculation fee (paid once only)</td>
</tr>
<tr>
<td>Tuition fee</td>
</tr>
<tr>
<td>This sum will be credited on account of the fee for the ensuing Winter Term.</td>
</tr>
</tbody>
</table>

**FEES FOR SPECIAL COURSES.**

(Students 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.)

<table>
<thead>
<tr>
<th>COURSES</th>
<th>FEE</th>
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</thead>
<tbody>
<tr>
<td>For the full third Course, including bandaging and operating, to graduates of this school</td>
<td>$7.50</td>
</tr>
<tr>
<td>For a single Course of Lectures, except Materia Medica</td>
<td>$2.00</td>
</tr>
<tr>
<td>For Course on Materia Medica, and on Bandaging and Operating, each</td>
<td>$1.00</td>
</tr>
<tr>
<td>For Practical Course in the Chemical Laboratory</td>
<td>$2.50</td>
</tr>
<tr>
<td>For the Course in Practical Gynaecology of the third year</td>
<td>$2.50</td>
</tr>
<tr>
<td>For any one of the remaining practical Courses of the third year</td>
<td>$1.50</td>
</tr>
<tr>
<td>Graduates of the school are admitted to the Lectures free of charge; but they pay the fees for the practical courses.</td>
<td></td>
</tr>
</tbody>
</table>

At the beginning of the first year, each student is required to make a deposit of five dollars with the Professor of Chemistry, to cover "breakage" in the chemical laboratories. Any balance remaining is 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 and practical instruction.

The Tuition fee of $1.50 each year is on condition of its being paid in a single payment before November 1st. If a division of payments is desired the fee will be $1.60 for the year, on condition that $80 be paid before November 1st, and $80 before February 1st. Under no circumstances are any changes made in the established fees. The only free scholarships granted are those under the regulations named below.

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

A competitive examination of candidates to fill six free scholarships is held annually. (In 1885, on Friday, September 25, at 12 o'clock, noon.) 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 a written examination in Latin prose translation, (first three books of Caesar,) and a written examination in Physics.

Fourth. They will be required to pay an examination fee of $5, which is not returned, but is transferred to the matriculation fee in the case of the successful candidate.

Candidates who propose to present themselves for examination will send their names, accompanied by the necessary certificate required by the first condition, to the Secretary of the Faculty of Medicine, before Sept. 15th, and appear without further notice.

SPRING COURSE OF INSTRUCTION—1885.

The various laboratories in connection with the University are open during the spring and early summer, and the post-graduate courses described below are continued.

The clinics and lectures are continued at the Hospital, and instruction will be given upon the following subjects:—CHEMISTRY; MATERIA MEDICA; PHARMACY; HISTOLOGY; PHYSIOLOGY; REGIONAL ANATOMY; MORBID ANATOMY; PHYSICAL DIAGNOSIS; VENEREAL DISEASES; PRACTICAL and CLINICAL OBSTETRICS; MENTAL DISEASES, and ELECTRICAL THERAPEUTICS; EXPERIMENTAL PATHOLOGY; CLINICAL MEDICINE; CLINICAL SURGERY; CLINICAL GYNAECOLOGY; DISEASES OF CHILDREN; DISEASES OF THE NERVOUS SYSTEM; DISEASES OF THE EYE; DISEASES OF THE EAR; and DISEASES OF THE SKIN.

PRELIMINARY LECTURES—1885.

This Session, beginning Monday, Sept. 14th, is strongly recommended to all students who can attend it. It includes lectures, didactic and clinical, by members of the Faculty and others. No fee is charged for this session.
POST-GRADUATE INSTRUCTION.

The post-graduate instruction includes the following subjects:—

**Clinical Medicine and Physical Diagnosis**, by Dr. Bruen, assisted by Dr. John H. Musser.

**Nervous Diseases and Electro-Therapeutics**, by Drs. Dercum and Lloyd.

**Clinical Surgery**, by Prof. Ashhurst, assisted by Drs. Wharton, Hopkins, Harte, and Fox.

**Ophthalmology**, by Dr. S. D. Risley, assisted by Dr. Wallace.

**Dermatology**, by Profs. Duhring and Dr. Stelwagon.

**Otology**, by Dr. Ziegler, assisted by Dr. Hoch.

**Gynaecology**, by Dr. B. F. Baer.

**Operative and Genito-Urinary Surgery, with Venereal Diseases**, by Dr. White, assisted by Dr. Neilson.

**Clinical and Operative Obstetrics**, by Dr. E. Richardson.

**Laryngology**, by Dr. Seiler, assisted by Drs. Smock and Sheetz.

**Diseases of Children**, by Dr. Starr.

**Microscopy and Pathology**, by Dr. Formad.


**Orthopedic Surgery**, by Drs. De Forest Willard and A. Sydney Roberts.

The teaching consists in bedside and dispensary lessons, in the practical examination of patients, and the use of instruments of precision in the diagnosis and treatment of disease. The classes are composed of graduates only. From two to six hours weekly are devoted to each of the branches named. The instruction is given at the University and other Hospitals with which the different members of the staff are connected.

In addition, the classes are permitted to attend, without further expense, the general and special clinics of the University, and such didactic lectures as do not interfere with the post-graduate instruction.

The courses, usually of six weeks' duration, are so arranged that the graduate may begin at any time between October 1st and June 1st.

For terms and further particulars, address the principal in charge of each course.

**Facilities for Instruction in the Medical Department.**

The instruction in the Medical Department is conducted in the Medical Hall, the Laboratory Building, and the Hospital of the University.
HALL OF THE MEDICAL DEPARTMENT.

The Medical Hall contains the Wistar and Horner Museum, the Histological, Osteological, Physiological, Pathological, and Pharmaceutical Laboratories, and the Stillé Medical Library.

The WISTAR AND HORNER MUSEUM, founded nearly one hundred years ago, has been annually augmented, and 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 models, used in illustrating the lectures. The matriculation ticket 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 MORBID ANATOMY, collected by the late Dr. George B. Wood, and generously given by him to the University, contains an extensive series of wet preparations, drawings, and models in wax and other materials. These form a collection, unrivalled in extent and value, for illustrating diseases of the internal organs and the skin.

The late distinguished Professor of Obstetrics, Dr. Hugh L. Hodge, enriched the facilities of Instruction in that special branch by the gift of his valuable Cabinet.

Through a like liberality of Dr. Henry H. Smith, Emeritus Professor of Surgery, and of the late Professor of Clinical Surgery, Dr. John Neill, the University has a further extensive and valuable gift of morbid specimens, models, and drawings.

The spacious apartments devoted to these collections are well adapted to their display, and render them accessible for examination.

THE HISTOLOGICAL LABORATORY is under the supervision of the Professor of Anatomy, and the direct guidance of the Demonstrators of Histology. The laboratory is furnished with excellent microscopes, and all necessary apparatus to enable the first course student to become practically familiar with the most approved methods of microscopical technology, as well as with the Normal Histology of all the tissues and organs. During the spring months it is open for such as may desire a course embracing the refine-
ments and minutiae, which of necessity are omitted in the regular winter's work. Especial facilities are afforded to those who desire to pursue original research; for such the laboratory is open the entire year, except during July and August.

The Osteo-Syndesmological Laboratory is under the supervision of the Professor and Demonstrator of Anatomy. The first year student is required, in this Laboratory, to make himself familiar with the skeleton and the articulations, as a part of his instruction in practical anatomy.

Physiological Laboratory.—The Physiological Laboratory is under the personal supervision of the Professor of Physiology and the Demonstrator. It is furnished with every form of apparatus likely to be used by the practical physiologist. An elementary practical course in Physiology, designed especially for first year students who are without preliminary training in Biology, is continued throughout the session; and students of the second year are further instructed in Practical Physiology; while every facility is afforded advanced students and graduates pursuing special studies in that subject. The Laboratory is open during 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, and has already attracted, from remote sections of the country, a large number of physicians and students who desire special preparation in microscopic technology, normal and pathological histology, and experimental pathology. It is suitably furnished with microscopes, and all appliances requisite for practical study of these subjects, and for making original researches.

The Laboratory is also supplied with a complete outfit of materials and apparatus for the investigation of Bacteria in their relation to infectious diseases, and the study of the lower fungi in general.

The practical work in the pathological laboratory during the regular winter session is obligatory on students of both the second and the third year.

1st. Each student of the second year is provided with a separate table and microscope, with material and reagents, and receives personal instruction in pathological histology, in mycology, and in the microscopy of urine.
2d. Each student of the third year receives advanced practical instruction in morbid anatomy, and in the making of autopsies. Weekly demonstrations of the gross appearance of specimens, embracing all known morbid products, mostly in fresh condition, side by side with the microscopic section from the same, are a feature of this course.

Special instruction and guidance in original research are given by the demonstrators to advanced students.

The laboratory is open during 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 Demonstrators of Pharmacy. It is furnished with suitable tables and all necessary apparatus. In it the student learns not only the various pharmaceutical processes, but also that familiarity with drugs which can be acquired only by handling them.

Laboratory of Experimental Therapeutics.—This Laboratory, under the direction of the Professor of Materia Medica and Therapeutics, is furnished with all apparatus and instruments necessary for the study of the physiological action of medicines.

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

The Laboratory Building.

The first floor is arranged for the Operating Room or Infirmary of the Dental Department, and has the necessary waiting-rooms, etc., carefully adapted to the requirements of this department. The entrance is from the centre on Spruce Street.

The second and third floors are fitted up as chemical laboratories; the second being the laboratory of General Chemistry, and the third that of Medical Chemistry. Each story is capable of accommodating two hundred and sixteen students; so that, even if the total University class should reach six hundred, each student of chemistry could be furnished with his own table and apparatus. In addition to the main room, on each story, there are four balance rooms, divided from these large apartments by glass partitions.
The fourth floor is entirely occupied by the Dissecting Room.
The entrance for the second, third, and fourth stories is from
the rear and nearly opposite the south entrance of the Medical De-
partment. An elevator is arranged at this place for all the stories.

CHEMICAL LABORATORIES.—1. The Working Laboratory for Prac-
tical Chemistry is under the supervision of the Professor of Chem-
istry and the Demonstrator, with competent assistants. Students
of the First Year devote four hours each week to 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 formulae, on paper, all reactions involved
in his tests.

2. Students of the Second Year devote four 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 examina-
tion of urine and animal fluids, and the recognition and recovery
of poisons from the animal body and complex mixtures.

DISSECTING ROOM.—In constructing the new Dissecting Room of
the University, care was taken to provide everything that experi-
ence suggested as being necessary or desirable. The room is at
the top of the Laboratory Building, and is one hundred and fifty-
nine feet in length, by ninety-two feet in width. It is lighted by
windows on all sides, and by skylights. The most perfect ventila-
tion is thus secured. There are gas burners over every table for
work by night. The tables have stone tops, which cannot absorb
the discharges and can be kept perfectly clean. There are nume-
rous washstands and private closets for the use of each student.
Cleanliness is rigidly enforced. The preservation of the cadaver
has been so successfully accomplished as almost to do away with
the dangers of dissecting wounds. Dissection is legalized in Penn-
sylvania.

The Room is open throughout the year (except in July and Au-
gust), under the superintendence of the Professor of Anatomy and
the Demonstrators.
PRACTICAL SURGERY.—The application of bandages and dressings, and surgical operations on the cadaver are a part of the practical instruction to students of the Third Year, under the supervision of the Professor and Demonstrators of Surgery. Instruments, splints, and bandages are supplied free of cost.

THE UNIVERSITY HOSPITAL.

The University Hospital is an elegant and commodious edifice, constructed according to the best established principles of hospital architecture, and provided with all the appliances pertaining to such institutions of the first class. It is adjacent to the new Medical Hall, and forms an integral portion of the Medical Department. In its various departments, during 1883, there were treated 7731 cases, representing almost all of the known medical, surgical, and gynaecological affections. Owing to its situation within a very short distance of numerous railroads, the Hospital is especially rich in cases of severe injury, and of acute surgery. Attendance on the Clinical Lectures delivered in its amphitheatres and its wards is a part of the daily duty 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, Gynaecology, and the Specialties. These subjects are taught by the several Clinical Professors.

The resident physicians of the University Hospital are every year selected by competitive examination from among the graduating class of the University. The next examination will be held Wednesday, April 22, 1885, at 12 M.

OTHER HOSPITALS AND HOSPITAL CLINICS.

In addition to the official clinical lectures and bedside instruction delivered at the University Hospital, medical students have the opportunity of attending clinical lectures in other Hospitals and in private classes formed for the special study of disease.

The Philadelphia Hospital, contiguous to the grounds of the University, contains one thousand beds. In it are delivered twice a week Clinical Lectures 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 and Children's Diseases is given, too, at the Children's Hospital. To these institutions students are admitted without charge, except at the Pennsylvania Hospital, where a small fee is now required.

During the spring and summer private classes are also formed for Clinical Instruction, for which a moderate fee is exacted.

Appointments of Resident Physicians, amounting to twenty-five or more, are made annually in the different Hospitals of the city. With one or two exceptions these positions are now filled by competitive examination of candidates.

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.

STILLE MEDICAL SOCIETY AND H. C. WOOD MEDICAL SOCIETY.

These Societies are composed of Second and Third year students. Their meetings are held once a week during the winter session for the reading and discussion of papers referring to the theory and practice of medicine.

PRIZES.

Two Prizes, one of One Hundred Dollars, one of Fifty Dollars, will be awarded to the members of the Graduating Class of 1884–85 for the best Essays upon Medical subjects, provided such Essays are of sufficient merit.

One of these prizes has been instituted by the Society of the Alumni of the Medical Department of the University; the other by a friend of the University.

A Prize of Twenty Dollars is awarded by the Demonstrator of Anatomy for the best vascular preparation.

A Prize of Thirty Dollars is also awarded by the Demonstrator to the member of the Graduating Class who shall present the best record of the anomalies found in the anatomical rooms.

A Prize of Fifty Dollars is offered by Dr. Henry Beates, Jr., a graduate of the School, to the candidate receiving the highest average at his final examination.
MORBID ANATOMY PRIZE.—A prize of a Zentmayer's Histological Microscope will be awarded by the Professor of General Pathology and Morbid Anatomy for the best thesis on any subject connected with Pathology or Morbid Anatomy, illustrated by a set of not less than twelve microscopical preparations. The Essay must be presented as competing for the prize.

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

MATRICULATES 1884–5.

FOURTH YEAR.

Greenfield, John W., M.D.
Perley, George P., M.D.
Plumer, Andrew J., M.D.

Springboro', Bridgeton, Me.
Council Bluffs, Iowa.

Students of the Fourth Year, 3.

Hillis-town.

Albright, Titus
Alexander, Reid
Allyn, Herman B., A.B. (Univ. Pa.)
Ball, Lewis Heisler, Ph.B. (Delaware)
Beckley, Joseph R.
Bermudez, Salvador
Birney, David Bell, A.B. (Univ. Pa.)
Bley, Alphonso, A. W., Ph.G.
Boon, Harry Herbert
Boyd, Robert H. A., A.B. (Lafayette)
Brader, William B.
Bratton, Howard, A.M. (Princeton)
Butler, William J.
Cameron, James, M.D.
Cameron, Markley C.
Carothers, Edward J.
Carson, Alfred D., Ph.D. (Lyceum of Valparaiso)
Clark, George A.
Coates, Louis P., M.D.
Coburn, Clinton C.
Cochrane, William R., Ph B. (Western University)
Cooke, Dudley T., A.B. (Central High School)

dot
Cothman, Louis von, Ph.G.
Day, F. Harvey
Deaver, Harry C.
Depue, Barclay H.
Dingee, Charles
Eckels, G. Morris, Ph.G.
Edsall, Frank H.
Elmer, Matthew K., A.B. (Princeton)
Emery, Francis E. E.

Univ. of Michigan.
Maine Med. School.
Mo. Med. College.

THIRD YEAR.

