Swarthmore College

CATALOGUE

1896-97

SWARTHMORE COLLEGE.
(MAIN BUILDING LOOKING WEST.)

Twenty-Eighth

Annual Catalogue

OF

Swarthmore College

Swarthmore, Pa.

1896-97.

PHILADELPHIA:
FRANKLIN PRINTING COMPANY,
516-518 MINOR STREET,
1896.

Contents.

Calendar.

1896–'97.

1896.	Ninth Month, 15th,	Third-day,	Meeting of the Board of Managers.
"	Ninth Month, 15th,	Third-day,	New Students arrive.
"	Ninth Month, 16th,	Fourth-day,	Examinations for Admission.
"	Ninth Month, 17th,	Fifth-day,	Old Students return.
"	Ninth Month, 18th,	Sixth-day,	Regular Exercises begin.
"	Eleventh Month, 30th,	Second-day,	Meeting of the Board of Managers.
"	Twelfth Month, 1st,	Third-day,	*Annual Meeting of the Stockholders.*
"	Twelfth Month, 1st,	Third-day,	Meeting of the Board of Managers.
"	Twelfth Month, 23d,	Fourth-day,	Winter Recess begins.
1897.	First Month, 4th,	Second-day,	Students return.
"	First Month, 5th,	Third-day,	Regular Exercises begin.
"	First Month, 30th,	Seventh-day,	First Semester ends.
"	Second Month, 1st,	Second-day,	Second Semester begins.
"	Third Month, 9th,	Third day,	Meeting of the Board of Managers.
"	Third Month, 27th,	Seventh-day,	Spring Recess begins.
"	Fourth Month, 5th,	Second-day,	Students return.
"	Fourth Month, 23d,	Sixth-day,	Graduating Essays due from Senior Class.
"	Fifth Month, 17th,	Second-day,	Senior Examinations begin.
"	Fifth Month, 24th,	Second-day,	Senior Examinations completed, and the results announced.
"	Fifth Month, 31st,	Second-day,	Final Examinations begin.
"	Sixth Month, 4th,	Sixth-day,	Examinations for Admission.
"	Sixth Month, 5th,	Seventh-day,	
"	Sixth Month, 7th,	Second-day,	Meeting of the Board of Managers.
"	Sixth Month, 7th,	Second-day,	Class-Day Exercises.
"	Sixth Month, 8th,	Third-day,	COMMENCEMENT.
"	Ninth Month, 21st,	Third-day,	Meeting of the Board of Managers.
"	Ninth Month, 21st,	Third-day,	New Students arrive.
"	Ninth Month, 22d,	Fourth-day,	Examinations for Admission begin, and old Students return.
"	Ninth Month, 23d,	Fifth-day,	Examinations for Admission completed, and Regular Exercises begin.
"	Twelfth Month, 6th,	Second-day,	Meeting of the Board of Managers.
"	Twelfth Month, 7th,	Third-day,	*Annual Meeting of the Stockholders.*
"	Twelfth Month, 7th,	Third-day,	Meeting of the Board of Managers.
"	Twelfth Month, 22d,	Fourth-day,	Winter Recess begins.
1898.	First Month, 3d,	Second-day,	Students return.
"	First Month, 4th,	Third day,	Regular Exercises begin.

Corporation.

OFFICERS.

Clerks.

ROBERT M. JANNEY,
112 Drexel Building, Philadelphia.

ABBY W. MILLER,
1203 Delaware Avenue, Wilmington.

Treasurer.

ROBERT BIDDLE,
507 Commerce Street, Philadelphia.

Board of Managers.

Term expires Twelfth Month, 1897.

JOHN T. WILLETS,
303 Pearl Street, New York.

CHARLES M. BIDDLE,
507 Commerce Street, Philadelphia

DANIEL UNDERHILL,
Jericho, L. I.

EMMOR ROBERTS,
Fellowship, N. J.

JANE P. DOWNING,
1613 Race Street, Philadelphia.

SARAH H. POWELL,
324 West 58th Street, New York.

ELIZABETH B. PASSMORE,
West Chester, Pa.

JOANNA W. LIPPINCOTT,
Logan Station, Philadelphia.

Term expires Twelfth Month, 1898.

ISAAC H. CLOTHIER,
8th and Market Streets, Philadelphia.

JAMES V. WATSON,
718 Franklin Street, Philadelphia.

HERMAN HOOPES,
436 Drexel Building, Philadelphia.

ANNIE SHOEMAKER,
Swarthmore, Pa.

FANNIE W. LOWTHORP,
Trenton, N. J.

EDMUND WEBSTER,
1156 S. Broad Street, Philadelphia.

EMMA McILVAIN COOPER,
Riverton, N. J.

REBECCA C. LONGSTRETH,
Sharon Hill, Delaware Co., Pa.

Term expires Twelfth Month, 1899.

JOSEPH WHARTON,
P. O. Box 1332, Philadelphia.

MARY WILLETS,
Manasquan, N. J.

LYDIA H. HALL,
Swarthmore, Pa.

WILSON M. POWELL,
324 W. 58th Street, New York.

MARY C. CLOTHIER,
Wynnewood, Pa.

WILLIAM M. JACKSON,
335 W. 18th Street, New York.

RACHEL W. HILLBORN,
Swarthmore, Pa.

EDWARD MARTIN, M. D.,
415 S. 15th Street, Philadelphia.

Term expires Twelfth Month, 1900.

EDWARD H. OGDEN,
314 Vine Street, Philadelphia.

ELI M. LAMB,
1432 McCulloh St., Baltimore, Md.

EMMA C. BANCROFT,
Wilmington, Del.

SUSAN W. LIPPINCOTT,
Cinnaminson, N. J.

CATHARINE UNDERHILL,
Jericho, L. I.

EDWARD STABLER, JR.,
3 South Street, Baltimore, Md.

HANNAH H. WOODNUTT,
1816 Arch Street, Philadelphia.

HOWARD W. LIPPINCOTT,
613 Drexel Building, Philadelphia.

Officers and Committees of the Board.

President.

JOSEPH WHARTON.

Secretary.

HERMAN HOOPES.

Auditors.

HERMAN HOOPES, JOHN T. WILLETS.

Executive.

EMMOR ROBERTS,
ISAAC H. CLOTHIER,
DANIEL UNDERHILL,
EDWARD H. OGDEN,
ROBERT M. JANNEY,
EDMUND WEBSTER,
HOWARD W. LIPPINCOTT,
ELI M. LAMB,
MARY WILLETS,
JANE P. DOWNING,
SUSAN W. LIPPINCOTT,
EMMA McILVAIN COOPER,
HANNAH H. WOODNUTT.
MARY C. CLOTHIER,
ELIZABETH B. PASSMORE,
ABBY W. MILLER.

Ex-Officio, HERMAN HOOPES.

Finance.

CHARLES M. BIDDLE, JAMES V. WATSON,
EDWARD H. OGDEN.

Instruction.

ANNIE SHOEMAKER,
EMMOR ROBERTS,
MARY WILLETS,
SUSAN W. LIPPINCOTT,
LYDIA H. HALL,
WILLIAM M. JACKSON,
FANNIE W. LOWTHORP,
RACHEL W. HILLBORN,
EDWARD MARTIN,
HOWARD W. LIPPINCOTT,
ISAAC H. CLOTHIER.

Building and Property.

EDWARD H. OGDEN,
EMMOR ROBERTS,
DANIEL UNDERHILL,
JANE P. DOWNING,
EDMUND WEBSTER,
RACHEL W. HILLBORN,
HOWARD W. LIPPINCOTT,
ROBERT M. JANNEY.

Museum and Laboratories.

MARY C. CLOTHIER,
ELI M. LAMB,
MARY WILLETS,
EDWARD MARTIN.

Friends' Historical Library.

LYDIA H. HALL,
EDWARD STABLER, JR.,
ISAAC H. CLOTHIER,
REBECCA C. LONGSTRETH.

Trusts, Endowments, and Scholarships.

