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Public Commencements are held—

1) For the Departments of Arts and of Law, the Auxiliary Department of Medicine, the Towne Scientific School, the Department of Music, and the Wharton School of Finance and Economy, on June 15th, or, if this day falls on Saturday or Sunday, on the previous Friday.

2) For the Departments of Medicine and of Dentistry (in 1883), on April 15th, or on the preceding Friday (as above).
THE FOLLOWING DEGREES ARE NOW CONFERRED BY THE UNIVERSITY:

COLLEGIATE DEPARTMENTS.—Bachelor of Arts (A.B.); Bachelor of Science (B.S.), with mention of the special Course of Study pursued. The same degree is awarded to graduates of the Wharton School of Finance and Economy.

MEDICAL DEPARTMENT.—Doctor of Medicine (M.D.).

LAW DEPARTMENT.—Bachelor of Laws (L.L.B.).

DEPARTMENT OF MUSIC.—Bachelor of Music (Mus.Bac.).


POST-GRADUATE DEGREES.—Master of Arts (A.M.), to graduates in Arts of three years' standing; Civil Engineer (C.E.), Mechanical Engineer (M.E.), Mining Engineer (E.M.), Architect (Arch't), to graduates in Science of three years' standing; Bachelor of Science (B.S.), in Sciences Auxiliary to Medicine, by the Auxiliary Faculty of Medicine; Doctor of Philosophy (Ph.D.), by the Faculty of Philosophy.

LIBRARIES.

The LIBRARY contains the following special collections: (1) The WETHERILL LIBRARY OF WORKS ON CHEMICAL SCIENCE; (2) the COLWELL LIBRARY OF WORKS ON SOCIAL SCIENCE, the most complete in the world in its own department; (3) the CAREY LIBRARY, comprising the library of the late Henry C. Carey, and especially rich in the department of statistics; (4) the ALLEN LIBRARIES OF CLASSICAL LITERATURE, BIBLIOGRAPHY, SHAKESPEARE, AND MILITARY SCIENCE; (5) the ROGERS LIBRARY OF CIVIL ENGINEERING; (6) the STILLE MEDICAL LIBRARY in the Medical Department.

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 STILLÉ MEDICAL LIBRARY, including over four thousand volumes, is appropriately arranged in the Medical Hall. The LIBRARIES OF THE LITERARY AND SCIENTIFIC SOCIETIES are of considerable value.
GENERAL INFORMATION IN REGARD TO THE COLLEGIATE DEPARTMENTS.

CALENDAR.

1882.

September 15. College Year begins. 10 A. M.
November 30. Thanksgiving Day. (Holiday.)
December 22. Christmas Recess begins.

1883.

January 2. Christmas Recess ends. 10 A. M.
" 31. Annual Examinations, First Session, end.
" 31. First Term ends. 10 A. M.
February 1. Second Term begins.
" 22. Washington's Birthday Celebration. 10 A. M.

EASTER RECESS.

March 27. Easter Recess ends. 10 A. M.
May 14. Senior Examinations end.
" 15. Announcement of Results. 10 A. M.
" 14. Announcement of Results. 10 A. M.
" 15. Commencement Day.
" 16 to 22. Examinations for Admission.

SUMMER VACATION.

Sept. 8 to 14. Fall Examinations for Admission.

COLLEGE TERMS AND VACATIONS—TUITION FEES.

The College Year in the Department of Arts, the Towne Scientific School, and the Wharton School of Finance and Economy, is divided into two Terms; the first beginning on the 15th of September, and ending on the 31st of January; the second beginning on the 1st of February, and ending on the 15th of June (Commencement Day).

The Annual Tuition Fee is one hundred and fifty dollars, payable to the Treasurer of the University in two instalments, on October 1st and February 1st. The Graduation Fee is twenty dollars. A separate charge of fifteen dollars per term is made to the chemical and geological students of the Junior and Senior Classes in the Towne Scientific School, for chemicals and gas, and a like charge of ten dollars per term to students of the Sub-Junior Class. Students are required to have their own apparatus.

Examinations are held by the Faculties of these Departments, partly in the month of January, and partly, for the Senior Class, in May, and, for the lower classes, at the close of the college-year in
June. At the end of each term, students who attain distinction are classed in order of merit.

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

INSTRUCTION OPEN TO THE PUBLIC.

Persons of both sexes are admitted without examination to the following courses of lectures given in these Departments, viz.:—

On German Literature, by Professor Seidensticker.
On the Older English Classics, by Professor McElroy. (Two Courses: — I. Chaucer and Spenser, September to January; II. Shakspere, February to May.)
On National Economy, on the History of the Civil Law, and on Communism, by Professor Thompson.
On Physics and Astronomical Physics, by Professor Barker.
On Inorganic and Organic Chemistry, by Professor Sadtler.
On Classical Archæology, by Mr. Leighton Hoskins.

They are also admitted to the Classes in Analytical Chemistry, including practical work in the laboratory, under Professor Genth.

The lectures begin, as a rule, about February 1st. The fee for each course is five dollars; for the instruction in Analytical Chemistry, seventy-five dollars a term.

Application may be made to the Dean or the Secretary of any of the Faculties; from whom, also, further information respecting this instruction may be obtained.

SPECIAL COURSES.

Special Courses are granted by the Faculties in these departments, as follows:—

I. In the Department of Arts, a Partial Course, consisting of such studies given in the full course as the student may elect and the Faculty may sanction. (See p. 18.)

II. In the Towne Scientific School, a Special Course in any one of the six Professional Courses given in the last three years. (See p. 27.)
III. In the Wharton School, either a Partial Course of such studies as the Faculty may permit the student to take, or a Special Course in any subject taught in the school. (See p. 42.)

SOCIETIES.

The Philomathean (Literary) Society, founded in 1813, holds meetings weekly during the college-year, in its rooms at the University. Undergraduates in all three collegiate departments 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, and is open to the use of members.

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 in the University Chapel.

SCHOLARSHIPS.

I. Under a contract with the City of Philadelphia, Fifty Free Scholarships have been established in the University of Pennsylvania 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.

II. A limited number of Free Scholarships will be granted at the beginning of each college-year to deserving and indigent students in these departments, 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 the case of those who are 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 Wharton School is open without fee to those students from the Public Schools who have gained the Prize Scholarships, after they have passed through the Freshman and Sophomore classes. Scholarships of Class II., also, held by students in the Department of Arts or the Towne Scientific School who elect the course in the Wharton School, may be renewed from year to year in this School in the same way as in the other Departments.

IV. The income of THE BLOOMFIELD MOORE FUND is appropriated to enable women (not exceeding six in number in any one year) who are teaching, or who propose to teach, to receive, without cost, instruction in one or more of the subjects named above as open to the public.

PRIZES.

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

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

1. In the Department of Intellectual and Moral Philosophy, a prize of the value of twenty dollars for the best Essay by a member of the Junior Class. Subject: "The Doctrine of Cause and Effect."

2. In the Department of the Greek Language and Literature, a prize of twenty dollars for the best examination upon the Oration of Aeschines contra Ctesiphontem, to be read with the Professor by members of the Junior Class.

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

4. In the **Department of Mathematics**, a first and a second prize of the value of fifteen and ten dollars, respectively, for the best examination on the *Lectures on Quaternions* given to the Voluntary Junior Class.

5. In the **Department of History and English Literature**, a prize of the value of thirty dollars for the best English Essay by a member of the Senior Class. Subject: “Bancroft.”

6. A prize of the value of twenty dollars for the best English Essay by a member of the Junior Class. Subject: “Gustavus Adolphus.”

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

II. To encourage the training in Greek and Latin Prose Composition in the Preparatory Schools, a first and a second prize have been established by the Faculty, under authority of the Board of Trustees, of the value of fifteen and ten dollars, respectively, to be awarded annually to the Freshmen who, upon entering College, shall pass the best special examinations in the *Elements of Latin Prose Composition*, provided the examinations reach a satisfactory standard of excellence. The examination will take place on or about the first day of October. In 1883, it will be upon the first fifty-five exercises in Part I. of *Arnold's Latin Prose Composition*. Certificates will be presented to all competitors whose examinations reach a satisfactory standard.

Two prizes of the same amounts will be awarded annually for *Greek Prose Composition*. The examination in the year 1883 will be upon the whole of *Jones's Greek Exercises*, with the Accents.

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

IV. The “*Henry Reed Prize*,” founded by the Alumni of the University in memory of Professor Henry Reed, is annually awarded for the best *English Essay* by a member of the Senior Class (Department of Arts). It entitles the successful candidate to one
year's interest on a certificate of loan issued by the City of Philadelphia in the sum of six hundred dollars and to an accompanying Diploma of Merit. The essays must be handed to the Vice-Provost, for transmission to the Board of Trustees, by the first day of May. The subject for the present year is: "The Causes and Tendencies of the Growing Obscurity in Recent Poetry."

V. The Society of the Alumni have founded the following prizes:

1. A prize to be annually awarded to that member of the graduating class who shall present the best Latin Essay. It entitles the successful candidate to one year's interest on a certificate of loan issued by the City of Philadelphia in the sum of nine hundred dollars. The essays must be handed to the Vice-Provost, for transmission to a Committee of Examiners appointed by the Society, by the first day of May.

2. A prize is annually awarded to a member of the Junior Class for the best Original Declamation. It entitles the successful candidate to one year's interest on certificates of loan issued by the City of Philadelphia in the sum of three hundred dollars.

VI. Through the liberality of Mr. Henry La Barre Jayne, of the class of 1879, a prize is offered annually for the best English Composition by a member of the Freshman Class. It entitles the successful competitor to one year's interest on the sum of two hundred dollars. The subject for the present year is: "Proprietary Government in the American Colonies."

VII. "The Joseph Warner Yardley Memorial Prize," founded by the Class of 1877, in the Department of Social Science, in memory of their classmate, will be annually awarded to that member of the Senior Class who shall prepare the best thesis upon such subject as the Professor of that Department shall each year designate, and will entitle the successful candidate to one year's interest upon the sum of five hundred dollars, and also to an accompanying Diploma of Merit. The subject for the present year is: "The Nationalization of Land."

VIII. A prize is offered in the Department of Civil Engineering, by D. Van Nostrand, Esq., to the member of the Junior Class (Section of Civil Engineering) who attains the highest general average of scholarship. It consists of certain technical works.
The DEPARTMENT OF ARTS is designed to give that comprehensive and liberal culture, and to secure that mental training and discipline, which, until recent years, were the sole aims of the best known American colleges. The methods by which these objects are sought have been enlarged by the adoption of a carefully arranged elective system, by the introduction of new subjects of study (notably the modern languages), and by giving greater prominence to certain old ones. The students are divided into four classes, Senior, Junior, Sophomore, and Freshman.

To be admitted into the Freshman Class, a student must pass a satisfactory examination on the following subjects and authors:

**Geography.**—Ancient and Modern Geography. (Mitchell’s *New Ancient Geography* and *Ancient Atlas* are recommended.)
ENGLISH.—Grammar, Composition and Etymology (Greek and Latin roots). Abbott’s How to Parse indicates the amount required in Grammar, and Sargent’s Manual the amount required in Etymology. A composition, one (foolscap) page long, will be required on a theme to be set at the time of the examination.


Two examinations of candidates for admission will be held during the present year. Candidates must be punctual in their attendance at the hours named.

The first of these examinations will be held as follows:

ON SATURDAY, JUNE 16, from 9 to 10½.—A written examination in Arithmetic (especially—The Simple Rules, Vulgar and Decimal Fractions, The Decimal System of Weights and Measures, and The Extraction of the Square and Cube Root).

From 10½ to 1½.—A written examination in Algebra—To Quadratic Equations including Proportion, Progression, Surds, Imaginary Quantities, and The Binomial Theorem.

ON MONDAY, JUNE 18, from 9 to 11.—A written examination in Latin Grammar. From 11½ to 1.—A written examination upon six books of Virgil’s Aeneid, and upon the Structure and Scanning of Hexameter Verse.

ON TUESDAY, JUNE 19, from 9 to 11.—A written examination in English Grammar, Composition, and Etymology. From 11½ to 12½.—A written examination in Ancient and Modern Geography.

ON WEDNESDAY, JUNE 20, from 9 to 11.—A written examination in Greek Grammar and Arnold’s Greek Prose Composition. From 11½ to 1½.—A written examination upon the first four books of Xenophon’s Anabasis and the first three books of the Iliad. (Candidates will be required to scan the Homeric verse.)

ON THURSDAY, JUNE 21, beginning at 9 o’clock.—An oral examination upon five of Cicero’s Orations, including those against Catiline.

ON FRIDAY, JUNE 22, at 11 o’clock.—Announcement of results.

Applicants for admission to the Sophomore Class, who pass the above examinations satisfactorily, will be examined as follows upon the subjects studied by the Freshman Class:

ON THURSDAY, JUNE 22, beginning at 11½ o’clock—Oral or written examinations on the following subjects and authors:

IN GREEK.—Upon Xenophon’s Hellenics (II. 4, IV. 2, 3, 4, VI. 4, §§ 1–37, and VII. 5), and the Persae or the Prometheus of Aeschylus. The whole of Arnold’s Greek Prose Composition.

IN LATIN.—Upon Livy (Selections from the Twenty-first and Twenty-second Books); and Horace (Selections from the Satires).

IN MATHEMATICS.—On Newcomb’s Algebra and Chauvenet’s Geometry.
IN HISTORY.—Upon Freeman's General Sketch of History.

IN ENGLISH.—Upon Abbott's How to Write Clearly and McElroy's System of Punctuation.

IN FRENCH.—Upon Kuetel's Collegiate Course, First Part, and Analytical Reader, First Part, or Télémaque, Three Books.

ON THURSDAY, JUNE 22, at 3 o'clock.—ANNOUNCEMENT OF RESULTS.

Applicants for admission to the Junior or Senior Class, who pass the above examinations satisfactorily, will have special appointments made for their examination upon the studies of the Sophomore and Junior Years.

The second examination will be held:—
From Monday, Sept. 10th, to Saturday, Sept. 15th, upon the same subjects as those named for the examination in June.

COURSE OF INSTRUCTION FOR THE DEGREE OF BACHELOR OF ARTS.

All candidates for the degree of Bachelor of Arts, pursue the same studies during the Freshman and Sophomore years. During the remaining two years of the course,—

1. All the members of the class are required to study Intellectual and Moral Philosophy, Mathematical Astronomy, English Literature and General History, the elements of Social and Political Science, General Mechanics, Physics, Chemistry, and English Composition and Oratory.

Each member of the class at the beginning of his Junior year must elect either—

Greek or German;
Latin or French;
Pure Mathematics or advanced studies in History and English Literature.

These elections are binding for both years.

A student may pursue the full course, or he may take any portion of that course which the Faculty may sanction: but admission to a partial course is to be considered an exceptional arrangement, made by the Faculty, to be granted and withdrawn, when and as it may be deemed expedient. At the termination of such a partial course, satisfactorily pursued, a certificate of proficiency will be awarded.

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

For further information respecting this Department, see pages 8 to 15. Letters of inquiry may be addressed to the Dean of the Faculty.

FRESHMAN CLASS.

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

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

MATHEMATICS.—Newcomb's *Algebra*, Chauvenet's *Geometry*.

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

ENGLISH.—Abbott's *How to Write Clearly*. McElroy's *System of Punctuation*.

FRENCH.—Keetel's *Collegiate Course and Analytical Reader*, or *Télémaque*.

SOPHOMORE CLASS.

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

LATIN.—Tacitus (Agricola, Germania, or Annales). Cicero (De Seneceute or De Officiis). Horace (Selected Odes).

MATHEMATICS.—Chauvenet's *Plane and Spherical Trigonometry*, with applications. Bowser's *Analytical Geometry*.

ENGLISH.—Elements of Rhetoric (Lectures). Compositions and Declamations. Halderman's *Outlines of Etymology*. Lounsbury's *English Language*.

GERMAN.—Whitney's *German Grammar*. Woodbury's *Elementary Reader*.

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

JUNIOR CLASS.


GREEK (Elective with German).—Sophocles. Lysias or Isocrates. Thucydides.

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

PURE MATHEMATICS (Elective with History and English).—Differential Calculus.

PHYSICS (Required).—Mechanics, Sound, Heat, Light, Electricity.

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

ENGLISH (Required).—Compositions and Declamations.

ENGLISH (Elective with Pure Mathematics).—Shakspere (Love's Labour's Lost, The Merchant of Venice, Macbeth).


GERMAN (Elective with Greek).—Whitney's *German Grammar*. Schiller's *Maria Stuart*. Lessing's *Nathan der Weise*. Eichendorff's *Aus dem Leben eines Taugenichts*.

FRENCH (Elective with Latin).—Corneille and Racine.
SENIOR CLASS.


GREEK (Elective with German).—Demostenes de Coronè. Plato (Apology and Crito, or Phædo).

LATIN (Elective with French).—Cicero (Tusculanae), or Lucretius (Selections). Horace (Ars Poetica). Reading at Sight.

PURE MATHEMATICS (Elective with English).—Integral Calculus.

ASTRONOMY.—Newcomb’s Astronomy.

HISTORY (Required).—Medieval and Modern History (Lectures).

ENGLISH (Required).—Compositions and Original Declamations.


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

GERMAN (Elective with Greek).—Goethe’s Faust. Translations into German. History of German Literature.


UNDERGRADUATES. 1882-3.

DEPARTMENT OF ARTS.

SENIOR SOPHISTERS.

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<th>Name</th>
<th>City</th>
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<tr>
<td>William Adger</td>
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<td>Cyrus Adler</td>
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<td>Charles Young Audenried</td>
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<td>Cornelius Davis Mecutchen</td>
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<td>Elliston Joseph Morris</td>
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<td>John Robert Moses</td>
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Howard Wurts Page, do.
Louis Rodman Page, do.
Emil Roth, do.
Paul Judd Sartain, do.
George Edward Schlegelmilch, do.
Herman Schmitt, do.
Joseph Sherlock, do.
Francis Edward Smiley, do.
Alpheus Waldo Stevenson, do.
Joseph Whitaker Thompson, Phoenixville, do.

Seniors, 29.

JUNIOR SOPHISTERS.

John Stokes Adams, Lexington, Kentucky.
Caldwell Keppele Biddle, Philadelphia, Pennsylvania.
Marcus Ingraham Brock, do.
Thomas Cooke, do.
John Pusey Croasdale, do.
Morris Dallett, do.
William Henry Dillingham, West Chester, do.
John August William Haas, Philadelphia, do.
Butler Kenner Harding, do.
Charles Hoffman, do.
James Woodside MacBride, do.
John Vaughan Merrick, Jr., Roxborough, do.
Thomas Lynch Montgomery, Philadelphia, do.
John Mullen, do.
Benjamin Brannan Reath, Jr., do.
Laurence Butler Ridgely, do.
Waters Dewees Roberts, Riverton, New Jersey.
James Irvine Scott, Philadelphia, do.
Lewis Lawrence Smith, Media, do.
James Dallas Steele, Philadelphia, do.
Ardemus Stewart, Abington, do.
Landreth Worthington Thompson, Philadelphia, do.
John Barton Townsend, Overbrook, do.
Alexander Waddell, Philadelphia, do.
Benjamin Harvey Welch, do.
George Emlen West, do.
Milton Cooper Work, do.

Juniors, 28.

SOPHOMORES.

Harrison White Biddle, Philadelphia, Pennsylvania.
Samuel Laurence Bodine, do.
George Rosengarten Bower, Riverton, New Jersey.
William Brockie, Jr., Germantown, Pennsylvania.
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<tr>
<th>Name</th>
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<td>James Fry Bullitt</td>
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<td>Samuel Welsh, 3rd</td>
<td>Philadelphia</td>
<td>do.</td>
</tr>
<tr>
<td>John Rhea Barton Willing</td>
<td>do.</td>
<td>do.</td>
</tr>
<tr>
<td>Gustave Winelander</td>
<td>Germantown</td>
<td>do.</td>
</tr>
<tr>
<td>Lewis Wynne Wister</td>
<td>Overbrook</td>
<td>do.</td>
</tr>
<tr>
<td>Edward Yarnall</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sophomores, 34:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Place of Birth</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Sands Brown Chew</td>
<td>Germantown</td>
<td>Pennsylvania</td>
</tr>
<tr>
<td>George Christian Eisenhardt</td>
<td>Philadelphia</td>
<td>do.</td>
</tr>
<tr>
<td>William West Frazier, 3rd</td>
<td>do.</td>
<td>do.</td>
</tr>
<tr>
<td>William Thompson Graham</td>
<td>do.</td>
<td>do.</td>
</tr>
<tr>
<td>James Biddle Halsey</td>
<td>do.</td>
<td>do.</td>
</tr>
<tr>
<td>Crawford Dawes Hening</td>
<td>do.</td>
<td>do.</td>
</tr>
<tr>
<td>William Robert White Hentz</td>
<td>do.</td>
<td>do.</td>
</tr>
<tr>
<td>Robert Murray Hogg</td>
<td>do.</td>
<td>do.</td>
</tr>
<tr>
<td>George Quintard Horwitz</td>
<td>do.</td>
<td>do.</td>
</tr>
<tr>
<td>John Chester Hyde, Jr.</td>
<td>Bristol</td>
<td>do.</td>
</tr>
<tr>
<td>Edward Miller Jefferys</td>
<td>Philadelphia</td>
<td>do.</td>
</tr>
<tr>
<td>Samuel Stryker Kneass</td>
<td>Norristown</td>
<td>do.</td>
</tr>
<tr>
<td>Irvin Poley Knipe</td>
<td>Pittsburgh</td>
<td>do.</td>
</tr>
<tr>
<td>Christopher Magee, Jr.</td>
<td>Philadelphia</td>
<td>do.</td>
</tr>
<tr>
<td>Albert William Manifold</td>
<td>Fowlerville</td>
<td>New York.</td>
</tr>
<tr>
<td>William Smith Nelson</td>
<td>Philadelphia</td>
<td>Pennsylvania</td>
</tr>
<tr>
<td>John Hooker Packard, Jr.</td>
<td></td>
<td></td>
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</tbody>
</table>
Robert William Rogers, do.
Jacob Martin Romnell, Jr., do.
Edward Jaquett Sellers, do.
Walter Moore Shaw, Norristown, do.
Frederick Thibault, Philadelphia, do.
Howard James Truman, do.
Thomas Holmes Walker, Hatborough, do.
George Wisner Wilgus, Philadelphia, do.
Charles Baeder Williams, Camden, do.
Charles Elmer Woodruff, Philadelphia, do.
Samuel Megargee Wright.