Albright, Titus
Alexandar, Reid
Allyn, Herman B., A.B. (Univ. Pa.)
Ball, Lewis Heisler, Ph.B. (Delaware)
Beckley, Joseph R.
Bermudez, Salvador
Birney, David Bell, A.B. (Univ. Pa.)
Bley, Alphonso, A. W., Ph.G.
Boon, Harry Herbert
Boyd, Robert H. A., A.B. (Lafayette)
Brader, William B.
Bratton, Howard, A.M. (Princeton)
Butler, William J.
Cameron, James, M.D.
Cameron, Markley C.
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dot
Cothman, Louis von, Ph.G.
Day, F. Harvey
Deaver, Harry C.
Depue, Barclay H.
Dingee, Charles
Eckels, G. Morris, Ph.G.
Edsall, Frank H.
Elmer, Matthew K., A.B. (Princeton)
Emery, Francis E. E.

Harvey Kraitz and E. S. Johnson.
M. Rowe.
J. H. Masser.
S. Chandler.
Samuel Weiss.
University.
University.
J. A. Schoales.
University.
University.
H. H. Mitchell.
W. G. Weaver.
University of Vt.
H. H. Clark.
University.

Green Village.
Catlett, Va.
Germantown, Ky.
Philadelphia.
Philadelphia.

University.
University.

University.
University.

University.
Wm. G. Nowell.
James D. De Witt.
Richard Dingee.
University.
S. D. Risley.
Robert W. Elmer.
University.
<table>
<thead>
<tr>
<th>Name</th>
<th>City</th>
<th>Address</th>
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<tbody>
<tr>
<td>Evans, Elmer E.</td>
<td>Philadelphia</td>
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<tr>
<td>Evans, William</td>
<td>University</td>
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<tr>
<td>Farquhar, Charles</td>
<td>University</td>
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<td>Freas, Henry M., A.B.</td>
<td>Lafayette Hill</td>
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<td>Freeman, Walter J.</td>
<td>Philadelphia</td>
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<td>Godd, Samuel Wesley, Ph.G.</td>
<td>University</td>
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<td>Gallagher, W. Moorehouse</td>
<td>University</td>
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<td>Geissel, Albert E.</td>
<td>University</td>
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<td>Goodell, William C.</td>
<td>University</td>
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<td>Grimm, Nathan P.</td>
<td>University</td>
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<td>Guiteras, Gregorio M., A.M.</td>
<td>La Salie</td>
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<td>Herman, George C.</td>
<td>Lancaster</td>
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<td>Herr, William M.</td>
<td>St. Louis, Mo.</td>
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<td>Hill, William P.</td>
<td>Wilkes-Barre</td>
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<td>Hines, Peter</td>
<td>Staunton, Va.</td>
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<td>Hirsh, Charles E.</td>
<td>Kansas, Ill.</td>
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<td>Hite, J. Edwin S.</td>
<td>Ashtabula, Ohio</td>
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<td>Hubbard, Thomas</td>
<td>West Fairfield</td>
<td></td>
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<td>Huston, William O., A.B.</td>
<td>Philadelphia</td>
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<tr>
<td>Jelovitz, Meier L.</td>
<td>Hartford, Conn.</td>
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<td>Johnson, William H.</td>
<td>Ebensburg</td>
<td></td>
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<tr>
<td>Jones, Fremont G.</td>
<td>Philadelphia</td>
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<tr>
<td>Jones, Oliver B.</td>
<td>Pittston</td>
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<tr>
<td>Kelley, John A.</td>
<td>Grigsville, Ill.</td>
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<tr>
<td>Kenney, Edward L., A.B.</td>
<td>Springfield, Ohio</td>
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<tr>
<td>King, Thomas D., A.M.</td>
<td>Nashua, N. H.</td>
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<td>Kittredge, Frank E.</td>
<td>Clear Spring, Md.</td>
<td></td>
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<tr>
<td>Kreps, John J.</td>
<td>Fall River, Mass.</td>
<td></td>
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<tr>
<td>Learned, William T., A.B.</td>
<td>Para, Brazil</td>
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<tr>
<td>Lemos, Odorico G. de</td>
<td>Laurelton</td>
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<tr>
<td>Lincoln, Mark H.</td>
<td>Bridgeton, N. J.</td>
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<tr>
<td>Lott, William C., A.B</td>
<td>Camden, N. J.</td>
<td></td>
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<tr>
<td>Marcy, John W.</td>
<td>Reading</td>
<td></td>
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<tr>
<td>Mengel, Matt S.</td>
<td>Minersville</td>
<td></td>
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<tr>
<td>Merkel, Horace E.</td>
<td>Manor Station</td>
<td></td>
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<tr>
<td>Miller, Asher D.</td>
<td>Cold Spring, N. J.</td>
<td></td>
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<tr>
<td>Miller, Elijah</td>
<td>Philadelphia</td>
<td></td>
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<tr>
<td>Miller, George B. McClellan</td>
<td>Gloucester, Mass.</td>
<td></td>
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<tr>
<td>Morrow, Charles H.</td>
<td>Philadelphia</td>
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<tr>
<td>Morton, Thomas S. K.</td>
<td>Philadelphia</td>
<td></td>
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<tr>
<td>Musser, F. Reber</td>
<td>Munsey</td>
<td></td>
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<tr>
<td>McAllister, Alexander, Ph.G.</td>
<td>University</td>
<td></td>
</tr>
<tr>
<td>McClouds, William D.</td>
<td>Camden, N. J.</td>
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<td>Nichols, William V.</td>
<td>Columbia, N. C.</td>
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<td>Novaes, Emydio Dias</td>
<td>Chester, N. J.</td>
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<td>Packard, Frederick A., B.A.</td>
<td>University</td>
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<td>Peters, H. Vance, A.B.</td>
<td>Quelez de S. Paulo, B.</td>
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<td>Pierce, David</td>
<td>Philadelphia</td>
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<td>Pike, Charles P.</td>
<td>Philadelphia</td>
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<td>Pitts, Charles S., A.B.</td>
<td>Philadelphia</td>
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<td>Purcell, McDaniel</td>
<td>Greenwood Depot, Va.</td>
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<td>Reed, Samuel H.</td>
<td>University of Va.</td>
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<td>Rhoads, Edward G.</td>
<td>Sharpsburg</td>
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<td>Rickert, Charles M.</td>
<td>University of Pa.</td>
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</tbody>
</table>

City information for each entry includes the name of the city, followed by additional information in parentheses such as the state or country.
Biera, John H. Philadelphia.
Robeson, William F., B.S. (Dickinson Seminary)
Rowe, Charles K.
Sehnabel, Edwin D., M.E. Hecktown.
Shoemaker, Harvey Philadelphia.
Small, Edward H., A.M. (Princeton)
Taylor, George B.
Taylor, Joseph C. Egbert.
Tull, M. Graham, A.M. (Lafayette)
Van Pelt, William T.
Weaver, Daniel B., A.B. (Yale)
Williams, Thomas D., Ph.G.
Wilson, Edwin Frazer, A.B. (Kenyon)
Woodruff, Robert A.
Ziegler, S. Lewis, A.M. (Lewisburg)

SECOND YEAR.

Achey, Frederick A.
Albertson, William C.
Avison, David, Ph.G.
Baker, George Fales
Banks, William H.
Baylis, John N.
Beck, Charles S., Jr.
Benton, John W.
Bevan, Andrew J.
Bricker, William H.
Broughton, William H., Ph.B. (Delaware)
Brumbaugh, Samuel O.
Burns, Samuel W.
Burr, Charles W., B.S. (Univ. Pa.)
Carley, William A.
Carle, Charles W.

Philosophy.

Havana, Cuba.

Minneapolis, Minn.

Philadelphia.

Philadelphia.

Philadelphia.

Philadelphia.

Philadelphia.

Philadelphia.

Philadelphia.

Philadelphia.

Philadelphia.

Philadelphia.

Philadelphia.

Lancaster.

West Chester.

Vienna, N. J.

Camden, N. J.

Philadelphia.

Millcreek.

Bridgetown, N. J.

Wilkes-Barre.

Ogdensburg, N. Y.

Rosemont.

Philadelphia.

Kingston, Md.

Huntington.

Philadelphia.

Philadelphia.

Wenonah, N. J.

Ashley.

H. E. Muhlenburg.

Isaac Massey.

L. B. Hoagland.

University.

William Hunt.

L. Banks.

University.

E. R. Mayer.

J. H. and C. C. Benton.

J. E. Whiteside.

J. William White.

John Dale.

University.

University.

Judson Daland.

J. William White.

A. D. Tewksbury.
Cashman, Elmer W.
Chambers, George H.
Church, Joseph G.
Cooke, Snow P., B.A. (Acadia)
Crawford, James R., Jr.
Criley, John C.
Culp, John F.
Dalbey, Alvin D., A. B. (Central High School)
Dale, Frank
Davies, J. Henry
Diller, Theodore
Dixon, Samuel G.
Donohoe, Michael J., A.B.
Dorland, William A. N., A.B. (Central High School)
Dorsey, Allen W., A.B.
Dowling, Henry M.
Emerick, Charles E.
Fisher, John W.
Fitzpatrick, Charles, Jr.
Fledderjohann, Henry E.
Flexer, John R.
Green, Elgar M., A.B. (Lafayette)
Green, Walter D., A.B. (Princeton)
Grass, William D., Jr., A.B. (Univ. Pa.)
Hammond, Levi J.
Harmon, John B.
Hersh, Daniel G.
Hewetson, Hale L.
Bill, J. Heighe
Hillegass, John P., Jr.
Hosgland, Bonn W.
Hoban, Charles J.
Hoffman, J. Louis
Hoffman, Jacob Z., A.B.
Holly, William J., A.B. (Yale)
Hopkins, Gerald G.
Houser, Luther M.
Humiston, Franklin G., A.B. (Dart.)
Hunt, Charles D.
Jameson, William B.
Johnson, Edwin W.
Jones, Kent C.
Kerlin, Ejithah I.
Kilburn, John H.
Kimmell, Louis J. C.
Knowles, James H., A.B.
Kynett, Harry H., A.B.
Laine, Danaso T.
Lane, Samuel L.
Lane, Samuel M.
Lee, Thomas G.
Leopold, Isaac, B.S. (Univ. of Pa.)
Lighty, Albert M.
Longo, Wilson P.
Lung, George A., A.B. (University of Rochester)
Lyons, Ray
Macias, Jose J., Ph.B.

Bendersville.
Philadelphia.
Girardville.
Milton, Nova Scotia.
Brownsville.
Allentown.
Philadelphia.
Philadelphia.

Bellefonte.
Cleveland, Ohio.
Lancaster.
Philadelphia.
Waterbury, Conn.

Owego, N. Y.
West Chester.
Centre Hall.
Philadelphia.
New Bremen, Ohio.

Easton.
Trenton, N. J.
Philadelphia.

Dover, Del.
Altoona.

East Greenville.

St. Clairsville, Ohio.

Locust Grove, Md.

Pennsburg.

Philadelphia.

Scranton.

Cressona.

Maytown.

Philadelphia.

Philadelphia.

Honesville.

Cambridge, Mass.

Williamsport.

Petrolia.

Stockton, N. J.

Milton, Del.

Richmond, Ind.

Woodstock, N. Br'k.

Philadelphia.

Milton, Nova Scotia.

Philadelphia.

Navajas, Cuba.

New Castle, Del.

Orbisonia.

Rochester, N. Y.

Philadelphia.

Elk Lick.

Mertzown.

Philadelphia.

Laneshoro'.

Leon, Nicaragua.

E. W. Mumma.
E. B. Shapleigh.

University.

W. S. Duncan.

Thomas T. Martin.

University.

University.

University.

University.

University.

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Philadelphia.

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University.
Marin, Luis, B.S.  
Marshall, George M., A.B. (Western Res. Univ.)  
Martin, Charles B.  
Matlack, Ellwood, A.B.  
Miller, Harold B., Ph.G.  
Miller, R. Frank B., A.B. (Western University)  
Morris, Elliston J., A.B. (Univ. Pa.)  
Morris, William L.  
Morton, Samuel W.  
Moyer, Sherman G. T.  
Murchison, John  
McCausland, James R., Ph.G.  
McCleare, Charles B.  
McCreight, Robert, Ph.G.  
McFetridge, William C.  
Negendank, Egmont T.  
Neuber, Samuel T., A.B. (Univ. Pa.)  
Orbison, J. Harris, A.M. (Princeton)  
Otto, Joseph, Jr.  
Parkes, William E., A.B. (Princeton)  
Pascoe, George Y., Jr., A.B. (Central High School)  
Pfouts, Gilbert B.  
Pownall, Elmer E.  
Redmond, Henry  
Rees, Chas. Hansen  
Reynolds, Leon E.  
Roberts, T. Sargent  
Sartain, Paul J., A.B. (Univ. Pa.)  
Schoales, Charles B.  
Schum, Frank L.  
Seymour, Alfred M., A.B.  
Sharp, Alexander A., A.B. (Dickinson)  
Shimer, William S., A.B. (Central High School)  
Shissler, Alfred G.  
Shoemaker, Jesse O.  
Shoemaker, Levi L., A.B. (Yale)  
Shoemaker, Samuel B., B.S. (Hav’ld)  
Silva, Manuel C. Da  
Smith, Allen J., A.B. (Penna.)  
Snodgrass, O. Edmund  
Stevens, Arthur A., A.B. (Central High School)  
Stiles, William E.  
Tatum, Edward, A.B. (Yale)  
Teller, William H.  
Thompson, James B.  
Thompson, William O.  
Tomlin, Almer N.  
Waterhouse, Charles F., A.B.  
Ward, E. Tillson, A.B. (Central High Philadelphia School)  
Weaver, W. Warren, A.B. (Penna.)  
Welker, Abram T.  
Wellner, Elmer K.  
Westcott, Thompson S., A.B. (Univ. of Pa.)  
Leon, Nicaragua.  
Painesville, Ohio.  
Bart.  
Philadelphia.  
Philadelphia.  
Allegheny.  
Germantown.  
Philadelphia.  
Linwood.  
Pottsville.  
North River, P. E. I.  
Philadelphia.  
Loyalton.  
Philadelphia.  
Philadelphia.  
Wilmington, Del.  
Philadelphia.  
Belleville.  
Key West, Fla.  
Parkesburg.  
Philadelphia.  
Philadelphia.  
Bridge Valley.  
Coryus Christi, Tex.  
Winchester, Ky.  
Portland, Me.  
Hazleton.  
Philadelphia.  
Philadelphia.  
Altoona.  
Huntington, Conn.  
Carlisle.  
Philadelphia.  
Shamokin.  
Philadelphia.  
Wilkes-Barre.  
Germantown.  
Rio de Janeiro, Brazil.  
York.  
York.  
Germantown.  
Pittston.  
New York, N. Y.  
Philadelphia.  
Allegheny City.  
Summit Hill.  
Goshen, N. J.  
Cincinnati, Ohio.  
Hanover.  
Hillegass.  
Trexelerton.  
Philadelphia.  
University.  
University.  
John Martin.  
University.  
C. P. Stout.  
Dr. Dickson.  
J. Cheston Morris.  
J. E. Whiteside.  
J. Newton Walker.  
A. H. & G. H. Halberstadt.  
Halifax Med. College.  
R. G. Curtin.  
H. C. Beschler.  
University.  
J. H. W. Chestnut.  
University.  
University.  
University.  
Gullifras & Sweeting.  
William L. Martin.  
University.  
James Tyson.  
H. J. Nelids.  
L. D. Judd.  
University.  
Yale College.  
W. R. Longshore.  
University.  
Jos. D. Schoales.  
John Fay.  
F. L. Dickinson.  
D. F. Woods.  
University.  
C. W. Weaver.  
M. Price.  
E. B. Mayer.  
University.  
University.  
Kerr & Bacon.  
University.  
University.  
J. J. Walsh.  
University.  
University.  
Chas. W. Dulles.  
E. H. Kistler.  
H. Swain.  
J. P. Waterhouse.  
Joseph Hearn.  
G. P. Weaver.  
H Bobb.  
William S. Herbst.  
W. W. Keen.
Whitehead, John  
White, R. Parks  
Whitten, James L.  
Williams, Walter S.  
Wilson, Henry G.  
Worthington, Union, A.B. (Central)  
Yard, John S.  
Yard, Pearson  
Zentmayer, William  

Trenton, N. J.  
Ashland, Ohio.  
Philadelphia.  
Pittsburgh.  
Carlisle.  
Danville, Ky.  
Trenton, N. J.  
Trenton, N. J.  
Philadelphia.  