EDWARD H. OGDEN,
DANIEL UNDERHILL,
EDMUND WEBSTER,
EMMOR ROBERTS,
SUSAN W. LIPPINCOTT,
REBECCA C. LONGSTRETH, *Secretary*.

Trustees of Endowed Professorships.

ISAAC H. CLOTHIER,
EDWARD H. OGDEN,
EMMOR ROBERTS.

Library.

LYDIA H. HALL,
RACHEL W. HILLBORN,
EDWARD STABLER, JR.,
JOHN T. WILLETS.

Faculty.*

1896–97.

CHARLES De GARMO,
President.

ELIZABETH POWELL BOND,
Dean.

Prof. EDWARD H. MAGILL.

Prof. ARTHUR BEARDSLEY.

Prof. WILLIAM HYDE APPLETON.

Prof. SUSAN J. CUNNINGHAM.

Supt. WILLIAM J. HALL.

Prof. WILLIAM C. DAY.

Prof. FERRIS W. PRICE.

Prof. GEORGE A. HOADLEY.

Prof. SPENCER TROTTER.

ESTHER T. MOORE.

Prof. MARIE A. KEMP HOADLEY.

Prof. WILLIAM I. HULL.

*By-Laws—"The President, Dean, and such of the resident Professors and others as may be elected by the Board, shall constitute the Faculty. They shall hold regular meetings, arrange the course of study, determine the qualifications for admission and for graduation, decide upon rules of order, and determine all questions pertaining to the discipline or instruction, subject to the approval of the Executive Committee, to whom they shall report monthly."

Officers of Instruction.*

CHARLES DE GARMO, Ph.D.,
President, and Professor of Philosophy.

ELIZABETH POWELL BOND,
Dean.

EDWARD H. MAGILL, A.M., LL.D.,
Professor of the French Language and Literature.

ARTHUR BEARDSLEY, C.E., Ph.D.,
I. V. Williamson Professor of Engineering, and Director of the Workshops.

WILLIAM HYDE APPLETON, A.M., LL.B., Ph.D.,
Professor of Greek and of Early English.

SUSAN J. CUNNINGHAM, Sc.D.,
Edward H. Magill Professor of Mathematics and Astronomy.

WILLIAM CATHCART DAY, Ph.D.,
Professor of Chemistry.

SPENCER TROTTER, M.D.,
Professor of Biology and Geology.

GEORGE A. HOADLEY, C.E., A.M.,
Professor of Physics.

FERRIS W. PRICE, A.M.,
Isaac H. Clothier Professor of the Latin Language and Literature.

MARIE A. KEMP HOADLEY, A.M.,
Professor of the German Language and Literature.

WILLIAM I. HULL, Ph.D.,
Joseph Wharton Professor of History and Political Economy.

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* Arranged with the exception of the President and Dean, in the order of appointment, as Professors, Assistant Professors, and other Instructors.

MYRTIE E. FURMAN, M.O.,
Assistant Professor in charge of Elocution.

J. RUSSELL HAYES, A.B., LL.B.,
Assistant Professor of English.

BEATRICE MAGILL,
Instructor in Drawing and Painting.

J. K. SHELL, M.D.,
Director of Physical Culture for the Young Men.

EMILY G. HUNT, M.D.,
Lecturer on Physiology and Hygiene to the Young Women.

JOSEPH BAYLEY, JR.,
Assistant in Engineering, Shop Practice.

HENRY V. GUMMERE, A.M.,
Assistant in Mathematics.

MARY V. MITCHELL GREEN, M.D.,
Director of Physical Culture for the Young Women.

WILLIAM H. ADEY, C.E.,
Assistant in Engineering, Field Practice and Drawing.

RACHEL L. HUTCHINSON,
Assistant in Department of Physical Culture.

ESTHER T. MOORE, A.B.,
Secretary to the President, and Registrar.

SARAH M. NOWELL,
Librarian.

Students.

SENIOR CLASS.

Name.	Course.	Residence.
Sarah Bancroft	*Science*	Wilmington, Del.
Mary E. Bartleson	*Letters*	Chester, Pa.
Reuben G. Bennett	*Science*	Freeport, Ohio.
Grace A. Brosius	*Letters*	Lancaster, Pa.
Thomas Cahall	*Letters*	Frederica, Del.
Jared W. Darlington	*Engineering*	Darling, Pa.
Walter C. De Garmo	*Engineering*	Swarthmore, Pa.
Iola K. Eastburn	*Letters*	Union, Del.
Jessie D. Ellis	*Letters*	Philadelphia, Pa.
Marietta Hicks	*Letters*	Westbury Station, N. Y.
Clarence B. Hoadley	*Science*	Swarthmore, Pa.
Edith H. Johns	*Letters*	Media, Pa.
Nellie Lodge	*Science*	Philadelphia, Pa.
Walker Matteson	*Arts*	Roslyn, N. Y.
Laura C. Miller	*Arts*	New York, N. Y.
Herbert L. Noxon	*Engineering*	Ingersoll, Canada.
Ellwood C. Parry	*Letters*	Wyncote, Pa.
Robert Pyle	*Arts*	London Grove, Pa.
Samuel Riddle	*Engineering*	Media, Pa.
Miriam Sener	*Letters*	Lancaster, Pa.
Bertha J. Smith	*Letters*	Lincoln, Va.
Channing Way	*Arts*	West Chester, Pa.
Lydia P. Williams	*Letters*	Philadelphia, Pa.

JUNIOR CLASS.

Name.	Course.	Residence.
Frederic D. Barber	*Science*	Gardner, Ill.
Frank G. Blair	*Science*	Mt. Vernon, Ill.
Charles T. Brown	*Arts*	West Chester, Pa.
Hiram D. Campbell	*Science*	Ironton, Ohio.
Daisy R. Corson	*Science*	Norristown, Pa.

Name.	Course.	Residence.
Gerry B. Dudley	*Irregular*	Ashmore, Ill.
Lucretia M. Gaskill	*Letters*	Swarthmore, Pa.
Henry A. Gawthrop	*Science*	Wilmington, Del.
Ada V. Gillespie	*Letters*	Allegheny, Pa.
George Gleim, Jr.	*Engineering*	Cornwall, Pa.
Jonathan Y. Higginson	*Engineering*	Pine, Col.
Jesse W. Jeffries	*Irregular*	Chester, Pa.
Edith Lamb	*Letters*	Baltimore, Md.
Frederic S. Larison	*Irregular*	Stanford, Ill.
Caroline A. Lukens	*Irregular*	Swarthmore, Pa.
Robert E. Manley	*Engineering*	Philadelphia, Pa.
William B. Miller	*Engineering*	Media, Pa.
Albert C. Myers	*Letters*	Kennett Square, Pa.
Arthur L. Patton	*Irregular*	Panola, Ill.
Margery Pyle	*Arts*	London Grove, Pa.
Eva T. Rangier	*Letters*	Lancaster, Pa.
Marshall P. Sullivan	*Letters*	Moorestown, N. J.
Levi S. Taylor	*Science*	Philomont, Va.
Frederic L. Thomas	*Engineering*	Ashton, Md.
Guy T. Viskniskki	*Irregular*	Carmi, Ill.
Henrietta M. Wanzer	*Arts*	Hurstville, N. Y.
Joseph A. Willis	*Irregular*	Fowling Creek, Md.
Frederic F. Wilson	*Engineering*	Jersey Shore, Pa.
Alice Witbeck	*Letters*	Belvidere, Ill.

SOPHOMORE CLASS.

Name.	Course.	Residence.
Susan W. Atkinson	*Arts*	Holicong, Pa.
Bird T. Baldwin	*Irregular*	Marshalton, Pa.
Mary G. Ball	*Letters*	Merchantville, N. J.
Richard J. Bond	*Engineering*	Upper Darby, Pa.
Levis M. Booth	*Science*	Chester, Pa.
John P. Broomell	*Arts*	Baltimore, Md.
Pauline Broomell	*Irregular*	Christiana, Pa.
Ella L. Cass	*Letters*	Swarthmore, Pa.
Helen M. Catlin	*Irregular*	Lexington, Mass.
Calvin F. Crowell	*Science*	Moorestown, N. J.