Louis J. Cunningham Kimmell, do.
Henry Rankin Poore, do.
Frank Lambader, Jr., do.
John Carnahan Milligan, do.
Redmond Conyngham, Lancaster, do.
Charles Howard Hagert, Philadelphia, do.
Grant Lee Knight, do.
Andrew Wheeler, Jr., do.
Otis Mills Coxe, do.
James Burnet Crane, Rome, Italy.
Edwin Pound Gardner, Canandaigua, New York.
Charles Alexander Oliver, Philadelphia, do.
George Petry, Chestnut Hill, do.
Edmund Austin Stewardson, Philadelphia, do.
Henry Wurst, do.

PARTIAL STUDENTS.

Partial Students, 16.

DEPARTMENT OF ARTS.

<table>
<thead>
<tr>
<th>Class</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seniors</td>
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<tr>
<td>Juniors</td>
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</tr>
<tr>
<td>Sophomores</td>
<td>34</td>
</tr>
<tr>
<td>Freshmen</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
</tr>
<tr>
<td>Partial Students</td>
<td>16</td>
</tr>
</tbody>
</table>

Total Matriculates in the Department of Arts 136
THE TOWNE SCIENTIFIC SCHOOL.

FACULTY.

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

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

E. OTIS KENDALL, LL.D., Dean of the Faculty, and Professor of Mathematics.

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

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

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

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

F. A. GENTH, Ph.D., Professor of Chemistry and Mineralogy.

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

LEWIS M. HAUPT, C.E., Professor of Civil Engineering.

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

GEORGE A. KENNIG, Ph.D., Assistant Professor of Chemistry, Instructing in Metalurgy, Technical Chemistry, and Mineralogy. (Acting Professor of Geology and Mining.)

SAMUEL P. SADTLER, Ph.D., Assistant Professor of Chemistry, Instructing in General and Organic Chemistry.

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

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

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

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

HENRY W. SPANGLER, Assistant Engineer U. S. N., Assistant Professor of Dynamical Engineering, and Instructor in Marine Engineering and Naval Architecture.

INSTRUCTORS AND ASSISTANTS.

MORTON W. EASTON, Ph.D., Instructor in French and Elocution.

EDWIN S. CRAWLEY, B.S., Instructor in Civil Engineering.

W. EGBERT MITCHELL, A.M., Instructor in History.

FREDERICK A. GENTH, Jr., M.S., Assistant in Analytical Chemistry.

CARL OTTO HERING, B.S., Assistant in Physics.

WINCHESTER DICKERSON, B.S., Assistant in Geology and Mining Engineering.

JOHN G. R. McELROY, Secretary.

AIMS OF THE TOWNE SCIENTIFIC SCHOOL.

The design of the instruction in this School is to give a thorough technical and professional training in the following subjects: viz., Chemistry, with its manifold applications to the industrial arts;

* Deceased. † Absent on leave.
METALLURGY and ASSAYING; MINERALOGY and GEOLOGY; CIVIL, DYNAMICAL (or MECHANICAL) and MINING ENGINEERING; MECHANICAL DRAWING and ARCHITECTURE; and STUDIES PREPARATORY TO THE STUDY OF MEDICINE.

In order that this professional training shall be complete and systematic, and rest upon a broad basis, so that the student at its close may not be a mere specialist, but a man of liberal education as well, the course is comprehensive, extending through five years.* The students are divided into five classes—Senior, Junior, Sub-Junior, Sophomore, and Freshman. The first two years are devoted, not merely to a thorough training in the preparatory and elementary Mathematics, Chemistry, and the methods of scientific research in general, but (for a considerable portion of the time) to instruction in History, English Composition, and Rhetoric, as well as to the Modern Languages and to Mechanical and Free Hand Drawing. At the close of these two years, the student is presumed to be prepared for studies of a strictly professional or technical character, and he then selects one of six parallel courses, in which instruction is given in this Department. (See pp. 26, 27.) During the last three years his work is confined mainly to the studies of one or another of these courses, in accordance with the plans he may have formed in regard to his future profession.

TERMS OF ADMISSION, EXAMINATIONS, AND DEGREES.

Candidates for admission to the Freshman Class must pass an examination in the following subjects:—

**Geography.**—Ancient and Modern Geography. (Mitchell’s New Ancient Geography and Ancient Atlas are recommended.)

**English.**—Grammar, Composition, and Etymology (Greek and Latin roots). Abbott’s *How to Parse* indicates the amount required in Grammar, and Sargent’s *Manual* the amount in Etymology. A composition, one (foolscap) page long, will be required on a theme to be set at the time of the examination.

**Mathematics.**—Arithmetic (including the Decimal System of Weights and Measures), Algebra (through Quadratic Equations), Geometry (the first four books of Chauvenet or Wentworth).

* The four years’ curriculum heretofore in force has been found too short for the work required of undergraduates in this Faculty, and it has accordingly been lengthened to five years. The statements in the Catalogue have been adapted to the new arrangement; but the Seniors and the Juniors are still pursuing the four years’ course, whose requirements will be found in the Catalogue of 1879–80.
Two examinations of candidates for admission will be held during the present year. Candidates must be punctual in their attendance at the hour named.

**First,**

**ON SATURDAY, JUNE 16, from 9 to 10½.—** A written examination in Arithmetic (Elementary Rules, Compound Numbers, Vulgar and Decimal Fractions, Proportion, Percentage, the Extraction of the Square and Cube Roots, and the Decimal System of Weights and Measures).

From 10½ to 1½.—A written examination in Algebra (to the end of Quadratic Equations, including Proportion, Progression, Surds, Imaginary Quantities, and the Binomial Theorem).

**ON MONDAY, JUNE 18, from 9 to 11.—** A written examination in the first four books of Chauvenet's or Wentworth's Geometry.

**ON TUESDAY, JUNE 19, from 9 to 11.—** A written examination in English Grammar, Composition and Etymology.

From 11½ to 12½.—A written examination in Ancient and Modern Geography.

**ON WEDNESDAY, JUNE 20, at 11 o'clock.—ANNOUNCEMENT OF RESULTS.**

Applicants for admission to the Sophomore Class who pass the above examinations satisfactorily, will be examined orally or in writing on the following subjects studied by the Freshman Class:

**ON WEDNESDAY, JUNE 20, from 11 to 2.**

**IN MATHEMATICS.—** On the whole of Newcomb's Algebra, Chauvenet's Geometry, and Chauvenet's Plane Trigonometry.

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

**IN ENGLISH.**—Upon Abbott's How to Write Clearly, and McElroy's System of Punctuation.

**IN FRENCH.—** On Keetel's Collegiate Course, First Part, and Analytical Reader, First Part.

**IN GERMAN.—** On German Grammar.

**IN DRAWING.—** On Geometrical and Isometrical Drawing and Shading in India Ink.

The results of these examinations will be made known on Wednesday, June 20th, at 3 o'clock.

Candidates for the Senior, Junior, or Sub-Junior Class, if they pass the above examinations satisfactorily, will have special appointments made for their examinations on the studies of the Sophomore, Sub-Junior, and Junior years.

**Second,**

**ON WEDNESDAY, THURSDAY, FRIDAY, and SATURDAY, September 12th, 13th, 14th, and 15th, upon the same subjects as those named for the examination in June.**

**PROFESSIONAL COURSES.**

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

I. A Course in Analytical and Applied Chemistry and Mineralogy.

II. A Course in Geology and Mining.
III. A Course in Civil Engineering.
IV. A Course in Mechanical Engineering.
V. A Course in Drawing and Architecture.
VI. A Course Preparatory to the Study of Medicine.

On the completion of any one of these professional courses, in addition to the studies pursued by the whole class during the five years of the curriculum, and on the presentation of a satisfactory thesis, the student is graduated Bachelor of Science.

Special students, not candidates for a Degree, may be received into any of the professional courses, when the Professor in charge of that course is satisfied of their competency to profit by his instruction. They take all the studies that the Professor thinks necessary to the completeness of 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 will receive a Certificate of Proficiency. Application should be made to the Professor in charge of the department in which the student wishes to study, and definite arrangements may be made with him,—subject, however, to the approval of the Faculty.

COURSE, METHODS, AND MEANS OF STUDY.

Instruction is made as practical as possible. It is given by lectures and recitations, and by daily exercise in the Laboratories and the Drawing and Model Rooms. These are open to the students all day, work being required of the higher classes in the afternoon as well as in the morning hours.

In the Department of Chemistry, the Sophomores have a course of fully illustrated Lectures, covering the whole ground of Inorganic Chemistry. In the Sub-Junior year, their work in the Analytical Laboratories begins, while they also attend Lectures on Mineralogy and Metallurgy. In the Junior and Senior years, Qualitative and Quantitative Analysis and the making of Chemical Preparations are combined with Lectures on Organic Chemistry, and practical work on Metallurgical and 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, so as to develop to the best advantage the qualities required of the practical engineer. The afternoons and Saturdays are devoted to drawing and practical work in the shop, or to surveying or visiting public or private works, manufactories, etc.

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

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.

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

The recent appointment to this department of an Instructor in Marine Engineering and Naval Architecture provides for instruction in these subjects.

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 complete years. In the Sub-Junior year the subjects treated are Elementary Mechanics, Sound, Heat, Light, and Electricity, the exercises consisting of lectures, illustrated by experiments, with recitations. In the Junior year, special instruction is given in advanced physics. The Senior class receives practical instruction in the Physical Laboratory throughout the year. The education of the eye and hand which is thus given, secures familiarity with apparatus and the knowledge of methods of precise measurement.

The Course Preparatory to the Study of Medicine includes not only Biology, but cognate studies specially adapted to train the powers of observation and reflection. Special students are admitted to the regular classes of the School; but, in addition to these regular classes, a special class in Analytical and Microscopic Botany is held on Saturdays, for teachers and others who cannot attend on other days.

The Rogers Engineering Library is composed of standard works on the various subdivisions of the profession, treating of drawing, mathematics, astronomy, physics, surveying and explorations, technical works on roads, strength and properties of materials, railroads, tunnels, canals, water supply, drainage, architecture, 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.

For further information respecting the Towne Scientific School, see pages 8–15. Letters of inquiry may be addressed to Professor E. O. Kendall, Dean of the Faculty, or to Professor J. G. R. McElroy, its Secretary, at the University.
COURSE OF STUDY.

FRESHMAN YEAR.

HISTORY.—Freeman’s General Sketch of History.

ENGLISH.—Abbott’s How to Write Clearly, and McElroy’s System of Punctuation.

FRENCH.—Keetel’s Collegiate Course and Analytical Reader.


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.


SOPHOMORE YEAR.

ENGLISH.—Elements of Rhetoric (Lectures). Haldeman’s Outlines of Etymology. Lounsbury’s English Language. Compositions and Declamations.

GERMAN.—Hodges’ Course of Scientific German. Guide to German Conversation. Translations into German.

FRENCH.—Böcher’s French Plays.

MATHEMATICS.—Chauvenet’s Spherical Trigonometry. Bowser’s Analytical Geometry.


CHEMISTRY.—Inorganic Chemistry (Experimental Lectures).

SUB-JUNIOR YEAR.

STUDIES PURSUED BY THE WHOLE CLASS.

CHEMISTRY.—Exercises in Analytical Chemistry and recitations in Analytical and General Chemistry.

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

MINERALOGY.—Crystallography and General Description of Minerals.

MATHEMATICS.—Descriptive Geometry.

GERMAN.—Schiller’s Maria Stuart. Lessing’s Nathan der Weise.

FRENCH.—Racine or Corneille. Molière.


1. Studies pursued by the Chemical Section.

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

2. Studies pursued by the Geological and Mining Section.

MINERALOGY.—Same as 1st section.

BOTANY.—Structure of Woods.

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

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 Punctual Structures.

**Surveying.**—Same as 3d Section.

**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.

5. Studies pursued by the Architectural Section.

**Architecture.**—Classical Architecture and Medieval Ornament. Shading in India ink. Sketching.

**Mathematics.**—Differential Calculus.

**Botany.**—Same as 6th Section.

**Engineering.**—Graphical Statics.

6. Studies in the Course Preparatory to Medical Studies.

**Chemistry.**—Practical work in the Laboratory.

**Mineralogy.**—Same as 1st Section.

**Botany.**—Use of Microscope. Outlines of Vegetable Anatomy.

**Zoology.**—General Morphology, Histology, and Invertebrate Zoology.

**Latin.**—Grammar.

JUNIOR YEAR.

STUDIES PURSUED BY THE WHOLE CLASS.

**Physical Science.**—Special Advanced Physics.

**Philosophy.**—Atwater’s *Logic*. Intellectual and Moral Philosophy.

**English.**—Compositions and Declamations.

**Descriptive and Determinative Mineralogy.**

**Elements of Geology.**


1. Studies pursued by the Chemical Section.

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.—Same as Section 3. 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.

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.—Topography in ink and colors; Studies in Contours; Platting field notes; Spherical Projections, Shades, Shadows, and Perspective.


ENGINEERING.—Mechanics of Engineering, embracing the Statics of Rigid Bodies, Determination of the Centres of Gravity, Moments of Flexure, Rupture, Resistance, Torsion, Analysis of Bridge and Roof Trusses, Strength and Properties of Materials, etc.

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.

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

MATHEMATICS.—Differential and Integral Calculus.


ENGINEERING.—Same as Section 3.

BOTANY.—Same as Section 6.
6. Studies in the Course Preparatory to Medical Studies.

CHEMISTRY.—Laboratory Practice in Qualitative Analysis. Organic Chemistry (Lectures and practical analysis).

BOTANY.—Systematic Botany and Special Morphology.

ZOOLOGY.—Invertebrate Zoology and Embryology.

LATIN.—Cæsar (De Bello Gallico).

SENIOR CLASS.

STUDIES PURSUED BY THE WHOLE CLASS.

ENGLISH.—Compositions. Declamations.

HISTORY.—Medieval History (Lectures).

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

ASTRONOMY.—Newcomb's Astronomy.

PHYSICAL SCIENCE.—Practical Physics (Instruction in the Physical Laboratory).

GEOLGY.—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.

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.

GEOLGY.—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, ANALYTICAL AND DIDACTIC 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. Plating field-notes and computations from data.

SURVEYING.—Field practice. Reconnaissance, Use of Prismatic Compass, Level, Solar Transit, Repeating Theodolites, and Heliotropes. Sketching; Preliminary Surveys for and Locations of Roads, Railroads, or Canals; Hydrography; Laying Out of Parks; Use of Sextant, etc.


VISITS OF INSPECTION to public and private works, with reports thereon.


METALLURGY.—Technical Chemistry and Metallurgy.

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

4. Studies pursued by the Dynamical Engineering Section.


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.


METALLURGY.—Chemical Technology and Metallurgy.

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

ENGINEERING.—Calculation of the strength of roofs and bridges. Foundations, retaining walls, arches. Same as Section 3.


BOTANY.—Same as Section 6.

6. Studies in the Course preparatory to Medical Studies.


BOTANY.—Medical and Vegetable Adulterations.


PHYSIOLOGY.—Elementary Physiology. Application of Physics.
MATRICULATES, 1882-3.

TOWNE SCIENTIFIC SCHOOL.

The numbers prefixed to the names of students in the upper classes designate the special courses that they are pursuing.

SENIORS.

2. Charles Michael Baumann, Jr., do. do.
3. Sanford Keyser Campbell, Overbrook, do. do.
5. Frank Miles Day, do. do.
2. Lincoln Grant Eakins, do. do.
2. Edward Henry Earnshaw, Riverton, New Jersey.
2. William Magee Field, do. do.
6. Isaac Leopold, do. do.
3. Hiram Abiff Schofield, Elwyn, do. do.
4. William Jones Serrill, Darby, do. do.

JUNIORS.

3. Llewellyn Barry, do. do.
1. William Milliken Bodine, do. do.
2. Clarence Raymond Claghorn, do. do.
3. Frank Cooper, Mount Airy, do. do.
2. Frank Lynwood Garrison, do. do.
4. George Ross Green, do. do.
3. Charles Francis Gummey, Jr., Germantown, do. do.
4. Wilford Lawrence Hoopes, do. do.
2. Clemens Jones, do. do.
4. William Forrest Paul,  
   Pennsylvania.  
2. William Irvin Seltzer,  
   Germantown, do.  
   Pennsylvania.  
2. George Sergeant, Jr.,  
   Chestnut Hill, do.  
   Pennsylvania.  
3. Emiln Lamar Stewardson,  
   Philadelphia, do.  
   Philadelphia.  
2. Samuel Sle Teaite,  
   Westminster, do.  
   Pennsylvania.  
3. William Joseph Thompson,  
   Philadelphia, do.  
   Sub-Juniors, 21.  
1. Samuel Smyth Van Pelt,  

SUB-JUNIORS.

1. James Lindsay Burton,  
2. Jay Dickerson,  
   do.  
   Philadelphia.  
2. Alexander Johnstone Gray,  
   do.  
   Philadelphia.  
3. Llywellyn Howard Jenks,  
   do.  
   Philadelphia.  
2. Lucien Vernon Leach,  
   do.  
   Philadelphia.  
3. Charles Elder Lindsay,  
   do.  
   Philadelphia.  
2. Frederick Gad Mybleritz,  
   do.  
   Philadelphia.  
3. William Merriman Price,  
   do.  
   Philadelphia.  
2. William Evan Russell,  
   do.  
   Philadelphia.  
4. Charles Hopkins Small,  
   York, do.  

SOPHOMORES.

Enoch Jones Acker,  
   Schuylkill P. O., do. Pennsylvania.  
   do.  
   New Jersey.  
Charles Henry Anspach,  
   do.  
   New Jersey.  
Percy Ash,  
   do.  
   New Jersey.  
William Henry Bower,  
   Riverton, do. New Jersey.  
   Pennsylvania.  
Samuel Williamson Cheyney,  
   Pennsylvania.  
Allen Brooks Cuthbert,  
   Beverly, do. New Jersey.  
   Pennsylvania.  
John Stephens Durham,  
   Pennsylvania.  
Norman Ellison,  
   do.  
   New Jersey.  
George Kingsbury Fischer,  
   Pennsylvania.  
Howard Godoy,  
   do.  
   New Jersey.  
Rockwell Hall,  
   Woodbury, do. New Jersey.  
   Pennsylvania.  
Stephen Harris,  
   Germantown, do. New Jersey.  
   Pennsylvania.  
John Lincoln Harvey,  
   Ridley Park, do. New Jersey.  
   Pennsylvania.  
Edwin Newberry Hawkins,  
   Pennsylvania.  
William Whitney Heberton,  
   do.  
   New Jersey.  
Hermann Siegfried Herig,  
   do.  
   New Jersey.  
Herman Herzog, Jr.,  
   Germantown, do. New Jersey.  
   Pennsylvania.  
Edward Ilsley,  
   Exton, do. New Jersey.  
   Pennsylvania.  
Thomas Hill Brinton Jacobs,  
   Pennsylvania.  
James Collins Jones,  
   do.  
   New Jersey.  
Jerome Thomas Kelly,  
   do.  
   New Jersey.  
Wilbur Paddock Klapp,  
   Conshohocken, do. New Jersey.  
   Pennsylvania.  
Wilmer Francis Lube,  
   Rockland, do. New Jersey.  
   Pennsylvania.  
David Lincoln Luke,  
   Pennsylvania.  
John Gibson McCall,  
   Doylestown, do. New Jersey.  
   Pennsylvania.  
Marshall Rogers Pugh,  

Delaware.
<table>
<thead>
<tr>
<th>Name</th>
<th>City</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>William Sharpe</td>
<td>do.</td>
<td>do.</td>
</tr>
<tr>
<td>William Ignatius Shields</td>
<td>do.</td>
<td>do.</td>
</tr>
<tr>
<td>Henry Szlapka</td>
<td>Phœnixville, do.</td>
<td>do.</td>
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<tr>
<td>Samuel McMurray Smith</td>
<td>Philadelphia, do.</td>
<td>do.</td>
</tr>
<tr>
<td>Morris Sutphen Solomon</td>
<td>do.</td>
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<tr>
<td>Francis Thibault</td>
<td>do.</td>
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<tr>
<td>Paul Thompson</td>
<td>Beverly, do.</td>
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<tr>
<td>Herbert Coleman Whitaker</td>
<td>Camden, do.</td>
<td>New Jersey.</td>
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</tbody>
</table>