FIRST YEAR.  

Addison, Thomas G., Jr.  
Agnew, Hubert, A.B. (Princeton)  
Allen, Americus R.  
Andrews, George E., A.B. (Univ. of Rochester)  
Arnold, Ira W.  
Atlee, William A., Jr.  
Austin, John M.  
Balliet Tilghman M., A.B. (Franklin and Marshall)  
Barney, Delbert, A.B. (Lafayette)  
Bemish, Reuben H.  
Beren, T. P. Paasmore  
Bowen, Cutbert F., B.A. (Durham and London University)  
Bowman, David P., B.E.  
Bradley, Edward T.  
Brinkmann, Leon  
Caldwell, Charles C.  
Cameron, George A.  
Carlisle, Paris T., Jr.  
Cattell, Henry W., A.B. (Lafayette)  
Chamorro Filadelfo, B.S.  
Clarkson, J. A. Coleman, A.B. (Dickinson Seminary)  
Cleaver, J. Vale  
Clewell, Cary K.  
Coll, Arthur P.  
Coke, Edwin Stanley, A.B. (Central High School)  
Crandall, R. Percy  
Cyphers, Millard E.  
Diversity, Henry B.  
Djongion, Giragos  
Doron, John George, A.B. (Brown)  
Douglas, Malcolm, Jr.  
Dunaway, Allen G., B.S. (Ill. Coll.)  
Edgar, Lambert H.  
Ely, Thomas C., Jr.  
Parr, William W.  
Pay, William E., A.B. (Univ. of Minn)  
Fell, Alexander G., B.S. (Princeton)  
Ferrer, Adolfo Leon  
Frost, William M., A.B. (Dickinson)  
Fundenberg, George B., Jr., A.B. (Western Univ.)  
Gale, John F.  
Gallagher, Thomas D. J., A.B. (Georgetown)  

Washington, D. C.  
Philadelphia.  
Shippensburg.  
Granville, Ohio.  
Philadelphia.  
Philadelphia.  
New Mahoning.  
Wilkes-Barré.  
Rochester, N. Y.  
Philadelphia.  
Philadelphia.  
Koib's Store, Va.  
Gallitin.  
Philadelphia.  
West Chester.  
Zion, Md.  
Frederica, Del.  
Easton.  
Granada, Nicaragua.  
Altoona.  
E. Bethlehem.  
Telford.  
Philadelphia.  
Philadelphia.  
Brooklyn, N Y.  
Wilkes-Barré.  
South Dennis, N. J.  
Deurlecker, Armeucia.  
Mt. Holly, N. J.  
Philadelphia.  
Pittsburgh.  
Philadelphia.  
Holmdel, N. J.  
Philadelphia.  
Minneapolis, Minn.  
Tabasco, Mexico.  
Hazard.  
Philadelphia.  
Woodland, Cal.  
Mt. Carmel.  

Students of the Second Year, 136.
Townes, William C., Ph.B. (Univ. of Miss.)
Tybout, Richard Raymond
Voorhess, Shepard
Weston, George D., B.S. (Dartmouth)
Witherspoon, John A.
Zuniga, Francisco J., A.B.

Oxford, Miss.
New Castle, Del.
Dargett's Mills.
E. Bethlehem.
Columbia, Tenn.
Massaya, Nicaragua.

University.
Q. C. Farquhar.
Lewis D. Harlow.
University.

Students of the First Year, 101.

SPECIAL STUDENTS.

Collins, Moses
Facklar, Louis H.
Hugenschmidt, Arthur C.
Keller, Frederick R.
Maercklein, Bernard G.
Maury, Richard B., Jr.
Stahl, B. Franklin, Ph.G.
Wood, James L.

Louisville, Ky.
York.
Paris, France.
Philadelphia.
Milwaukee, Wis.
Memphis, Tenn.
Philadelphia.
Philadelphia.

University.
Thos. W. Evans.
A. P. Keller.
University.
J. H. Grove.
University.

Special Students, 8.

POST-GRADUATES.

Crow, Walter A., A.M., M.D.
Farquhar, Quintus C., M.D.
Kinnamin, Richard C., M.D.
Livingston, Thomas M.
Phillips, Ellis, M.D.
Tuttle, Freeman A., M.D.

Friendship, Va.
East Bethlehem.
Ashland, O.
Columbia.
New Haven.
Jefferson, O.

Bellevue, University.
Ohio Med. College.
Jeff. Med. College.
Cleveland Med. Coll.

Post-Graduates, 6.

TOTAL.

Students of the fourth year ..... 3
Students of the third year ..... 119
Students of the second year ..... 136
Students of the first year ..... 101
Special Students ..... 8
Post-graduate Students ..... 6

373

The total number of new matriculates the present session, including those admitted to advanced standing, is 124.

SUMMARY.

Argentina 
Armenia 
Brazil 
California 
Chili 
China 
Connecticut 
Cuba 
Delaware 
District Columbia 
Florida 
France 
Illinois 
Indiana 
Iowa 
Kentucky 
Maine 
Maryland 
Massachusetts 
Mexico 
Minnesota 
Mississippi 
Missouri 
New Brunswick 
New Hampshire 
New Jersey 
New York 
Nevada 
Nevada 
New York 
New York 
New York 
New York 
New York 
New Hampshire 
New Hampshire 
New Jersey 
New Jersey 

373
AUXILIARY DEPARTMENT OF MEDICINE.

FACULTY.

WILLIAM PEPPER, M.D., LL.D., Provost of the University, and ex-officio President of the Faculty.

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

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

JOSEPH T. ROTHROCK, B.S., M.D., Professor of Botany.

JOSEPH G. RICHARDSON, M.D., Professor of Hygiene.

ANDREW J. PARKER, M.D., Ph.D., Professor of Comparative Anatomy and Zoology.

SAMUEL B. HOWELL, M.D., Dean.

AIMS OF THE DEPARTMENT.

The Auxiliary Faculty of Medicine supplements the ordinary winter course of medical instruction by lectures on certain collateral branches of science essential to the thorough education of the physician. To profit by this instruction, the student should have previously attended at least two sessions of the usual winter lectures. In fact, this course is essentially post-graduate; and the Faculty, therefore, earnestly recommends that at least one session should be attended, if possible, after graduation in medicine. The session for 1884–85 will begin on Monday, December 8th, and continue until the early part of May.

The lectures are open, also, 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.

FEES.

The Lectures are free to students and graduates of the Department of Medicine of the University. Other matriculates pay fifteen dollars for each professor's ticket, or thirty-five dollars for the whole course. The graduation fee is ten dollars.
DEGREES.

Graduates in medicine of the University, or of other recognized schools, who attend two full courses of lectures in the Auxiliary Department of Medicine, who pass a satisfactory examination, and who present an original thesis on one of the subjects taught, receive the degree of Bachelor of Science (B.S.), on complying with the following conditions:

(1) When applying to the Dean for examination, the candidate must exhibit his medical diploma and the tickets of this Faculty.

(2) The thesis must be presented to the Dean and the graduation fee be paid by the 15th day of May.

(3) Candidates must be present at Commencement, unless excused by the Faculty.

PRIZES.

(1) The George B. Wood Prize, founded by the Alumni Association of the Auxiliary Department of Medicine, is awarded annually to the candidate who passes the best examination, and presents the best original thesis on an experimental subject, satisfactory to the Faculty.

(2) Messrs. R. & J. Beck, opticians, through their manager, W. H. Walmsley, offer at the coming session one of their new “Ideal” microscopes, complete, of the value of seventy-five dollars, to the author of the best and most practical paper illustrative of any Department of Natural History, preference being given to Human Anatomy and Botany, worked out by the aid of the microscope, and accompanied by prepared objects or drawings of the subject-matter.

COURSE OF STUDY.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.—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.

Poisoning, with special reference to testing; modes of procedure in order to determine the presence of poisons in cases of homicide and suicide.
MINERALOGY AND GEOLOGY.—Lectures on Descriptive Mineralogy. Practical determination of minerals by their physical properties. Qualitative analysis by the blow-pipe, 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: The Chemistry of Geology; Lithological Geology—condition, structure, and arrangement of Rock Masses.


Practical Mineralogy and Geological Chemistry.

BOTANY.—Vegetable Physiology. Practical Botany.

Instruction during the first year will be by lectures only. During the second year the time will be devoted to laboratory work exclusively. Candidates for graduation must pass a botanical examination at the close of each year.

Practical classes in Analytical Botany are held, in addition to the regular lectures.

HYGIENE.—A full consideration of 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.

Sanitary Science, and especially Preventive Medicine, has advanced with such enormous strides during the past few years, that it has been found necessary to devote alternate years to instruction in regard to Public and Personal Hygiene respectively.

COMPARATIVE ANATOMY AND ZOOLOGY.—1. An outline of the classes of animals. 2. A succinct account of their anatomy and embryology. 3. Explanation of "varieties" of human anatomy, and the proper method of studying malformations. 4. A description of human parasites. 5. An account of the more important sources of those articles of the materia medica which are derived from the animal kingdom.

MUSEUM.

The Museum of the Auxiliary Department of Medicine contains three thousand mineral specimens systematically arranged; a collection of rocks, fossils, and casts, arranged according to their geological succession; a valuable philosophical apparatus; a growing collection of specimens of Comparative Anatomy and Zoology; 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:

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

Reese's Med. Jurisprudence and Toxicology.

Dana's System of Mineralogy.


Dana's Manual of Geology.

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


Works of reference:—
Wharton and Stillé's *Medical Jurisprudence*.
Tidey's *Legal Medicine*.
Sach's *Text-book of Botany*.
Le Maout and Decaisne's *General System of Botany, Descriptive and Analytical*.
Cooke and Berkeley on *Fungi*.
Parke's *Hygiene*, with American Supplement.
Wilson's *Manual of Hygiene*.
Buck's *Hygiene and Public Health*.
Pavy or Chambers on *Diet*.
Mivart's *Elements of Anatomy*.
Gegenbaur's *Elements of Comparative Anatomy*.
Balfour's *Comparative Embryology*.

MATRICULATES, 1884.

Albertson, W. C.,
Achev, Fred. A.,
Avison, David,
Bradford, T. B.,
Bratton, Howard,
Baylis, J. N.,
Benton, J. W.,
Birney, D. B.,
Boon, H. H.,
Bodamer, Geo. A.,
Carothers, E. J.,
Carson, A. D.,
Carey, W. A.,
Crawford, J. R., Jr.,
Chambers, G. H.,
Cochran, Wm. R.,
Culp, J. F.,
Davies, J. H.,
Dorland, Wm. A. N.,
Edsall, F. H.,
Evarts, H. C., M.D.,
Flexer, J. L.,
Fitzpatrick, C., Jr.,
Fisher, J. V.,
Freas, H. M.,
Fundenberg, G. B., Jr.,
Grant, H. S.,
Grimm, Nathan P.,
Hare, Hobart A.,
Hirsh, Chas.,
Hill, W. Preston,
Hoagland, B. W.,
Hubbard, Thos.,

Vienna, N. J.
Lancaster.
Wakefield, Eng.
Dover, Del.
Elkton, Md.
Bridgeton, N. J.
Ogdensburg, N. Y.
Philadelphia.
do.
do.
San Antonio, Texas.
Valparaiso, Chili, S. A.
Wenonah, N. Y.
Brownville.
Philadelphia.
Philadelphia.
do.
Cleveland, Ohio.
Philadelphia.
Hamburg, N. J.
New York, N. Y.
Allentown.
Philadelphia.
Williamstown.
Lafayette Hill.
Pittsburg.
Navarre, Ohio.
West Chester.
Philadelphia.
Staunton, Va.
St. Louis, Mo.
Philadelphia.
Ashtabula, Ohio.
Jones, LeRoy, H.,
Kimball, H. Augusta,
Lee, Thomas G.,
Leidy, J., Jr.,
Mengel, Matt.,
Mial, L. L.,
Morton, T. S. K.,
Morton, S. W.,
Pierce, David,
Pownall, Elmer E.,
Reynolds, Leon E.,
Stevens, Arthur A.,
Shissler, A. G.,
Strouse, F. M.,
Thompson, J. B.,
Ward, E. Tillson,
Weller, E. K.,
Wende, E.,
Whitehead, John,
White, R. P.,
Work, Hubert,
Yard, P.,

Utica, N. Y.
Philadelphia.
Rochester, N. Y.
Philadelphia.
Reading.
Raleigh, N. C.
Philadelphia.
Linwood.
Suterville.
Bridge Valley.
Portland, Maine.
Germantown.
Shamokin.
Philadelphia.
Allegheny City.
Philadelphia.
Trexlerstown.
Alden, N. Y.
Trenton, N. J.
Ashland, Ohio.
Brady.
Trenton, N. J.

Total, 55.
DEPARTMENT OF DENTISTRY.

FACULTY.

WILLIAM PEPPER, M.D., LL.D., Provost of the University, and ex-officio President of the Faculty.
CHARLES J. ESSIG, M.D., D.D.S., Professor of Mechanical Dentistry and Metallurgy.
EDWIN T. DARBY, M.D., D.D.S., Professor of Operative Dentistry and Dental Histology.
JAMES TRUMAN, D.D.S., Professor of Dental Pathology, Therapeutics and Materia Medica.
JOSEPH LEIDY, M.D., LL.D., Professor of Anatomy.
HARRISON ALLEN, M.D., Professor of Physiology.
THEODORE G. WORMLEY, M.D., LL.D., Professor of Chemistry.

ROBERT HUEY, D.D.S., Lecturer on Operative Dentistry.

CLINICAL INSTRUCTORS.

DR. C. S. BECK,
DR. LOUIS JACK,
DR. W. G. A. BONWILL,
DR. W. R. MILLARD,
DR. R. R. UNDERWOOD,
DR. E. H. NEALL,

DR. H. C. REGISTER,
DR. R. H. SHOEMAKER,
DR. J. A. WARDWELL,
DR. J. A. WOODWARD,
DR. H. C. LONGNECKER.

DEMONSTRATORS.

WM. LEWIS CAVE, D.D.S., Demonstrator of Mechanical Dentistry.
J. JUDSON EDWARDS, D.D.S., Assistant Demonstrator of Mechanical Dentistry.
JOHN MARSHALL, M.D., Nat.Sc.D., Demonstrator of Practical Chemistry.
JOHN B. DEAVER, M.D., Demonstrator of Anatomy.

COURSE OF STUDY.

The Course extends over two years, and in each year there are three sessions, the Spring, the Preliminary, and the Winter Session. By this arrangement, students are spared the necessity of securing a preceptor during their stay in the city; the Faculty deeming attendance during the spring and summer months equivalent to private instruction. Such attendance, however, is not to be considered in any way a substitute for the Winter Session.

During the Preliminary Session there are one or more lectures a day upon important practical subjects, or on matters collateral with the subjects of the Winter Session. During the Winter Session the following is the arrangement of studies:
### FIRST YEAR.

<table>
<thead>
<tr>
<th>Hour</th>
<th>Monday.</th>
<th>Tuesday.</th>
<th>Wednesday.</th>
<th>Thursday.</th>
<th>Friday.</th>
<th>Saturday.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 A.M.</td>
<td>General Chemistry.</td>
<td>General Chemistry.</td>
<td>Mechanical Clinic.</td>
<td>Mechanical Clinic.</td>
<td>Mechanical Clinic.</td>
<td></td>
</tr>
<tr>
<td>10 A.M.</td>
<td>Mechanical Clinic.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 A.M.</td>
<td>Chemistry Laboratory.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>12 M.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1 P.M.</td>
<td>Operative Clinic.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:30 P.M.</td>
<td>Operative Clinic.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3:30 P.M.</td>
<td>Anatomy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4:30 P.M.</td>
<td>Physiology.</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

The curriculum of the first year is identical for Medical and Dental students as far as Anatomy, Chemistry, and Physiology are concerned.