Name.	Course.	Residence.
Augusta C. Edel	*Irregular*	Swarthmore, Pa.
Anna B. Eisenhower	*Arts*	Norristown, Pa.
Edith Flitcraft	*Arts*	Woodstown, N. J.
Eva E. Foster	*Letters*	Lancaster, Pa.
Mabel C. Gillespie	*Letters*	Allegheny, Pa.
Mabel Harris	*Letters*	Etna, N. H.
Emily Hicks	*Irregular*	Westbury Station, N. Y.
Lyman B. Hollingshead	*Irregular*	Pemberton, N. J.
Anna C. Holmes	*Letters*	Philadelphia, Pa.
Mary S. Howell	*Arts*	Mt. Ephraim, N. J.
Mary E. Hutchinson	*Irregular*	New York, N. Y.
Rachel Knight	*Letters*	Somerton, Pa.
J. Margaret Kyle	*Letters*	Grinnell, Iowa.
M. Katharine Lackey	*Letters*	Atlantic City, N. J.
Clarence K. La Motte	*Irregular*	Wilmington, Del.
Mary G. Leiper	*Letters*	Wallingford, Pa.
Jane E. Linvill	*Letters*	Philadelphia, Pa.
Annie Lodge	*Science*	Philadelphia, Pa.
Helen S. Marshall	*Arts*	Trenton, N. J.
Lillian J. McDowell	*Arts*	New York, N. Y.
Horace W. McFetridge	*Letters*	Philadelphia, Pa.
Helen S. Moore	*Letters*	May's Landing, N. J.
Edna M. Nicholl	*Letters*	Scotch Plains, N. J.
Marshall Pancoast	*Letters*	Mickleton, N. J.
Mary W. Pierce	*Irregular*	Washington, D. C.
S. Edna Pownall	*Letters*	Christiana, Pa.
Lydia Rakestraw	*Letters*	Christiana, Pa.
Edward Y. Rich	*Science*	Dyerstown, Pa.
Edna H. Richards	*Letters*	Salem, Ohio.
Mary E. Seaman	*Arts*	Brooklyn, N. Y.
Arthur C. Smedley	*Science*	Willistown Inn, Pa.
Ely J. Smith	*Letters*	New Hope, Pa.
George B. Stevens	*Engineering*	Tyrone, Pa.
Marion A. Stutzbach	*Letters*	Philadelphia, Pa.
Benjamin A. Thomas	*Arts*	King of Prussia, Pa.
Georgiana Titus	*Letters*	Old Westbury, N. Y.
Albert T. Verlinden	*Irregular*	Darby, Pa.

Name.	Course.	Residence.
J. Serrill Verlinden	*Engineering*	Darby, Pa.
Emma B. Wallace	*Science*	Woodstown, N. J.
Georgiana Walter	*Irregular*	Christiana, Pa.
Louis S. Walton	*Irregular*	Altoona, Pa.
Abner P. Way	*Science*	Swarthmore, Pa.
Joseph E. Way	*Irregular*	Kennett Square, Pa.
Howard J. Webster	*Irregular*	Philadelphia, Pa.
Abraham U. Whitson	*Engineering*	Westbury Station, N. Y.
Amy M. Young	*Irregular*	Oak Park, Ill.

FRESHMEN CLASS.

Name.	Course.	Residence.
Mary E. Armstrong	*Irregular*	Lansdowne, Pa.
Benjamin Bachrach	*Science*	Decatur, Ill.
Annie E. Baldwin	*Letters*	Patterson, N. Y.
Lucy Bancroft	*Arts*	Wilmington, Del.
Mary C. Bell	*Irregular*	Bayside, N. Y.
Lucretia S. Blankenburg	*Irregular*	Philadelphia, Pa.
Anna Bradbury	*Letters*	Richmond, Ind.
A. Mary Brown	*Letters*	Cornwall, N. Y.
Robert L. Brownfield, Jr.	*Engineering*	Philadelphia, Pa.
Emily W. Carter	*Letters*	Belmont, N. Y.
Florence E. Christy	*Irregular*	Bloomfield, Canada.
Lydia B. Clothier	*Irregular*	Wynnewood, Pa.
Jennie Coker	*Irregular*	Hartsville, S. C.
John W. Coles	*Engineering*	Camden, N. J.
Lester Collins	*Science*	Moorestown, N. J.
Paul Darlington	*Science*	Darling, Pa.
Leslie C. Derrick	*Science*	Moorestown, N. J.
George B. Evans	*Science*	Moorestown, N. J.
Roger B. Farquhar, Jr.	*Science*	Rockville, Md.
Roland B. Flitcraft,	*Letters*	Oak Park, Ill.
Anna Gillingham	*Arts*	Topeka, Kansas.
Lucy C. Grumbine	*Letters*	Titusville, Pa.
Gilbert L. Hall	*Arts*	Brentwood, N. Y.
John K. Harper	*Engineering*	Fox Chase, Pa.
Edmund A. Harvey	*Arts*	Brandywine Summit, Pa.

Name.	Course.	Residence.
M. Elizabeth Haviland	*Irregular*	New York, N. Y.
Mary R. Hicks	*Letters*	Avondale, Pa.
Anna K. Hines	*Irregular*	New Oxford, Pa.
Edwin D. Hubbard	*Irregular*	Philadelphia, Pa.
Edna R. Johnston	*Letters*	Connellsville, Pa.
George M. Lamb, Jr.	*Science*	Baltimore, Md.
Mabel W. Latimer	*Letters*	Wilmington, Del.
Alice Lippincott	*Letters*	Riverton, N. J.
Anna H. Lippincott	*Letters*	Riverton, N. J.
Walter H. Lippincott	*Irregular*	Riverton, N. J.
Rebecca E. Lloyd	*Letters*	Purcellville, Va.
Willard S. Mears	*Irregular*	Wilmington, Del.
Edna M. Miller	*Letters*	Lancaster, Pa.
E. Mae Myers	*Letters*	Kennett Square, Pa.
Elizabeth W. Parrish	*Irregular*	Avondale, Pa.
Katharine Pfeiffer	*Letters*	Camden, N. J.
Bertha H. Phillips	*Irregular*	Rochester, N. Y.
Mabel A. Powell	*Letters*	Ghent, N. Y.
John Roach	*Engineering*	Chester, Pa.
Emily P. Shelmire	*Irregular*	Avondale, Pa.
Elizabeth P. Speakman	*Irregular*	Wilmington, Del.
E. Alford Stabler	*Science*	Baltimore, Md.
Helen T. Sullivan	*Letters*	Moorestown, N. J.
William H. Thatcher	*Science*	Wilmington, Del.
J. Ethel Thompson	*Letters*	Baltimore, Md.
Chester J. Tyson	*Science*	Baltimore, Md.
Emily R. Underhill	*Letters*	Glenhead, N. Y.
Antoinette F. Wegert	*Letters*	Saginaw, Mich.
Elizabeth E. Willets	*Letters*	Glen Cove, N. Y.
Edith M. Wilson	*Arts*	Bloomfield, Canada.
William E. Wolverton	*Irregular*	Swarthmore, Pa.
Mabel F. Woodward	*Letters*	West Chester, Pa.

UNCLASSIFIED STUDENTS.

Name.	Residence.
Howard N. Cassel	Marietta, Pa.
Norman C. Dunn	Salem, N. J.

Name.	Residence.
Ernest A. Gill	Baltimore, Md.
Ethel Griest	Reading, Pa.
Lenore Houston	Lancaster, Pa.
Edgar L. Meyer	St. George, Bermuda.
Victor I. Meyer	St. George, Bermuda.

SUMMARY.

Seniors	23
Juniors	29
Sophomores	56
Freshmen	57
Unclassified	7
Total	172

SWARTHMORE COLLEGE.
(MAIN BUILDING.)

General Information.

Buildings and Grounds.