**FRESHMEN.**

<table>
<thead>
<tr>
<th>Name</th>
<th>City</th>
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<tbody>
<tr>
<td>Edgar Augustus Alcott</td>
<td>Mount Holly, do.</td>
<td>New Jersey.</td>
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<tr>
<td>Thomas Passmore Berens</td>
<td>do.</td>
<td>do.</td>
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<tr>
<td>William Augustus Bigler</td>
<td>do.</td>
<td>do.</td>
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<tr>
<td>Edward Brooke</td>
<td>Birdsboro’, do.</td>
<td>do.</td>
</tr>
<tr>
<td>Amos Peaslee Brown, Jr.</td>
<td>Germantown, do.</td>
<td>do.</td>
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<tr>
<td>Harry Arthur Darnall</td>
<td>do.</td>
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<tr>
<td>Isaac Roberts Davis</td>
<td>Branchtown, do.</td>
<td>do.</td>
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<tr>
<td>Abram Trimble Eastwick</td>
<td>Wissahickon, do.</td>
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<td>Thomas Sydenham Reed Flickwir</td>
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<tr>
<td>Frederick Morton Fox</td>
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<td>William Salter Freeman</td>
<td>Beverly, do.</td>
<td>New Jersey.</td>
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<tr>
<td>Thomas Graham Grier</td>
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<tr>
<td>Morris Hacker, Jr.</td>
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<td>Enon Major Harris, Jr.</td>
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<tr>
<td>William Lincoln Harris</td>
<td>Marblehead, do.</td>
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<tr>
<td>Charles Herman Haupt</td>
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<td>Joseph Edward Horn</td>
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<tr>
<td>Joseph David Israel</td>
<td>Philadelphia, do.</td>
<td>do.</td>
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<tr>
<td>James Harmer Knight</td>
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<tr>
<td>Gustavus Adolphus Edward Kohler</td>
<td>do.</td>
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<tr>
<td>Leon Kraft</td>
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<tr>
<td>John Greble Leech</td>
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<td>do.</td>
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<tr>
<td>William Wallace Leech</td>
<td>do.</td>
<td>do.</td>
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<tr>
<td>Walter Raleigh Livingston</td>
<td>do.</td>
<td>do.</td>
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<tr>
<td>Jacob Lychenheim</td>
<td>do.</td>
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<tr>
<td>Marshall Sprogell Lynch</td>
<td>do.</td>
<td>do.</td>
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<tr>
<td>Richard McCall</td>
<td>West Chester, do.</td>
<td>do.</td>
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<tr>
<td>Percy McGeorge</td>
<td>do.</td>
<td>do.</td>
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<tr>
<td>Name</td>
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<tr>
<td>Joseph Brown Mansur</td>
<td>Indianapolis</td>
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<tr>
<td>Charles Price Mercer</td>
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<td>Henry Jackson Mullen</td>
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<tr>
<td>Henry Lippincott Patterson</td>
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<tr>
<td>Edward Arnott Pearson</td>
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<td>Louis Edmond Péguynot</td>
<td>Wayne,</td>
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<td>Robert Evans Peterson, 3d</td>
<td>Philadelphia,</td>
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<td>Julius Bujac, Jr.</td>
<td>Germantown,</td>
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<td>William Green Ridgway</td>
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<td>Abraham Bunn Ross</td>
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<td>Lewis Rutter</td>
<td>Overbrook,</td>
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<td>Jacob Sailer, Jr.</td>
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<td>Wyndham Harvey Stokes</td>
<td>Merion,</td>
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<td>Harry Randolph Stoops</td>
<td>Camden,</td>
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<tr>
<td>Sydney Thayer</td>
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<td>do.</td>
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<tr>
<td>Earl Thomson</td>
<td>Annapolis,</td>
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<td>Richard Alfred Tilghman, Jr.</td>
<td>Fox Chase,</td>
<td>do.</td>
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<td>Henry Davis Todd, Jr.</td>
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<td>David Edward Tracy</td>
<td>Conshohocken,</td>
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<td>Victor Francisco Valdes</td>
<td>Philadelphia,</td>
<td>do.</td>
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<td>Barclay Harding Warburton,</td>
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<td>Charles Edward Warburton, Jr.</td>
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<td>Alfred Weeks, Jr.</td>
<td>Merchantville,</td>
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<td>William Daniel Weikel</td>
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<td>John Weiszgerber</td>
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<td>John Dunlap Williamson</td>
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<td>Charles Willcox</td>
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<td>Edmund Wright, Jr.</td>
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<tr>
<td>John Williamson Ziegler</td>
<td>do.</td>
<td>do.</td>
</tr>
</tbody>
</table>

*SPECIAL STUDENTS*

5. Harry Bernheim Hirsh, Philadelphia, do.
12. Thomas Drake Whitaker, Olney, do.

* Deceased.
2. Gilbert Forney Brown, Huntington, West Virginia.
1. Lewis Cheeseman, Cleveland, Ohio.
1. Edwin Greble Dreer, do.
2. William Miller Ellicott, 3d, do.
1. George Deazley Firmin, Norristown, do.
3. Frank Davis Jones, Philadelphia, do.
1. Henry Frank Kellner, do.
2. Charles Turbit Massey, do.
3. Albert Emerick Miller, do.
1. Alfred Hurst Read, Norristown, do.
1. William Peter Baltz, do.
1. David Owen Brooke, Norristown, do.
5. George Lochman Croll, A. B., Middletown, do.
3. Benjamin Franklin, do.
3. Henry Beardsley Hazard, do.
2. William Henry Keller, do.
3. David Rinehart Mehaffey, Marietta, do.
2. Samuel Lieberkuhn Shober, Jr., do.
1. Frederick Winslow Taylor, Germantown, do.
3. John Whitaker, Frankford, do.

Special Students, 45.

### TOWNE SCIENTIFIC SCHOOL

<table>
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<th>Seniors</th>
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<tr>
<td>Juniors</td>
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<td>Sub-Juniors</td>
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<td>Sophomores</td>
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<td>Freshmen</td>
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<td>Special Students</td>
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Total Matriculates, Towne Scientific School, 201
THE WHARTON SCHOOL OF FINANCE AND ECONOMY.

FACULTY.

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

REV. CHARLES P. KRAUTH, D.D., LL.D.,* Vice Provost, and Professor of Intellectual and Moral Philosophy.

REV. ROBERT E. THOMPSON, A.M., Dean of the Faculty, and Professor of Social Science.

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

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

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

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

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

GEORGE A. KOENIG, Ph.D., Assistant Professor of Chemistry, instructing in Geology, Mineralogy, and Metallurgy.

SAMUEL P. SADTLER, Ph.D., Assistant Professor of Chemistry, instructing in Organic Chemistry and its Applications to Manufactures.

John Welsh Centennial Professor of History and English Literature.

Professor of Elementary, Mercantile, and International Law.

INSTRUCTORS.

MORTON W. EASTON, Ph.D., Instructor in French and Elocution.

WILLIAM D. MARKS, Ph.B., C.E., Instructor in Mercantile Practice.

JOHN G. R. McELROY, Secretary.

AIMS OF THE WHARTON SCHOOL.

The design of the instruction in this School (founded by Joseph Wharton, Esq., in 1881), is to give a thorough general and professional training to young men who are looking forward to business pursuits, and to fit them for the understanding of those scientific and economic problems which they may expect to meet in business life, besides imparting to them that discipline in business habits and that moral training which are the foundation of genuine success.

It is believed that such a school has become necessary, (1) because young men no longer receive in large business houses that instruction in the various branches of mercantile procedure which was formerly imparted; and (2) because the problems now encountered in business life are too complex for any solution that could be fur-

* Deceased.
nished, without a close acquaintance with the principles of economic science.

Heretofore, students of this class have been obliged to content themselves with the general culture imparted in the Faculty of Arts, and to enter upon business life with the understanding that they are to pick up the knowledge of its methods as opportunity offers. But, with every increase in the complexity of business, there is less opportunity of learning in this way; and a young man may spend years in a counting-room without having acquired the knowledge requisite for the proper management of his own estate, or for the discharge of a trust, or for taking his place as partner in a firm.

The association of this school with the University of Pennsylvania, marks the purpose to connect with the special training in economic and mercantile science that general culture which is as necessary to the business man as to every other useful member of society.

The students of the school are divided into three classes—Sub-Junior, Junior, and Senior.

On the completion of the three years' course of study, and on the presentation of a satisfactory thesis, the degree of Bachelor of Science, with special mention of the course pursued, will be conferred by the University.

TERMS OF ADMISSION.

Candidates for admission as full students of the Sub-Junior year must pass examinations in all the subjects specified in the following list, under the head A, and either those which are specified under the head B, or those under the head C:


In exceptional cases, proficiency in subjects equivalent to those required may be accepted by the Faculty.

Candidates who have passed through the Freshman and Sophomore Classes in either the Department of Arts or the Towne Scientific School, will be admitted as full students without examination. Other applicants for admission will report to the Dean on the sixteenth day of June, at 9 o'clock A.M. Those who desire to enter as full students will pass on that and the following days the examinations for admission, beginning with those for the Freshman Class of either of the Departments named above. (See pp. 17-18, or p. 26.)

Special students, not candidates for a degree, will be admitted to the studies of this school without being required to pass the examinations for admission exacted of full students, provided the Faculty is satisfied that they possess the elements of a good English education, and are able to profit by the course of instruction. They must pursue all the studies that the Faculty may require of them.

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

COURSE, METHODS, AND MEANS OF STUDY.

Instruction is given by recitations and lectures and through original research under the direction of the Professors.

A portion of the studies are of a general nature, covering those branches of literature, history, language, and physical science which are requisite to a liberal education. The rest are specially adapted to the purposes of the School.

The University possesses what is believed to be the largest and most complete library of works on economic science that is to be found 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 in this science 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 some three thousand English pamphlets, covering the period from the close of the seventeenth century till our own
time, and bound in chronological order; (2) by the bequest of the library of the late Henry C. Carey, including many works and pamphlets which appeared since Mr. Colwell's death, and especially rich in statistical literature, European governmental reports, and the like.

Further information respecting this School will be found on pp. 8–15. Letters of inquiry may be addressed either to the Rev. Professor R. E. Thompson, Dean of the Faculty, or to Professor John G. R. McElroy, its Secretary, at the University.

COURSE OF STUDY.

SUB-JUNIOR YEAR.


MERCANTILE PRACTICE.—Oral instruction in business procedure, in the management of trusts, and in the routine of banking.


GERMAN.—Lessing's Nathan der Weise. Schiller's Maria Stuart.

FRENCH.—Racine or Corneille.

PHYSICS.—Mechanics, Sound, Heat, Light, and Electricity.

MINERALOGY.—General description of Minerals and Crystallography.


DRAWING.—(Elective with Latin). Free Hand Drawing, and Drawing from the Flat.

JUNIOR YEAR.


MENTAL AND MORAL SCIENCE.—Atwater's Logic. Whewell's Elements of Morality.

ENGLISH.—Compositions and Declamations.

GEOLOGY.—Elements of Geology. Descriptive and Determinative Mineralogy. Metallurgy.

CHEMISTRY.—Lectures on Organic Chemistry.

LATIN.—Caesar (continued).

GERMAN.—Goethe's Faust. History of German Literature.

FRENCH.—Molière.
SENIOR YEAR.


SOCIAL SCIENCE.—Lectures on Living Issues (Land, Labor, Monetary Questions in their Popular Aspects, Socialism and Communism, Free Trade and Protection, Charity Organization, Popular and Industrial Education).

Mulford's Nation.

Original Research in the Theory and History of Economical Questions, under direction of the Professor.


ENGLISH.—Compositions and Declamations.

PHYSICS.—Electricity. Practical and Astronomical Physics.

CHEMISTRY.—Lectures on the Applications of Organic Chemistry to the Useful Arts.

ASTRONOMY.—Mathematical Astronomy.

MATRICULATES, 1882-3.

WHARTON SCHOOL OF FINANCE AND ECONOMY.

JUNIORS.

William Redwood Wharton, do.

SPECIAL STUDENTS.

Shiro Shiba, Tokio, Japan.
Clarence Wells Taylor, Camden, New Jersey.
Charles Stanley Harvey, do.
Archibald Campbell Knowles, Camden, do.
William Carmalt Scull, Philadelphia, do.
Frederick Ernest Wiltberger, Pennsylvania.

WHARTON SCHOOL OF FINANCE AND ECONOMY.

Juniors
Special Students 2 7 9
DEPARTMENT OF MUSIC.

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

Term opens first Monday in October.

The qualifications required to enter this department are—
1. A knowledge of the rudiments of music, and,
2. The ability to play on some instrument—preferably the piano or organ.

The course extends over two years. Each year is divided into three terms. 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 diploma (or 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 undergo an examination 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 option of the examiners.

2. They must submit to the examiners an original composition in the form of a cantata for solos and chorus, with 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.

STUDENTS IN MUSIC.

OF THE SECOND YEAR.

Helen A. Clarke, Philadelphia.
Marie Jefferys, do.
Adèle Mitchell, do.
Kate E. Smaltz, Philadelphia.
Annie V. Spooner, do.

OF THE FIRST YEAR.

Albert E. Brown, Philadelphia.
Samuel J. Diton, do.
Margaret R. Smith, do.
Ida Wood, Philadelphia.
Sarah E. Wright, do.
DEPARTMENT OF MEDICINE.

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.

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

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

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

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

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

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

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

HORATIO C. WOOD, M.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.

DEMONSTRATORS AND LECTURERS.

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

ROLAND G. CURTIN, M.D., Lecturer on Physical Diagnosis.

CHARLES K. MILLS, M.D., Lecturer on Mental Diseases and Electro-Therapeutics.

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

ADOLPH W. MILLER, M.D., Lecturer on Materia Medica and Pharmacy.

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

ROBERT MEADE SMITH, M.D., Demonstrator of Experimental Physiology.

JOHN MARSHALL, M.D., Nat.Sc. D., Demonstrator of Practical Chemistry.

BENJAMIN F. BAER, M.D., Demonstrator of Clinical Gynecology.

ELLIOTT RICHARDSON, M.D., Lecturer on Clinical and Operative Obstetrics.

EDWARD T. BRUEN, M.D., Demonstrator of Clinical Medicine.

J. WILLIAM WHITE, M.D., Demonstrator of Surgery, and Lecturer on Venereal Diseases.

HARRY R. WHARTON, M.D., Demonstrator of Clinical Surgery.

JOHN B. DEAYER, M.D., Demonstrator of Osteology and Syndesmology.

HENRY F. FORMAD, M.D., Demonstrator of Morbid Anatomy, Assistant Demonstrator of Pathological Histology, and Lecturer on Experimental Pathology.

EDWARD T. REICHERT, M.D., Demonstrator of Experimental Therapeutics.

GEORGE A. PIERSOL, M.D., Assistant Demonstrators of Normal Histology.

WILLIAM M. GRAY, M.D.,
JOHN B. DEAVER, M.D.,
RICHARD H. HARTE, M.D.,
THOMAS R. NEILSON, M.D.,
EDMUND W. HOLMES, M.D.,
WM. BARTON HOPKINS, M.D.,
HARRY R. WHARTON, M.D.,
RICHARD H. HARTE, M.D.,
ALBERT L. A. TOBOLDT, M.D., Assistant Demonstrator of Anatomy.
WILLIAM A. EDWARDS, M.D.,
JUDSON DALAND, M.D.,
FRANCIS X. DERCUM, M.D.,
ARCHER N. RANDOLPH, M.D., Assistant Demonstrators of Clinical Medicine.
WILLIAM H. BAKER, M.D., Assistant Demonstrators of Surgery.
HENRY F. FORMAD, M.D., Librarian of the Stillé Medical Library.

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

Dr. C. H. MASTIN, Mobile, Ala. Dr. ————, San Francisco, Cal.
Dr. P. V. SCHENCK, St. Louis, Mo. Dr. C. GILMAN SMITH, Chicago, Ill.
Dr. Jos. M. TOWLER, Columbia, Tenn. Dr. C. H. BOARDMAN, St. Paul, Minn.
Dr. EUGENE A. GRISsom, Raleigh, N. C. Dr. H. C. DIMOND, Detroit, Mich.
Dr. C. D. FISHER, Cincinnati, Ohio. Dr. W. S. ELKIN, Atlanta, Ga.
Dr. E. C. BULLARD, Boston, Mass. Dr. J. W. WHITRECK, Rochester, N. Y.

HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA.

HOSPITAL STAFF.

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D. HAYES AGNEW, M.D., John Rhea Barton Professor of Surgery.
RICHARD A. F. PENROSE, M.D., Professor of Obstetrics and of the Diseases of Women and Children.
WILLIAM PEPPER, M.D., Professor of Clinical Medicine.
D. HAYES AGNEW, M.D., Professor of Clinical Surgery.
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 F. NORRIS, M.D., Clinical Professor of Diseases of the Eye.
GEORGE STRAWBRIDGE, M.D., Clinical Professor of Diseases of the Ear.
HORATIO C. WOOD, M.D., Clinical Professor of Nervous Diseases.
LOUIS A. DUHRING, M.D., Clinical Professor of Skin Diseases.

BENJ. F. HAMELL, M.D., Superintendent of the Hospital.
CHARLES W. DULLES, M.D., Surgical Registrar.
WILLIAM E. HUGHES, M.D., Medical Registrar.
HENRY F. FORMAD, M.D., Curator.
GEORGE W. JOHNSTON, M.D., Resident Physician.
JOHN E. SHEPPARD, M.D., Resident Physician.
B. B. FERGUSON, Apothecary.
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CHARLES T. HUNTER, M.D., Chief of the Surgical Dispensary.
CHARLES K. MILLS, M.D., Chief of the Dispensary for Nervous Diseases.
SAMUEL D. RISLEY, M.D., Chief of the Dispensary for Diseases of the Eye.
ARTHUR VAN HARLINGEN, M.D., Chief of the Dispensary for Skin Diseases.
WALTER M. L. ZIEGLER, M.D., Chief of the Dispensary for Diseases of the Ear.
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J. WILLIAM WHITE, M.D., Chief of the Dispensary for Venereal Diseases.
JOHN H. MUSSER, M.D., Chief of the Medical Dispensary.
LOUIS STARR, M.D., Chief of the Dispensary for Diseases of Children.
LEWIS H. KIRK, M.D.,
WILLIAM E. HUGHES, M.D., Assistant Physicians in the Medical Dispensary.
HOLLINGSWORTH NEILL, M.D.,
Wm. Barton Hopkins, M.D., Assistant Surgeons in the Surgical Dispensary.
J. HENRY C. SIMES, M.D.,
RICHARD H. HARTE, M.D.,
Wm. L. TAYLOR, M.D., Assistant Physicians in the Dispensary for Diseases of
WILLIAM A. DAVIS, M.D., Women.
CARL SEILER, M.D., Assistant Physician in the Medical Dispensary in Charge of
Throat Department.
JAMES WALLACE, M.D.,
B. ALEXANDER RANDALL, M.D., Assistant Physicians in the Dispensary for Dis-
G. E. DE SCHWEINITZ, M.D., eases of the Eye.
ROBERT B. GLASGOW, M.D.,
JAMES HENDRIE LLOYD, M.D., Assistant Physicians in the Dispensary for Nervous
DISEASES.
ROBERT H. HAMILL, M.D., Assistant Physician in the Dispensary for Diseases of the
EAR.
J. MADISON TAYLOR, M.D., Assistant to Physician in the Dispensary for Venereal Dis-
eases.

All communications should be addressed to

JAMES TYSON, M.D.,
Secretary of the Faculty of Medicine,
P. O. Box 2838, Philadelphia, Penna.

WM. H. SALVADOR, Clerk.
DEPARTMENT OF MEDICINE.

CALENDAR, 1883-4.

1883.
Monday, April 2. Final and Term Examinations begin.
Friday, " 13. Annual Commencement.
Saturday, " 14. Examination for Resident Physicians, University Hospital.
Wednesday, " 26. Competitive Examination for Scholarships held.
Thursday, " 27. Examination for Admissions to Advanced Standing, and
               Re-examination of Undergraduates.
Monday, October 1. Winter Session opens.
1884.
Monday, April 14. Annual and Term Examinations begin.

The Department of Medicine was founded in 1765, by Drs. William Shippen, John Morgan, Adam Kuhn, Benjamin Rush, and Thomas Bond. From its establishment to the present time, its reputation has been maintained by worthy successors of those eminent men, 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. Through their labors, the circle of the school's influence has constantly been growing wider, and at the present time the number of its graduates exceeds ten thousand.

A preliminary examination is now required of all candidates who have not received a collegiate degree, or passed the matriculation examination of a recognized college, or who do not present a certificate covering the required subjects from a recognized normal or high school, or from a duly organized county medical society having instituted a preliminary examination, such as is referred to in the action of the Medical Society of the State of Pennsylvania at Pittsburgh in 1878. The candidate for admission will be required: First, to write a brief essay, not exceeding a page of foolscap, which will serve as a test of his qualifications in orthography and grammar;
second, to undergo an examination in the elementary principles of Physics, in the subjects considered in Part I. of Fownes's Chemistry. Students to whom it is inconvenient to appear before the opening of the winter session, can arrange with the Secretary for examination after the opening of the session. Students may also be examined at any time during the spring or fall session previous to the opening of the winter session.*

The attention of those who design to study medicine is particularly called to the special advantages of the Course Preparatory to Medicine in the Towne Scientific School of the University. Students taking this course will be exempted from a preliminary examination. It is not necessary that a student taking this course shall be a full student in the collegiate department; but, if he possess the requisite qualifications, he may be admitted as a special student for this preparatory course alone.

During the first and second years much of the student's time is occupied with practical work in the various laboratories, of Chemistry, Pharmacy, Osteology, Histology, and Pathological Histology, and in Dissection; but throughout the second and third years he is required to attend the general medical and surgical clinics at the University and Philadelphia Hospitals, while special clinical facilities are provided for the third year. In this year each student receives bedside instruction in Clinical Medicine and Surgery, in Physical Diagnosis, and in Gynaecology. Opportunities are afforded 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 various practical subjects above mentioned. In the fourth year, recently organized to go into operation with the session of 1883-4, and upon which attendance is voluntary, the instruction is almost purely practical in character.

The laboratory instruction in Chemistry, Pharmacy, Osteology, and Normal and Pathological Histology, which is further described

* Examinations for admission will be held annually hereafter during the first week in September 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. This provision is made solely for the convenience of the student. He can, of course, be examined in Philadelphia if preferred.
in the subsequent sections of the announcement devoted to these subjects, forms a part of the regular course, and does not involve extra expense. It is co-ordinated with the didactic teaching in such a manner as to illustrate the subjects taught in the lectures.

Opportunities are given to advanced students to make original researches in the pharmaceutical, chemical, physiological, and pathological laboratories, also in that of experimental therapeutics.