### SECOND YEAR.

<table>
<thead>
<tr>
<th>Hour</th>
<th>Monday.</th>
<th>Tuesday.</th>
<th>Wednesday.</th>
<th>Thursday.</th>
<th>Friday.</th>
<th>Saturday.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 A.M.</td>
<td>Laboratory of Mechanical Dentistry, or Operative Dentistry.</td>
<td>Laboratory of Mechanical Dentistry, or Operative Dentistry.</td>
<td>Laboratory of Mechanical Dentistry, or Operative Dentistry.</td>
<td>Laboratory of Mechanical Dentistry, or Operative Dentistry.</td>
<td>Laboratory of Mechanical Dentistry, or Operative Dentistry.</td>
<td></td>
</tr>
<tr>
<td>10 A.M.</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>11 A.M.</td>
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</tr>
<tr>
<td>12 M.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1 P.M.</td>
<td>Operative Clinic.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:30 P.M.</td>
<td>Operative Clinic.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3:30 P.M.</td>
<td>Anatomy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4:30 P.M.</td>
<td>Physiology.</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
In order to facilitate work in the practical departments, and fully employ the student's time, the first year student devotes the morning hours equally to dental and chemical laboratory work.

The second year student has the entire forenoon of each day for practical dental work. Every opportunity is afforded for practice in operative and mechanical dentistry.

The graded course, with its examinations at the close of the first year, not only economizes time, but facilitates the acquisition of a knowledge of the remaining branches.

OUTLINE OF THE COURSE.

The lectures on OPERATIVE DENTISTRY AND DENTAL HISTOLOGY embrace the comparative anatomy of the teeth, the functions and microscopical peculiarities of the dental organs, the development of teeth, their component tissues, a full description of the materials and instruments used in operative dentistry, a thorough elucidation of all dental operations, such as filling, extracting, regulating, the pathological relations of the teeth to the other parts of the system, and a minute description of all special diseases related to dental surgery, or of interest to the dentist. The theories taught are demonstrated in clinics.

The instruction in MECHANICAL DENTISTRY AND METALLURGY embraces the proper fitting up of a dental laboratory; the use of tools; the melting, refining, alloying, and working of metals and alloys used by the dentist; the chemical and physical properties of materials pertaining to ceramic dentistry, their preparation, and the most approved formulae for compounding bodies and enamels for the manufacture of block teeth and continuous gum work; the history and properties of all substances used in making artificial dentures; as well as the mechanical treatment of cleft palate, including the several methods of constructing obturators for such cases, whether congenital or acquired. The lectures in this department also include every approved mechanical means of correcting irregularities of the teeth. They are amply illustrated by specimens, models, diagrams, and practical application in the laboratory, under the supervision of accomplished mechanical dentists. Special attention will be directed to the higher branches of plate work, the continuous gum process, and carving teeth.

Every student is required to furnish his own bench tools for
metal and rubber work, and will be provided with a place in which they can be locked when not in use.

The lectures in chemistry embrace the study of chemical physics and principles of chemical philosophy, together with a detailed consideration of the principal elementary substances and their compounds, and of the fundamental principles of organic chemistry, including the classification of organic compounds, and the special study of typical members of the different classes. Special attention is also given to the laws of chemical affinity, and the conditions under which they are modified, especially as they relate to the preparation of mixtures and prescriptions.

The course in practical chemistry in the working laboratory includes exercises in chemical manipulation, the study of the chemical properties and reactions of the principal metals, acids, and their combinations, and the general principles of qualitative analysis, especially as they relate to the detection and separation of the metals and compounds of interest to practitioners in all branches of medicine. Each student is provided with a separate table and apparatus, and is required to perform all the usual chemical manipulations under the direction of demonstrators, as well as to exhibit by formulae, on paper, all reactions involved in his tests.

Human anatomy is taught in its relations to all the departments of medicine, including dentistry. The lectures are illustrated by fresh dissections of the human body, and a rich museum of anatomical specimens, large and well-executed models, and drawings.

The course on physiology includes lectures and demonstrations on the entire human physiology and on physiological chemistry. The study of the physiology of each organ is preceded by a full consideration of its histology. The course is amply illustrated by appropriate diagrams, chemico-physiological experiments, and vivisections.

The lectures on dental pathology include such portions of general pathology as have a bearing upon the special subjects taught. Dentition, and its possible pathological results, will receive careful attention, followed by a detailed consideration of all the diseases to which the teeth and surrounding parts are liable, the character—normal and abnormal—of the oral secretions, and the direct and remote relations which the pathological conditions of the mouth sustain to other portions of the system.
The treatment required under each head will be explained, and the recognized processes by which to secure a return to normal conditions, be minutely detailed.

**Materia Medica** will be taught with special reference to the character and value of those remedies that have a direct or indirect bearing upon dental therapeutics.

**Clinical Instruction.**

Four hours daily (except Saturday) are spent in actual practice under the supervision of the Demonstrators. Every student is required to provide his own instruments, except those for extracting. He is expected to keep them in perfect order, and will be provided with a place in which they can be locked when not in use. In the operating room, wires are arranged to a number of the chairs for the use of electric pluggers.

**Text-Books and Works of Reference.**

- On-operative Dentistry and Dental Histology: Harris' Principles and Practice; Tomes' Dental Surgery; Taft's Operative Dentistry; Tomes' Dental Anatomy.
- On Mechanical Dentistry and Metallurgy: Richardson's Mechanical Dentistry; Wildman's Instruction in Vulcanite Work; Kingsley's Oral Deformities; Essig's Dental Metallurgy.
- Dental Follicle: Legros and Magitot, translated by M. S. Dean.
- On Chemistry: Fownes' or Wurtz's Chemistry; Wormley's Micro-Chemistry of Poisons; Muter's Analytical Chemistry.
- On Physiology: Foster's Physiology, with Frey's Compendium of Histology; Tyson's Cell Doctrine; Carpenter's Physiology, by Smith.
- On Materia Medica: H. C. Wood's Therapeutics; Geo. B. Wood's Therapeutics; Wood and Bache's Dispensatory.
- On Surgery: Agnew's Surgery; Ashhurst's Surgery; Billroth's Surgical Pathology.

**Infirmary and Laboratory.**

The Infirmary and Laboratory are open to the student for the prosecution of the practical part of his studies under the guidance and supervision of competent demonstrators. During the Preliminary and the Winter Session, a Clinical Lecture is given and operations performed by one of the Professors every Saturday.

**The Stillé Medical Library.**

This Library, which was founded by Professor Alfred Stillé for the purpose of promoting a spirit of scientific research and literary culture, contains upwards of four thousand volumes. During the Winter and Spring Sessions it is accessible to students and graduates of the Dental Department under appropriate regulations.
MUSEUM AND CABINETS.

The Wistar and Horner Museum, founded nearly one hundred years ago, and 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, a rich collection of specimens relating to Dentistry, such as the different stages of dentition, abnormal conditions of the teeth, mandibles of the lower animals, etc., and an extensive collection of artistic models, which are used in illustrating the several courses of lectures. It is open on Wednesday and Saturday of each week, from 9 A.M. to 12 M., throughout the session. The ticket of matriculation in this Department entitles the holder to admission to the Museum.

ARRANGEMENT OF SESSIONS.

The Spring Session, 1885, begins on Monday, May 4th, and ends the 15th of June. The work of this session is entirely practical; no lectures are delivered.

The Preliminary Session begins on Monday, September 14th.

The Winter Session, 1885–86, begins on Thursday, October 1st, 1885, and ends on May 1st, 1886.

FALL SESSION.

The Fall Course is free of charge to those who enter for the Winter Session.

EXAMINATIONS.

At the close of the first year, examinations are held in chemistry and materia medica. If the student is not qualified, a second examination is afforded him at the beginning of the next winter session.

The final examination is in anatomy, physiology, operative dentistry, mechanical dentistry and metallurgy, and dental pathology and therapeutics.

Students who have attended one full term in another dental school recognized by the Faculty, will be admitted to the graduating class, upon presentation of the required certificate.

Students holding a medical diploma will be admitted to the Senior Class, but will be required to spend a year in the study of
practical Dentistry in the Operative and Mechanical Departments, the year to include the regular winter's course of lectures.

Students who have attended but one course in a medical college will be required to take two winter courses in this Department.

A preliminary examination will be required for entrance to the first or Junior year. The requirements of this examination will be a good English education.

Students who have certificates properly attested from colleges, or other schools of reputable character, will be accepted without examination.

DEGREES.

At the close of the second year, upon passing satisfactorily all his examinations and complying with the following regulations, the student will receive the degree of Doctor of Dental Surgery (D.D.S.):—

I. The candidate must be twenty-one years of age, and must have attended two full winter sessions,—the second, in this institution.

II. He must have dissected at least two parts; must prepare a thesis upon some subject connected with the theory or the practice of Dentistry; must treat thoroughly and bring before the Professor of Operative Dentistry a patient requiring all the usual dental operations; must take up at least one artificial case, and bring it completed, with the patient, before the Professor of Mechanical Dentistry, 30 days before the close of the term; and must prepare a specimen case, to be deposited in the College collection, and present it to the Professor of Mechanical Dentistry before the 1st of April. The operations must be performed, and the work on the artificial case done, at the College building.

Students of Dentistry, who wish the degree of Doctor of Medicine also, can take a three years' course; but they must notify the Secretary of the Department of Medicine of their intention before the beginning of the second session. They must then add to the studies of the second year, Medical Chemistry, General Pathology and Morbid Anatomy, Therapeutics, Theory and Practice of Medicine, Surgery, and Obstetrics, with clinics, medical and surgical. At the end of this year they are examined in Medical Chemistry, Anatomy, and Physiology, in addition to the dental branches. If qualified,
they then receive the degree of D.D.S., and pass on to the third year in medicine.

To such graduates the spring course is open for practice at the chair, or in the dental laboratory, free of additional charge.

In the third year they take the studies of the third year of the medical course, and at the end of the year pass an examination in Therapeutics, General Pathology and Morbid Anatomy, Theory and Practice of Medicine, Surgery, and Obstetrics.

**EXPENSES.**

**FIRST YEAR.**

<table>
<thead>
<tr>
<th>Matriculation Fee</th>
<th>$5 00</th>
</tr>
</thead>
<tbody>
<tr>
<td>General ticket, Winter Session</td>
<td>$100 00</td>
</tr>
</tbody>
</table>

**SECOND YEAR. DENTISTRY ONLY.**

| General ticket, Winter Session | $100 00 |
| Dissecting ticket (required) | $10 00 |
| Graduation | $30 00 |

Total fees for the two courses in dentistry, including graduation: $140 00

**SECOND YEAR. DENTISTRY AND MEDICINE.**

| Matriculation in Medical Department | $5 00 |
| Tuition for joint medical and dental studies | $190 00 |

**THIRD YEAR. (MEDICINE.)**

| General ticket | $150 00 |

No graduation fee.

Third-year medical students who have graduated in the department of Dentistry are entitled to the use of the Operative Clinics and the Dental Laboratory free of charge.

Board can be obtained at from five to eight dollars per week, according to location and accommodations. In locations near the College, students generally pay about five dollars per week. This amount includes fire and light.

Persons desiring further information in regard to this Department should address the Secretary, giving Name, Post Town, County, and State.

Members of the profession who receive a copy of this Catalogue are requested to notify the Secretary should they change their residence, and to send postal card with names of dentists practising in the town or county in which they reside.

Members of the profession who have specimens of peculiarities of development or unusual pathological conditions, models of irregularities as to position of the natural teeth, etc. etc., and who will be
good enough to send the same by mail or otherwise to Prof. E. T. Darby, No. 1513 Walnut Street, Philadelphia, Pa., will receive suitable acknowledgment and thanks. The specimens will be nicely mounted, with the donor's name attached, and deposited in the College Museum.

JAMES TRUMAN, Secretary,
3249 Chestnut Street, Philadelphia, Pa.

JOHN A. REIMOLD, Clerk,
Dental Department, University.

SECOND YEAR.

Allen, William Y.
Bailey, Edgar C.
Bells, Edward R.
Bromley, Frederick W., M.D.
Brans, August
Carter, Ditson P.
Coute, William S.
Crisman, Ira B.
Dayton, Cha.s. Elmer
Dick, George W. C.
Dickinson, Edward B.
Ehni, Robert F.
Englert, G. Zieglaus
Erskine, George W.
Fergus, Oswald, L.D.S. (Faculty of Physicians and Surgeons)
Fisher, Frank W.
Fridman, Andreas
Gerdtzen, Oscar
Gibbons, Clifford
Gibbons, John F., B.A. (Cambridge)
Gibbs, C. Franklin
Ginoyer, Louis
Hammer, William J.
Hayward, Thaddeus T.
Hertz, John C.
Howe, Edward D.
Hugenschmidt, Arthur C.
Jack, L. Foster, M.D.
James, Benjamin R., A.M.
Jones, Victor S.
Knapp, Frank C.
Lomadriz, Estanislo
Llorach, Paul J. G.
Long, William R.
Marsh, Adelbert W.
Mercee, Charles J.
Milliken, George G.
Millkin, Charles T.
Moore, U. S. Grant
Monroe, Grafton, A.B. (St. John's College)
Nittinger, Alfred

Boston, Mass.
Macon, Geo.
Richmond, Ind.
Palmira, Wis.
Hanover, Germany.
Proctorville, Ohio.
São Paulo, Brazil.
Fremont, Ill.
Stamford, Conn.
Sumter, S. C.
Cicero, Mass.
Toledo, Ohio.
Orange, N. J.
Philadelphia.
Glasgow, Scotland.

Syracuse, N. Y.
Dalarne, Sweden.
Conception, Chilli.
Catskill, N. Y.
São Paulo, Brazil.
Greensburg.
Minneapolis, Minn.
Hazelton.
Holllis, N. H.
Paris, France.
Philadelphia.

Evans, Ill.
Bethlehem.
Bradford, N. Y.
Matanzas, Cuba.
Matanzas, Cuba.
Connelsville.
Constantia, N. Y.
Kenne, Square.
Philadelphia.
Sacramento, Cal.
Shumakin.
Annapolis, Md.
Philadelphia.

Boston Dental College.
Missouri Dental Coll.
W. N. Wilson.
R. Peardon.
University.
University.
University.
W. H. Taggart.
P. H. Brown.
H. B. Noble, Jr.
C. S. Hurbut.
E. E. Heffron.
University.
J. D. White, Jr.
Andrew Fergus.

University.
Univ. of Christiana.
Penna. Dental College.
George Owen.
University.
Gibbs & Wilcox.
University.
University.
Bowman & Weeks.
Wm. H. Hertz.
Frank Bell.
Thomas W. Evans.
Louis Jack and Wm.
Lewis Cave.
University.
Louis E. Sage.
University.
University.
S. D. Woods.
B. T. Mason.
Frank Bernard.
University.
F. F. Tebbets.
R. Hollenback.
University.
S. D. Strohm.
Orrock, Geo. Dall, M.B., C.M., (Univ. of Edin.) L.D.S., R.C.S.E., etc.
Parker, Edwin G.
Peardon, Edwin
Pitts, John R.
Rees, Chas. Hanson
Roett, Clarence F.
Rogov, José
Ryan, George B.
Schmidt, John A.
Schroeder, Curt.
Shaw, Louis
Smith, Chas. Elmer
Smith, W. Albert
Southwell, Claude A.
Southworth, Ernest L.
Stapleton, J. Walter
Starr, R. Walter
Stine, Henry M.
Wells, George H.
Winner, William L.

Edinburgh, Scotland. Chas. Matthew.
Watertown, N. Y. University.
Palmyra, Wis. University.
Philadelphia University.
Winchester, Ky. B. D. Rees.
Barbados, W. I. University.
Matanzas, Cuba. University.
Sussex, Canada. C. Cutler Smith.
Hion, N. Y. George Schroeder.
Bresian, N. Y. James Martin.
Davenport, Iowa. University.
Salida, Col. University.
Milwaukee, Wis. University.
Sacramento, Cal. University.
Winchester, Ky. University.
Harrisburg University.
N. Hatfield, Mass. W. H. Jones.
Williamsport, J. M. Winner.

Students of the Second Year, 61.

FIRST YEAR.