Swarthmore College was founded in 1864 by members of the religious Society of Friends, to provide the children of the Society and others with opportunities for higher education under guarded care. With this object in view, a property of two hundred and forty acres was secured, ten miles from Philadelphia, on the Central Division of the Philadelphia, Wilmington & Baltimore Railroad. It is accessible by trains from the Broad Street Station twenty-four times daily. About half the land is used for farming purposes, providing milk and vegetables for the College; the remainder is devoted to lawn and pleasure grounds. Crum Creek, which forms the western boundary of the property, affords facilities for boating, bathing, and skating. The portion of the grounds bordering the stream is of great picturesque beauty. The building site is high, securing perfect drainage and pure air and commanding a fine view of the surrounding country for many miles.

The Principal College Building is a massive stone structure 348 feet long. It consists of a central building, five stories high, containing public rooms, such as lecture-rooms, museum, library, reading-rooms, parlors, dining-hall, etc. Fire-proof compartments separate this building from the two wings. The latter are each four stories high. The ground floors are devoted to lecture and recitation rooms; the remaining floors in the east wing contain the dormitories of the young women, and in the west wing those of the young men. A number of the instructors reside in the same building with the students, and the relations between them are such that there is comparative freedom from the dangers and temptations ordinarily incident to college life. The buildings are heated throughout by steam, lighted by gas, and thoroughly ventilated.

The Science Hall is constructed of stone, in the most durable manner, and was planned with special reference to the work of stu-

dents in Engineering, Physics, and Chemistry. It has a frontage of 162 feet, and a depth of 64 feet. The basement contains engine and boiler rooms, the blacksmith shop, and the foundry of the engineering department, the electrical laboratory, and store-rooms. On the first floor are the machine shop and engineering lecture-room, the engineering laboratory, and the chemical and physical laboratories, and on the second floor are the draughting-rooms, the wood-working shop, and the chemical and physical lecture-rooms.

The Astronomical Observatory is especially arranged for purposes of instruction. The plan embraces a central building supporting the dome and two wings. There are four rooms: a transit-room, in which is placed an instrument of three-inch aperture, also the mean-time clock; a pier-room, at present utilized as a sidereal-clock room; a work-room in which is placed a small library of reference books, the chronograph and chronometer; and the dome, containing the equatorial of six-inch aperture. In connection with this latter instrument there is a micrometer and a spectroscope. The transit and equatorial were constructed by Warner & Swasey, of Cleveland, O., and the spectroscope by Brashear, of Allegheny, Pa. The equipment is ample for class-work. Connected with the observatory is the Signal Service Station of the State Weather Bureau, fully provided with the necessary meteorological and other apparatus.

Other Buildings are a meeting-house, the President's house, the West house (birthplace of Benjamin West, now used as a professor's house), the house of the Professor of Astronomy, the Farmer's house and commodious farm-buildings, the laundry and bakery, the boiler-house, containing the sectional boilers for heating and cooking purposes, and the gymnasium for young women. All these buildings are constructed of stone.

Libraries and Reading-Room.

The Libraries of the College collectively contain 17,601 bound volumes, as follows:

The General Library, ...	11,979
Literary Societies' Libraries, ...	3,380
Friends' Historical Library, ...	2,242

Members of the Senior Class are permitted, under proper regu-

lations, to consult the Philadelphia Library, containing 145,000 volumes, and the Mercantile Library, containing 150,000 volumes, as well as the valuable special and technical libraries in the city of Philadelphia. The General Library is at all times accessible to students. The Librarian will aid students in consulting the Library and in arranging courses of reading.

Friends' Historical Library, founded by the late Anson Lapham, of Skaneateles, N. Y., consists of a valuable collection of Friends' books, photographs of representative Friends, and manuscripts relating to the Society and its history, and is, upon application to the Custodian, accessible to all persons interested in the doctrines and history of Friends. This collection is stored in a fire-proof apartment, and it is hoped that Friends and others will deem it a secure place in which to deposit books and other material in their possession which may be of interest in connection with the history of the Society. Such contributions, as well as additional funds for its growth and maintenance, are solicited, and should be addressed to "Friends' Historical Library," or to "ARTHUR BEARDSLEY, *Curator*, Swarthmore, Pa."

The Reading-Room is supplied with the leading literary and scientific journals and the prominent newspapers of the principal cities.

Literary Societies are maintained by the students. There are two for young men and one for young women. These hold regular meetings for the reading of essays, etc., and for practice in debate. Their Libraries, under their own management, contain over three thousand volumes and are accessible to all students.

The Gymnasiums.

The *Gymnasium* for the young men is supplied with a full set of apparatus for exercising according to the system of Dr. Sargent. Through the efforts of the Somerville Literary Society and their friends a separate gymnasium for the young women has been built and equipped for exercise under the Swedish system. The exercises are conducted in separate classes for the young men and young women, and are required of all.

Students are requested to bring from home a physician's certificate if there is any cause that would make it dangerous for them to take part in the exercises required.

The extensive and beautiful grounds connected with the College invite to out-door exercise, which is encouraged by the authorities. On the highest and driest part of the campus a space has been prepared for athletic games, with a quarter-mile cinder running track, and a well-graded field for foot-ball and base-ball, whilst the surrounding country offers facilities for cross-country running.

General Regulations.

Religious Exercises.—While care is taken to inculcate the doctrine that religion is a matter of practical daily life, and is not confined to the observance of set forms or the promulgation of religious tenets, the regular assembling for religious purposes is carefully observed. On First-day morning a religious meeting is held, attended by students, teachers, members of the household, and Friends of the neighborhood. The meeting is preceded by First-day school exercises, consisting of the recitation of passages of Scripture prepared by members of the different classes, and the reading of a portion of Scripture. The daily exercises are opened by a general meeting for reading selected portions of Scripture or other suitable books, and for imparting such moral lessons as circumstances seem to require, followed by a period of silence before entering upon the duties of the day.

The use of tobacco being strictly prohibited, those addicted to its use, unless prepared to renounce it entirely, should not apply for admission.

Commencement and Vacation.—The College year begins on the third Third-day of Ninth month, and closes with Commencement day, which occurs on the second Third-day of Sixth month.

Students are not admitted for a period less than the current College year; but, when vacancies exist, they may enter at any time during the year.

Besides the summer vacation there will be a recess of about ten days at the close of the Twelfth month, and one of one week in the Third month. (See Calendar.)

Students are permitted to remain at the College, under care, during the recesses, but not during the summer vacation.

The Household.

In the organization of this College unusual care has been extended to the personal comforts and the social interests of the students. This department is in charge of the Dean, with able assistants. She has also special oversight of the conduct and health of the young women, and parents are desired to communicate freely with her in regard to the welfare of their daughters.

The several departments of the household are under the immediate charge of the following:

MARY P. EVES, Matron of Central Building.

RACHEL B. TOWNSEND, Housekeeper.

SARAH D. COALE, Matron of West Wing.

RACHEL A. HICKLIN, Matron of East Wing.

ELLEN ROBERTS, Director of Laundry.

Expenses.

The cost of Board and Tuition is $450 per year, of which $250 is payable in advance, and $200 on the first of First month.

For Day Students, the price is $200 per year, of which $100 is payable in advance, and the remainder on the first of First month. The day students take lunch with the resident students.

A deposit of five dollars is required by each male student to defray any expense incurred by injury to property. The unexpended balance will be returned at the end of the year.

Students purchase their own books, which the College will furnish at the lowest obtainable rates. They also buy their own stationery, drawing implements, and certain tools and materials used in the workshops, and pay at a reasonable rate for laundry work done at the College. Students taking laboratory courses will make a deposit of $10 at the beginning of the course to cover the expense of the material used. The unexpended balance will be returned at the end of the course.

In case of illness, no extra charge is made unless a physician be employed.

The above figures may be depended upon as covering all necessary expenses.

Payments.

Payments are to be made by check or draft to the order of

ROBERT BIDDLE, Treasurer,

No. 507 COMMERCE STREET, PHILADELPHIA, PA.

Fellowships, Scholarships, and Pecuniary Aid.

FELLOWSHIPS.