By prolonging the period of medical study the authorities of the University have been able to so arrange the course as to allow of the constant introduction of new matter as the student advances, and at the same time to secure at least as much repetition of the more essential subjects, as in the former system of teaching. It will be seen that a prominent feature of the present curriculum is systematic laboratory work in the fundamental medical sciences, as well as the personal teaching of each student in practical subjects of the greatest importance—such as physical diagnosis, clinical medicine, clinical surgery, and clinical gynaecology. Students of the Medical Department of the University are now trained, not only in the theory of medicine, but are also taught to perform chemical, pharmaceutical, and microscopical manipulations, to diagnose and treat medical and surgical diseases, and to recognize their post-mortem appearances. Exclusively didactic teaching has been universally abandoned in every branch of scientific and technical education, save the medical. Therefore, in establishing the present method, the Trustees and the Medical Faculty of the University felt that they were only adopting one which, in other departments of science, had produced the most valuable fruits. The result shows that, sooner or later, medical teaching in this country must be conformed to the system which has long been recognized as the only suitable one in the great medical centres of Europe.

This anticipation, which was formed several years ago, has been more than justified by the results. The effect of the change on the composition of the classes and on their proficiency, has been most gratifying. A much larger proportion of students than under the former system has given evidence of a good previous education, either in colleges or in reputable academies. The attention of the classes to study has been marked by increased seriousness and zeal; the annual examinations have steadily improved; the examinations for graduation have shown a higher average degree of merit than
ever before; and a much larger proportion of inaugural theses than formerly has given evidence of scientific knowledge as well as literary culture. The Medical Faculty feel, therefore, that their advance towards a more perfect system has been sustained both by enlightened professional opinion, and by its practical results. They are also convinced that the further contemplated improvements, if judiciously made, will receive, not only the approbation of all right-minded men, but the active co-operation and support of the medical profession.

In addition to the spring course of lectures and the lectures of the Auxiliary Faculty of Medicine, the Faculty have also inaugurated a Voluntary Fourth Year and a Course for Graduates, which will be found described on pages 53 and 60. There are no subjects connected with the fundamental departments of medicine, or with its several subdivisions determined by usage, that are not thoroughly taught in one or other of these courses. While several of the subjects taught by the Auxiliary Faculty must ultimately fall into the official curriculum, the greater number will remain extra limites, as they do now in the most important medical schools of Europe. Meanwhile, it is strongly urged upon all students of the University, and especially those of the second and third years, to continue their studies during the spring and summer, and, where possible, to pursue the studies of the fourth year, for attendance on which a suitable certificate will be given in addition to the diploma.

Before the opening of the next winter session the new wing in the University Hospital, for the accommodation of cases of chronic diseases, especially of the heart and lungs, will be occupied, 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, will be endowed by friends of the University. The Peter Hahn Ward, endowed by the late Dr. George B. Wood, has been opened recently for the admission of patients.

Students of one department of the University may attend, without additional charge, the lectures and recitations in any other department during hours otherwise unoccupied, provided it is with the consent of the Dean of such department.
CURRICULUM. (Session 1883–4, 28 weeks, from October 1st to April 12th.)

**FIRST YEAR.**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy—3 lectures per week, 10 hours practical anatomy</td>
<td>13</td>
</tr>
<tr>
<td>Histology—2 hours laboratory instruction per week</td>
<td>2</td>
</tr>
<tr>
<td>Materia Medica and Pharmacy—1 lecture per week, 2 hours laboratory</td>
<td>3</td>
</tr>
<tr>
<td>General Chemistry, including Chemical Physics—2 lectures per week, 5 hours laboratory</td>
<td>7</td>
</tr>
<tr>
<td>Physiology—3 lectures per week, 3 hours laboratory</td>
<td>6</td>
</tr>
<tr>
<td>General Pathology—1 lecture per week</td>
<td>1</td>
</tr>
<tr>
<td>General Clinics, Medical and Surgical</td>
<td>4</td>
</tr>
</tbody>
</table>

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

**SECOND YEAR.**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy—3 lectures per week, 10 hours evening dissection</td>
<td>13</td>
</tr>
<tr>
<td>Topographical Anatomy—2 lectures per week</td>
<td>2</td>
</tr>
<tr>
<td>Medical Chemistry—1 lecture per week, 4 hours laboratory</td>
<td>5</td>
</tr>
<tr>
<td>Physiology—3 lectures per week</td>
<td>3</td>
</tr>
<tr>
<td>General Pathology and Morbid Anatomy—2 lectures per week, 1½ hours laboratory</td>
<td>3½</td>
</tr>
<tr>
<td>Therapeutics—2 lectures per week</td>
<td>2</td>
</tr>
<tr>
<td>Theory and Practice of Medicine—3 lectures per week</td>
<td>3</td>
</tr>
<tr>
<td>Surgery—3 lectures per week</td>
<td>3</td>
</tr>
<tr>
<td>Obstetrics—2 lectures per week</td>
<td>2</td>
</tr>
<tr>
<td>General Clinics, Medical and Surgical</td>
<td>8</td>
</tr>
</tbody>
</table>

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

**THIRD YEAR.**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Pathology and Morbid Anatomy—2 lectures per week</td>
<td>2</td>
</tr>
<tr>
<td>Demonstrations in Morbid Anatomy—1 hour per week</td>
<td>1</td>
</tr>
<tr>
<td>Therapeutics—2 lectures per week</td>
<td>2</td>
</tr>
<tr>
<td>Theory and Practice of Medicine—3 lectures per week</td>
<td>3</td>
</tr>
<tr>
<td>Surgery—3 lectures per week</td>
<td>3</td>
</tr>
<tr>
<td>Obstetrics—2 lectures per week</td>
<td>2</td>
</tr>
<tr>
<td>Operative Surgery, Minor Surgery, and Bandaging—1 lecture per week, 2 hours practice</td>
<td>3</td>
</tr>
<tr>
<td>Diseases of Women and Children—1 lecture per week</td>
<td>3</td>
</tr>
<tr>
<td>*Gynecology—1 lecture per week, 1 hour bedside teaching</td>
<td>2</td>
</tr>
<tr>
<td>*Bedside Instruction in Practical Medicine (including Physical Diagnosis)</td>
<td>1</td>
</tr>
<tr>
<td>*Bedside Instruction in Practical Surgery</td>
<td>1</td>
</tr>
<tr>
<td>Clinical Conference</td>
<td>1</td>
</tr>
<tr>
<td>General Clinics, Medical and Surgical</td>
<td>8</td>
</tr>
<tr>
<td>Special Clinics (Nervous Diseases, Diseases of the Skin, Eye, Ear, Diseases of Women and Children)</td>
<td>5</td>
</tr>
</tbody>
</table>

Final examinations at the end of the Course: General Pathology and Morbid Anatomy, Therapeutics, Theory and Practice of Medicine, Surgery, Obstetrics, and Diseases of Women and Children.

**FOURTH YEAR (VOLUNTARY).**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Medicine and Physical Diagnosis, including Laryngology—1 hour clinical lecture, 1 hour practical instruction, 1 hour clinical conference</td>
<td>4</td>
</tr>
<tr>
<td>Clinical Surgery—2 hours clinical lecture, 1 hour practical instruction</td>
<td>3</td>
</tr>
<tr>
<td>Operative Surgery and Venereal Diseases—1 hour practical instruction, alternate weeks</td>
<td>½</td>
</tr>
</tbody>
</table>

* For these courses the class will be divided into sections, so that each student may receive direct personal instruction.
Nervous and Mental Diseases and Electro-Therapeutics—1 hour clinical lecture

Gynecology—1 hour didactic lecture, 1 hour clinical lecture, 1 hour practical instruction

Dermatology—1 hour didactic lecture, 1 hour clinical lecture, 1 hour practical instruction

Ophthalmology—1 hour didactic lecture, 1 hour clinical lecture, 1 hour practical instruction

Otology—1 hour didactic lecture (alternate weeks), 1 hour clinical lecture, 1 hour practical instruction

Clinical and Operative Obstetrics—1 hour practical instruction, alternate weeks...

Final examinations for degree at the end of the course: Clinical Medicine, including Laryngology, Clinical Surgery, and Operative Surgery, Gynecology, Clinical and Operative Obstetrics, Dermatology, Ophthalmology, and Otology.

Upon students of the University who pursue a four years' course, and who pass a satisfactory examination, a suitable certificate will be conferred in addition to the degree.

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, and to those attending the fourth year, together with the didactic lectures throughout the Course on Morbid Anatomy, Therapeutics, Practice of Medicine and Surgery, Obstetrics and Gynecology, and pass a satisfactory examination.

(For post-graduate courses, see p. 60.)

TEXT-BOOKS:

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

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

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

**Physiology:** Kirke.

**General Pathology:** Wagner; Tyson's Cell Doctrine, pp. 127-152.

**TEXT-BOOKS.**

**Collateral Reading.**

Wormley's Micro-Chemistry of Poisons.

Quain; Allen; Wilson; 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:** Cornil and Ranvier, translated by Shakespeare and Simes; Wagner.

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

**Practice of Medicine:** Flint or Roberts; Fenwick's Medical Diagnosis.

**Surgery:** Agnew; Ashhurst.

**Obstetrics:** Playfair's Midwifery.

**Gynecology:** Goodell's Lessons in Gynecology.
<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>Medical Chemistry, Laboratory, two hours.</td>
<td>Practice.</td>
<td>Medical Chemistry.</td>
<td>Medical Chemistry, Laboratory, two hours.</td>
</tr>
</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>
</table>

**THIRD YEAR.**

- U. H. University Hospital.
- For the study of Histology 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 work in the anatomical laboratory or dissect, while those of the second year attend Clinics.
- For Ward Class instruction the third-year class is divided in sections. See special roster.
ROSTER OF BEDSIDE INSTRUCTION AND SPECIAL CLINICS FOR STUDENTS OF THE THIRD YEAR, SESSION 1882-3.

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

From Tuesday, Oct. 3d, until Friday, Nov. 10th, inclusive.

Monday. Tuesday. Thursday. Friday.
Prof. Pepper ....... A   B   —   C
" Goodell ....... B   —   D   A
" Ashhurst ....... C   D   B   —
Special Clinics ....... D   A & C   A & C   B & D

From Monday, Nov. 13th, to Friday, Dec. 22d, inclusive.

Prof. Pepper ....... B   C   D   —
" Goodell ....... C   —   A   D
" Ashhurst ....... D   A   —   B
Special Clinics ....... A   B & D   B & C   A & C

From Tuesday, Jan. 2d, to Friday, Feb. 9th, inclusive.

Prof. Pepper ....... C   A   —   D
" Goodell ....... D   —   B   C
" Ashhurst ....... A   B   C   —
Special Clinics ....... B   C & D   A & D   A & B

From Monday, Feb. 12th, to Friday, March 23d, inclusive.

Prof. Pepper ....... B   D   A   —
" Goodell ....... A   —   C   B
" Ashhurst ....... D   C   —   A
Special Clinics ....... C   A & B   B & D   C & D

The instruction is given at the University Hospital at 1 o'clock. Prof. Pepper meets the sections of the Third Class in the Main Ward, second floor; 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, except on Mondays, when Prof. Ashhurst meets his section in the Upper Lecture-Room, and Prof. Strawbridge holds his Clinic in the Front Ward, first floor.

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. Tuesday. Thursday. Friday.
Prof. STRAWBRIDGE. Prof. DURING. Prof. NORRIS. Prof. WOOD.

The entire Third Year Class attends the General Medical, Surgical, and Gynaecological Clinics, held on Wednesdays and Saturdays, from 12 to 2 o'clock, in the Upper Lecture-Room; also the Autopsies and Demonstrations in Morbid Anatomy by Prof. Tyson at 11 o'clock on Tuesdays, and the Clinical Conferences of Prof. Pepper at 11 o'clock on Thursdays.

RULES AND REQUIREMENTS FOR ADMISSION AND GRADUATION.

I. The candidate for admission is required to pass the preliminary examination described on page 49. (See also foot-note to p. 50.) Students may report to the Secretary for examination at any time after the second Monday in September.
II. Students who have attended one course in a regular* medical school are admitted as students of the second course in the University of Pennsylvania, after having passed a satisfactory examination in General Chemistry and Materia Medica and Pharmacy. Students who have attended two courses in a regular medical school are admitted as students of the third course in this institution, after having satisfactorily passed an examination in General and Medical Chemistry, Materia Medica and Pharmacy, Anatomy, and Physiology.†

Graduates of other regular medical schools in good standing are admitted as students of the third course without an examination.

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

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

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

V. When the candidate receives notice of having successfully passed his final examination, he will enter his name on the register for the purpose of being reported to the Board of Trustees as qualified for the degree.

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

* Homeopathic and Eclectic schools are not recognized as being in this category.
† These examinations for admission to advanced standing in the next year will be held on Thursday, September 27, 1883, at 12 M. The re-examination of those who have failed in their term examinations will be held on the same day.
‡ The thesis must be in the candidate's own handwriting, and should be written on thesis paper, the alternate pages being left blank. It is recommended that the candidate prepare his essay before the commencement of the last course of lectures. It must also be bound, and becomes after presentation the property of the Stifli Medical Library. A thesis may be published by the candidate if he desires it, the permission of the Professor by whom he was examined thereon having been first obtained; but no alteration shall be made in such thesis without the consent of the said Professor.
VII. The Degree will not be conferred upon a candidate who absents himself from the Public Commencement, except by special permission of the Medical Faculty.

ARRANGEMENT OF SESSION.

The *Winter Session*, 1883–84, upon which alone attendance is obligatory, begins on Monday, the first day of October, and ends on the 12th day of April ensuing.

The *Preliminary Session* begins on the second Monday (10th), in September, and ends on the Saturday preceding the day of opening of the Winter Session.

The *Spring Session*, 1883, begins on the third Monday in April, and ends about the middle of June.

EXPENSES.

WINTER TERM.

**FIRST YEAR.**

Matriculation Fee .......................... $5.00
For general ticket, admitting to all the lectures and laboratory work assigned to this year, including dissection .......................... $150.00
Dissecting material .......................... $1 a part.

**SECOND YEAR.**

For general ticket, admitting to all the lectures and laboratory work assigned to this year, including dissection .......................... $150.00
Dissecting material .......................... $1 a part.

**THIRD YEAR.**

For general ticket, admitting to all the lectures and practical work assigned to this year, including operating and bandaging (no graduation fee) .......................... $150.00
Fee for the full third year course to graduates of other schools, including privilege of applying for graduation (no graduation fee) .......................... $150.00
Material for operating .......................... $1 a part.

**FOURTH YEAR (VOLUNTARY).**

To graduates of other schools, with the privilege of attending the didactic courses of the third year, and applying for graduation (no graduation fee) .......................... $200.00

SPRING SESSION.

Matriculation fee (paid once only) .......................... $5.00
To old matriculates, a registration fee of .......................... $5.00
To new matriculates, in addition to the matriculation fee .......................... $35.00
($30 of which will be credited on account of the fee for the ensuing Winter Term.)
FEES FOR SPECIAL COURSES.

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

Fee for the full third Course, including bandaging and operating, to graduates of this school: $75.00
Fee for a single Course of Lectures, except Materia Medica: 20.00
Fee for Course on Materia Medica, and on Bandaging and Operating, each: 10.00
Fee for Practical Course in the Chemical Laboratory: 25.00
Fee for the Course in Practical Gynecology of the third year: 25.00
Fee for any one of the remaining practical Courses of the third year: 15.00

Graduates of the school are admitted to the Lectures free of charge; but the above fees are charged to all for the practical courses.

At the beginning of the first course, students will be required to make a deposit of five dollars with the Professor of Chemistry, to cover “breakage” in the chemical laboratories. Any balance remaining will be returned.

All fees are payable in advance to the Secretary of the Faculty, who will issue a general ticket of admission to all the lectures and practical instruction.

No promissory notes will be received, or reductions made. The only free scholarships granted will be under the regulations named below.

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

SCHOLARSHIPS.

There will be held at the Medical Hall, on Wednesday, September 21, 1883, at twelve o’clock, a competitive examination of candidates to fill six free scholarships created by the Board of Trustees. The candidates will be required—

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

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

Third. To pass a written examination in Latin prose translation (first three books of Caesar); and a written examination in Physics.

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 at the hour and place above named.

SPRING COURSE OF INSTRUCTION—1883.

In order still further to extend the opportunities for thorough preparation, and to provide facilities for research and experiment to advanced students and graduates, the various laboratories in connection with the University are open during the spring and early
summer, 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; MORBIT ANATOMY; PHYSICAL DIAGNOSIS; VENEREAL DISEASES; PRACTICAL and CLINICAL OBSTETRICS; MENTAL DISEASES, and ELECTRICAL THERAPEUTICS; EXPERIMENTAL PATHOLOGY; CLINICAL MEDICINE; CLINICAL SURGERY; CLINICAL GYNECOLOGY; DISEASES OF THE NERVOUS SYSTEM; DISEASES OF THE EYE; DISEASES OF THE EAR; and DISEASES OF THE SKIN.

POST-GRADUATE INSTRUCTION—1883.

The post-graduate instruction in connection with this University for the year 1883 is divided into three terms, as follows:—

1. From January 2d to March 1st, inclusive.
2. From April 9th to June 9th, inclusive.
3. From October 29th to December 24th, inclusive.

The following subjects are taught:—

CLINICAL MEDICINE and PHYSICAL DIAGNOSIS, by Prof. Pepper and Dr. Bruen.
RENAL DISEASES, WITH PRACTICAL EXAMINATION of Urine, by Prof. Tyson and Dr. Formad.
NERVOUS DISEASES and ELECTRO-THERAPEUTICS, by Prof. Wood and Dr. Mills.
CLINICAL SURGERY, by Prof. Ashhurst and Dr. Wharton.
OPHTHALMOLOGY, by Prof. Norris and Dr. Risley.
DERMATOLOGY, by Prof. Duhring.
OTOLOGY, by Prof. Strawbridge.
GYNECOLOGY, by Prof. Goodell and Dr. Baer.
OPERATIVE and GENITO-URINARY SURGERY, with VENEREAL DISEASES, by Dr. White.
CLINICAL and OPERATIVE OBSTETRICS, by Dr. Elliot Richardson.
LARYNGOLOGY, by Dr. Seiler.
DISEASES OF CHILDREN, by Dr. Starr and Dr. Keating.

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, to classes composed of graduates only. There are two classes of graduates to whom these courses are adapted: first, recent graduates, and second, those who have been for some years engaged in practice at a distance from medical centres. To the latter, the review afforded by such practical courses has been found peculiarly ad-
vantageous. From one to three hours weekly are devoted to these objects in each of the branches named. In clinical medicine one hour weekly will be devoted to a clinical conference.

In addition, the classes are permitted to attend the general and special clinics of the University, and such didactic lectures as do not occur in the hours devoted to post-graduate instruction.

**FEES (INVARIABLY IN ADVANCE).**

<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>To non-matriculants of the University, a matriculation fee of</td>
<td>$3</td>
</tr>
<tr>
<td>For full post-graduate course for eight weeks</td>
<td>150</td>
</tr>
<tr>
<td>&quot; any seven of post-graduate courses for eight weeks</td>
<td>100</td>
</tr>
<tr>
<td>&quot; three &quot;</td>
<td>60</td>
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<tr>
<td>&quot; &quot; seven &quot;</td>
<td>150</td>
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<tr>
<td>&quot; &quot; sixteen weeks</td>
<td>100</td>
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<tr>
<td>For a course of eight weeks in Clinical Medicine and Physical Diagnosis</td>
<td>25</td>
</tr>
<tr>
<td>and Ophthalmology and Gynaecology, each</td>
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<tr>
<td>For a course of eight weeks in Clinical Surgery</td>
<td>10</td>
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<tr>
<td>For a course of eight weeks in Dermatology, and in Operative Surgery</td>
<td>20</td>
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<tr>
<td>and Venereal Diseases, each</td>
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<tr>
<td>For any one of the remaining courses</td>
<td>15</td>
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<tr>
<td>For full post-graduate course for sixteen weeks</td>
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</table>

In addition to the above combined courses, the following are also given:

**PRACTICAL PHYSIOLOGY,** by Dr. Robert Meade Smith. Systematic Instruction in Experimental Physiology and Experimental Therapeutics, and the superintendence of Original Investigations. Fee, including material, $25.


**HISTOLOGY AND PATHOLOGY,** by Dr. H. F. Formad. Two courses: I. Normal and Pathological Histology, including Microscopic Technology; the opportunity of witnessing and making Post-mortem Examinations, Winter and spring months. II. Experimental Histology and Experimental Pathology. Fee for each course, including material, $15.

**PRELIMINARY LECTURES—1883.**

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

No fee is charged for this session.

**FACILITIES FOR INSTRUCTION, ETC.**

The instruction in the Medical Department is conducted in the Medical Hall, 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, Pathological, and Pharmaceutical Laboratories, and the Stille Medical Library.

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

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, which, together, form a collection unrivalled in extent and value, for illustrating diseases of the internal organs and of the skin.

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

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

The spacious and elegant 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. Every member of the first year class is required to make himself familiar with the technology of the microscope and Normal Histology, and is furnished with a microscope for the purpose.
THE OSTEO-SYNDERSMOLOGICAL LABORATORY is under the supervision of the Professor of Anatomy and the Demonstrator of Osteology and Syndesmology. The first year student is required, in this Laboratory, furnished with ample material for the purpose, to make himself familiar with the skeleton and the articulations, before commencing with dissection of the cadaver.

PHYSIOLOGICAL LABORATORY.—The Physiological Laboratory is under the personal supervision of the Professor of Physiology and the Demonstrator. It is furnished with a kymographion, electrical, and other apparatus. An elementary practical course in Physiology, designed especially for those matriculates who are without preliminary training in Biology, is continued throughout the session. Matriculates desiring this course are furnished with microscopes and material for observation, free of charge. Every facility is afforded advanced students and graduates pursuing special studies in Practical Physiology. 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 Demonstrators of Pathological Histology, was opened in 1874, and has already attracted, from remote sections of the country, physicians and students who desire special preparation in microscopic technology and normal and pathological histology. It is suitably furnished with microscopes, and all appliances requisite for practical study of these subjects, and for making original researches.

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 only be acquired by handling them.

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

THE STILLE MEDICAL LIBRARY—This Library, which was founded by Prof. Alfred Stillé for the purpose of promoting a spirit of scientific
research and literary culture, now contains 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.