Abarca, Filadelfo University.
Adams, James E. University.
Aguilar, Arturo University.
Bentley, Delavan F. University.
Bohn, Henry W. University.
Borden, Walter A. University.
Bordner, Charles M. University.
Bradley, Wilmot V. University.
Calves, Antonio D. University.
Campbell, John University.
Chambers, William M. University.
Cookingham, George T., A.B. (Williams)
Davis, Charles H. University.
Dennison, Joseph S. University.
Dumas, Victor University.
Ensigo, Charles L. University.
Fuller, Dwight B., Jr. University.
Gaseke, Elly A. University.
Griffin, Frank R. University.
Hawke, William W. University.
Hills, J. Bartlett University.
Howland, Frank H. University.
Huber, William S. University.
Keisel, James H. University.
Lamotte, Luis Alfredo University.
Long, W. Laurence University.
Lowry, Samuel S. University.
McIntyre, Alex. A. University.
Maercklein, Bernhard G. University.
Maercklein, Reinhold E. University.
Miller, Louis J. University.
Paranhas, João University.
Pérez, Eduardo A. University.
Pierce, Charles M. University.

Abarca, Nicolau, Nicaragua. University.
Adams, James E. University.
Aguilar, Arturo University.
Bentley, Delevan F. University.
Borden, Walter A. University.
Bordner, Charles M. University.
Bradley, Wilmot V. University.
Calves, Antonio D. University.
Campbell, John University.
Chambers, William M. University.
Cookingham, George T., A.B. (Williams)
Davies, Charles H. University.
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Fuller, Dwight B., Jr. University.
Gaseke, Elly A. University.
Griffin, Frank R. University.
Hawke, William W. University.
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Lamotte, Luis Alfredo University.
Long, W. Laurence University.
Lowry, Samuel S. University.
McIntyre, Alex. A. University.
Maercklein, Bernhard G. University.
Maercklein, Reinhold E. University.
Miller, Louis J. University.
Paranhas, João University.
Pérez, Eduardo A. University.
Pierce, Charles M. University.
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<tr>
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<tr>
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<td>Nicaragua, C. A.</td>
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<td>Brazil</td>
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<td>Ohio</td>
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<td>2</td>
<td>Indiana</td>
<td>1</td>
<td>Pennsylvania</td>
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<td>Porto Rico</td>
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<td>Connecticut</td>
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<td>Massachusetts</td>
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<td>South Carolina</td>
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<td>Cuba</td>
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<td>Tennessee</td>
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<td>Mississippi</td>
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<td>Wisconsin</td>
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<td>New Brunswick</td>
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<tr>
<td>England</td>
<td>2</td>
<td>New Hampshire</td>
<td>2</td>
<td></td>
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<tr>
<td>France</td>
<td>1</td>
<td>New Jersey</td>
<td>3</td>
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<tr>
<td>Georgia</td>
<td>1</td>
<td>New York</td>
<td>13</td>
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</tr>
<tr>
<td>Students of the second year</td>
<td>61</td>
<td>Students of the first year</td>
<td>51</td>
<td>Total</td>
<td>112</td>
</tr>
</tbody>
</table>
DEPARTMENT OF VETERINARY MEDICINE.

FACULTY.

WILLIAM PEPPER, M.D., LL.D., PROVOST OF THE UNIVERSITY, and ex-officio President of the Faculty.
RUSH SHIPPEN HUIDEKOPER, M.D., V.S., DEAN OF THE FACULTY, Professor of Internal Pathology, and pro tempore Professor of Veterinary Anatomy.
JAMES TYSON, M.D., Professor of Internal Pathology, and pro tempore Professor of Veterinary Anatomy.
HORATIO C. WOOD, M.D., LL.D., Professor of Materia Medica, Pharmacy, and General Therapeutics.
THEODORE G. WORMLEY, M.D., LL.D., Professor of Chemistry and Toxicology.
HARRISON ALLEN, M.D., Professor of Physiology.
JOSEPH T. ROTHROCK, M.D., B.S., Professor of Botany.
ANDREW J. PARKER, M.D., Ph.D., Professor of Comparative Anatomy and Zoology.
ROBERT MEADE SMITH, M.D., Professor of Comparative Physiology.
WILLIAM L. ZUILL, M.D., V.S., Professor of Surgical Pathology and Obstetrics.

DEMONSTRATORS.

HENRY F. FORMAD, M.D., Demonstrator of Pathology and Morbid Anatomy.
W. HORACE HOSKINS, V.S., Demonstrator of Anatomy.
ALEXANDER GLASS, V.S., Demonstrator of Therapeutics, Materia Medica, and Pharmacy.

* FARRIER, Demonstrator of Forging and Horseshoeing.
R. S. HUIDEKOPER, M.D., V.S., Dean of the Faculty.

AIM OF THE DEPARTMENT.

This Department aims to give instruction, both theoretical and practical, in the scientific study of the elements of medicine and their practical application to the domestic animals, in the preservation of their health, in their employment as useful aids to man, and in the diseases to which they are subject.

THE GROUNDS

at Thirty-sixth and Pine Streets, in Philadelphia, occupy a space some two squares in extent adjoining the Medical and other Departments of the University. They are located in one of the most beautiful parts of Philadelphia, within twenty minutes of the Broad Street Railroad Station and the centre of the city, from which they can be reached by several lines of horse cars.

* The appointments necessary to complete the Faculty will be made during the year.
THE BUILDINGS

at present erected occupy a street frontage of over 250 feet, consisting of a commodious amphitheatre and museum, Anatomical room 66 by 21 feet, lighted from both sides, Histological laboratory 40 by 21 feet, Blacksmith shop with eight forges, Pharmaceutical laboratory and four private laboratories. These floors are all laid in cement, with the most approved drainage. Water, both hot and cold, gas and heat are supplied in each room. Large stables for hospital purposes will be erected by the opening of the second year, and dormitories for students, cattle stables, and other buildings are in prospect.

ADMISSION.

Candidates for admission are required: First, to write an essay (not exceeding a page of foolscap), which may serve as a test in orthography and grammar; second, to pass an examination in Elementary Physics (Part I. of Fownes's Chemistry). But candidates who have either received a collegiate degree, or passed the matriculate examination of a recognized college, or who have a certificate covering the required subjects from a recognized normal or high school, or a duly organized county medical society that has instituted a preliminary examination,—such as that adopted by the Medical Society of the State of Pennsylvania,—may enter without examination.

COURSE OF INSTRUCTION.

The course extends over three years, beginning the first of October and ending the last of June. It includes the following subjects:—

FIRST YEAR.

Chemistry, Materia Medica and Pharmacy, Physiology, Histology, Botany, Zoology, Veterinary Anatomy, and Forging.

SECOND YEAR.

Medical Chemistry, Physiology, Therapeutics, General Pathology and Morbid Anatomy, Veterinary Anatomy, Surgical Pathology, Internal Pathology and the Contagious Diseases, Botany, Zoology, and Practical Farriery.
THIRD YEAR.

Therapeutics, General Pathology and Morbid Anatomy, Surgical Pathology and Operative Surgery, Internal Pathology and the Contagious Diseases, Sanitary Police, Obstetrics, and Zootechnics.

In the second year the student will attend clinics, and will serve as aid in the hospital; in the third year, he will be placed in charge of sick animals, and be required to prepare clinical reports and make autopsies. He will, also, make regular visits to breeding and dairy farms and to slaughter-houses, in order to familiarize himself with the races of animals, the economical means employed in their care, and the varieties of butcher-meat.

The immense number of horses in Philadelphia, the large car and sale stables in the immediate neighborhood of the University, and the fine agricultural country lying just outside the city, which can be utilized for the study of cattle and other food animals, will afford the students of this school especial opportunities.

During the session of 1885–6 the first and second year courses only are taught, and in 1886–7 the full course will be given and the first diplomas be granted.

EXAMINATIONS

At the end of the first year, General Chemistry, Histology, Materia Medica, Pharmacy, and Forging.

At the end of the second winter, Anatomy, Physiology, and Medical Chemistry.

At the end of the second year, Zoology and Botany.

At the end of the third year, Therapeutics, General Pathology and Morbid Anatomy, Internal Pathology and the Contagious Diseases, Surgical Pathology, Obstetrics, Zootechnics, and Sanitary Police.

EXPENSES.

Matriculation Fee (paid once only), five dollars. Tuition Fee (each year), one hundred dollars.

DIPLOMA.

Upon completing the full course of study and passing satisfactorily all the examinations, the student receives the degree of Veterinary Surgeon. (V.S.)

For further information, address R. S. Huidekoper, M.D., V.S., Veterinary Department University of Pennsylvania, Philadelphia.
TEXT-BOOKS.
FIRST YEAR.

Chemistry: Fownes's Chemistry; Mutet's Analytical Chemistry.

Materia Medica: H. C. Wood; Finley Dunn.

Anatomy: Chauveau; Strangeway; Liautard.

Histology: Klein; Schaeffer, or Satterthwaite.

Physiology: Kirke; Yeo; Foster.

General Pathology: Rindfleisch's Elements of Pathology; Tyson's Cell Doctrine.


Horseshoeing: Fleming; Russell.

MATRICULATES 1884-5.

Bennett, John, Johnsville.
Biddle, Spencer F. B., Philadelphia.
Bignell, Lewis M., do.
Birch, William A., Philadelphia.
Boon, George M., do.
Brenner, John C., do.
Cullen, Chas. M., West Chester.
Davis, William E., Lima.
Eves, Hiram F., Olney.
Felton, Howard B., Ashbourne.
Flower, Richard, Philadelphia.
Formad, Robert, do.
Greene, Abraham, Philadelphia.
Groome, Harry C., do.
Haehnen, W. Frank, M D., Ph.D., Hecktowm.
Harger, Simon, Philadelphia.
Kinney, John B., M.D., Holmestown.
Lintz, Charles, Philadelphia.
Marlin, Edgar, Chestnut Hill.
Montgomery, William B., W. Philadelphia.
McAnulty, Jas. T., Philadelphia.
McLean, James J., Frankford.
Ross, Jas. T., Philadelphia.
Sellers, Albert T., West Chester.
Sullivan, Dennis O., Philadelphia.
Tomlinson, William J., Philadelphia.
Vandegrift, John F., Langhorne.
Webster, Richard G., Glen Riddle.
Wernitz, William B., do.
Williams, Charles, Fellowship, N. J.
Ziegler, William H., M.D., Philadelphia.

TOTAL.

Students of the first year ...... 29
Special students ................. 4

33
DEPARTMENT OF BIOLOGY.

FACULTY.

WILLIAM PEPPER, M.D., LL.D., PROVOST OF THE UNIVERSITY, and ex-officio President of the Faculty.

JOSEPH LEIDY, M.D., LL.D., Professor of Anatomy; Director of the Biological Department.

JOSEPH T. ROTHROCK, M.D., B.S., Professor of Botany.

HARRISON ALLEN, M.D., Professor of Physiology.

ANDREW J. PARKER, M.D., Ph.D., Professor of Comparative Anatomy.

HORACE JAYNE, M.D., Professor of Vertebrate Morphology.

BENJAMIN SHARP, M.D., Ph.D., Professor of Invertebrate Morphology.

N. ARCHER RANDOLPH, M.D., Instructor in Physiology.

HORACE JAYNE, M.D., Secretary.

AIM OF THE DEPARTMENT.

The aim of this Department is—

1. To conduct the Biological studies of those students in the College Department who are pursuing the course in Philosophy. (See page 30.)

2. To provide a course of instruction in Biology for students of both sexes who are preparing to study medicine, or who desire systematic training in this subject.

3. To afford advanced instruction to graduate students, candidates for the degree of Doctor of Philosophy. (See page 31.)

4. To encourage original research in Biology by offering facilities to scientists engaged in investigation, and by giving aid and instruction to advanced students prosecuting special work.

LABORATORIES AND LIBRARIES.

The new laboratory building, erected for the use of this Department, contains a lecture-room, two large laboratories for undergraduate biological work, rooms for the zoological and botanical collections and libraries, laboratories for advanced and special work in Botany, Zoology, Histology, Embryology, and Physiology, besides private laboratories for the use of the instructors, and rooms for photography, with ample space for the aquaria, animals, and storage.
Proper and abundant material is furnished students engaged in special work. A supply of the ordinary forms used in the practical laboratory exercises is kept, as far as possible, in the building.

The nucleus of an excellent collection of skeletons, typical forms, and dissected preparations has been formed, and a fine herbarium, containing about forty-five thousand specimens, will be deposited in the building.

A good working library, containing the more important textbooks and complete sets of many valuable journals, has been provided. The large public libraries of the city are open to students under proper regulations. The Academy of Natural Sciences, with a rich museum and a large library, the most complete in Biology in the country, is accessible to students without charge.

1. COURSE FOR STUDENTS IN THE COLLEGE DEPARTMENT.

Instruction in Biology forms a part of the Course in Philosophy in the College Department, and covers a general knowledge of vital phenomena. For details of this course, admissions, examinations and degrees, see Course in Philosophy in College Department.

2. GENERAL COURSE IN BIOLOGY.

This course forms an important branch of modern general culture, and also furnishes a peculiarly appropriate and valuable preparation for the study of medicine.

The course extends through two years of two terms each:

FIRST YEAR.


MAMMALIAN ANATOMY.—(Lectures and laboratory exercises.) Mivart’s The Cat. Wilder’s Anatomical Technology.


SECOND YEAR.

BOTANY.—1. (a) Medical Botany; the plants used in medicine, adulteration of foods and drugs, or (b) Vegetal Morphology. 2. The life histories of plants. (Practical exercises) Bessey’s Botany, Sach’s Text-book of Botany.

ZOOLOGY.—The outlines of General Zoology and Comparative Anatomy. The classification and distribution of animals. (Lectures.) Claus’ Lehrbuch der Zoologie. Gegenbauer’s Comparative Anatomy.
ANIMAL HISTOLOGY.— (Lectures and laboratory exercises on Microscopic Anatomy.) Schäfer’s Histology and the Microscope.

EMBRYOLOGY.— (Lectures and laboratory exercises on the development of the chick.) Foster and Balfour’s Elementary Embryology.

PHYSIOLOGY.— The Elements of Physiology. (Lectures and practical work.) Foster & Langley’s Elementary Physiology. Sanderson’s Physiological Textbook.

The instruction in General Biology is in the form of practical laboratory exercises accompanied by explanatory lectures, and comprises the study of the structure, functions, and development of a series of plants and animals. The student in this manner gains a general knowledge of the vital phenomena manifested in the different forms of living matter before beginning the study of either Botany or Zoology. The series studied are, (1) Amoeba, Paramaecium, Vorticella, Bacterium, Yeast-plant, and Protococcus, as unicellular forms of life. (2) Moulds, Chara, Braken-fern, and Bean-plant as exhibiting the structure and activities of plants. (3) These compared with Sponge, Hydra, Starfish, Earthworm, Leech, Cyclops, Crayfish, Cockroach, Clam, Squid, Amphioxus, Skate, Cod, Frog, Snake, Terrapin, Pigeon, and Rabbit as animals.

The course in Mammalian Anatomy consists of lectures on the methods of anatomical investigation, a detailed description of the anatomy of one of the higher mammals, and comparisons with human anatomy. In the laboratory the class carefully dissects the cat.

The work in Botany, during the first year, consists in exercises in the determination and classification of plants, and begins in the second term after the student has finished the first half of the course in General Biology, and has acquired a sufficient knowledge of vegetal structure and physiology. In the first term of the second year some choice is permitted. The student may take up Medical Botany, if intending to study medicine, or may devote his attention to more advanced work in plant structure. During the second term the class studies the life histories of plants, their development, growth, and reproduction.

General Zoology and Comparative Anatomy embrace the study of the differences between organic and inorganic bodies; animals and plants; individuals and colonies; cells and cell aggregates; a short account of the tissues; growth and division of labor; organs, their structure; reproduction, general facts of embryology; meta-
morphosis, alternation of generation, polymorphism and heterog-ony; systems of classification; the Darwinian theory; species and varieties; a succinct account of the various groups of animals, their anatomy, development, and distribution.

Histology is taught, during the first term in the second year, mainly by practical work with the microscope. The structure of animal tissues and organs and the methods of examining and preparing microscopic specimens are thoroughly studied.