THE JOSHUA LIPPINCOTT FELLOWSHIP, founded by Howard W. Lippincott, A. B., of the Class of 1875, in memory of his father, consists of a fund yielding an income of $450 per year, which is granted annually by the Faculty, with the concurrence of the Instruction Committee, to a graduate of this College engaged in advanced study under the direction or with the approval of the Faculty.

THE LUCRETIA MOTT FELLOWSHIP, founded by the Somerville Literary Society and sustained by the contributions of its members, yields an annual income of $525, and is awarded each year by a Committee of the Faculty selected by the Society, to a young woman graduate of that year, for the purpose of pursuing advanced study at some other institution approved by this Committee.

SCHOLARSHIPS.

1. THE WESTBURY QUARTERLY MEETING, N. Y., SCHOLARSHIP pays all charges for board and tuition and is awarded annually by a Committee of the Quarterly Meeting.

2. THE REBECCA M. ATKINSON AND THE BARCLAY G. ATKINSON SCHOLARSHIPS pay all charges for board and tuition and are awarded annually by the Board of Managers of the College.

3. There are nine other similar Scholarships owned by individuals, each entitling the holder to board and tuition at the College, and awarded by the owner.

4. FRESHMEN HONOR SCHOLARSHIPS.—For the year 1897–98 ten honor Scholarships of the value of $200 each for resident, and $100 each for non-resident students have been established. One of

these Scholarships may be awarded to a candidate for the Freshman Class by each of the following named schools:

Friends' Central School,	Philadelphia, Pa.
Friends' Seminary,	New York, N. Y.
Friends' High School,	Baltimore, Md.
Friends' School,	Wilmington, Del.
Friends' High School,	Moorestown, N. J.
Friends' Academy,	Locust Valley, L. I.
Friends' Select School,	Washington, D. C.
Abington Friends' School,	Jenkintown, Pa.
George School,	Newtown, Pa.
Chappapua Mountain Institute,	Chappaqua, N. Y.

PECUNIARY AID.

The Committee on Trusts, Endowments, and Scholarships holds in trust certain funds, the income of which is used to aid deserving and needy students who are pursuing their studies at this College. Full information as to the condition and amount of such pecuniary aid may be had on application to

REBECCA C. LONGSTRETH, *Secretary*,
Sharon Hill, Pa.

Examinations for Admission.

Introductory.

The studies required for a Degree extend over four years. The requirements for admission are intended to be such as Friends' schools generally can meet. Owing to the enforcement of regular hours for study, and the absence of all opportunity for dissipation, the amount accomplished in four years is large, and is believed to afford a sufficient preparation in classics, science, and general culture for the ordinary avocations of life, for the study of any of the learned professions, or as candidates for advanced degrees in the higher universities.

Time and Conditions of Admission.

To secure places, application for admission should be made as early as possible by letter to the President.

All applicants must submit satisfactory testimonials of good character from their last teachers, and students coming from another college must present certificates of honorable dismissal.

The examinations for admission may be taken either in the summer at the close of the college year, or in the fall. See Calendar for the dates.

Students are also admitted at any time during the year, and are charged for the unexpired time until the close of the year.

Requirements for Admission in 1897-8.

All candidates for admission to the Freshman Class will be examined in the following subjects:

1. MATHEMATICS.—*Arithmetic.*—Entire.

Algebra.—To Permutations and Combinations in a book of High-School grade. (Charles Smith's Elementary Algebra is suggested.)

Geometry.—The whole of Plane Geometry.

2. ENGLISH GRAMMAR AND COMPOSITION.

3. ENGLISH LITERATURE.—Candidates are expected to be familiar with Milton's L'Allegro, Il Penseroso, Comus and Lycidas, Shakespeare's Merchant of Venice and Midsummer Night's Dream, Longfellow's Evangeline, Macaulay's Essay on Milton, Webster's First Bunker Hill Oration, Irving's Tales of a Traveler, George Eliot's Silas Marner, and Scott's Woodstock.

The candidate will be required to write a short composition upon a subject taken from some one of the above-named works.

4. HISTORY.—A thorough preparation in the outlines of the History of the United States, and in *either* the History of England *or* in General History. The amount required in each subject is equivalent to what is contained in the following text-books: Johnston's History of the United States, Gardiner's School History of England, Myers's General History.

5. GEOGRAPHY.—The general facts of Physical, Descriptive, and Political Geography, especially of the United States and Europe.

In addition to the above, candidates will be examined as follows:

(1) *For the Classical Course* in

LATIN.—Cæsar, Gallic War, four books; Virgil's Æneid, six books; Cicero, seven orations (including those against Catiline); Latin Grammar, the essentials;

particularly paradigms and elementary syntax; Latin Composition, the accurate translation into Latin of easy sentences involving words and constructions commonly met in Cicero's first oration against Catiline.

GREEK.—Greek Grammar (Goodwin's recommended); elementary Greek Composition; Xenophon—Four books of the Anabasis; Homer—Three books of the Iliad; General History of Greece to the death of Alexander.

For candidates who pass a satisfactory examination in the above, Greek will be *elective* after the Sophomore year.

Candidates for the Classical Course who present no Greek will be required to pursue the study during the *entire four years* of college—a class for beginners being formed in the Freshman year.

FRENCH OR GERMAN.—Candidates for the Classical Course offering no Greek are required to present the minimum amount of either French or German, as prescribed in the Literary Course under OPTIONS.

(2) *For the Literary Course*, in Latin, or in French, or in German, as follows:

LATIN.—As required for entrance to the Classical Course.

FRENCH.—Elements of French Grammar; Super's Preparatory French Reader; varied selections (entire); dictées. Volumes I, II, and III of Magill's Modern French Series, or equivalents; Racine's *Athalie*, and Molière's *Bourgeois Gentilhomme*, or equivalents; Prose Composition.

GERMAN.—Joynes-Meissner's German Grammar, Part I, or equivalent; Grimm's Maerchen (twelve selections); Eichendorff's *Taugenichts*, omitting chapters VII and VIII; Buchheim's *Elementary German Prose Composition*, Parts I and II; *Wilhelm Tell* and *Die Journalisten* or *Hermann and Dorothea;* Ballads and Lyrics (six to be memorized). Equivalents will be accepted.

OPTIONS.—Candidates not prepared to offer the maximum amount of Latin, French, or German will be permitted to substitute a smaller amount of any *two* of the three languages, as follows: *Latin*—Four books of Cæsar and six books of Virgil, or equivalents. *French*—Elements of French Grammar and the ability to read easy French at sight. *German*—Elements of German Grammar and the ability to read easy German at sight.

(3) *For the Engineering Course*, in Latin, French, or German, as above.

(4) *For the Science Course*, in Latin, French, or German, as above.

Admission by Certificate.

Graduates of Friends' Schools whose courses of study are sufficient to prepare students for the Freshman Class will be admitted on the Certificate of the Principal.

Graduates of any High School which, in the judgment of the Faculty and Instruction Committee, is adequately taught, and which conforms substantially to the courses of study recommended by the Committee of Ten of the National Educational Association, will be admitted to the Freshman Class on certificate of the Principal.

Graduates of other schools which in the judgment of the Faculty and Instruction Committee conform to the above requirements, will be admitted on the certificate of the Principal.

Blank Forms of application and certificates will be sent, on application, to the Principals of the above schools, who are requested to fill out and return them together with a circular or catalogue of the school.

Students admitted by certificate are admitted on trial, and the Faculty reserves the right to change their classification or to decline to continue their connection with the College if found not properly prepared to do the work.

Also, permits to send students on certificates may be withdrawn from any school when it is found that it does not send students properly prepared.

Pupils from these Schools intending to enter the College should apply by letter for places as soon as convenient after the completion of their preparation. They should present themselves at the College on Fifth-day, Ninth month 23d, 1897.

Principals of other schools who wish to have students admitted on their recommendation, should correspond with the President concerning each case.

Examination for Higher Classes.—Candidates for classes higher than the Freshman Class must pass satisfactorily in all the subjects pursued by the lower class or classes; and students coming from other colleges must present letters of honorable dismissal, and must show that they have pursued courses of study equivalent to those taken by the classes they wish to enter.