This building, recently constructed, is forty-six feet, six inches wide, and one hundred and fifty-one feet, six inches long, with a projection in the centre of the front on Spruce Street of three feet, and in the rear of fourteen feet, and corresponds architecturally with the other buildings of the University.

The first story is arranged for the Operating Room or Infirmary of the Dental Department, having 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 stories 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 affording accommodations for 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 story 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 door of the Medical Department. An elevator is arranged at this place for all the stories.

CHEMICAL LABORATORIES.—1. The Working Laboratory for Practical Chemistry, under the supervision of the Professor of Chemistry and the Demonstrator, with competent assistants. Students of the First Year devote five 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 examination 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 experience suggested as being necessary or desirable. The room is at the top of the Laboratory Building, and bounded by its extreme dimensions. It is therefore one hundred and fifty-nine feet in length, by ninety-two feet in width. It is lighted by windows in the four sides, and by skylights in the ceiling. By this means, too, the most perfect ventilation is secured. There are gas burners over every table for work by night. Every table has a stone top, which cannot absorb the discharges and can be kept perfectly clean. There are numerous washstands and 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 Pennsylvania.

The Room is open throughout the year (except in July and August), under the superintendence of the Professor of Anatomy and the Demonstrators.

**PRACTICAL SURGERY**.—The application of bandages and dressings, surgical operations on the cadaver are a part of the practical instructions to students of the Third Year, under the supervision of the Professors and Demonstrators of Surgery. Instruments, splints, and bandages are supplied free of cost.

THE HOSPITAL OF THE UNIVERSITY.

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.
There were treated in its various departments, during 1881, 6963 cases, representing almost all of the known medical, surgical, and gynaecological affections. Owing to its being situated within a very short distance of the great railroad depots, the Hospital is especially rich in cases of severe injury, and its acute surgery is almost unrivalled. Attendance on the Clinical Lectures delivered in its 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.*

OTHER HOSPITALS AND HOSPITAL CLINICS.

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

The Philadelphia Hospital, 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 is also given at the Children's Hospital. To all these institutions students are admitted without charge, except at the Pennsylvania Hospital, where a small fee is now charged.

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

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

* The competitive examination of candidates for the positions of Resident Physicians at the University Hospital is held at the Hospital at 12 M. on the day succeeding Commencement.
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.

STILLÉ 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 of One Hundred Dollars each will be awarded to the members of the Graduating Class of 1882–83 for the best Essays upon Medical subjects, provided such Essays are of sufficient merit to be worthy of publication.

One of these prizes has been instituted by the SOCIETY OF THE ALUMNI of the Medical Department of the University; the other has been authorized by a friend of the University.

A Prize of THIRTY DOLLARS will be awarded by the Demonstrator of Anatomy, Dr. C. T. Hunter, to that member of the Graduating Class who shall present the best record of the anomalies found in the anatomical rooms.

A Prize of TWENTY DOLLARS will also be awarded by the Demonstrator for the best vascular preparation, which preparation will be placed in the Wistar and Horner Museum, with the name of the preparer attached.

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.
<table>
<thead>
<tr>
<th>NAME</th>
<th>POST OFFICE</th>
<th>STATE</th>
<th>PRECEPTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backus, Ogden</td>
<td>Rochester,</td>
<td>N. Y</td>
<td>Azel Backus</td>
</tr>
<tr>
<td>Barber, A. Walker</td>
<td>Doylestown,</td>
<td>Pa</td>
<td>F. Swartzlander</td>
</tr>
<tr>
<td>Bellerjean, Daniel V.</td>
<td>Trenton,</td>
<td>N. J</td>
<td>W. W. L. Phillips</td>
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<tr>
<td>Bidwell, Edwin H., Ph.G.</td>
<td>Vineland,</td>
<td>N. J</td>
<td>E. C. Bidwell</td>
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<tr>
<td>Bliss, H. Dwight, B.S. (Univ. of Rochester)</td>
<td>Rochester,</td>
<td>N. Y</td>
<td>John W. Whitbeck</td>
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<tr>
<td>Bowman, Jacob Z.</td>
<td>Chambersburg,</td>
<td>Va</td>
<td>S. G. Lane</td>
</tr>
<tr>
<td>Brooks, Frederick M.</td>
<td>Fairfax Station,</td>
<td>Pa</td>
<td>B. M. Collins</td>
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<tr>
<td>Brooks, Joseph W.</td>
<td>Philadelphia,</td>
<td>Pa</td>
<td>A. Harshberger</td>
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<tr>
<td>Burger, Anthony J. B.S. (Notre Dame, Ind.)</td>
<td>Reading,</td>
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<td>T. J. Ellinger</td>
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<tr>
<td>Carothers, J. Weller</td>
<td>Milton,</td>
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<td>C. H. Dougall</td>
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<td>Carrie, William H.</td>
<td>St. Clair,</td>
<td>Pa</td>
<td>A. P. Carr</td>
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<td>Chesnet, Radcliffe</td>
<td>West River,</td>
<td>Md</td>
<td>D. Murray Cheston</td>
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<td>Christy, Walter</td>
<td>High Bridge,</td>
<td>N. J.</td>
<td>University of Pa.</td>
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<td>Clemens, Brentano</td>
<td>Easton,</td>
<td>Pa</td>
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<td>Coddington, Charles L.</td>
<td>Towanda,</td>
<td>Pa</td>
<td>C. K. Ladd</td>
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<td>Collins, Thomas S., Ph.G.</td>
<td>Woodbury,</td>
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<td>Cooper, J. Cardean</td>
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<td>Del.</td>
<td>Ezekiel T. Cooper</td>
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<td>Costa, Leopoldo M. da, A.B. (Nat. Lyceum, Lisbon)</td>
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<tr>
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<td>H. Kratz</td>
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<td>Crawford, Joel</td>
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<td>Culpeper, William A.</td>
<td>Barbadeos,</td>
<td>W. I</td>
<td>Jno. J. Crawford</td>
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<td>Cuebas, Manuel J. de las A. B. (Coll. of Santiago)</td>
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<td>Custer, David D.</td>
<td>Fairview Village,</td>
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<td>Ercoyd, Henry, Jr.</td>
<td>Muncy,</td>
<td>Pa</td>
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<td>Eschbach, H. Clay, A.B. (Franklin and Marshall)</td>
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<td>Geo. F. Kratz</td>
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<td>Gibson, Maris</td>
<td>West Chester,</td>
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<td>Ark. State University</td>
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<td>Grier, Edgar B.</td>
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<td>George Johnson</td>
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<td>Hamersly, William H., B.S.</td>
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<td>Pa</td>
<td>John Fay</td>
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<td>Harris, Harry C.</td>
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<td>Pa</td>
<td>M. E. Hornbeck</td>
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<td>E. W. Holmes</td>
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**MATRICULATES, 1882-3.**

**MEDICAL DEPARTMENT.**

**STUDENTS OF THE THIRD YEAR.**
<table>
<thead>
<tr>
<th>Name</th>
<th>Post Office</th>
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<th>Preceptor</th>
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<tr>
<td>Hedges, Ellis W., A.B. (Prince-</td>
<td>Port Carbon,</td>
<td>Pa.</td>
<td>S. E. Hedges.</td>
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<td>Heebner, Thomas F.</td>
<td>Costa Rica</td>
<td>C. Amer.</td>
<td>Hiram Burton.</td>
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<td>(Lafayette)</td>
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<td>Ingram, James H.</td>
<td>Vineland,</td>
<td>N. J.</td>
<td>University of Pa.</td>
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<td>Johnson, Richard G.</td>
<td>Amsterdam,</td>
<td>N. Y.</td>
<td>Robb and Stover.</td>
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<td>Keys, T. Frank, Ph.G.</td>
<td>Philadelphia</td>
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<td>Louis W. Hildenbrand</td>
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<td>Maher, Andrew J.</td>
<td>Williamstown</td>
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<td>P. Clarence McGill.</td>
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<td>Montgomery, Guy Rochester</td>
<td>Rochester,</td>
<td>N. Y.</td>
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<td>Novoselsky, Constantine, A.M. (St. Petersburg)</td>
<td>St. Petersburg,</td>
<td>Russia</td>
<td>University of Pa.</td>
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<td>Patterson, Thomas J.</td>
<td>Pittsburg,</td>
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<td>Raht, William E.</td>
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<td>Galveston, Texas</td>
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<td>Reffless, Emil G., Ph.G.</td>
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<td>Reimann, Louis P., Ph.G.</td>
<td>Rising Sun, Md.</td>
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<td>Reynoldis, Conrad S.</td>
<td>Bellefonte, Pa.</td>
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<td>L. R. Kirk</td>
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<td>Seiss, Ralph W.</td>
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<td>Philadelphia, Pa.</td>
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<td>Riva, Ferdinand E., A.B. (Institute of Havana)</td>
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### TOTAL.

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The total number of new matriculates the present session, including those admitted to advanced standing, is 147.

### SUMMARY.

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AUXILIARY DEPARTMENT OF MEDICINE.

FACULTY.

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

JOHN J. REESE, A.M., 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.

The Auxiliary Faculty of Medicine was constituted a distinct Department by the Board of Trustees in the year 1865, for the purpose of supplementing the ordinary winter course of medical instruction by lectures given during the spring months on certain collateral branches of science.

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

The lectures are open to all students under the above regulations; but the nature of the subjects taught is such, that for their proper understanding, the student should have previously attended at least two sessions of the usual winter lectures. In fact, this course may be regarded as essentially a post-graduate course. Hence, the Faculty earnestly recommend that at least one of its sessions should be attended, if possible, after graduation in medicine.

The course of instruction, although strictly collateral to medicine, is largely scientific in its character; and the Trustees of the University have, therefore, decided to confer the degree of Bachelor of Science (B. S.) upon those graduates in medicine of the University, or of other recognized schools, who shall have attended two full courses of lectures in the Auxiliary Department of Medicine, and have passed a satisfactory examination before the Fac-
ulty, and presented an original thesis on some one of the subjects taught.

Graduates of Medicine who have matriculated in the Auxiliary Department of Medicine before June, 1880, on complying with the then existing conditions, will receive the degree of Doctor of Philosophy.*

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

Wishing to promote original investigation, R. & J. Beck, opticians, through their manager, W. H. Walmsley, offer for competition 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 to be accompanied by prepared objects or drawings of the subject-matter.

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

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

The thesis must be presented to the Dean on or before the 15th of May.

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

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

The session for 1883 will commence on Monday, March 5th, and continue until the early part of June. Three lectures a week will be given by each professor.

* Minutes of the Board of Trustees.
These lectures are also open to those who are not engaged in the study of medicine; and they afford an excellent opportunity to teachers and others, who may be desirous of acquiring a knowledge of the subjects taught. Tickets may be obtained from the Dean, either for the whole course of lectures, or for those on a single branch.

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

**MEDICAL JURISPRUDENCE AND TOXICOLOGY.**

*Prof. John J. Reese, M.D.*

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

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

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

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

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

- Life Insurance in its medico-legal relations.

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

**MINERALOGY AND GEOLOGY.**

*Prof. Samuel B. Howell, M.D.*

In this department the following subjects will be included:

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

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


The instruction of this chair requires two years to complete the course.

In connection with the lectures, a practical course of Mineralogical and Geological Chemistry is carried on during the session;
tables and apparatus for original investigation and study being supplied to the members of the practical classes.

BOTANY.
Prof. Joseph T. Rothrock, M.D., B.S.

In the botanical course, two objects are kept in view: first, to teach vegetable physiology thoroughly; second, to make (so far as the time allows) practical botanists, who can recognize the plants of the regions in which they may reside.

The course of instruction, it is to be understood, extends over two sessions; hence students cannot be considered as entitled to an examination unless they have actually attended two courses of lectures on botany in this Department.

The examinations will not only be based upon the lectures delivered, but upon the practical work done by the class.

The practical classes in Analytical Botany are in addition to the regular lectures.

HYGIENE.
Prof. Joseph G. Richardson, M.D.

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

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. After a few lectures upon Etiology, and upon General and Special Prophylaxis, the remainder of the course for 1883 will, therefore, be devoted to the subject of Public Hygiene.

COMPARATIVE ANATOMY AND ZOOLOGY.
Prof. Andrew J. Parker, M.D., Ph.D.

The lectures on Comparative Anatomy will embrace:—

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.

In connection with the lectures a practical course of laboratory work will be instituted in which the students will dissect types of each of the principal classes of animals. It is also the desire to encourage graduates and students to make original researches in
comparative anatomy and embryology. It is proposed, in connection with the course of lectures, to organize a class for practical work during the summer. Some place will be secured on the Atlantic coast, and a practical laboratory established in which those students who desire it can work under the direct superintendence of the Professor of Comparative Anatomy and efficient assistants.

The Museum of the Auxiliary Department of Medicine embraces a collection of minerals, containing three thousand specimens, systematically arranged; a collection of rocks, fossils, and casts, arranged according to their geological succession; a valuable philosophical apparatus; a growing collection of specimens of Comparative Anatomy and 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.
Dana's System of Mineralogy.
Elderhorst's Manual of Qualitative Blowpipe Analysis.
Dana's Manual of Geology.
Ganot's Éléments de Physique, translated by E. Atkinson, Ph.D., F.C.S.

Works of reference:

Wharton and Still's Medical Jurisprudence.
Whitney's Micro-Chemistry of Poisons.
Sach's Text-book of Botany.
Le Maout and Descaines's General System of Botany, Descriptive and Analytical.
Cook and Berkeley on Fungi.
Parker's or 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.
Baltour's Comparative Embryology.

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

MATRICULATES, 1882.

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<tr>
<th>NAME</th>
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<tr>
<td>Abbott, William L.</td>
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<td>Bodamer, George A.</td>
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NAME.

Brinkman, Morris W.
Carson, Alfred D.
Cassel, George L.
Chrystie, Walter
Collins, Thomas S.
Culpeper, William A.
Darey, J. Herbert
Dock, George
Dolley, Charles S.
Duplan, Ernesto
Elder, Frank H. (M.D.)
Evans, Franklin J.
Frees, J. R. (M.D.)
Fussel, M. Howard
Gaul, C. Reese
Gloninger, Andrew B.
Haehnlen, W. Frank
Howell, William G., Jr.
Hughes, Martha P.
Ickes, W. J.
Irvin, C. Jones
Judge, John P.
Matson, Eugene G.
Mercur, William H.
Montgomery, P. Brough
Morse, G. Byron, Jr.
Norton, Albert E.
Orsell, Jacob F.
Peters, H. Vance
Pratt, C. Manville
Raab, Ernest P.
Randall, Edward
Randolph, N. Archer
Richardson, David D. (M.D.)
Robb, Hunter
Robinson, James A.
Rudge, J. Cezar
Scott, John B.
Seiss, Ralph W.
Sheibley, J. P. (M.D.)
Shell, J. Kinzer (M.D.)
Stamm, Edward P. (M.D.)
Tremblay, Asencio O. du
Trumbull, J. Heyward
Voorhees, Nathaniel W., Jr.
Wells, George M.
Wilson, Arthur M.
Winner, William G.
Woodnutt, Clement A.
Young, James K.

RESIDENCE.


STATE.

Pennsylvania. Chili.
New Jersey.
New Jersey.
West Indies.
Canada.
Pennsylvania.
New York.
Mexico.
Pennsylvania.
Pennsylvania.
Pennsylvania.
Pennsylvania.
Pennsylvania.
Pennsylvania.
Utah.
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Illinois.
Texas.
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New Jersey.
Massachusetts.
Brazil.
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Pennsylvania.
Pennsylvania.
Pennsylvania.
Cuba.
Chili.
New Jersey.
Pennsylvania.
Pennsylvania.
Pennsylvania.
Pennsylvania.
New Jersey.

Total, 57.
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.

MARSHALL H. WEBB, D.D.S.,* Lecturer on Operative Dentistry.

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

CLINICAL INSTRUCTORS.

Dr. C. S. BECK, Dr. E. H. NEALL,
Dr. LOUIS JACK, Dr. H. C. REGISTER,
Dr. GEO. W. KLUMP, Dr. R. H. SHOEMAKER,
Dr. GEORGE B. MCDONALD, Dr. J. A. WARDELL,
Dr. W. R. MILLARD, Dr. J. A. WOODWARD,
Dr. R. R. UNDERWOOD, Dr. H. C. LONGNECKER.

DEMONSTRATORS.


WM. LEWIS CAVE, D.D.S., Demonstrator of Mechanical Dentistry.


J. HARRISON CAMPBELL, D.D.S., Assistant Demonstrator of Mechanical Dentistry.

J. JUDSON EDWARDS, D.D.S., Assistant Demonstrator of Mechanical Dentistry.

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

JOHN MARSHALL, M.D., NAT.SC.D., Demonstrator of Practical Chemistry.

CALENDAR.

1883.

April 16. Spring Session opens.


16. Examination for admission to advanced standing, and re-examination of undergraduates.

October 1. Winter Session opens.

1884.

April 14. Examinations begin.

May 1. Annual Commencement.

* Deceased.
QUALIFICATIONS FOR GRADUATION.

The candidate must be twenty-one years of age. He must have studied under a private preceptor at least two years, including his course of instruction at the College. Attendance on two full courses of lectures, at the Regular or Winter Session, in this institution, will be required, but satisfactory evidence of having attended one full course in any respectable dental or medical school will be considered equivalent to the first course of lectures in this College.

The candidate is required to dissect at least two parts; he must also prepare a thesis upon some subject connected with the theory or practice of dentistry. He must treat thoroughly some patient requiring all the usual dental operations, and bring such patient before the Professor of Operative Dentistry. He must also take up at least one artificial case, and after it is completed, bring his patient before the Professor of Mechanical Dentistry at least 30 days before the close of the term. He must also prepare a specimen case, to be deposited in the College collection, and present the same to the Professor of Mechanical Dentistry and Metallurgy before the 1st of February. The operations must be performed, and the work on the artificial case done, at the College building. At the end of the session he must undergo an examination by the Faculty; when, if found qualified, he will be recommended to the Board of Trustees, and, if approved by them, will receive the Degree of Doctor of Dental Surgery.

GRADUATION IN MEDICINE.

Dental students wishing to take the degree in Medicine also, can do so in three years from the beginning of their studies; but candidates must notify the Secretary of the Department of Medicine of such intention before the beginning of the second course of lectures. They must then add to their studies of the second year, which they would take as students of dentistry, Medical Chemistry, Topographical Anatomy, 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, Physiology, and Pharmacy, together with the dental branches proper; and then, qualified, they 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 medical students as laid down in the Medical Curriculum, 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.

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 Instructions in Vulcanite Work; Kingsley's Oral Deformities; Essig's Dental Metallurgy.


On Operative Dentistry and Dental Histology: Legros and Magriot, translated by M. S. Dean.

On Chemistry: Fownes' or Wuitz'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.

STUDIES OF THE 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>WORMLEY, General Chemistry.</td>
<td>WORMLEY, General Chemistry.</td>
<td>Mechanical Clinic.</td>
<td>WORMLEY, General Chemistry.</td>
<td>Mechanical Clinic.</td>
<td>Chemical Laboratory.</td>
</tr>
<tr>
<td>10 A.M.</td>
<td>Mechanical Clinic.</td>
<td>Chemical Laboratory.</td>
<td>University Hospital Clinics.</td>
<td>Mechanical Clinic.</td>
<td>Mechanical Clinic.</td>
<td>Medical Laboratory.</td>
</tr>
<tr>
<td>11 A.M.</td>
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<td>12 M.</td>
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<td>1½ P.M.</td>
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</tr>
<tr>
<td>2 P.M.</td>
<td>LEIDY, Anatomy.</td>
<td>ALLEN, Physiology.</td>
<td>ALLEN, Physiology.</td>
<td>ESIG, Metallurgy.</td>
<td>DARBY, Operative Dentistry.</td>
<td>DARBY, Operative Dentistry.</td>
</tr>
<tr>
<td>3½ P.M.</td>
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<td></td>
</tr>
<tr>
<td>4½ P.M.</td>
<td>ESIG, Mechanical Dentistry.</td>
<td>DARBY, Operative Dentistry.</td>
<td>ESIG, Mechanical Dentistry.</td>
<td>DARBY, Operative Dentistry.</td>
<td>ESIG, Metallurgy.</td>
<td>DARBY, Operative Dentistry.</td>
</tr>
<tr>
<td>5½ P.M.</td>
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</tbody>
</table>

Students of one department may attend the lectures in any other department, during hours otherwise unoccupied, without additional charge.
Order of Clinics and Lectures—Session of 1883-84. Beginning Monday, October 1st.

<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>Mechanical Clinic</td>
<td>Mechanical Clinic</td>
<td>Mechanical Clinic or Operative Clinic</td>
<td>Mechanical Clinic or Operative Clinic</td>
<td>Truman, Dental Pathology, Therapeutics, and Materia Medica</td>
<td></td>
</tr>
<tr>
<td>10 A.M.</td>
<td></td>
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<td></td>
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<td></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>Leidy, Anatomy</td>
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</tr>
<tr>
<td>1½ P.M.</td>
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<tr>
<td>2 P.M.</td>
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<tr>
<td>3½ P.M.</td>
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</tr>
<tr>
<td>4½ P.M.</td>
<td>Allen, Physiology</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>5½ P.M.</td>
<td>Eshig, Mechanical Dentistry</td>
<td>Darry, Operative Dentistry</td>
<td>Eshig, Mechanical Dentistry</td>
<td>Darry, Operative Dentistry</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

The curriculum of the first year, established by the University of Pennsylvania, is identical for Medical and Dental students so far as Anatomy, Chemistry, Physiology, and Materia Medica are concerned.

ARRANGEMENT OF SESSIONS.

In order to extend further the opportunities for thorough preparation, and to provide facilities for practical instruction in the infirmary, there will be a Spring and a Fall as well as a Winter Session. Students who contemplate attending are informed that, by this arrangement, they will not be required to secure a preceptor during their stay in the city; the Faculty deeming the attendance during the spring and summer months as equivalent in value to private instruction; such attendance, however, is not to be considered in any way a substitute for the Regular or Winter Course of Lectures.