Embryology is taught in the second term, and the student is instructed in the processes by which the complex tissues and organs are built up from the simple egg. The instruction consists in lectures on the Embryology of the chick, with laboratory exercises in the preparation and study of the principal stages of development.

The instruction in the elements of Human and Comparative Physiology embraces the study of the phenomena of nutrition, of food-stuffs and digestion; circulation; respiration; reproduction; muscular function, including locomotion, speech, etc.; and the functional activity of nerve and brain.

3. INSTRUCTION FOR GRADUATE STUDENTS.

Students in the Department of Philosophy, who have selected Botany or Zoology as the main subject in their course for the degree of Doctor of Philosophy, and who have had the requisite training, will, on entering, begin original investigation for the required graduation thesis. If not sufficiently prepared for this work, or if Botany or Zoology, or both, have been selected as subordinate studies, the students are advised to take the General Course in Biology, or such portions of it as may be deemed necessary. The conditions of entrance, fees, examinations, and degrees are set forth in the Department of Philosophy.

4. INVESTIGATION AND ADVANCED INSTRUCTION.

Scientists engaged in the investigation of any subject in Biology can be accommodated in the laboratory by permission of the Faculty. A moderate fee will be charged for the use of the rooms and apparatus, and for attendance. Instruction of advanced students and of those engaged in special work is given by special lectures and by laboratory exercises under the personal direction of
the professors. Meetings of the instructors and advanced students are held frequently for the discussion of recent discoveries in the various branches of Biology.

FEES.

The fee for tuition in the full course is one hundred and fifty dollars a year, payable in two instalments, on October 1st and February 1st. Fees for partial courses payable in advance. There are no extra charges for material used in the practical classes, or for the use of instruments or reagents.

ADMISSIONS, EXAMINATIONS, AND DEGREES.

Candidates for admission to the general course must show that they are able to profit by the instruction.

Students who do not desire to pursue the full course, and who are properly qualified, may take either a special or a partial course in any subject or subjects taught in the Department.

Examinations are held at the close of each college year. The student who has completed the full course in Biology, and has passed satisfactory examinations, is granted a Certificate which will admit him to the Medical Department without entrance examination. No degrees will be given solely for study in this Department; but persons who pursue biological study in the Department of Philosophy will be entitled to the degree of Ph.D., on the conditions imposed by that Department.

For further information respecting this Department, address the Secretary of the Faculty.
DEPARTMENT OF LAW.

FACULTY.

WILLIAM PEPPER, M.D., LL.D., Provost of the University, and ex-officio President of the Faculty.
P. PEMBERTON MORRIS, A.M., LL.D., Emeritus 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, \textit{inter alia}, International, Constitutional, and Commercial Law.
E. COPPÉE MITCHELL, LL.D., Professor of the Law of Real Estate and Conveyancing, and of Equity Jurisprudence.
JAMES PARSONS, A.M., Professor of the Law of Personal Relations and Personal Property.
JOHN J. REESE, A.M., M.D., Professor of Medical Jurisprudence.
GEORGE TUCKER BISHAM, A.M., Professor of Practice, Pleading, and Evidence at Law and in Equity.
E. C. MITCHELL, Dean of the Law Faculty,
518 Walnut Street, Philadelphia.

AIM OF THE DEPARTMENT.

The aim of this Department is to aid students who are preparing for admission to the Bar, as well as others who are desirous of acquiring knowledge in any branch of legal learning. The Conveyancer or the Merchant may attend with profit the particular lectures appropriate to his pursuits.

COURSE OF STUDY.

Students may matriculate in this Department at any stage of their professional preparation. No entrance-examination is required by the Faculty.

The Course occupies two years. Each year is divided into two terms, the first beginning on the first of October, the second on the first of February. Each term continues four months. The course is so arranged that a student entering at the beginning of any October term will complete his studies in two years.

SESSION OF 1885–6.

<table>
<thead>
<tr>
<th>OCTOBER TERM</th>
<th>FEBRUARY TERM</th>
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<tbody>
<tr>
<td>Evidence.</td>
<td>Practice and Pleading in Equity.</td>
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<tr>
<td>Equity Jurisprudence.</td>
<td>Equity Jurisprudence.</td>
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SESSION OF 1886-7.

OCTOBER TERM.
Practice and Pleading at Law.
Constitutional Law, Insurance.
Real Estate.
Domestic Relations; Executors and Administrators.

FEBRUARY TERM.
Practice and Pleading at Law.
Suretyship and Guaranty.
Conveyancing.
Title to Personal Property, Civil Law;
Contract of Sale.
Medical Jurisprudence.

Instruction is given 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 meet once a week during each term; and an evening is assigned to each case, so that a continuous discussion can be had of the points raised for argument. The Law Academy of Philadelphia, too, an institution of long standing, to which not only students, but many practising lawyers, belong, gives opportunity for debate and argument that 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.

FEES.

The Tuition Fee for the full course (except Medical Jurisprudence) is forty dollars a term. Each Professor will issue tickets for his own lectures to students who do not desire to attend the full course, and will fix the fee at his own discretion. Students who take the full course pay, also, a matriculation fee of five dollars. No other charges are made.

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

The students of this Department are also permitted to attend the Lectures given in the other Departments 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 the free use of the University Library, under the usual regulations.

The Library of the Law Association of Philadelphia (one of the largest in the country) is also open to students of law in the University for a fee of three dollars per annum, under proper regulations.

EXAMINATIONS AND DEGREES.

The following statute, fixing the qualifications of candidates for graduation, has been adopted by the Board of Trustees:

"In order to obtain the degree of the 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 by the 15th of February.

Errors in spelling or grammar, 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. The questions used at the written examination in May, 1884, will be found on a subsequent page.

Students are not admitted to advanced standing. Actual attendance on the full course of two years is required for graduation.

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

PRIZES.

The Alumni of this Department have established two prizes, one of seventy-five dollars, called the "Sharswood Prize," and one of fifty dollars, called the "Meredith Prize," to be competed for by the Graduating Class for the best and the second best graduation essay. They are awarded by the Faculty.
A Faculty prize of fifty dollars is given to the student in either class who passes 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 of Philadelphia County, and embraces all the branches of a good English education. No person can be registered as a student of law without passing this examination.

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

EXAMINATION QUESTIONS, MAY, 1884.

PROFESSOR MORRIS.

EVIDENCE.

1. What is secondary evidence, and how does it differ from circumstantial evidence?
2. Is a duly authenticated copy from the record of a recorded deed secondary evidence?
3. How do you prove the title of a married woman?
4. Is incompetency ever the consequence of conviction of an infamous crime? If so, can competency be restored, and how?
5. What is necessary to a valid judicial oath?

EQUITY PRACTICE.

1. Explain the difference between a plea and an answer in equity.
2. How do you determine whether the necessary and proper persons have been made parties to a suit in equity?
3. Can you name any exception to the rule that the defendant in equity must give discovery?
4. What modes of defence are open to you in equity? State them briefly, indicating wherein they differ.
5. What is a receiver in equity, and what is the character of his possession?
PROFESSOR HARE.

1. Enumerate the consensual contracts of the Roman law, and state what was essential to the validity of a stipulation.
2. Can a promise to be answerable for such advances as may be made to a third person during the ensuing year be recalled before it has been acted on, and what is the rule when such an undertaking is under seal?
3. What effect has a warranty given after the sale, and what is the difference between such an undertaking and a promise to pay a debt barred by the statute of limitations?
4. Can an unauthorized promissory note be ratified, and what is the rule when the maker's signature is forged?
5. Did the right of property pass, under the Roman law, on the completion of the contract of sale by an agreement as to the thing and the price, and what is the rule of the common law?
6. Does the tender of goods answering to the terms of an executory contract vest the right of property in the purchaser, and entitle the vendor to sue for and recover the price? and what is the vendor's remedy if the purchaser declines to accept?
7. Does the maxim caveat emptor apply to executory contracts for the sale and delivery of goods of a certain kind and quality, and to what extent?
8. What is the extent and nature of the obligation arising from a sale by description, and what is the difference between such a sale and a sale with warranty?
9. What is a sale by sample, and what inferences may be drawn from the exhibition of a sample at or before the sale?
10. Does a breach of warranty, properly so called, justify a rescission of the contract and the return of the goods? What remedy has the purchaser? State the measure of damages.

PROFESSOR MITCHELL.

EQUITY.

1. How long and in what manner have equitable principles been administered by courts in Pennsylvania?
2. How are Trusts affected by the Statute of Frauds, and what are the exceptions?
3. Wherein does a charity differ from a private trust? How may a charity be created?
4. In what cases are trusts for accumulations valid? What is the result where the limit of time is exceeded by the direction to accumulate?
5. Define "constructive notice," and give an example of it.
6. What is the theory upon which equity upholds an assignment of a chose in action? Does such an assignment require a consideration? Give reasons.
7. Suppose a will gives a legacy to A, and also gives A's property to B; and A elects to keep his property, what will be done with the legacy?
8. Name and define the different kinds of injunctions.
9. What contracts will be specifically enforced in Equity?
10. Against whom may a bill be maintained to enforce specific performance of a contract for the sale of land?

PROFESSOR PARSONS.

1. To what jurisdiction does the ownership of corporate stock subject the shareholder?
2. If a foreign corporation did not trade or employ its capital in Pennsylvania, could Pennsylvania tax its stock, or tax it beyond the proportion of capital employed in Pennsylvania?
3. How does the Statute of Frauds affect an oral contract of partnership?
4. Is a partner's contribution a debt by the firm, and must he contribute a share of borrowed capital?
5. What effect has a partner's share of the profits upon his title to firm property?
6. How was usury complicated with partnership?
7. Might a party control the business, and yet not be a partner?
8. What effect is given to a sister-State judgment against a partner?
9. How could a carrier lawfully compete with express companies?
10. If an agent acts in different capacities, how do they affect his authority?

MATRICULATES 1884-5.

SENIOR CLASS.

Acker, Ephraim L.        Norristown, do.
Barrows, George A.        Philadelphia, do.
Beasley, Charles Oscar    do.
Benson, Cyrus L.          Philadelphia, do.
Binns, Burton             do.
Brinton, Ferree           Lebanon, do.
Clark, Joseph S.          Germantown, do.
Comly, James I.           Frankford, do.
Crawford, Wm. B.          Conshohocken, do.
Darlington, Wm. S.        Concord, do.
Develin, John F.          Philadelphia, do.
Fels, Maurice             do.
Ferguson, Wm. C.          Philadelphia, do.
Galbraith, John W.        do.
Gardiner, Benjamin D.     do.
Gillespie, A. Jackson     do.
Good, D. Clare            do.
Guillou, Alfred           do.
Harvey, W. Spence         do.
Holden, Chancellor D.     do.
Longaker, A. Edwin        Norristown, do.
Lott, Edwin F.            Lansdowne, do.

J. R. Hunsicker.
Charles F. Warwick.
Crawford & Dallas.
A. S. Letchworth.
Benson & Adams.
Moses Veale.
E. C. Mitchell.
J. C. Bullitt.
J. D. Duffield.
Redding, Jones, & Car-
 do.
Redding, Jones, & Car-
 do.
W. H. Hepburn.
James Parsons.
J. C. Ferguson.
W. S. Lane.
J. K. Booth.
T. E. Patterson.
MacVeagh & Bispham.
V. Guillou.
P. F. Rothermel, Jr.
F. S. Cantrell.
C. Hunsicker.
G. Peirce.
Massey, Henry V.  Germantown, Admitted.
Melcher, Webster A.  Horsham, H. Hazlehurst.
Metzger, Percy B.  Philadelphia, MacVeagh & Bispham.
Miller, Hobart  do.  E. Spencer Miller.
O'Callaghan, Michael J.  do.  B. F. Hughes.
Peale, Rembrandt R.  Lock Haven, J. E. Gowen.
Reeves, Wm. H. T.  do.  Hon. F. C. Brewster.
Sergeant, Wm. W.  do.  G. Sergeant.
Shattuck, Frank R.  do.  A. P. Colesberry.
Snively, Saml. F.  Greencastle, Hon. B. H. Brewster.
Sprout, Clarence  Muncy, Crawford & Dallas.
Stockwell, Adelbert E.  Moortown, M. H. Todd.
Todd, Henry C.  do.  M. H. Todd.
Thompson, Henry C., Jr.  do.  H. C. Thompson.
White, Horace M.  do.  E. P. McCormick.
Woodward, Wm. Henry  Lock Haven, Seniors, 44.
Yardley, W. Hampton  E. C. Mitchell.

Audenried, Charles Y.  do.  MacVeagh & Bispham.
Biddle, Caldwell K.  Bellefonte, Jno. M. & Wm. P. Gest.
Brock, Marcus I.  do.  Hon. R. N. Willson.
Brunner, Frank A.  Caroline, J. de F. Junkin.
Butler, Henry C.  Doylestown, Elias Carver.
Cahall, Joseph L.  Philadelphia, T. J. Diehl.
Carver, Henry  do.  A. P. Douglass.
Cliff, George H.  Philadelphia, E. Hunn, Jr.
Craig, Andrew C.  do.  R. P. Dechert.
Croaddale, John P.  Tompkinsville, J. S. Price.
Evans, Franklin H.  Spring House, Redding, Jones, & Car-
Freyer, George A.  do.  T. C. Lazear. [son.
Garrison, Lindley M.  Elizabeth, J. B. Uhle.
Guffey, Frank H.  Lehighton, J. R. Rhoads.
Hamberg, M. P.  do.  do.
Hancock, Henry James  do.  do.
Harding, Butler Kenner  do.  do.
Hillman, John J.  do.  do.
<table>
<thead>
<tr>
<th>Name</th>
<th>City</th>
<th>Name</th>
<th>City</th>
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</thead>
<tbody>
<tr>
<td>Hinkson, Joseph H.</td>
<td>Chester</td>
<td>J. B. Hinkson.</td>
<td>Philadelphia</td>
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<tr>
<td>Hoffman, Charles</td>
<td>Philadelphia</td>
<td>S. B. Hucy.</td>
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<tr>
<td>Kaufman, Ralph</td>
<td>Mechanicsburg</td>
<td>A. J. Kaufman.</td>
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<tr>
<td>Landon, Benson</td>
<td>Towanda</td>
<td>D. C. DeWitt.</td>
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<tr>
<td>Lindsay, Eugene J.</td>
<td></td>
<td>W. B. Mann.</td>
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<td>McCarthy, Wm. J.</td>
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<td>M. J. Mitcheson.</td>
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<td>MacDonald, John</td>
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<td>W. F. Harrity.</td>
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<td>Magee, Joseph G.</td>
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<td>J. H. Little.</td>
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<td>Marple, Chas. H.</td>
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<td>Page &amp; Allison.</td>
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<tr>
<td>Miller, John Faber</td>
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<td>J. E. Burr.</td>
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<td>Muller, Henry G.</td>
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<td>Hon. B. H. Brewster.</td>
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<td>Page, Howard Wurts</td>
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<td>W. S. Price.</td>
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<td>Patterson, Roswell H.</td>
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<td>Crawford &amp; Dallas.</td>
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<td>Scott, William C.</td>
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<td>Malcolm Hay.</td>
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<td>Schlegelmilch, G. Edward</td>
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<td>H. R. Edmunds.</td>
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<td>Smith, Lewis Lawrence</td>
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<td>J. S. Price.</td>
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<td>Sproul, Frank Penrose</td>
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<td>Cyrus Elder.</td>
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<td>Steele, James D.</td>
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<td>J. B. Townsend.</td>
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<tr>
<td>Thompson, John</td>
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<td>E. C. Mitchell.</td>
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<tr>
<td>Townsend, J. Barton</td>
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<td>W. H. Sutton.</td>
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<tr>
<td>Umsted, T. Chalmers</td>
<td></td>
<td>Juniors, 63.</td>
<td></td>
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<tr>
<td>Wilson, Thomas C.</td>
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<tr>
<td>Wood, T. Stewart</td>
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<td>Gibson, Muscoe M.</td>
<td>Norristown</td>
</tr>
<tr>
<td>Woodward, J. Butler</td>
<td></td>
<td></td>
<td>Philadelphia</td>
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<tr>
<td>Ziegler, George G.</td>
<td></td>
<td>Paul, Henry N., Jr.</td>
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<td>Special Students, 2.</td>
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</tbody>
</table>

**SPECIAL STUDENTS.**

<table>
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<tr>
<th>Name</th>
<th>City</th>
<th>Name</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girvin, Muscoe M.</td>
<td>Berks, Pa.</td>
<td>Norristown,</td>
<td></td>
</tr>
</tbody>
</table>

**SUMMARY.**

| Seniors | 44 |
| Juniors | 63 |
| Special Students | 2 |

| Total   | 109 |
POST-GRADUATE COURSE IN LAW.