Partial Courses of Study.—A limited number of teachers and other persons of fair education and of sufficiently mature age who may wish to improve themselves in particular studies will be received without examination, and allowed to elect, in any of the regular classes, such work as they can pursue to advantage. They should in all cases correspond with the President in advance.

Courses of Instruction.

ALPHABETICALLY ARRANGED.

For required and elective studies, and the number of exercises per week, in each, see pages 49–52.

Biology.

SPENCER TROTTER, *Professor.*

The purpose of biological studies is to train students in the right methods of thinking and the interpretation of the facts and problems continually presented to them by natural objects.

Lectures, demonstrations, and text-books are employed in connection with laboratory work. The course *is required of all Science students.*

The Course is arranged as follows : .

FRESHMAN CLASS.—*Required of Science Students.*—Elements of Biology (Animals and Plants).

Text-books.—Trotter's "Abstract of Zoology;" Colton's "Practical Zoology;" Gray's "Botany."

JUNIOR CLASS.—Morphology and Physiology of a high form of animal. Text-books.—Mivart, "The Cat;" Huxley & Youman, "Physiology;" Foster & Langley, "Practical Physiology."

SENIOR CLASS.—Vertebrate Morphology. Geology and Physiography (elective). Huxley, "Anatomy of Vertebrated Animals." Martin & Moule, Hand-books of Vert.-Dissection.

Independent Work.—Preparation and writing of a thesis on some biological subject. The time for work to be arranged with the Professor.

The Museum.

The Museum of the College is strictly a teaching collection, and the specimens from its cases are in constant use in the lectures and laboratories in Natural History; it is growing steadily, but always in the direction of rendering more perfect the means of illustrating the different departments of Natural History, and with no intention of making it a collection of curiosities or miscellaneous articles, however interesting they may be in their way.

It includes the following collections:

1. The *Joseph Leidy Collection of Minerals*, the result of thirty years' discriminative collecting by its founder, occupies four large double cases, and consists of exceedingly choice cabinet specimens of crystallized minerals, characteristic rocks and ores, and transparent and opaque models of the various systems of crystallization.

2. The *Collection of Comparative Osteology* consists of a large series of partial and complete skeletons, prepared at Prof. Henry Ward's Natural History Establishment in Rochester, N. Y., and illustrating the structure and framework of backboned animals.

3. The *Wilcox and Farnum Collection of Birds* comprises four large double cases of stuffed specimens of native and foreign birds. Nearly all the specimens visiting this State are represented.

4. The *Frederick Kohl Ethnological Collection* consists of two cases of Indian implements, weapons, clothing, etc., mostly from Alaska.

5. The *C. F. Parker Collection of Shells* is made up of six large cases of choice typical land, fresh-water, and marine shells. These specimens were all selected by the Curator from the extensive collection of the late C. F. Parker, and render further additions to this branch needless. The founder of this collection was for many years the Curator in charge of the Academy of Natural Sciences of Philadelphia.

6. The *Robert R. Corson Collection of Stalactites, Stalagmites, and Helictites* represents the celebrated Luray Caverns, and illustrates the limestone formations which render these caverns the second in magnificence in the world.

MUSEUM.

7. The *Eckfeldt Herbarium* consists of over two thousand plants, illustrating the flora of Pennsylvania.

In addition to the above, there is a large and constantly increasing collection of stuffed and alcoholic specimens of vertebrates and invertebrates (including the U. S. Fish Commission Educational Collection,) of dissected specimens for demonstration in the lectures on Physiology and Hygiene, glass and papier-maché models of invertebrates and of special points in vegetable and animal morphology, besides some three hundred classified diagrams and finely colored charts illustrating every branch of natural history.

Chemistry.

WILLIAM C. DAY, *Professor.*

The course of instruction in this subject extends over a period of four years, and aims to impart a thorough understanding of the most essential facts and principles of the science, while special attention is given to the cultivation of systematic habits of manipulation, so that, besides possessing value as part of a liberal education, it forms a foundation for such pursuits in life as require this knowledge.

Those who may desire to continue their work beyond the limits of the regular course will have suitable work assigned them, and will find every facility for carrying it on.

The Chemical Laboratory occupies rooms in Science Hall. It includes a room for work in General Chemistry and Qualitative Analysis, one for Quantitative Analysis, and a basement room for Assaying and Metallurgy. Near to these are store-rooms, a balance-room, and a lecture-room. The Laboratory tables are covered with glazed tiles; fume-closets, suction for filtration, water and gas are provided. The lecture-room, with a seating capacity of one hundred, is furnished with water, gas, fume-closets, and abundant apparatus for lecture purposes. For lecture illustration, there is an excellent collection of the metals and their salts, and a cabinet of minerals (deposited by Hugh Foulke). In addition to these there is a complete set of typical preprations for use in the course in Organic Chemistry.

Chemical Library.—In all cases students are encouraged in the habit of consulting for themselves the best authorities; and in a room

near to the Laboratory there will be found a number of standard works on Chemistry; besides, there are numerous other works on technical and analytical subjects, current chemical journals, including some complete sets of the latter.

Text-Books.—As the student advances in the course the following text-books are used: "Elementary Chemistry," Remsen; "Qualitative Analysis," Medicus; "Introduction to the Study of the Compounds of Carbon," Remsen; "Quantitative Chemical Analysis," Fresenius; "Theoretical Chemistry," Remsen. Special works in technical analysis are used as required.

Freshman Class.—*a. Lectures* (*Experimental*).—General Elementary Chemistry (non-metals and metals), with examinations.

b. Laboratory Work.—Special exercises on topics selected with the object of stimulating intelligent experimentation.

Sophomore Class.—*a. Lectures.*—Theoretical Chemistry, followed by Qualitative Analysis.

b. Laboratory Work.—Qualitative, followed by Quantitative Chemical Analysis.

Junior Class.—*a. Lectures.*—Chemistry of the compounds of carbon.

b. Laboratory Work.—Quantitative Analysis, followed by a number of exercises in important, typical, organic transformations.

Senior Class.—The course during this year consists largely of laboratory work. A few special subjects are given to each student, with the understanding that he is to fulfill the practical and theoretical requirements of these subjects in a complete, exhaustive, and scholarly manner. Such work will involve the study of technical works and a number of the current chemical journals. Meetings will occasionally be held for the consideration of important researches, as they appear from time to time in the journals.

CHEMICAL LABORATORY.

Drawing and Painting.

BEATRICE MAGILL, *Instructor.*

A course of Freehand Drawing and Painting is open to all. Aside from its intrinsic value as a means of culture, it leads to habits of close observation, and is a very important adjunct to the other courses, especially to those of Engineering and Science.

It consist of drawing from objects and casts, and painting from still-life, flowers, etc., and a series of lectures on Practical Perspective and the History of Painting. A Sketch Class is open to the students qualified to work in it. It is held one afternoon a week for out-door sketching in the Spring and Autumn, and during the Winter-time sketches are made in the studio from casts and still-life, in color and light and shade.

FRESHMAN CLASS.—Drawing from geometrical objects; cast, ornament, still-life.

SOPHOMORE CLASS.—Drawing from cast, details of figure. Painting from still-life.

JUNIOR CLASS.—Drawing from cast, details of figure. Painting, still-life, flowers, out-door sketching.

SENIOR CLASS.—Drawing from cast, head or figure. Paintings, still-life, flowers, out-door sketching.

History of Art.

JUNIOR CLASS.—(*Elective*), *two periods a week.*

First Semester:—History of Italian Art, the Renaissance.

Second Semester:—History of Art in Germany, England, and Spain.

SENIOR CLASS.—(*Elective*), *two periods a week.*

First Semester:—History of Art in France; Modern Art.

Second Semester:—Grecian Art.

The students are required to present written sketches upon the subjects under consideration and to visit the different art exhibitions held in Philadelphia during each season.

Engineering and Mechanic Arts.