During the Spring and Fall Sessions there will be one or more lectures a day. These lectures are upon important practical subjects, or on matters collateral with what is taught from the several chairs.

SPRING SESSION.

The Spring Course of Lectures will commence on the third Monday in April, and continue until the middle of June.

The student will matriculate, and pay a fee of fifty dollars for this session; but this amount will be deducted from the fee for the following Regular or Winter Session.
LECTURES IN THE SPRING COURSE.

Mechanical Dentistry and Metallurgy ............................................. Prof. Essig.
Operative Dentistry, Dental Histology, and Pathology ...................... Prof. Darby.
Physiology ..................................................................................... Prof. Allen.
Chemistry ....................................................................................... Prof. Wormley.
Histology ....................................................................................... Dr. Chas. T. Hunter.
Regional Anatomy .......................................................................... Dr. Adolph W. Miller.
Materia Medica and Pharmacy ....................................................... Dr. Adolph W. Miller.

Students of the Dental Department have access to all the other medical lectures in the Spring Course free of additional charge.

FALL SESSION.

The Fall or Preliminary Course will commence on the second Monday in September, will continue until the first day of October, and will be free of charge to those who enter for the Winter or Regular Session.

THE REGULAR OR WINTER SESSION.

In order to facilitate work in the practical departments, and to employ fully the students' time, the regular winter sessions are so arranged that the first course student is required to devote the morning hours equally between dental and chemical laboratory work. At the end of the first session he is examined in chemistry and materia medica, and, if qualified, is passed into the second class.

The second year student, having passed in those two branches, is not required during his second course to attend the lectures upon them. He has, thus, the entire forenoon of each day for practical dental work.

The Faculty desires to offer every opportunity for the acquirement of practice in operative and mechanical dentistry; and, hence, since many large operations in the mouth require the morning light, and more time in their performance than an afternoon affords, permission will be given to the second course student to devote the morning hours to this object when required.

It is believed that this plan of grading the course, and of affording the first year student an opportunity of coming forward for examination in the branches of chemistry and materia medica, will not only prove an economical arrangement of his time, but will really facilitate his labors in the acquirement of knowledge in the remaining branches.
PLAN OF FINAL EXAMINATIONS.

The first course student will, at the end of the term, be required to pass a final examination in chemistry and materia medica, and if successful, he enters the second year class. If, however, he is not qualified, a second examination is afforded him at the beginning of his next regular course (October 1st).

The final examination of the second course student will be in anatomy, physiology, operative dentistry, mechanical dentistry and metallurgy.

Matriculates who have attended one full term in another dental or medical school of good standing, will be admitted as students of the graduating class.

The session will commence on Monday, October first, and continue until the first of April ensuing. The course is so arranged that twenty lectures will be delivered each week on the various branches taught in the Department.

EXPENSES.

FIRST YEAR.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Matriculation (paid but once)</td>
<td>$5.00</td>
</tr>
<tr>
<td>General ticket, admitting to all the lectures and clinical and laboratory work assigned to the first year dental students</td>
<td>$100.00</td>
</tr>
<tr>
<td></td>
<td>$105.00</td>
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</table>

SECOND YEAR.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
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<tbody>
<tr>
<td>General ticket, admitting to all the lectures and clinical work assigned to the second year dental students</td>
<td>$100.00</td>
</tr>
<tr>
<td>Dissecting ticket (required)</td>
<td>$10.00</td>
</tr>
<tr>
<td>Graduation</td>
<td>$30.00</td>
</tr>
<tr>
<td></td>
<td>$140.00</td>
</tr>
<tr>
<td>Total fees for the two courses in dentistry, including graduation</td>
<td>$245.00</td>
</tr>
</tbody>
</table>

Expenses incurred by the second-year dental students who take the additional studies of the second course of medicine:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matriculation in Medical Department</td>
<td>$5.00</td>
</tr>
<tr>
<td>Tuition for joint medical and dental studies, second year</td>
<td>$190.00</td>
</tr>
<tr>
<td>For third-year medical course (no diploma fee)</td>
<td>$150.00</td>
</tr>
</tbody>
</table>

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 FOR STUDENTS.

Board can be obtained at from four to six 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.
The Infirmary and Laboratory are open during the several sessions of the College, and ample opportunities will be afforded the student for the prosecution of the practical part of his studies under the guidance and supervision of competent demonstrators. During the Fall Course and the Regular or Winter Session, a Clinical Lecture will be 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, now contains upwards of four thousand volumes. During the Winter and Spring Courses it is accessible to students and graduates of the Dental and Medical Departments under appropriate regulations.

**MUSEUM AND CABINETS.**

The Wistar and Horner Museum, which was founded nearly one hundred years ago, and has been annually augmented, is unequalled in the United States for the number and variety of its specimens of the normal and the morbid anatomy of every part of the human body. It also contains a large number of preparations in comparative anatomy, a rich collection of specimens relating to the subject of Dentistry, such as the different stages of dentition, abnormal conditions of the teeth, mandibles of the lower animals, etc., illustrative of odontology, and an extensive collection of artistic models, which are used in illustrating the several courses of lectures. The ticket of matriculation in this Department entitles the holder to admission to the Museum, which is open on Wednesday and Saturday of each week, from 9 A.M. to 12 M., throughout the session.

**OUTLINE OF THE COURSE.**

**OPERATIVE DENTISTRY, AND DENTAL HISTOLOGY.**

The lectures of this department will embrace the comparative anatomy of the teeth, the functions and microscopical peculiarities of the dental organs, the development of teeth, and their component tissues. It will also include a full description of the materials and instruments used in operative dentistry, and will comprise a thorough elucidation of all the operations required of the dental
practitioner, such as filling, extracting, regulating, etc. etc. The incumbent of this chair will devote a certain portion of the course to the consideration of dental pathology, the pathological relations of the teeth to the other parts of the system, together with a minute description of all special diseases that have any relation to dental surgery, or are of interest to the dentist. He will also demonstrate in the clinic the theories taught.

MECHANICAL DENTISTRY AND METALLURGY.

The instruction from this chair will embrace—the proper fitting up of a dental laboratory; the use of tools; melting, refining, alloying, and working of the noble metals, and combinations or alloys of the base metals 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; and the entire range of manipulation of the different materials used as bases for dental substitutes, from the impression to the completion and proper adjustment of the case to the mouth. Also 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. The lectures will be amply illustrated by specimens, models, and diagrams, and the practical application will be given in the laboratory, under the supervision of accomplished mechanical dentists. Special attention will be directed to the higher branches, consisting of plate work, the continuous gum process, and carving teeth.

In the laboratory are all the conveniences for the preparation of the metals, manufacture of teeth, single and block, mounting, etc. Every process known in the profession, which has any value to the mechanical dentist, is fully taught. The student is required to go through all the necessary manipulations connected with the insertion of artificial teeth—from taking the impression of the mouth to the entire construction of the denture, and its proper adjustment in the mouth of the patient. 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.
Under the instruction of a skilful manipulator in continuous gum work, the student will be enabled to acquire a thorough knowledge of this important method.

CHEMISTRY.

The lectures in this department 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 the consideration 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 relating to 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, and the study of the chemical properties and 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 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 personally practise all the usual chemical manipulations under the direction of demonstrators, precisely as he does his practical work in mechanical and operative dentistry, and also to exhibit by formulae, on paper, all reactions involved in his tests.

GENERAL, SPECIAL, AND TOPOGRAPHICAL ANATOMY.

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

PHYSIOLOGY.

The course on this subject will include lectures and demonstrations on the entire human physiology, and on physiological chemistry. The study of the physiology of each organ is also preceded by a full consideration of its histology. The course is amply illustrated by appropriate diagrams, chemico-physiological experiments, and vivisections.
DENTAL PATHOLOGY, THERAPEUTICS, AND MATERIA MEDICA.

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, to secure a return to normal conditions, minutely detailed.

Under the division of materia medica, will be taught the character and value of those remedies that have a direct or indirect bearing upon dental therapeutics.

CLINICAL INSTRUCTION.

In addition to the above, with the exception of Saturday, four hours daily are spent by the student in actual practice under the supervision of the Demonstrators.

THE OPERATIVE DEPARTMENT.

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 new operating room, wires are arranged to a number of the chairs for the use of electric pluggers.

Persons desiring further information relating to this department should address the Secretary, and should give in their communication their Name, Post Town, County, and State.

Members of the profession receiving a copy of this Announcement, are requested to notify the Secretary should they change their residence. Also, 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 in 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 for the same, and the specimens will be nicely mounted, with the donor's name attached, and deposited in the College Museum.

CHAS. J. ESSIG, Secretary,
Department of Dentistry of University of Pennsylvania,
36th Street and Woodland Avenue.
DENTAL DEPARTMENT.

STUDENTS OF THE SECOND YEAR.

<table>
<thead>
<tr>
<th>NAME</th>
<th>POST-OFFICE</th>
<th>STATE</th>
<th>PERCEPTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andersen, Sigurd S.</td>
<td>Christiana,</td>
<td>Norway</td>
<td>Univ. of Christiana</td>
</tr>
<tr>
<td>Austin, John F.</td>
<td>Cascade</td>
<td>Wis</td>
<td>Dr. J. L. Shephard</td>
</tr>
<tr>
<td>Baker, Charles R.</td>
<td>Davenport</td>
<td>Iowa</td>
<td>Dr. J. B. Morgan</td>
</tr>
<tr>
<td>Barrett, W. Oliver</td>
<td>Barre</td>
<td>Mass</td>
<td>Dr. J. N. Dodge</td>
</tr>
<tr>
<td>Battles, Wilton L.</td>
<td>Girard</td>
<td>Pa</td>
<td>University of Mich.</td>
</tr>
<tr>
<td>Beck, Uriah G.</td>
<td>Williamsport</td>
<td>Pa</td>
<td>Dr. G. W. Klump</td>
</tr>
<tr>
<td>Brown, Wistar P.</td>
<td>West Chester</td>
<td>Pa</td>
<td>University of Pa</td>
</tr>
<tr>
<td>Cook, Everett M.</td>
<td>Waterbury</td>
<td>Conn</td>
<td>Dr. J. O. Cook</td>
</tr>
<tr>
<td>Croll, William L.</td>
<td>Middletown</td>
<td>Pa</td>
<td>Dr. J. H. Crist</td>
</tr>
<tr>
<td>Davenport, John F.</td>
<td>Freeport</td>
<td>III</td>
<td>Drs. Kingsley &amp; Mills</td>
</tr>
<tr>
<td>De Witt, Joseph R.</td>
<td>Birdsboro'</td>
<td>Pa</td>
<td>University of Pa</td>
</tr>
<tr>
<td>Franklin, De Witt C.</td>
<td>Maysville</td>
<td>Ky</td>
<td>Dr. Jno. A. Mitchell</td>
</tr>
<tr>
<td>Gibbons, Clifford</td>
<td>Brighton</td>
<td>England</td>
<td>Dr. George Owen</td>
</tr>
<tr>
<td>Goettinger, Louis</td>
<td>Berlin</td>
<td>Germany</td>
<td>University of Pa</td>
</tr>
<tr>
<td>Harper, J. Warren</td>
<td>Carlisle</td>
<td>Pa</td>
<td>Dr. Geo. W. Noldich</td>
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<tr>
<td>Herbein, Howard J.</td>
<td>Sinking Spring</td>
<td>Germany</td>
<td>University of Pa</td>
</tr>
<tr>
<td>Hofmann, Georg</td>
<td>Darmstadt</td>
<td>N. C</td>
<td>Dr. E. Wall</td>
</tr>
<tr>
<td>James, David L.</td>
<td>Greenville</td>
<td>Pa</td>
<td>Dr. J. G. James</td>
</tr>
<tr>
<td>Jennings, Irving H.</td>
<td>Harrisburg</td>
<td>Pa</td>
<td>Dr. George W. Stine</td>
</tr>
<tr>
<td>Keffer, Edward I.</td>
<td>Lancaster</td>
<td>Pa</td>
<td>Dr. M. H. Webb</td>
</tr>
<tr>
<td>Leser, Victor</td>
<td>St. Louis</td>
<td>Mo</td>
<td>University of Pa</td>
</tr>
<tr>
<td>Lewis, Emler L.</td>
<td>York</td>
<td>Pa</td>
<td>Dr. C. A. Eisenhart</td>
</tr>
<tr>
<td>Luce, John E.</td>
<td>Red Wing</td>
<td>Minn</td>
<td>Dr. Charles J. Essig</td>
</tr>
<tr>
<td>McCandless, Albert H.</td>
<td>Columbus City</td>
<td>Iowa</td>
<td>University of Pa</td>
</tr>
<tr>
<td>McDougall, John</td>
<td>Pittston</td>
<td>Pa</td>
<td>University of Pa</td>
</tr>
<tr>
<td>Nicol, John D.</td>
<td>Peoria</td>
<td>Ill</td>
<td>Drs. Hewett Bros</td>
</tr>
<tr>
<td>Noble, Joseph W.</td>
<td>Carlisle</td>
<td>Pa</td>
<td>Drs. Fogg &amp; Kirk</td>
</tr>
<tr>
<td>Parker, J. Abbott</td>
<td>Minneapolis</td>
<td>Minn</td>
<td>Dr. J. H. Bowman</td>
</tr>
<tr>
<td>Scott, Robert M.</td>
<td>Gettysburg</td>
<td>Pa</td>
<td>University of Pa</td>
</tr>
<tr>
<td>Sherraden, William H.</td>
<td>Council Bluff</td>
<td>Iowa</td>
<td>Dr. Geo. C. Brown</td>
</tr>
<tr>
<td>Stowe, Frank J.</td>
<td>Toronto</td>
<td>Canada</td>
<td>Dr. J. S. Stowe</td>
</tr>
<tr>
<td>Taylor, William D.</td>
<td>West Springfield</td>
<td>Mass</td>
<td>Dr. C. S. Harlbut</td>
</tr>
<tr>
<td>Tovar, Luis F.</td>
<td>Bogota, U. S. Columbia, S.A.</td>
<td>Germany</td>
<td>University of Pa</td>
</tr>
<tr>
<td>Valdes, Antonio G.</td>
<td>Matanzas</td>
<td>Cuba</td>
<td>Drs. Hering &amp; Klare</td>
</tr>
<tr>
<td>Wienecke, Eugene</td>
<td>Leipzig</td>
<td>Germany</td>
<td>Dr. J. L. Baker</td>
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<tr>
<td>Yorks, John R.</td>
<td>Danville</td>
<td>Pa</td>
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STUDENTS OF THE FIRST YEAR.

<table>
<thead>
<tr>
<th>NAME</th>
<th>POST-OFFICE</th>
<th>STATE</th>
<th>PERCEPTOR</th>
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<tbody>
<tr>
<td>Aldcroft, J. Gamwell</td>
<td>Hudson</td>
<td>N. Y</td>
<td>Dr. C. K. Van Vleck</td>
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<tr>
<td>Bermudes, Salvador</td>
<td>Managua, Nicaragua, C. A.</td>
<td></td>
<td>University of Pa</td>
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<tr>
<td>Bowers, Horace A.</td>
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<td>Dr. George Bowers</td>
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<td>Campbell, Charles S.</td>
<td>St. Albans</td>
<td>VT</td>
<td>Dr. J. M. Comegys</td>
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<tr>
<td>Cate, Wilbur T.</td>
<td>Springfield</td>
<td>Mass</td>
<td>Drs. Anderson &amp; Harlbut</td>
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<tr>
<td>Da Silva, Vasco A.</td>
<td>Elmira</td>
<td>N. Y</td>
<td>Dr. Frank B. Darby</td>
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<tr>
<td>Davila, Nemesio (Ph.D.)</td>
<td>Santiago</td>
<td>Chili</td>
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<table>
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<tr>
<th>Name</th>
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<tr>
<td>Eadie, George</td>
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<td>Canada</td>
<td>Dr. Edward Hart.</td>
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<tr>
<td>Gastal, Edmund</td>
<td>Pelotas</td>
<td>Brazil</td>
<td>Dr. A. G. Gastal &amp; Son.</td>
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<td>Hert, Benedict S.</td>
<td>Rochester</td>
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<td>Dr. A. A. Morgan.</td>
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<td>Hiestand, Ira</td>
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<td>Dr. P. N. Hiestand.</td>
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<td>Dr. Piarr.</td>
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<td>Bridgeton</td>
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<td>Dr. J. C. Kirby.</td>
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<td>Loder, James E.</td>
<td>Philadelphia</td>
<td>Pa.</td>
<td>Dr. E. M. Beesley.</td>
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<tr>
<td>McCance, James L.</td>
<td>Oil City</td>
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<td>Macreklein, Robert</td>
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<td>Miner, Howard A.</td>
<td>Guelph</td>
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<td>Dr. A. E. Bradley.</td>
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<td>Nittinger, Alfred</td>
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<td>Conn.</td>
<td>Dr. S. D. Strom.</td>
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<td>Provost, Howard G.</td>
<td>Stamford</td>
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<td>Redpath, Philip E.</td>
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<td>Richter, Charles H.</td>
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<td>Shockley, Abraham S.</td>
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<td>Skidmore, Luther W.</td>
<td>Reading</td>
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<td>Siegell, Samuel E.</td>
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<td>Stine, Harry M.</td>
<td>Peru</td>
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<td>Stowell, Sidney S.</td>
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<td>Tripler, William C.</td>
<td>Vineyard</td>
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<td>Walls, Frank H.</td>
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**SPECIAL STUDENTS.**

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**SUMMARY.**

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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., Professor of Practice, Pleading, and Evidence at Law and in Equity.

HON. J. H. CLARK HARE, LL.D., Professor of the Institutes of Law, including, inter alia, International, Constitutional, and Commercial Law.

E. COPPÈE MITCHELL, LL.D., Professor of the Law of Real Estate and Conveyancing, and of Equity Jurisprudence.

JAMES PARSONS, A.M., M.D., Professor of the Law of Personal Relations and Personal Property.

JOHN J. REESE, A.M., M.D., Professor of Medical Jurisprudence.

E. C. MITCHELL, Dean of the Law Faculty,

518 Walnut Street, Philadelphia.

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

Instruction is 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 both terms of the annual session. A special evening is assigned to each case, so that a continuous discussion can be had of the points raised for argument. 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 which has been found of the greatest practical advantage.

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

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

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

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

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

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

The Full Course occupies two years.

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

The Tuition Fee for the full course with all the Professors (except the Professor of Medical Jurisprudence) is $40 for each term. Each Professor will issue separate tickets for his own lectures to such students as do not desire to attend the full course, for such fee as he shall determine. Each student taking the full course is required also to pay, upon entering, a matriculation fee of $5. There are no other charges made.

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

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

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

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

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

The use of the Library of the Law Association of Philadelphia
(which is one of the largest law libraries in the country) is also
allowed the students of law in the University for a fee of $3 per
annum, under proper regulations.

DEGREES.

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

"In order to obtain the degree of 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 sub-
jects 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 mem-
ers of the committee on the said Law Department belonging to this Board as may
choose to attend. And the members of the Board of Examiners appointed by the
Courts of Philadelphia may be present at the examination if they desire to do so."

The essay required from each candidate must be handed to the
Dean of the Faculty on or before the 15th day of February preced-
ing the commencement.

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

The examinations required by the statute are both written and
oral, and are held during the last week in May in each year. On
a subsequent page will be found the questions used at the written
examination, in May, 1882.
It will be noticed that no provision is made in these regulations for students entering upon advanced standing. No one can be graduated who has not actually attended the full course of two years.

PRIZES.

The Alumni of this Department have established two prizes, one of fifty dollars, called the “Sharswood Prize,” and one of twenty-five dollars, called the “Meredith Prize,” to be competed for by the Graduating Class in each year for the best and second best graduation essays—the merits of the essays to be passed upon by the Faculty.

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

ADMISSION TO THE BAR.

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

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

The preliminary examination referred to in this rule is conducted by the Board of Examiners appointed by the courts 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.

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

Application for admission, and for information, should be made to the Dean of the Faculty, at his office, 518 Walnut Street, Philadelphia.
EXAMINATION QUESTIONS, MAY, 1882

PROFESSOR MORRIS.

EVIDENCE.
1. State briefly the several kinds of presumptions known in the law, and explain them.
2. State how a will is to be proved.
3. Explain the words "patent ambiguity" and "latent ambiguity."
4. Who is a competent witness?
5. What is the probative effect of the acknowledgment of a deed?

EQUITY.
1. Name the original bills which do not pray relief.
2. What is the difference between a plea and an answer?
3. What is the practical test by which you determine whether your bill embraces all necessary parties defendant?
4. What do you understand by scandal and impertinence in a bill?
5. Explain the use of the cross bill.

PROFESSOR HARE.

CONTRACTS.
1. Define a stipulation under the Roman law, and state what were its requisites.
2. Which were the Consensual contracts, and was a consideration essential to their validity, as, for instance, in the case of a mandate?
3. Did the title pass under the Roman law on the completion of a contract of sale without payment or delivery? and what is the common law rule on this point?
4. Can the title pass by the sale of a part out of a larger mass without separation, and under what circumstances?
5. Must the price be definitely ascertained to pass the title, or is it enough that it should be computable?
6. Can a vendor detain goods which he has sold for cash, if the purchase-money be not paid, and what are his rights in this regard when the sale is on credit?
7. May goods which have been sold to a purchaser who makes default, be re-sold to the highest bidder? and what is the effect of such a sale as it regards the right of recovery against the purchaser?
8. Does an offer sent by mail become obligatory on the posting of a letter of acceptance, or not until the acceptance is delivered to the offerer?
9. May a parole undertaking, to be answerable for such goods as may be sold to a third person during the ensuing year, be recalled during the year, but before it has been acted on by the promisee? and what is the rule in this regard when the guarantee is under seal?
10. May a bid at auction be withdrawn before the hammer falls, notwithstanding a stipulation to the contrary on the part of the auctioneer and agreed to by the bidders?