FACULTY.

JAMES PARSONS, Professor.

This Course, opened in 1883, aims to broaden and deepen the foundation of legal education. The method adopted is a comparison of the systems of law which obtain in different countries,—the Roman, or the Civil Law, which is the basis of the Continental law of Europe, not to speak of other countries, and the Common Law, which serves as the groundwork of the law for the English race.

The study of the civil law is no longer a matter of choice for a lawyer: a knowledge of the system is required to enable him to practise his profession in America. The English students are taught the Roman law at the Universities, and undergo an examination upon it, for admission to the bar, more stringent than any American examination upon the Common law. The result of this advance in English preparation is already noticeable in the familiarity exhibited by the profession and by the courts with the principles of Continental law. The English reports, which are the great source of American instruction, will soon be available only for those who understand the parallels and contrasts of our law with the Roman. Nor is the only access of the Continental law gained through the systematic study of its principles by students. The intercourse which now prevails between all parts of the world brings the citizens of different countries into contact with each other, and legal controversies arise out of the relation established. A comparison is at once instituted, and an attempt made to find a common basis for adjustment. Private international law is the outgrowth of the interchange of legal ideas, and, while this province is rapidly spreading, the effect of the contact is to modify the peculiarities of each system.

There is little need to emphasize the importance of studying the Common law in its sources and in its history. The effect of taking Lord Coke as a starting-point and of neglecting the earlier periods of development is felt to have been a fatal error, which has dead-
ened the system. The modern effort has been to retrieve the mistake, and, by returning through history to the primeval structure of society, to reinfuse life into the law which has been isolated from its sources.

The character of the law, like that of a man, is the sum of his whole life. The spontaneity of youth reveals traits that the prudent reserve of later life conceals. The legal thought and wealth of experience epitomized in the Anglo-Saxon law and extended through the Feudal system is an untold treasury. To utilize it is to revitalize the common law.

Centuries of thought have been given by the leading nations of the world to the classification of legal principles under the Roman system, not only in an abstract form, but in application to the daily wants of life in the ordinary transaction of business, as well as in the solution of moral problems elaborated in the Canon law and administered through the trained intellects of a body of priests. A conception can, therefore, be formed of the vast extent and variety of philosophical truths that have been matured in the progress of legal science.

COURSE OF STUDY.

The course of study covers two years. The student, however, can begin at the opening of either year, November 1st.

One year of the course is devoted to the study of the Roman law and of the principles that have grown out of it.

The text-books used in this course are Hadley's Introduction to the Roman Law, Mackeldey's Roman Law, and Holland's Jurisprudence. But these text-books serve simply as an outline of the subject. The works of Austin, Clark, Markby, Hunter, Moyle, and others in English, besides authors in German and French, are consulted and utilized to fill out the framework of study.

In the analysis of an act, an important element in legal investigation, Aquinas and the Jesuit writers of to-day furnish the only source of information. Gury's Compendium Morale is used, though any Catholic manual would serve the purpose.

The year devoted to a study of the Common law is taken up with the Anglo-Saxon law, the Feudal system, and the principles peculiar to the Common law and developed in the course of its history. There is no adequate history of the English law, and the results of
German investigations, of great importance during the past fifty years, lie scattered through separate treatises and periodicals, and have not been collected and made accessible to English students. The work of Glasson, *Histoire du droit et des Institutions d'Angleterre*, comprehends in its first and second volumes a summary of the modern researches into the early periods of our law, both Saxon and Norman. The second volume on the Norman period is used as text-book in connection with Gunderman's *Die Common Law* and Digby's *History of the Law of Real Property*. Kemble's Anglo-Saxons in England is the only available work in English for the Saxon period, and is adopted as the text-book for the class.

The primary principles of the Common law have been investigated by Judge Holmes, and his work on the Common law will serve as the guide for a study of them. The comparison of English and Continental theories of law is forced upon the profession in controversies between citizens of different countries where the rules of the various systems compete for the control of the legal relations between the parties. The work of Westlake on Private International Law is the most convenient text-book, though Story, Wharton, Foote, and other writers will be consulted.

**ADMISSION AND FEES.**

Graduates of any law school of recognized standing and members of the bar are eligible as students in this department. The annual fee for tuition is twenty-five dollars.

**EXAMINATION AND DEGREES.**

Examinations are held annually in May, and are both oral and written. The written questions put at the last examination are appended.

Graduates of this Course receive the degree of Master of Laws, unless the post-graduate course of law is combined with two other courses of study in the Department of Philosophy. Then the degree of Doctor of Philosophy is conferred.

A thesis upon some topic connected with the course is required to be handed in as early as possible during the second year. It is expected to contain an exhaustive analysis of the subject-matter.
1. How did the *jus tripartitum* arise?
2. What was the *edictum tralaticium*?
3. Who was Harmenopulus, and what was his work?
4. What were the *actiones arbitrariae*?
5. How did the *litis contestatio* exclude the exception *rei judicatae*?
6. What was the advantage of the *Publiciana in rem actio*?
7. What was the development of security out of *nexum, fiducia, pignus, and hypotheca*?
8. How did the Romans calculate interest?
9. What are the elements, the impediments, the object and end and the effect, of an act?
10. Can a party to a contract be unascertained?

**MATRICULATES 1884–5.**

**SENIORS.**

J. Douglas Brown, 
Frederick M. Leonard, 
William M. Stewart,  
Philadelphia.  
do.  
do.

**JUNIORS.**

Edmund P. Leaming, 
E. Clinton Rhoads,  
Camden, N. J.  
Philadelphia.
DEPARTMENT OF PHILOSOPHY.

FACULTY.

WILLIAM PEPPER, M.D., LL.D., PROVOST OF THE UNIVERSITY, and ex-officio President of the Faculty.

E. OTIS KENDALL, LL.D., DEAN OF THE FACULTY, and Professor of Mathematics.

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

J. PETER LESLEY, LL.D., Professor of Geology.

REV. ROBERT E. THOMPSON, A.M., Professor of History.

FREDERICK A. GENTH, Ph.D., Professor of Inorganic Chemistry.

SAMUEL B. HOWELL, M.D., Assistant Professor of Geology.

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

JAMES PARSONS, A.M., Professor of Law.

GEORGE A. KÖNIG, Ph.D., Professor of Mineralogy.

JOSEPH T. ROTHROCK, B.S., M.D., Professor of Botany.

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

ANDREW J. PARKER, M.D., PH.D., Assistant Professor of Zoology.

MORTON W. EASTON, Ph.D., Professor of Comparative Philology.

EDMUND J. JAMES, Ph.D., Professor of Political and Social Science.

REV. GEORGE S. FULLERTON, A.M., B.D., Instructor in Intellectual and Moral Philosophy.

Edmund J. James, Ph.D., Secretary.

AIM OF THE DEPARTMENT.

The aim of this Department is to supervise advanced studies, and, as far as possible, to afford advanced instruction in the various branches of literature and science. Several courses, each covering a period of two years, are open to graduates of any department of this University, or of institutions of similar standing, and to other persons who can pass a satisfactory examination. The student may or may not be a candidate for the degree of Doctor of Philosophy. In the latter case, residence at the University will not be required; in the former, it will be expected, though in special cases and for good reasons the Faculty may excuse candidates from compliance with this requirement. A course may be begun at any time.

COURSES OF STUDY.

The following courses are now open:—

MATHEMATICS.—No instruction. Examination for the degree.
Zoology and Comparative Anatomy.—Laboratory work, with occasional lectures on Principles and Classification. Oral examination on the Classification of the Animal Kingdom (including the Chief Characters of the Classes and Orders of Animals), and on the principles of Comparative Anatomy and General Morphology, together with the specific anatomy of some form selected by the professor.


Geology.—I. Laboratory work—the plotting of geological field notes in map form by contour lines, the locations of outcrops, the construction of vertical and columnar sections, the manufacture of relief models, and the coloring of both maps and models on the two systems of the Pennsylvania and the United States surveys. II. Lectures on Dynamic, Structural, and Chemical or Physical Geology, on Lithology, on Systematic or Historical Geology, and on Palaeontology. III. Reports on districts visited by the student, with sketches, sections, full descriptions of strata, and a determination of the fossils.

History.—No instruction. Examination for the degree.

Inorganic Chemistry.—Laboratory practice. Examination in the History of Chemistry, Chemical Philosophy, and the Chemistry of all well-established elements and their compounds.

Physics.—No instruction. Examination for the degree.

Law.—See Post-Graduate course in Law.

Mineralogy.—Laboratory practice. Oral examinations, first (for students who take mineralogy as a principal study), on geometrical crystallography, comprising the development of the zonal equation, the transformation of axes, the linear and spherical methods of projection, the reduction of angles to indices, the methods employed in fixing the optical constants, and, by way of illustration, the identification of the less common minerals, present in well-developed crystals; second (for students who take mineralogy as a secondary branch), on the determination of any mineral substance by the blowpipe, the more common species of minerals at sight, and elementary crystallography, i. e. the systems, their holohedral and hemihedral forms, and the current systems of classification.
BOTANY.—Lectures and laboratory practice. Examination in Phænogamic, Cryptogamic, Structural, or Geographical Botany. Economic Botany, with the general relations of plants to human wants and uses.

ORGANIC CHEMISTRY.—Laboratory practice. Examination on Organic, Physiological, and Toxicological Chemistry.

PHILOLOGY.—Sanskrit, Linguistics, and the Comparative Philology of the Indo-European languages.

POLITICAL AND SOCIAL SCIENCE.—Political Science, Political Economy, Finance, Administration, Legislation, etc.

INTELLECTUAL AND MORAL PHILOSOPHY.—History of Speculative Philosophy, of Psychology, and of Ethics. (Other subjects will be announced.)

FEES.

For instruction or supervision, whether the student be in residence or not, one hundred and fifty dollars a year will be charged, with special fees for material used. A graduation fee of thirty-five dollars will be also charged in case a degree is taken. The cases of applicants for a degree on examination alone, without instruction or supervision, will be considered separately.

DEGREE.

The Degree of Doctor of Philosophy will be conferred upon the following conditions:—

1. The candidate must be a Bachelor of either Arts or Science of a reputable institution, or else must satisfy the Faculty by examination or otherwise that he possesses an equivalent preparation.

2. He must pursue during two years, under the supervision of the Faculty, a course of study in at least three branches of literature or science, one of which shall be designated as the principal branch, and the other two as subordinate branches.

3. He must pursue original investigations in the principal branch of study, must present a satisfactory thesis founded on it, and must pass an examination in all three branches.

For further information respecting this Department, address Professor E. J. James, Ph.D., Secretary of the Faculty.
DEPARTMENT OF PHYSICAL EDUCATION.

DIRECTOR, J. WILLIAM WHITE, M.D., Ph.D.

The object of this Department, which has been recently founded, is the exercise of an intelligent supervision over the general health and physical condition of the student during his college life. The value of systematic exercise and of useful attention to the laws of hygiene during the period of growth and development is now fully recognized, as well as the desirability of turning out graduates who shall be well prepared, physically as well as mentally, for their life-work. More and more attention has of recent years been paid to the demands of the body, and to the systematic satisfying of its requirements, and health and strength have been included among the results aimed at in the curriculum of the most advanced colleges. With this object in view, it is proposed to endeavor to establish in the case of each student the general physical condition, the points of special weakness, the direction in which he most needs development, and to include such advice as to the general rules of health as shall tend to guard him from the evil results of excesses either in the direction of study or of exercise.

Recreative and competitive sports do not of themselves supply these desiderata. Some men, naturally athletic and fond of exercise, need to be guided and directed, sometimes to be restrained; others, of sluggish temperament or of studious and scholarly habits, must be encouraged and stimulated; but all require to have their work, whether spontaneous or compulsory, directed into proper channels, so that the result will be a harmonious and symmetrical development of the entire organism. It is this which is aimed at in establishing the department of physical education, the importance of which, it is hoped, will be demonstrated in the future.

Further information respecting this Department may be obtained from Dr. J. Wm. White, 222 S. 16th St., Philada., Pa.
DEGREES, HONORS, AND PRIZES, 1883-4.

HONORARY DEGREES.

MAY 1, 1884.

Doctor of Laws,                          Samuel D. Gross, M.D., LL.D.

June 13, 1884.

Doctor of Laws,                          Henry Hartshorne, M.D.
                                          P. Pemberton Morris, A.M.
                                          Hon. Justin M. Morrel.

DEGREES IN COURSE—CERTIFICATES.

JUNE 13, 1884.

Bachelor of Arts—

John Stokes Adams,
Caldwell Keppel Biddle,
Frederick Meade Bissell,
Marcus Ingraham Brock,
John Pusey Croasdale,
Morris Dallett,
William Henry Dillingham,
John August William Haas,
Butler Kenner Harding,
Charles Hoffman,
James Woodside MacBride,
Charles Hinkle Marple,
John Vaughan Merrick, Jr.,
Thomas Lynch Montgomery,
John Mullen,
Laurence Butler Ridgely,
Waters Dewees Roberts,
Francis Rudderow,
James Irvine Scott,
Lewis Lawrence Smith,
James Dallas Steele,
Ardemus Stewart,
Landreth Worthington Thompson,
John Barton Townsend,
Alexander Waddell,
Benjamin Harvey Welch,
George Emelen West,
Milton Cooper Work.

Bachelor of Science—

Milo Dimmick Baldy,
Llewellyn Barry,
William Miliken Bodine,
Clarence Raymond Claghorn,
Frank Cooper,
Charles Ellis Ellicott,
Edward Shippen Watson Farnum,
James Barr Ferree,
George Ross Green,
Charles Francis Gummey, Jr.,
George Fales Baker.

Napoleon Bonaparte Heller,
Wilford Lawrence Hoopes,
Clemens Jones,
William Forrest Paul,
William Irvin Seltzer,
George Sergeant, Jr.,
Emlyn Lamar Stewardson,
Samuel Slee Taite,
William Joseph Thompson,
Samuel Smyth Van Pelt,

Bachelor of Finance—

Hon. Robert Adams, Jr., A.M.,
Edward Potts Cheyney, A.B.,
Charles Winrod Finck, B.S.,

Shiro Shiba [Tokio, Japan],
William Redwood Wharton, B.S.
Bachelor of Sciences Auxiliary to Medicine—
David H. Bergey, M.D.,
James H. Chandler, M.D.,
Evan William Evans, M.D.,
Albert Eugene Norton, M.D.,
Gustavus Adolphus Renz, M.D.

Bachelor of Laws—
Abraham S. Ashbridge, Jr.,
John R. Baker, Jr.,
John C. Bell,
James B. Benson,
J. Hope Caldwell,
Francis S. Chapron,
Charles A. Chase,
William H. Coleman,
Jere L. Cresse,
J. Frank Cushman,
Charles S. Duncan,
Maurice E. Fagan,
E. Newton Haag,
William P. Hillbush,
William Macpherson Hornor,
Walter G. Jones,
James J. Keefe,
J. Campbell Lancaster,
Thomas McFarland,
Walter Murphy,
Le Roy B. Peckham,
Hobart C. Porter,
Gustavus Remak, Jr.,
J. Edward Scattergood,
Edwin F. Shively,
George S. Schmidt,
Warren W. Sheppard,
Abram H. Smith,
Joseph B. Townsend, Jr.,
John J. White.