ARTHUR BEARDSLEY, *Professor;* JOSEPH BAYLEY, JR., *Assistant, Shop Work:* WILLIAM H. ADEY, *Assistant, Field Work and Drawing.*

This department is intended to give a good preparation to those students who are expecting to become either Civil or Mechanical Engineers, or to engage in any of the several specialties of engineering practice. The studies and exercises are so arranged that the graduates will be prepared to become immediately useful in the office, works, or field, in subordinate positions, and, after a fair amount of such practice, to design and take change of important works.

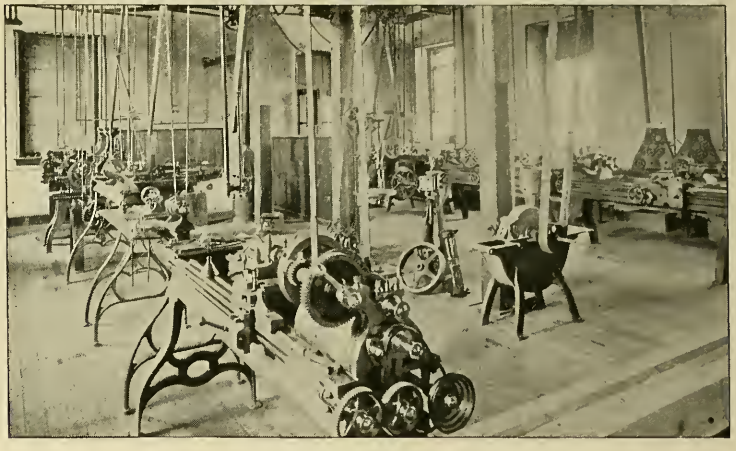
The location of the College is most favorable for residence and study, combining the quiet of the country with ready access to Philadelphia and the many important manufacturing cities in its vicinity, and permitting frequent visits to industrial and engineering works of every kind.

The department is well provided with the necessary field instruments, transits, levels, plane-table, etc., and each student is made familiar with their use and management by practical exercises in the field and draughting-room, carefully planned to illustrate the actual practice of the engineer. Included in the work of this department is a course in the Mechanic Arts, in which regular and systematic instruction is given in thoroughly-equipped workshops, and by skilled instructors in the use of tools and machinery, and in methods and processes.

The Draughting-Rooms are large, well-lighted, and furnished with adjustable tables, models, etc., are well ventilated and warmed, and are open for work during the greater part of the day.

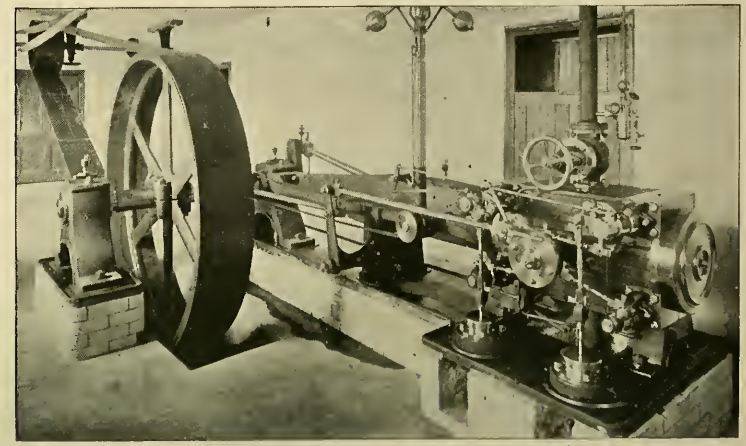
The Engineering Laboratory contains a ten-horse power vertical steam engine and boiler, an Olsen's testing-machine, arranged for tensile, compressive, and transverse tests, a steam-engine indicator, apparatus for hydraulic and steam-engine experiments, and other valuable instruments and appliances. It includes, also, several shops, in which the students become familiar with the nature and properties of the materials of construction (iron, wood, brass, etc.), employed by the engineer, and with the process of working them into the desired form for their intended uses.

ELECTRICAL LABORATORY



MACHINE SHOP

BOILER AND FORGE ROOM



ENGINE ROOM

The Machine Shop contains an excellent and complete assortment of tools, including 4 screw-cutting engine lathes, 3 speed lathes (simple and back geared), an iron planer, a complete universal milling machine, a set of milling cutters adapted for general purposes and for making other cutters, a shaper, a twist-drill grinder, 2 upright drills, an emery grinder, a mill grinder, a grindstone, 16 vises (plain and swivel), 14 lathe chucks (combination, independent, scroll, and drill), a milling machine chuck, a rotary planer chuck, planer centres, a set of Bett's standard gauges, surface plates (Brown & Sharpe), sets of twist drills, reamers, mandrels, screw-plates, taps and dies, lathe centre grinder, a complete set of steam-fitters' tools, with pipe vise, ratchet drill, etc., together with the many necessary small tools, hammers, chisels, files, etc. Additions are constantly being made to this collection as they are needed, either by manufacture in the shops or by purchase. Power is furnished by a 10x24 Corliss steam engine and a 60-horse power return tubular boiler, the former fitted with an improved indicator, and the latter with the necessary attachments for determining its efficiency, etc.

The Wood-Working Shop contains 18 benches with vises and sets of wood-working tools, a grindstone, and 8 wood-turning lathes.

The Smith Shop contains 7 forges, 10 anvils, and sets of blacksmith tools, bench, and vise.

The Foundry contains a brass-furnace, moulders' benches, a variety of patterns, and full sets of moulders' tools.

The details of the course vary somewhat from year to year, but in general, are represented by the following arrangement of the studies:

FRESHMAN CLASS.

ENGLISH—English Literature, Nineteenth Century Authors of England and America, Lectures on the Greek and Roman Literatures; Practice in Description, Orations, and Narrative Writing.

MATHEMATICS—Algebra, Geometry, and Plane Trigonometry, completed.

CHEMISTRY—Experimental Lectures; General Elementary Chemistry of non-metals and metals; Special Exercises in Laboratory Practice on topics selected with the object of stimulating intelligent experimentation; Analytical Work, qualitative and quantitative.

DRAUGHTING—Elements of Drawing; Use of Instruments; Tinting, Shading, Graining; Representation of Earthwork, Masonry, and Materials of Construction; Special Plane Geometric Problems, Projections, Lettering.

SHOP WORK—Wood-working and Pattern-making, Blacksmithing, Foundry, Practice.

SOPHOMORE CLASS.

MATHEMATICS—Conic Sections; Differential Calculus.

CHEMISTRY—Qualitative Analysis.

PHYSICS—Analytical Mechanics, Liquids, Gases, and Sound, Lectures, Recitations and Laboratory Work.

DRAUGHTING—Structure and Machine Drawing; Shades and Shadows; Descriptive Geometry, Point, Right Line, and Plane; Tangencies and Intersections; Lettering.

SHOP WORK—Vise Work, chipping, filing, scraping, fitting, tapping, reaming; hand turning in brass and iron; use of machine tools, lathe-work, turning, boring, screw-cutting, drilling, planing, milling, polishing, etc.; lectures on machine tools and materials of construction.

ELECTIVES—French, German, Elocution; shop work. (See Junior Class, shop work.)

JUNIOR CLASS.

MATHEMATICS—Integral Calculus.

PHYSICS—Heat, Magnetism, Electricity, and Light, Lectures, Recitations, and Laboratory work.

ENGINEERING—*Surveying*—Theory, adjustment, and use of field instruments; farm surveying; leveling; topographical, trigonometrical, and hydrographic surveys.

Applied Mechanics—Friction and other resistances; stresses; strength and elasticity of materials of construction; strength of beams, columns, shafts. Laboratory practice.

Draughting—Shades, shadows, and perspective; topographical, structure, and machine drawing; working drawings; finished drawings.

Mechanism—Principles of mechanism; visits to and sketches of special machinery and structures.

Practical Exercises—In field work; in general engineering laboratory practice, including the testing of metals and building materials, the setting up, testing, and management of steam engines, boilers, and machinery; shop work.

ELECTIVES—*Physics*—Practical electricity, including the theory and practice of electrical measurements.

Chemistry—Technical analysis of iron, steel, etc., as arranged with the Professor of Chemistry.