PROFESSOR MITCHELL.

EQUITY.

1. Give a brief account of the administration of Equity in Pennsylvania from 1736 to 1836.
2. What presumption does equity raise in a case where the title to property is conveyed to one man and the purchase-money is paid with the funds of another? and how may such a presumption be rebutted?
3. What is the difference between the property given for the separate use of a married woman, in equity; and property conveyed to her and held by her under the married woman's act? State the rule laid down on the subject of separate use in Lancaster vs. Dolan.
4. For whom, and within what limits, may a trust for accumulation be created? What will be the effect if the limit, as to time, be exceeded? How is a charity affected by this rule?
5. State the effect of a deed for land absolute on its face, which is delivered to-day with a verbal agreement that the conveyance shall stand only as security for a debt, and that when the debt is paid the land will be re-conveyed. Give reasons for answer.
6. What mistakes are relieved in equity? and which are not relieved?
7. Under what circumstances will notice to an agent bind his principal, the principal having no actual knowledge of the fact?
8. How can equitable conversion be produced by a will? What must the will contain to have that effect? What is "conversion out and out"?
9. What sort of injunction will be decreed at the beginning of a suit? and under what restrictions can such an injunction be granted ex parte?
10. State the doctrine of equity as to enforcing the specific delivery of chattels. Can a bill for specific performance be filed by a seller of land against the purchaser? Give reasons for answer.

PROFESSOR PARSONS.

(State in each reply the reason for your answer.)

1. When are executors partners, and to what extent, if to any, is the testator's estate involved in the business?
2. How did the change come about which converted the joint contract of the common law into the joint, though severable contract of partners, with third persons?
3. What is the difficulty of adjusting accounts between firms with a common member; does it arise from the common law procedure, and is the obstacle removed by a resort to a remedy in equity?
4. Can a judgment confessed by a partner be shown to embody a firm or a separate claim, as the case may be?
5. What is the effect of a partner's release of a firm debt without receiving payment?
6. Could the restriction imposed by the Pennsylvania statute of 26 April, 1855, invalidate a bequest made to a Pennsylvania corporation by a citizen of a different State within one calendar month of the testator's death?

7. In Pennsylvania, is a foreign corporation taxed upon its property, which is not employed in the State?

8. Work out the doctrine of consideration in bailment, through the history of the bailor's remedies.

9. What constitutional distinction is made between a tax on the tonnage of a carrier and a tax on his gross receipts?

10. How is the equitable value of a life policy made the basis for relief against a forfeiture?

ARRANGEMENT OF THE COURSE.

PROFESSOR MORRIS.

October Term, 1883, Evidence.
February Term, 1884, Practice and Pleading in Equity.
October Term, 1884, Practice and Pleading at Law.
February Term, 1885, Practice and Pleading at Law.

PROFESSOR HARE.

October Term, 1883, Contracts, Bills of Exchange and Promissory Notes; Bills of Lading.
February Term, 1884, Conflict of Laws, Criminal Law.
October Term, 1884, Constitutional Law, Insurance.
February Term, 1885, Suretyship and Guaranty.

PROFESSOR MITCHELL.

October Term, 1883, Equity Jurisprudence.
February Term, 1884, Equity Jurisprudence.
October Term, 1884, Real Estate.
February Term, 1885, Conveyancing.

PROFESSOR PARSONS.

October Term, 1883, Agency, Partnership, Corporations, International Law.
February Term, 1884, Bailment, Common Carriers, Pledges, Chattel Mortgages, Life Insurance.
October Term, 1884, Domestic Relations; Executors and Administrators.
February Term, 1885, Title to Personal Property, Civil Law; Contract of Sale.

PROFESSOR REESE

Will deliver the Course of Lectures on Medical Jurisprudence, each year, beginning early in March, and ending June 15.
## MATRICULATES—CLASS OF 1882-83.

### POST-GRADUATE.

<table>
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<tr>
<th>NAME</th>
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<tr>
<td>Bockius, Morris R.</td>
<td>Germantown,</td>
<td>R. Morgan.</td>
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<tr>
<td>Boger, Charles W.</td>
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<td>L. Lewis, Jr.</td>
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<tr>
<td>Chapman, S. Spencer</td>
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<tr>
<td>Davis, Howard A.</td>
<td>do.</td>
<td>C. F. Warwick.</td>
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<tr>
<td>Fitzpatrick, James</td>
<td>do.</td>
<td>A. A. Hirst.</td>
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<td>J. C. Bullitt.</td>
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<td>E. A. Anderson.</td>
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### SENIOR CLASS.

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<td>Redding, Jones, &amp; Car-</td>
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<td>do.</td>
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<td>do.</td>
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</tr>
<tr>
<td>Gest, William P.</td>
<td>do.</td>
<td>J. C. Bullitt.</td>
</tr>
<tr>
<td>Harding, George J.</td>
<td>do.</td>
<td>G. Harding.</td>
</tr>
<tr>
<td>Harned, John F.</td>
<td>Camden, N. J.</td>
<td>Admitted.</td>
</tr>
<tr>
<td>Hause, J. Frank E.</td>
<td>West Chester, Pa.</td>
<td>R. Jones Monaghan.</td>
</tr>
<tr>
<td>Lyster, Edward, Jr.</td>
<td>do.</td>
<td>H. M. Dechert.</td>
</tr>
<tr>
<td>McCarron, James B.</td>
<td>do.</td>
<td>Read &amp; Pettit.</td>
</tr>
<tr>
<td>McMahon, Thomas F.</td>
<td>do.</td>
<td>E. A. Anderson.</td>
</tr>
<tr>
<td>McManus, Francis P.</td>
<td>do.</td>
<td>J. G. Johnson.</td>
</tr>
<tr>
<td>MacVeagh, Lincoln</td>
<td>do.</td>
<td>MacVeagh &amp; Bispham.</td>
</tr>
<tr>
<td>Murphy, J. Shriver</td>
<td>do.</td>
<td>W. G. Griffith.</td>
</tr>
<tr>
<td>Neide, Erskine</td>
<td>do.</td>
<td>MacVeagh &amp; Bispham.</td>
</tr>
<tr>
<td>Owen, Robert J.</td>
<td>do.</td>
<td>Redding, Jones, &amp; Car-</td>
</tr>
<tr>
<td>Pettit, Horace</td>
<td>do.</td>
<td>Read &amp; Pettit.</td>
</tr>
<tr>
<td>NAME</td>
<td>RESIDENCE</td>
<td>PRECEPTOR</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------------</td>
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</tr>
<tr>
<td>Place, Samuel V.</td>
<td>Eagleville, Pa.</td>
<td>Redding, Jones, &amp; Car-</td>
</tr>
<tr>
<td>Rosenberger, Emil</td>
<td>do.</td>
<td>A. A. Grace.</td>
</tr>
<tr>
<td>Shipley, W. Penn</td>
<td>do.</td>
<td>P. P. Morris.</td>
</tr>
<tr>
<td>Sorver, Frank</td>
<td>York, Pa.</td>
<td>A. Moore.</td>
</tr>
<tr>
<td>Truitt, Alexander J.</td>
<td>Wilmington, Del.</td>
<td>Gendell &amp; Reeves.</td>
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<tr>
<td>Wallerstein, David</td>
<td>do.</td>
<td>M. Arnold.</td>
</tr>
<tr>
<td></td>
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<td>Seniors, 56.</td>
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<tr>
<td>Baker, John R., Jr.</td>
<td>Philadelphia, do.</td>
<td>Redding, Jones, &amp; Car-</td>
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<tr>
<td>Bowden, Harry M.</td>
<td>Philadelphia, do.</td>
<td>J. B. Roney.</td>
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<tr>
<td>Caldwell, James Hope</td>
<td>Dover, Del.</td>
<td>Heverin &amp; Shakspeare.</td>
</tr>
<tr>
<td>Chase, Charles A.</td>
<td>do.</td>
<td>H. R. Edmunds.</td>
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<td>Cramp, Howard</td>
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<td>E. C. Mitchell.</td>
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<td>Cresse, Jere L.</td>
<td>Cape May, N. J.</td>
<td>J. G. Leach.</td>
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<tr>
<td>Cushman, J. Frank</td>
<td>Marietta, Pa.</td>
<td>J. Merrill Linn.</td>
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<td>Finletter, Thomas D.</td>
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<td>Wm. A. Porter.</td>
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NAME.
Kynett, Alpha G.
Lancaster, J. Campbell
Lawrence, St. Lawrence J.
Lentz, John M.
Lesser, F. Louis
McFarland, Thomas
Mercer, O. Van
Miller, Harvey E.
Murphy, Walter
Patterson, R. Cunningham
Pike, Lewis E.
Porter, Hobart C.
Records, Edward
Remak, Gustavus, Jr.
Scattergood, J. Edward
Schively, Edwin F.
Schmidt, George S.
Schwalm, John M.
Sheppard, Warren W.
Simes, Alexander, Jr.
Snyder, Martin L.
Spottswood, Wilbur F.
Steckel, Alfred D.
Thayer, William W.
Townsend, Jos. B., Jr.
Trego, Benjamin T.
White, John J.
Whyte, Albert
Wilkinson, Ogden D.
Wintersteen, Abram H.

RESIDENCE.
Philadelphia, do.
Philadelphia, do.
Glen Rock, Philadelphia, do.
Selins Grove, Pa.
Philadelphia, do.
Philadelphia, do.
Holmesburg, Philadelphia, do.
Germantown, York, Pa.
Leechburg, Pa.
Shiloh, N. J.
Philadelphia, do.
Fernwood, Pa.
Philadelphia, do.
West Chester, Philadelphia, do.

PRECEPTOR.
M. S. McCullough.
Wm. H. Lex.
E. S. Lawrence.
Hon. B. H. Brewster.
University.
J. M. Jennison.
Williams & Fisher.
A. W. Potter.
Geo. Junkin.
University.
E. F. Hoffman.
J. E. Carpenter.
C. Carver.
G. Remak.
J. M. Pile.
Edw. Shippen.
Hon. B. H. Brewster.
Hon. B. H. Brewster.
T. E. Patterson.
Rothermel & Brown.
A. W. Potter.
W. R. Fisher.
J. Q. Hunsicker.
J. B. Thayer.
J. B. Townsend.
G. H. Davis.
N. H. Sharpless.
D. M. Lowry.
F. F. Brightly.

Post-Graduate Seniors Juniors Special Students

SPECIAL STUDENTS.

Philadelphia, do.
Media, Pa.
Philadelphia, do.
Fernwood, Pa.

Total 125

SUMMARY.

Post-Graduate 1
Seniors 56
Juniors 60
Special Students 8

Total 125
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., Professor of Mathematics, and Dean of the Faculty.
JOSEPH LEIDY, M.D., LL.D., Professor of Zoology.
J. PETER LESLEY, LL.D., Professor of Geology.
J. I. CLARK HARE, LL.D., Professor of Law.
REV. ROBERT E. THOMPSON, A.M., Professor of Political and Social Science.
FREDERICK A. GENTH, Ph.D. (Marburg), Professor of Inorganic Chemistry.
SAMUEL B. HOWELL, M.D., Assistant Professor of Geology.
GEORGE F. BARKER, M.D., Professor of Physics.
GEORGE A. KÖNIG, Ph.D. (Heidelberg), Professor of Mineralogy.
HUGH A. CLARKE, Professor of Music.
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.

Professor of History.

Professor of Philosophy.

The Faculty of Philosophy has recently been organized for the supervision of advanced studies in the several departments of literature and science. The degree conferred upon recommendation of this Faculty is that of Doctor of Philosophy. The courses, which cover a period of at least two years, are open to graduates in any department of this or like institutions, and to others who can pass a satisfactory examination. The fees are, for examination and graduation, $100. For instruction, $150 per annum, with special charges for material used; provided, that when instruction is received at the University, the graduation fee is $35.

A circular, giving in detail the courses of study, and the conditions of examination and graduation, will be furnished on application to

A. J. PARKER, M.D.,
Secretary of the Faculty,
315 North 9th St., Philada.
RECAPITULATION.

**PROFESSORS.**

<table>
<thead>
<tr>
<th>Department of Arts</th>
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<tr>
<td>&quot; Science</td>
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<td>&quot; Finance and Economy</td>
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<td>&quot; Music</td>
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<td>&quot; Medicine</td>
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<td>&quot; &quot; (Auxiliary Faculty)</td>
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<td>&quot; &quot; (Hospital)</td>
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<td>&quot; Dentistry</td>
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<td>&quot; Law</td>
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<tr>
<td>&quot; Philosophy</td>
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<td>Professores Emeriti</td>
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Deduct repetitions | 106 |
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**LECTURERS, INSTRUCTORS, ETC.**

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<th>Department of Arts, Science, and Finance and Economy</th>
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<td>&quot; &quot; Medicine, including Hospital Service</td>
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<td>&quot; &quot; Dentistry</td>
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Deduct repetitions | 97 |
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**STUDENTS.**

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<th>Department of Arts</th>
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<tr>
<td>&quot; Science</td>
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<td>&quot; &quot; Finance and Economy</td>
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<td>&quot; &quot; Music</td>
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<td>&quot; &quot; Medicine</td>
<td>367</td>
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<td>&quot; &quot; &quot; (Auxiliary)</td>
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<td>&quot; &quot; Dentistry</td>
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<tr>
<td>&quot; &quot; Law</td>
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Total | 984 |
ACADEMIC DEGREES,

Honors, Prizes, Etc.

1881--82.
HONORARY DEGREES.

The Honorary Degree of Doctor of Laws was conferred upon Eli K. Price, William Henry Rawle, and George W. Biddle at the Commencement held June 15, 1882.

DEGREES.

At the Commencement held June 15, 1882, the following Degrees were conferred:—

The Degree of Bachelor of Arts was conferred upon—

Herman Bryden Allyn,
Abraham Sharples Ashbridge, Jr.,
Frank Schell Ballentine,
David Bell Birney,
James Brown Cowperthwait,
Thomas Dickson Finletter,
Harry Abbott Fuller,
Henry Gibbs,
Alex. James Derbyshire Haupt,
William Macpherson Hornor,
Charles Edward Ingersoll;
Henry McKean Ingersoll;
Joseph Jastrow,
Harold Kennedy,
George Edward Krauth,
Joseph Campbell Lancaster,
Edwin Fussell Lott,
Frederick Adolphus Packard,
Gustavus Adolphus Packard,
Gustavus Remak, Jr.,
Howard Singer Stetler,
Joseph Brevitt Townsend, Jr.,
Thompson Seiser Westcott,
Isaac Keil Wismer,
Samuel Brown Wylie.

A Certificate of Proficiency was awarded to Frank Hallett DeSilver.

The Degree of Bachelor of Science was conferred upon—

Frank Spencer Brock,
Charles Wardell Brown,
Edwin Schofield Crawley,
Howard Deacon,
Winchester Dickerson,
Leon Philip Feustermann,
Charles Hanford Henderson,
Charles John Hexamer,
William Thomas Hildrup, Jr.,
James Swaim Hopkinson,
Thomas Guy Hunter,
George Marison Lawrence,
James Franklin McFadden,
Harry Wilmer Moore,
Francis Newland Paris,
Meyer Schamberg,
Samuel Edward Scott,
William Hinchkle Smith,
Guy Comfort Walraven,
Charles Spittall Walton,
William Grisley White,
Albert Maxwell Whitman,
Coffin Colket Wilson.

Certificates of Proficiency were awarded to—

Richard Downing Baker,
Maurice Benjamin Chandler,
John Chalmers DaCosta,
Edwin Meyer Goldsmith,
Charles Prevost MacArthur,
Francis Clark Perot.
The Degree of Master of Arts was conferred upon—

John Douglass Brown, Jr.,
Charles Claxton,
Charles Howard Colket,
Benjamin Bartis Comegys, Jr.,
Henry Taylor Dechert,
George Stewart Fullerton,
John Marshall Gest,
George Wood Hunt,

Rev. Henry Scott Jefferys,
William Egbert Mitchell,
Richard Montgomery,
Charles Santee Pauly,
Thomas Reath,
George Wood Bissell Roberts,
William Moore Stewart, Jr.

The Degree of Bachelor of Laws was conferred upon—

Charles Adamson,
George Ashbridge,
D. Moreau Barringer,
Frank K. Biggs,
M. Wm. Bradley,
George E. Brooks,
Henry Phillips Coleman,
Charles B. Earley,
Frank S. Elliott,
Charles H. A. Esling,
Oscar C. Foster,
John Marshall Gest,
B. DeS. Frank Harrah,
Francis Henderson,
Edwin A. Jaggard,
Frederick M. Leonard,
Alex. J. B. Lieder,
Agnew MacBridge,
John B. McAfee,

Fred. M. McFadden,
James Marshall,
J. Houston Merrill,
Charles W. Meyer, Jr.,
Philippus W. Miller,
J. Howard Morrison,
Harry L. Neall,
Alfred W. Ott,
Wm. A. Pike,
E. Clinton Rhoads,
Lendrum B. Ridge,
Henry D. Saylor,
J. Walter Screven,
Allison O. Smith,
Andrew B. Smith,
Moses Stevenson,
John M. Strong,
Charles K. Zug.

At the Examination of the Senior Class for Degrees, Honors were awarded as follows:—

To Graduates in Arts—

Honors of the First Class to THOMPSON SEISER WESTCOTT.

Of the Second Class to HENRY M’KEAN INGERSOLL, JOSEPH JASTROW,
ABRAHAM SHARPLES ASHBIDGE, JR., GEORGE LEWIS PLITT, SAMUEL
BROWN WYLIE, WILLIAM MACPHERSON HORNER, EDWIN FUSSELL LOTT,
and ALEXANDER JAMES DERBYSHIRE HAUP.

Of the Third Class to GUSTAVUS REMAK, JR., HENRY GIBBS, THOMAS
DICKSON FINLETTHER, HERMAN BRYDEN ALLYN, JAMES BROWN COW-
PERTHWAIT, JOSEPH BREVITT TOWNSEND, JR., ISAAC KEIL WISMER,
GEORGE EDWARD KRAUTH, HOWARD SINGER STETTER, JOSEPH CAMP-
BELL LANCASTER, and FRANK SHELL BALLENTINE.
To Graduates in the Towne Scientific School—
Honors of the First Class to William Ghriskey White and Charles Hanford Henderson.

Of the Second Class to Edwin Schofield Crawley, Charles John Hexamer, Leon Philip Feustmann, William Thomas Hildrup, Jr., George Marison Lawrence, Winchester Dickerson, Albert Maxwell Whitman, Charles Spittall Walton.

Of the Third Class to Guy Comfort Walraven, James Franklin McFadden, Meyer Schamberg, Samuel Edward Scott, and Thomas Guy Hunter.

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

In the Department of Arts—
Juniors—Cornelius Davis Mecutchuen, Charles Young Audenried, and Edward Potts Cheyney.
Sophomores—James Dallas Steele, John Stokes Adams, Lewis Lawrence Smith, and John August William Haas.
Freshmen—Herman T. Lukens, Mark Wilks Collett, George De Benneville Myers, Howard Lowe Cresswell, and James Fry Bullitt.

In the Towne Scientific School—
Juniors—Frank Miles Day and William Jones Serrill.
Sophomore—Samuel Van Pelt.
Freshmen—Henry Szlapka, Morris Sutphen Solomon, Marshall Rogers Pugh, and James Collins Jones.

In the Wharton School of Finance and Economy—
Sub-Junior—William Redwood Wharton.

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

In the Department of Intellectual and Moral Philosophy: Junior Prize of the best essay on "Pessimism," to Charles Oscar Beasley and John Robert Moses, with Honorable Mention of Emil Roth and Cyrus Adler.

In the Department of Greek Language and Literature: Junior Prize for the best examination on "The Oration of ÁEschines contra Ctesiphontem," read with the Professor in addition to the regular course, to Cornelius Davis Mecutcheu, with Honorable Mention of Edward Potts Cheyney.
In the Department of Mathematics: Junior Prize for the best extra work and examination in "Quaternions"—the First Prize to William Howard Falkner, and the Second to Edward Potts Cheyney.


The Sophomore Prize for the best Declamation to Charles Hoffman.

The Prize offered by the Board of Trustees to the Scientific Classes, for superiority in "Mechanical Drawing," to Morris Sutphen Solomon.

The Prize founded by the Society of the Alumni, for the best Latin Essay by a member of the Graduating Class (the subject to be selected by the writer), to George Lewis Plitt, for his Essay "De Republica Romana."

The Prize founded by the Society of the Alumni, for the best Original Declamation by a member of the Junior Class, to William Howard Falkner.

The Prize founded by Mr. H. L. Jayne, for the best English Composition by a member of the Freshman Class, on "The Swedish Settlements on the Delaware," to Samuel Williamson Cheyney.

The Joseph Warner Yardley Memorial Prize, founded by the Class of 1877, for the best Essay on "International Copyright in its Economic Relations," to Charles Hanford Henderson.

The Van Nostrand Prize, for the highest general average of scholarship in the Department of Civil Engineering (Junior Class), to Sanford Keyser Campbell.

In the Department of Law, Prizes were awarded as follows:—

The Sharswood Prize, for the best graduation Essay in 1882, was awarded to John Marshall Gest, Esq., for an Essay entitled "Securities for Bills of Exchange."

The Meredith Prize, for the second best Essay, was awarded to Harry L. Neall, Esq. Subject: "Lien of Judgments in Pennsylvania."