Master of Arts—
Henry Houston Bonnell, A.B.,
Joseph Sill Clarke, A.B.,
G. Walter G. Jones,
James J. Keefe,
J. Campbell Lancaster,
Thomas McFarland,
Walter Murphy,
Le Roy B. Peckham,
Hobart C. Porter,
Gustavus Remak, Jr.,
J. Edward Scattergood,
Edwin F. Shively,
George S. Schmidt,
Warren W. Sheppard,
Abram H. Smith,
Joseph B. Townsend, Jr.,
John J. White.

Civil Engineer—
Samuel Tobias Wagner, B.S.

Doctor of Philosophy (Auxiliary Faculty of Medicine)—
W. Frank Haehnlen, M.D.

Certificates of Proficiency—
In Science—
Max Biernbaum,
David Owen Brooke,
Gilbert Forney Brown,
Lewis Cheeseman,
Edwin Greble Dreer,
George Deazley Firmin,
Benjamin Franklin,
George Russell Ide,
Frank Davis Jones,
Frank Lambader, Jr.,
Albert Emerick Miller,
Alfred Hurst Read,
James Todd.

In Music—
William J. Boehm,
Albert E. Brown,
Samuel J. Diton,
Preston W. Oram,
Margaret R. Smith,
Elsie Walker,
Ida Wood,
Sarah E. Wright.
Doctor of Medicine—

Abbott, William L., A.B.  (Univ. of Pa.)
Bachman, Archibald C.
Baldy, John M.
Barr, Martin W.
Batchelor, William A., A.M. (Marietta)
Batt, Wilmer R.
Bergey, David H.
Bodamer, George A.
Barr, Martin W.
Batchelor, William A., A.M. (Marietta)
Batt, Wilmer R.
Bergey, David H.
Bodamer, George A.

Philadelphia, Scarlatina.

Easton, Chronic Pharyngitis.
Danville, Differential Diagnosis of Pseudo-Membranous Laryngitis.
Middletown, Del., Traumatic Tetanus.
Phoenixville, Colotomy, with a collection of 351 cases.
Skippack, Blood-cell counting.
Philadelphia, Actinomycosis.
Philadelphia, A few cases of abdominal Tumors.
Dover, Del., A Contribution toward the Experimental Investigation of the Etiology of Phthisis.

Philadelphia, Pain in the Heart.
Lebanon, Burns and Scalds.
Trenton, N. J., Anemia.
Beantleyville, Diphtheria.
Marietta, Rabies.

Philadelphia, Insomnia.
Beantleyville, An Inquiry into the Nature of Intestinal Casts.

Philadelphia, Acute Idiopathic Bronchitis.
New Haven, Ct., Tricuspid Stenosis.

Strasbourg, Neurasthenia.
Philadelphia, Adherent Prepuce.


Chester, Studies on Syphilis.
Beantleyville, Typhoid Fever.

New Haven, Ct., Lithotomy.

Boston, Chorea Minor.

Philadelphia, Exophthalmic Goitre.

Minatitlan, Mex., Snake Bite.

Womelsdorf, Diseases of the Prostate Gland.
York, Dysentery.
Radnor, A Case of Abortive Typhoid Fever.

Reading, Help in Emergencies.
Hartleton, Locomotor Ataxia.
Chambersburg, Puerperal Eelampsia.
Schellsburg, Breech Presentations.

Philadelphia, Action of Sulphate of Quinia on the Blood.

Lewes, Del., Interstitial Nephritis.
Hoobangh, John U., A.B. (Franklin and Marshall)
Howell, William G., Jr.
Hunter, N. Perry, A.B. (Cornell)
Ickes, William J.
Irvin, C. Jones
Jack, Louis Foster
Jenkins, Stephen R.
Joy, J. Addison, A.B. (Amherst)
Judge, John P., A.M. (Mt. St. Mary’s)
 Junco, Leoncio del, A.M.
Littig, Lawrence W., A.M., M.D.
Little, George
Lynd, Robert S.
Mackaef, John
Marvel, Philip
Masten, Claude H., Jr.
McBride, Thomas Barr
Moore, William A.
Mosteller, William H.
Newton, Alfred C.
Norton, Albert E.
Novas, Francisco de P.
Orr, William P.
Pierce, William R.
Powell, Lupher A.
Powell, William M.
Power, David P., A.B. (Washington and Jefferson)
Prendergast, James F.
Prettyman, John S., Jr.
Raughley, William C.
Rohruss, Emil G., Ph.G.
Renz, Gustav A., Ph.G.
Richardson, Charles W.
Richardson, Rodney H., Ph.B. (Delaware)
Robb, Hunter
Roberts, Ellis G.
Robinson, Oliver D.
Robinson, Milton A.
Green Park, Morbilli.
Philadelphia, Psychology as a Medical Science.
Jasper, N. Y. Typhoid Fever.
Sandy Hill, Laceration of the Perineum.
Philadelphia, Constitutional Treatment of Gonorrhoea.
Media, Some Observations Relating to the Mycological Examination of the Air.
Charlott’n, P.E.I. Tubercular Meningitis.
E. Hampton, Mass Rhus Poisoning.
Philadelphia, Vis Mediatrix Nature.
Matanzas, Cuba, Dyspepsias by Lesion of the Abdominal Organs.
Davenport, Iowa, Diphtheria.
Pottsville, Scarletina.
Red Wing, Minn. Scarlet Fever.
Philadelphia, The Importance of Physiology in the Practice of Medicine.
Lake Linden, Mi. Convulsions in Children.
Dover, Del. Gastric Ulcer.
Mobile, Ala. Simple Fractures of the Femur.
Philadelphia, Aortic Regurgitation with Hypertrophy following Endocarditis.
Rochester, N. Y. A Case of Empyema.
Kimberton, Cancer of Pancreas.
Allentown, Injuries of the Hand.
Lewes, Del. Coxaalgia.
Philadelphia, Hooping Cough.
Amsterdam, N.Y. Diphtheria.
Cochranton, A Drug that Enslaves.
Philadelphia, A New Fact in Physiology.
McKeesport, Shock.
Binghamton, N. Y. Scrofula.
Milford, Del. Septicaemia and Pyaemia.
Dover, Del. Typhoid Fever.
Philadelphia, Gelsemium; its Reported Antidotes.
St. Paul, Min. The Physiology of the Alimentary Tract.
Wash'ton, D.C. Nephrectomy.
Lewes, Del. Aneurism of Abdominal Aorta with Gastritis.
Burlington, N. J. Pertussis.
Penygroes, Wales, Management of Natural Labor.
Georgetown, Del. Diseases of Menstruation.
Williamsport, Scarletina.
Roderer, John F.  
Semple, Wm. O., Ph.B.  
Shaver, William D.  
Serraden, William H., D.D.S.  
Simpson, Maxwell G., M.A.  
Skinner, Harry  
Steer, Edgar H.  
Stout, Charles P., Ph.G.  
Sykes, Henry  
Temple, Frank M., M.D.  
Temple, William H., Jr.  
Trumbull, John Hayward, Ph.B. (Yale)  
Van Horn, Alfred F.  
Van Loon, William F., Ph.B. (Wesleyan University)  
Wallis, J. Edward, Ph.G.  
Waterbury, Edward M., A.B. (Univ. of Rochester)  
Wendle, Ernest, M.D.  
Whitney, Harry Leroy  
Wilson, Cunningham  
Winner, William G.  
Zaill, William L., D.V.S.  

Philadelphia, Craniotomy and Cesarean Section.  
Easton,Scarlatina.  
Plymouth, Cirrhosis of Liver.  
Parkesburg, Acute Pleurisy.  
Philadelphia, Oxygen as a Therapeutic Agent.  
Waterford, Va. Cerebral Syphilis.  
Florence, N. J. How to Decolorize Iodoform and to Prescribe it.  
Liverpool, N. B. Acute Pleurisy.  
Mercer, Scarlatina.  
Taleshahama, Chili Chronic Interstitial Nephritis.  
Catasauqua, Hypertrophy of the Heart.  
Wilkes-Barré, Sunstroke.  
Philadelphia, Mercury ; its Uses and Abuses.  
Saratoga Springs, Physiology of Animal Temperature.  
N. Y.  
Alden, N. Y. Dengue.  
Plymouth, Quinia in Pregnancy and Labor.  
Birmingham, Ala. Croupous Pneumonia.  
Williamsport, Ulcer of Stomach.  
Philadelphia, Contagious Pleuro-Pneumonia.  

SUMMARY.

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MAY 1ST, 1884.

Doctor of Dental Surgery—

Aldcroft, J. Gamwell
Bermudez, Salvador
Bowers, Horace A.
Brown, Wistar P.
Campbell, William F., M.D.
Davila, Nemecio, Ph.D.
 Emmert, John W.
Erskine, Stirling, M. D.
Entrikin, Joseph B.
Gastal, Edmund

Hudson, N. Y.
Leon, Nicaragua.
Nashua, N. H.
Philadelphia.
Media.
Santiago, Chili.
Freeport, Ill.
Philadelphia.
Pelotas, Brazil.
Goettinger, Louis                    Berlin, Germany.
Graves, Luther H.                  Philadelphia.
Hert, Benedict S.                  Rochester, N. Y.
Hiestand, Ira C.                   Millersville.
Jimenez, Generoso A.              Havana, Cuba.
Loder, James E.                   Philadelphia.
McCance, James L.                  Oil City.
McMillan, Samuel J.               Cumberland, Md.
Maercklein, Robert               Milwaukee, Wis.
Miner, Howard A.                 Guilford, N. Y.
Munn, Edgar W.                  Freeport, Ill.
Noble, Henry B., Jr.            Washington, D. C.
Provost, Howard G.                Stamford, Conn.
Redpath, Philip E.               Niagara Falls, N. Y.
Shockley, Abraham L.              Lakeville, Mass.
Skidmore, Luther W.              Morris, Ill.
Stowell, Sidney S.               Peru, Mass.
Swartz, J. Torrence              Washington, D. C.
Tompsonks, Clarence              Philadelphia.
Tripler, William C.               Philadelphia.
Walls, Frank H.                 Vineland, N. J.
Watson, D. Stuart                Fairfield.

JUNE 13, 1884.

Cate, Wilbur T.                     Springfield, Mass.

SUMMARY.

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HONORS.

In the College Faculty, at the examination for Degrees—

In the Arts—

Of the Second Class, to Laurence Butler Ridgely, John Stokes Adams, Charles Hoffman, James Dallas Steele, and Landreth Worthington Thompson.

Of the Third Class, to John Mullen, James Lawrence Smith, Benjamin Harvey Welch, Charles Hinkle Marple, Ardemus Stewart, Caldwell Keppele Biddle, William Henry Dillingham, and John Barton Townsend.
In The Towne Scientific School—
Of the Second Class, to George Ross Green, and Samuel Smyth Van Pelt.
Of the Third Class, to Edward Shippen Watson Farnum, and William Irvin Seltzer.

In The Wharton School of Finance and Economy—
Of the Second Class, to Edward Potts Cheyney.
Of the Third Class, to Shiro Shiba and William Redwood Wharton.

At the annual examination Distinctions of the First Class—
In The Arts to—
Juniors—Mark Wilks Collet, James Fry Bullitt.
Sophomores—Howard James Truman.
Freshmen—George Wharton Pepper, James Alan Montgomery, George Flowers Stradling, John McArthur Harris.

In the Faculty of Medicine, for graduation theses—
MAY 1, 1884.

Distinguished Merit, to—
William Gibbons Daggett, Ernesto Duplan,
George Dock, William L. Zuili.
Honorable Mention, to—
David H. Bergey, Francisco de Paulo Novaes,
Park P. Breneman, Albert E. Norton,
George L. Cassel, Emil G. Rehfuss,
Egbert Florance, Edgar H. Steer,
Charles P. Stout,

Successful candidates for appointment to Hospitals selected by competitive examination, and alphabetically arranged—
To The University Hospital.
Winters D. Hamaker, Henry Sykes,
Charles W. Richardson,

To The Philadelphia Hospital.
William L. Abbott, Harbeson Hickman, Jr.,
William Gibbons Daggett, Stephen R. Jenkins,
Evan W. Evans, Lawrence W. Littig,
George B. M. Free, Francisco de P. Novaes,
John C. Greenewalt, Edgar H. Steer.

To The St. Mary's Hospital.
Frank V. Cantwell, James F. Prendergast,
George Dock,

To The Presbyterian Hospital.
John C. Greenewalt, Maxwell G. Simpson,
Winters D. Hamaker,
To The German Hospital.
Charles Colmar,  H. Leroy Whitney.
Emil G. Rehfuss.

In the Faculty of Dentistry, at the examination for Degrees—
Honorable Mention for averages exceeding 90, to—
Howard G. Provost,  Conn.  John W. Emmert,  Ill.
Stirling Erskine, M.D.,  Penna.  Wm. F. Campbell, M.D.,  Penna.
Frank H. Walls,  N. J.  Howard A. Miner,  N. Y.
Ira C. HIestand,  Penna.  Horace A. Bowers,  N. H.
Henry B. Noble, Jr.,  D. C.  Joseph B. Entrikin,  Penna.

PRIZES.
I. By the College Faculty—
1. In the Greek Language and Literature, Junior Prize for the best examination on "The Oration of Eschines contra Ctesiphontem," read with the Professor, in addition to the regular course, equally to George Ard Shoemaker and Herman T. Lukens, with Honorable mention of Mark Wilks Collet.
2. For the best examination by a member of the Freshman Class on Greek Prose Composition with the accents, to George Flowers Stradling, with Honorable mention of Hyland Clarke Murphey.
3. In Mathematics, Junior Prizes for the best examinations on the Lectures on Quaternions given to the Voluntary Junior Class: 1st prize to Herbert Coleman Whitaker; 2d prize to James Collins Jones, with Honorable mention of Herman T. Lukens.
4. In History and English Literature, Senior Prize for the best Essay on "Martin Luther," to James Barr Ferree.
6. The Sophomore Prize, for the best Declamation, to Crawford Dawes Fleming.
7. The Matriculate Greek Prizes for the best examination upon the elements of Greek Prose Composition; of the 1st Rank to James Alan Montgomery; 2d Rank to Edward Alden Miller.
8. The Prize offered by the Board of Trustees to the Scientific Classes for Improvement in Drawing and for general good conduct and application, to Alfred Henry Smith, of the Freshman Class.
9. The Prize founded by the Society of the Alumni, for the best Latin Essay by a member of the Graduating Class, to James Dallas Steele, for his Essay "De Vera Philosophia."
10. The Prize founded by the Society of the Alumni, for the best Original Declamation by a member of the Junior class, to Roland Post Falkner.

11. The Prize founded by Mr. H. La Barre Jayne, for the best English Composition by a member of the Freshman Class, on "Nationality and Religious Belief as Factors in the Colonization of the United States," to James Alan Montgomery.


13. “The Van Nostrand Prize,” for the highest general standing in scholarship in the Department of Civil Engineering (Junior Class), to Charles Elder Lindsay.

II. By the Faculty of Law—

1. The Faculty Prize, for the best written examination with all the Professors, to Robert Ralston, of the Junior Class.

2. The Sharswood Prize, for the best graduation Essay in 1884, to Walter Murphy. Subject, “Remainders to Children as a Class.”

3. The Meredith Prize, for the second best Essay, to John C. Bell. Subject, “Ademption of Legacies.”

III. By the Faculty of Medicine—

MAY 1, 1884.

1. The Henry C. Lea Prize, One Hundred Dollars, to George A. Bodamer.

2. The Alumni Prize, Fifty Dollars, to William R. Batt.

3. The Faculty Prize, Fifty Dollars, to Hobart Amory Hare.

4. The Anatomy Prize, offered by the Demonstrator of Anatomy, Thirty Dollars, to M. Howard Fussell.

5. The Prize for Proficiency in Bandaging and Operating, a copy of Agnew's Surgery, in three volumes, to Edgar H. Steer.

6. The Henry A. Beates Prize, Fifty Dollars, for the best grade in final examination, to Edgar H. Steer.

IV. BY THE AUXILIARY FACULTY OF MEDICINE—

The George B. Wood Alumni Prize, to W. Frank Haehnlen, M.D., for his Essay entitled "Micro-chemistry of Bacteria, with special reference to the Bacillus tuberculosis.”
### RECAPITULATION.

#### PROFESSORS, LECTURERS, AND INSTRUCTORS.

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### STUDENTS.

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