The Faculty Prize, for the best written examination with all the Professors, was awarded to Edwin A. Jaggard, Esq., of the Senior Class.
At a Public Commencement held Wednesday, March 15, 1882, at the American Academy of Music, the degree of Doctor of Medicine was conferred by WILLIAM PEPPER, M.D., LL.D., Provost, upon the following gentlemen:

<table>
<thead>
<tr>
<th>NAME</th>
<th>POST-OFFICE</th>
<th>STATE</th>
<th>SUBJECT OF ESSAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barber, Timothy L. (A.M.)</td>
<td>Marietta,</td>
<td>Ohio</td>
<td>“Principiis Obsta.”—Hippocrates.</td>
</tr>
<tr>
<td>Bateman, Eliston R.</td>
<td>Cedarville,</td>
<td>N. J.</td>
<td>Dermatitis Neurotica.</td>
</tr>
<tr>
<td>Beck, J. Howard (Ph.G.)</td>
<td>Yardville,</td>
<td>N. J.</td>
<td>Malarial Fever.</td>
</tr>
<tr>
<td>Blackburn, J. Wright</td>
<td>Phillipsburg,</td>
<td>Pa.</td>
<td>The Microscopic Diagnosis of Lymphoid Structures.</td>
</tr>
<tr>
<td>Brown, Frederick A.</td>
<td>Webster,</td>
<td>Mass.</td>
<td>Milk Cholera.</td>
</tr>
<tr>
<td>Burnside, Samuel H.</td>
<td>Lancaster,</td>
<td>Ky.</td>
<td>Syphilis.</td>
</tr>
<tr>
<td>Christy, Francis M.</td>
<td>Altoona,</td>
<td>Pa.</td>
<td>Truss to be used in Luxation of the Fibula.</td>
</tr>
<tr>
<td>Costill, Henry B.</td>
<td>Freehold,</td>
<td>N. J.</td>
<td>Veratrum Viride in Pneumonia.</td>
</tr>
<tr>
<td>Dolley, Charles S. (B.S.)</td>
<td>Rochester,</td>
<td>N. Y.</td>
<td>Vibratile Cilia and Ciliary Motion.</td>
</tr>
<tr>
<td>Gotwald, D. King</td>
<td>York,</td>
<td>Pa.</td>
<td>Points in the Histology of the Uriniferous Tubules.</td>
</tr>
<tr>
<td>Guild, Edgar H.</td>
<td>Ware,</td>
<td>Mass.</td>
<td>Headaches.</td>
</tr>
<tr>
<td>NAME</td>
<td>POST-OFFICE</td>
<td>STATE</td>
<td>SUBJECT OF ESSAY</td>
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<tr>
<td>Hoell, Conrad G. (Ph.G.)</td>
<td>Camden</td>
<td>N. J.</td>
<td>Diphtheria</td>
</tr>
<tr>
<td>Holt, Charles A.</td>
<td>Snow Shoe</td>
<td>Pa.</td>
<td>The History of Lithotomy</td>
</tr>
<tr>
<td>Ives, William Warren</td>
<td>Scranton</td>
<td>Pa.</td>
<td>Cerebral Hemorrhage and Apoplexy</td>
</tr>
<tr>
<td>Jakes, C. Russel (Ph.B.)</td>
<td>Wyoming</td>
<td>Del.</td>
<td>Malaria</td>
</tr>
<tr>
<td>Keiser, James W.</td>
<td>Reading</td>
<td>Pa.</td>
<td>Typhoid Fever</td>
</tr>
<tr>
<td>Hinkle, Frank W.</td>
<td>Halifax</td>
<td>N. S.</td>
<td>Air in relation to Health</td>
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<td>Hoell, Conrad G.</td>
<td>Pleasant Gap</td>
<td>Pa.</td>
<td>Puerperal Sepsisemia</td>
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<td>Lamping, E (Ph.G.)</td>
<td>Douglastown</td>
<td>Wurt.</td>
<td>Legal Induction of Abortion</td>
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<td>Leavitt, Charles B.</td>
<td>Reuthingen</td>
<td>N. J.</td>
<td>Typhoid Fever</td>
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<tr>
<td>Leiser, Oliver</td>
<td>Trenton</td>
<td>Pa.</td>
<td>Diabetes Mellitus</td>
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<td>Lemmon, James Quinn</td>
<td>Watsontown</td>
<td>Physical Diagnosis</td>
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<td>Lichtenthaler, Henry C.</td>
<td>Latego</td>
<td>Pa.</td>
<td>Hay Fever</td>
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<td>Allentown</td>
<td>Pa.</td>
<td>The Physiology of the Voice</td>
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<td>Long, Alfred E. (A.B.)</td>
<td>Fort Wayne</td>
<td>Ind'a.</td>
<td>Conspiration</td>
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<td>McCullough, Howard</td>
<td>Washington</td>
<td>Pa.</td>
<td>F. E. I. Acute Bright's Disease</td>
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<td>MoRehead, William W.</td>
<td>Eldon</td>
<td>M. D.</td>
<td>Typhoid Fever</td>
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<td>McLean, Angus</td>
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<td>Pa.</td>
<td>Syphilis</td>
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<td>Markley, Paul H.</td>
<td>Philadelphia</td>
<td>Pa.</td>
<td>Lead Poison</td>
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<td>Matchett, Charles R.</td>
<td>E. Strondsb'g</td>
<td>Pa.</td>
<td>Pleurisy</td>
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<td>Miller, Morgan I.</td>
<td>Pittson</td>
<td>Pa.</td>
<td>Relative Strength of Commercial Pepsin</td>
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<td>Moorhead, William W.</td>
<td>Philadelphia</td>
<td>Pa.</td>
<td>Do Bacteria exist in Healthy Living Tissues?</td>
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<td>McLean, Angus</td>
<td>Philadelphia</td>
<td>Pa.</td>
<td>Indigestion in Infancy</td>
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<tr>
<td>Rossel, Nathan F. (A.B.)</td>
<td>Lockport</td>
<td>N. Y.</td>
<td>Acute Articular Rheumatism</td>
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<tr>
<td>Moylan, John J.</td>
<td>Pittson</td>
<td>Pa.</td>
<td>Probable Causes of Malaria in the Wyoming Valley</td>
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<tr>
<td>Oliver, Allen M.</td>
<td>Wilkesbarre</td>
<td>Pa.</td>
<td>Myelitis</td>
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<tr>
<td>Palmer, John, Jr.</td>
<td>Wilmington</td>
<td>Del.</td>
<td>Perityphlitis</td>
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<tr>
<td>Pease, Charles E.</td>
<td>Middletown</td>
<td>Pa.</td>
<td>The Clinical Thermometer</td>
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<tr>
<td>Pratt, C. Manville (A.B.)</td>
<td>Towanda</td>
<td>Pa.</td>
<td>Tissue Consumption</td>
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<tr>
<td>Prendergast, M.T. (Ph.B.)</td>
<td>Easton</td>
<td>Pa.</td>
<td>Exophthalmic Goitre</td>
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<tr>
<td>Randolph, N. Archer</td>
<td>Philadelphia</td>
<td>Pa.</td>
<td>Specific Urethritis</td>
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<tr>
<td>Rebert, Michael A.</td>
<td>York</td>
<td>Pa.</td>
<td>Histogenesis of Carcinoma</td>
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<tr>
<td>Reed, Carl H.</td>
<td>Philadelphia</td>
<td>Pa.</td>
<td>Local Action of Nitrate of Silver on Mucous Membrane</td>
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<td>Reed, Thos. B. (M.D.)</td>
<td>Philadelphia</td>
<td>Pa.</td>
<td>Stricture of the Urethra</td>
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<tr>
<td>Reves, J. Howard</td>
<td>Philadelphia</td>
<td>Pa.</td>
<td>Scarletina</td>
</tr>
<tr>
<td>Reinoehl, John K. (A.B.)</td>
<td>Lebanon</td>
<td>Pa.</td>
<td>Scarletina</td>
</tr>
<tr>
<td>Rentzheimer, WM. H.</td>
<td>Heltown</td>
<td>Pa.</td>
<td>Visual Purple</td>
</tr>
<tr>
<td>Robinson, George Taylor</td>
<td>Camden</td>
<td>N. J.</td>
<td>Diagnosis and its Importance</td>
</tr>
<tr>
<td>Robinson, James Arthur</td>
<td>Tauntom</td>
<td>N. J.</td>
<td>Brazil. The Mechanism of Dystocchia</td>
</tr>
<tr>
<td>Rudge, J. Cezar</td>
<td>San Paulo</td>
<td>Pa.</td>
<td></td>
</tr>
</tbody>
</table>
The following-named gentlemen received the Degree of Doctor of Medicine at the Commencement held June 15, 1882.

<table>
<thead>
<tr>
<th>NAME</th>
<th>POST-OFFICE</th>
<th>STATE</th>
<th>SUBJECT OF ESSAY</th>
</tr>
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<tbody>
<tr>
<td>Schwenk, P. N. K. (B.S.)</td>
<td>Lewisburg,</td>
<td></td>
<td>Histology of Gangrene.</td>
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<tr>
<td>Shaner, Warren Bunting</td>
<td>Pottstown,</td>
<td></td>
<td>Anaesthetics.</td>
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<tr>
<td>Shoemaker, George Eretey</td>
<td>Bridgeton,</td>
<td></td>
<td>The Identity of Callus and True Bone.</td>
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<tr>
<td>Shope, J. Henry</td>
<td>Clearfield,</td>
<td>Pa.</td>
<td>Alopecia.</td>
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<tr>
<td>Shelly, Daniel</td>
<td>Quakertown,</td>
<td></td>
<td>Physiological Action of Potassium Bromate.</td>
</tr>
<tr>
<td>Smith, Herbert Eugene (Ph.B.)</td>
<td>Hartford,</td>
<td></td>
<td>Pneumonitis.</td>
</tr>
<tr>
<td>Steen, Alexander M.</td>
<td>Trenton,</td>
<td></td>
<td>Cyanotic Induration of the Kidney.</td>
</tr>
<tr>
<td>Tait, J. Sinclair (B.Sc.)</td>
<td>Wallace,</td>
<td></td>
<td>R. I. Medicinal Plants of Rhode Island.</td>
</tr>
<tr>
<td>Thompson, Richard J.</td>
<td>New Britain,</td>
<td></td>
<td>Conn. Carcinoma of the Stomach.</td>
</tr>
<tr>
<td>Wentz, John L. (A.B.)</td>
<td>Jeddo,</td>
<td></td>
<td>N. J. Popular Ignorance on Medical Subjects the Support of Quackery: How shall the Profession meet it?</td>
</tr>
<tr>
<td>Wilbur, George Franklin</td>
<td>Hightstown,</td>
<td></td>
<td>N. Y. The Pathogenesis of Tumors.</td>
</tr>
<tr>
<td>Zimmer, Frederick W.</td>
<td>Rochester,</td>
<td></td>
<td>N. Y. Our Prescriptions.</td>
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The foregoing there were from

<table>
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<tr>
<th>STATE</th>
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<tr>
<td>Brazil</td>
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<td>Canada</td>
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<td>Connecticut</td>
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<td>Delaware</td>
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<td>Indiana</td>
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<tr>
<td>Iowa</td>
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<td>Kentucky</td>
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<td>Maryland</td>
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<td>Nebraska</td>
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<td>New Jersey</td>
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<td>Nova Scotia</td>
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<td>Ohio</td>
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<td>Prince Edward Island</td>
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<tr>
<td>Prussia</td>
<td>1</td>
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<tr>
<td>Rhode Island</td>
<td>1</td>
</tr>
<tr>
<td>Virginia</td>
<td>1</td>
</tr>
<tr>
<td>Wurttemburg</td>
<td>1</td>
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</tbody>
</table>

Total: 122
DEGREES, PRIZES, ETC., IN AUXILIARY DEPARTMENT OF MEDICINE.

At the Commencement held June 15, 1882, the Degree of Doctor of Philosophy was conferred upon the following persons, Doctors of Medicine:

Frank H. Elder, M.D.,
E. P. Raab, M.D.,
G. Byron Morse, M.D.,
Arthur M. Wilson, M.D.

The Degree of Bachelor of Science was conferred upon—
Martha P. Hughes, M.D.

The George B. Wood Alumni Prize was awarded to E. P. Raab, M.D., for his Thesis containing the results of original investigation.

For proficiency in Hygiene, a microscope offered by the Professor of Hygiene, to Ernest P. Raab, M.D.

DENTAL DEPARTMENT.

At the Commencement held March 15, 1882, the Degree of Doctor of Dental Surgery was conferred upon the following gentlemen:

<table>
<thead>
<tr>
<th>NAME</th>
<th>RESIDENCE</th>
<th>STATE</th>
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</thead>
<tbody>
<tr>
<td>Abrams, James H.</td>
<td>Brownsville</td>
<td>Pennsylvania</td>
</tr>
<tr>
<td>Allen, Edward H.</td>
<td>Freeport</td>
<td>Illinois</td>
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<tr>
<td>Betts, Philip</td>
<td>Birmingtown</td>
<td>Georgia</td>
</tr>
<tr>
<td>Bradley, Allen E.</td>
<td>Guilford</td>
<td>Colorado</td>
</tr>
<tr>
<td>Bushong, Albert J.</td>
<td>Philadelphia</td>
<td>Oregon</td>
</tr>
<tr>
<td>Causse, Charles O. de (M.D.)</td>
<td>Santiago</td>
<td>New York</td>
</tr>
<tr>
<td>Correvon, Alfred E.</td>
<td>Lausanne</td>
<td>Switzerland</td>
</tr>
<tr>
<td>Cristy, Alfredo</td>
<td>Mayaguez</td>
<td>Puerto Rico</td>
</tr>
<tr>
<td>Devereux, Theodore E.</td>
<td>Evansville</td>
<td>Pennsylvania</td>
</tr>
<tr>
<td>Dillon, Raphael A. C.</td>
<td>Pelotas</td>
<td>Massachusetts</td>
</tr>
<tr>
<td>Edwards, J. Judson</td>
<td>Cochransville</td>
<td>Florida</td>
</tr>
<tr>
<td>Ely, Adriel B.</td>
<td>East Worcester</td>
<td>Pennsylvania</td>
</tr>
<tr>
<td>Escovar, Francisco</td>
<td>Bogota</td>
<td>Missouri</td>
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<tr>
<td>Freeman, Sol.</td>
<td>Easton</td>
<td>Wisconsin</td>
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<tr>
<td>Gerrish, William E.</td>
<td>Seymour</td>
<td>Pennsylvania</td>
</tr>
<tr>
<td>Haberstich, Emil</td>
<td>Aarau</td>
<td>Maryland</td>
</tr>
<tr>
<td>Hurd, George L.</td>
<td>New York</td>
<td>Massachusetts</td>
</tr>
<tr>
<td>Keim, Henry H.</td>
<td>Middletown</td>
<td>New York</td>
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<tr>
<td>Kelly, Charles F.</td>
<td>Philadelphia</td>
<td>Massachusetts</td>
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<tr>
<td>Laney, John H.</td>
<td>Savannah</td>
<td>Pennsylvania</td>
</tr>
<tr>
<td>Musser, Martin H.</td>
<td>Davenport</td>
<td>Missouri</td>
</tr>
<tr>
<td>McCandless, A. W.</td>
<td>Strasburg</td>
<td>Pennsylvania</td>
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<tr>
<td>McFadden, Harry B.</td>
<td>Philadelphia</td>
<td>Pennsylvania</td>
</tr>
<tr>
<td>McFarlan, Charles R.</td>
<td>Downingtown</td>
<td>Pennsylvania</td>
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<tr>
<td>McIntire, Frank H.</td>
<td>Boston</td>
<td>Massachusetts</td>
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</tbody>
</table>
NAME.
McNair, William
Nunez, Leoncio B.
Oltramare, Gabriel
Peters, Charles J., Jr.
Ramos, Manuel G.
Salomon, Godfrey S.
Shannon, William H.
Sharpe, John G.
Smedley, Harry L. (Ph.G.)
Stetson, Charles M.
Sunderland, Eugene
Tudor, John W.
Weed, Albert G., Jr.
White, William T.
Winner, Jefferson P.

RESIDENCE.
Middletown,  Pennsylvania.
Sagua,  Cuba.
Geneva,  Switzerland.
Syracuse,  New York.
Guayaquil,  Ecuador.
Milwaukee,  Wisconsin.
West Chester,  Pennsylvania.
Syracuse,  New York.
Buenos Ayres,  Buenos Ayres.
Freeport,  Illinois.
York Springs,  Pennsylvania.
Stamford,  Connecticut.
Belvidere,  New Jersey.
Wilmington,  Delaware.

SUMMARY.
Brazil  1
Buenos Ayres  1
Connecticut  1
Cuba  2
Delaware  1
Ecuador  1
England  2
Pennsylvania  3
Indiana  1
Iowa  1
Massachusetts  2
Missouri  1
New Jersey  1
New York  4
Porto Rico  1
Switzerland  3
U. S. of Columbia  1
Wisconsin  2
Total  41

FINAL EXAMINATIONS.
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Rt. Rev. M. H. Dew, Howe, D.D.,
Henry C. Lea, Esq.,
Strickland Keasby, Esq.,
John H. Packard, M.D.,
William M. Stewart, Esq.,
J. Sergeant Price, Esq.,
Bishop H. W. Warren, D.D.,
Rev. H. A. Wayland, D.D.,
Rev. E. A. Hoffman, D.D.,
Morison McMichael, Jr.,
William Goodell, M.D.,
J. T. Audenried, Esq.,
Dr. S. Weir Mitchell,
S. Davis Page, Esq.,
Horace R. Farnace, Esq.,
Rev. Charles A. Dickey, D.D.,
Hon. Clement B. Penrose,
Rev. J. B. Fiskner, D.D.,
Joshua L. Bailey, Esq.,
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Butylchloral Hydrate, Bromal Hydrate, Sodse Ethylate, Caffeine Valerianate,
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Resorcin, Jalapine, Thymol Cryst., Codine, Corarillo, Protein, Conine
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Lacto-Phosphate of Lime and Cod-Liver Oil.

This remedy has been prescribed for many years by a constantly increasing number
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of Cod-Liver Oil that is perfectly palatable; that is tolerated by the most delicate stomach;
that is readily digested; that is never eructated; that is tonic, increasing the appetite;
that rapidly and surely develops the nutrient effects of the oil; that never fails of assimilation;
that can be relied on for arresting in the shortest possible time the progress of pulmonay and other wasting diseases, and that is especially suited to greatly debilitated persons, and to women and children.

Formula: 50 per cent. Norwegian Cod-Liver Oil with 16 gr. soluble Lacto-Phosphate of Lime to
each fluidounce, emulified with Mucilage and pure Glycerine, is as miscible in water as milk, which
allows the physician and patient to dilute it to any extent.

Price, at retail, $1.00 per bottle.

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For Physicians' Prescriptions.

PIL: DIGESTIVA. (WARNER & CO.)

B. Peptic Conc'r, 1 gr. Gingerine, 1-16 gr.

THERAPEUTICS.—Useful in relieving various forms of Dyspepsia and Indigestion, and of permanent benefit in cases of enfeebled digestion where the gastric juices are not
properly secreted. It is also a gentle laxative and excellent dinner pill; may be taken one
after dinner or one before each meal three times daily. Very much more might be said
concerning the value of this combination in conditions where indicated, but we prefer to
submit it to the profession, in whose hands we are positive it will receive a fair and impartial
trial, and in return will produce such effects as will render it worthy of their universal
commendation. Price per 100, 75 cents

PHILADELPHIA, December 22, 1882.

An analysis of seven samples of Quinine Pills, obtained without knowledge of the
manufacturers, was made and published in the American Journal of Pharmacy by me, and
those made by WILLIAM R. WARNER & Co. were found to be correct as to quantity and
purity of Quinine.

HENRY TRIMBLE, Analytical Chemist.

Supplied by Druggists throughout the country or can be sent by mail on receip
of price.

W. R. WARNER & CO., 1228 Market Street, Philadelphia.
WYETH'S COMPRESSED SODA MINT
OR
NEUTRALIZING TABLETS.

Each small Tablet contains—Soda Bi-Carb., 4 grains; Ammon. Carb., 1 grain; Oil. Menth Pip., 1-6 gtt.

It is well known that a frequent cause of discomfort in the stomach is the presence of an excess of acid.

Probably the most popular prescription with practitioners for cases arising from Acidity of the Stomach, such as Colic, Flatulence in Children, Heartburn, Sick Heabache, Dyspepsia, etc., is a combination of Soda Bi-Carb. and Ammonium Carb, with some pleasing adjuvant in the form of a mixture.

The Soda Mint or Neutralizing Tablet presents this favorite and very efficacious prescription in an exceedingly agreeable form, thereby greatly facilitating its administration, particularly to children.

Travellers and persons engaged in business will highly appreciate the convenience of having this valuable remedy prescribed in portable form.

Dose.—From one to two Tablets, according to age. To be swallowed with water.

WYETH'S COMPRRESSED PEPTONIC TABLETS.

FOUR GRAINS EACH.

Composed of pure Concentrated Pepsin and Pancreatin with Lacto-Phosphate of Lime and Lactic Acid, equal parts.

The above remedies possess valuable medicinal properties which are well known to the medicinal profession. They are now offered in a highly concentrated, active, and convenient form. Each small Compressed Tablet or pellet contains a full dose of Pepsin and Pancreatin (mixed together) of the best quality.

DIRECTIONS.—One to be given immediately after eating or as occasion may require. For children reduce the Tablet to powder, and give one-quarter or one-half, according to age. To be swallowed with water.

WYETH'S COMPRESSED TABLETS
CHLORATE OF POTASH WITH MURIATE OF AMMONIA.

34 Grs. CHLORATE OF POTASH, 13 Grs. MURIATE OF AMMONIA.

These two drugs are highly commended by the Profession for all forms of Sore Throat, accompanied by Ulcerations or Disordered Secretions of the Mucous Membrane.

The advantages of the combination of these two efficient remedial agents over either one administered alone will be readily appreciated by physicians.

The proportion of Muriate of Ammonia being small, and being intimately mixed with the less soluble salt of Chlorate of Potash, the objectionable taste of the former is not so apparent, while the medicinal effect is really just as potent.

DIRECTIONS.—Adults should take one every hour or two until relieved, allowing it to dissolve slowly in the mouth at the back of the tongue, but not at the tip, the surface of which is much more sensitive to taste and to the pungency of the ammonia salt. Children, half of one as often.

It will give us pleasure to furnish on application sufficient of these tablets to test their merits by actual use.

JOHN WYETH & BROTHER,
Manufacturing Chemists,

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