Shop Work—Construction of a project, steam engine, dynamo, lathe, or other special mechanism or piece of machinery. For this purpose the draughting-rooms and shops are available at all convenient times, and the professors and instructors accessible for advice and assistance.

SENIOR CLASS.

ENGINEERING—*Line Surveying*—Theory and practice of road, railroad, and canal surveying and engineering.

Structures—Building materials; stability of structures; foundations and superstructures; bridges, cranes, roofs, etc.; graphical statics.

Applied Mechanics—Practical hydraulics; practical pneumatics; general theory of machines; theory of prime movers, steam engines, turbines, etc.; measurement of power.

Mechanism—Principles of mechanism, of machine design, and of the transmission of power; construction and use of tools.

Draughting—Stereotomy; structure and machine drawing; plans, profiles and sections of road surveys; working drawings; designs and investigations.

Practical Exercises—In the field, engineering laboratory, and shops; tests of building materials and of machinery: preparation of graduating thesis.

ELECTIVES—*Physics*—Applied electricity; theory of dynamos and motors; care, running, and management under different loads; application of the current to lighting in both direct and alternating systems. Visits to and inspection of neighboring electrical plants.

Chemistry—Technical analysis of iron, steel, etc.—industrial chemistry—as may be arranged with the Professor of Chemistry.

Geology—Lectures and practical field-work.

English—Early English. Elocution.

History—History, Constitution, and Civil Government of the United States.

Mathematics and Astronomy—Eight elective courses are offered in advanced mathematics and three in astronomy.

The Degree conferred at the completion of the course is Bachelor of Science in Engineering.

English Language and Literature.

WILLIAM H. APPLETON, *Early English.*
J. RUSSELL HAYES, *English.*
MYRTIE E. FURMAN, *Elocution and Oratory.*

The course in English Literature extends through four years, instruction being given by recitations and lectures. During this time the English Language is studied in connection with the Literature

from the Anglo-Saxon period down to the present day. The particular feature of the course is the critical reading in the class-room of representative authors, such as Chaucer, Shakespeare, Milton, Pope, Wordsworth, Tennyson. Peculiarities of style and language are considered, allusions are looked up, and every effort made for a thorough comprehension of the work in hand. The author's life is studied in its relation to the history of the time, and his works are compared with those of his contemporaries. By this course it is expected that the student will be enabled, from his own observation, to form an intelligent estimate of the style and merits of the great authors of English Literature.

So far as practicable, the work in Literature, in Rhetoric and Composition, and in Elocution and Oratory is co-ordinated. The subjects for essays are largely suggested by the work in Literature, and in Elocution and Oratory the study, as literature, of the literature read is considered fundamental to an intelligent oral expression.

The courses offered are as follows:

a. Literature.

Freshman Year.—The nineteenth century authors of England and America.

A few authors are selected for more exhaustive study, with the design of making the work in literature contribute toward intellectual discipline and spiritual insight, no less than toward an appreciation of literary values. Portions of other authors are read, and a short historical survey of the Greek and the Roman literatures is given, in order to illustrate the debt of English literature to the earlier great literatures.

Sophomore Year.—The work of the year is largely Shakespeare and Milton, with readings, however, of other authors (prose and poetry).

Junior Year.—First Semester: Anglo-Saxon (Sweet's Primer and Selections), Lectures on the development of English.

Second Semester: Chaucer, Spenser; outside reading of minor contemporary authors by students. Lectures on the transition and Middle English periods.

This course is elective for Seniors.

In addition to the required class work there is in all classes additional reading suggested for such members as choose to avail themselves of the opportunity offered for conference and personal advice.

b. Rhetoric and Composition.

This course is required of all regular students.

FRESHMAN YEAR.—Practice in description, orations, and narrative writing.

SOPHOMORE YEAR.—The principles and practice of versification. Text-book, Corson's "Primer of English Verse."

JUNIOR YEAR.—Advanced Rhetoric—the study of style and authorship. Text-books, Genung's "Practical Elements of Rhetoric" and "Handbook of Rhetorical Analysis."

SENIOR YEAR.—Graduating essays.

c. Elocution and Oratory.

Inasmuch as natural and effective speech is one of the most potent factors for success in life, the subjects of Elocution and Oratory have been combined, and the student is given practice in expressing his own thought as well as the thought of an author. The aim in this course is to stimulate to a broader mental grasp, cultivate the imagination, and arouse the sensibilities, the theory accepted being that effective expression is a result of vivid mental impressions. Hence the student is given exercises whereby he learns to utilize his experiences, to vivify his thought, and thus be able to enter into the spirit of the literature read and to make it a part of himself.

A sound and flexible body being the medium through which the soul must express itself, due attention is given to physical training, voice culture, and enunciation.

The course in Elocution and Oratory extends through four years. First year, original work, reading, and recitation of typical orations in connection with the work required under Rhetoric and Composition, the critical reading of the "Merchant of Venice" and "Julius Cæsar," with imaginative study and description of the characters of the dramas, voice culture, enunciation, physical training. Second year, original work continued, extemporaneous speech, voice culture, etc., con-

tinued, the critical reading of "Twelfth Night" and other standard selections. Third and fourth years, the work continued more fundamentally.

During the college year there are several contests in oratory and declamation, open to all students, which stimulate oratorical zeal. The members of the Senior Class give a Shakespeare evening in character, in preparation for which they receive instruction.

Every effort is made to make the work in this department a stimulus to thought. A careful study is required of the literature read, so that the course is to some extent a course in English literature.

French Language and Literature.

EDWARD H. MAGILL, *Professor.*

The objective points in the study of the French language will be wide and extensive reading, making the student as familiar as the time will allow with as many as possible of the best works in French literature. To this end a minimum of grammar will be required, and rapid reading at sight encouraged early in the course. While the classical authors of the seventeenth century will receive careful attention, as much of the literature of the present generation as is found practicable will be introduced into the course. It is not possible nor necessary to name all the various works used, as they will be changed from year to year, as circumstances and the condition of classes seem to require.

COURSE I. Time, one year. French Grammar—inflections of regular verbs and auxiliaries; forms of articles, nouns, adjectives, and pronouns; common irregular verbs; general principles of syntax. Super's Preparatory French Reader; Magill's "Modern French Series," Vol. I, Dictées.

COURSE II. Time, one year. French Grammar reviewed and continued; Magill's "Modern French Series," Vols. II and III; varied selections (entire) from modern French writers; Dictées; Conversations.

COURSE III. Time, one year. Corneille's Horace and Poly-

eucte; Racine's Britannicus and Esther; Molière's Misanthrope and Les Précieuses Ridicules; Victor Hugo's Hernani, and selections entire from modern French writers; Dictées; Lectures on French Literature; Conversation and Correspondence.

COURSE IV. Time, one year. Conversation and Correspondence in French; Dictées, Essays, Critiques; varied selected works (entire) of authors of the eighteenth and nineteenth centuries; Lectures on French Literature.

COURSE V. Time, one year. This course will be similar to Course IV, but the authors used in class will be different. It is to be considered as equivalent to Course IV, and that students who desire a fifth year may take both, and that either may count as a fourth year's work, Courses IV and V will be given in alternate years.

German Language and Literature.

MARIE A. KEMP HOADLEY, *Professor.*

FIRST YEAR.—Joynes-Meissner's German Grammar (Part I); selections from Grimm's *Märchen;* Eichendorff, *Taugenichts;* Schiller, *Wilhelm Tell* (begun); Buchheim's *Elementary Prose Composition* (Part I).

SECOND YEAR.—Joynes-Meissner's German Grammar (continued); Schiller, *Wilhelm Tell* (completed); Freytag, *Die Journalisten;* Goethe, *Hermann and Dorothea;* Buchheim's *Elementary German Prose Composition* (Parts II and III); German ballads and lyrics.

THIRD YEAR.—Schiller, *Wallenstein* (ed. Carruth); Heine, *Harzreise;* Goethe, *Iphigenia auf Tauris;* Buchheim's *Advanced German Prose Composition;* lectures on the history of German literature. Private reading: selection from Scherer's *History of German Literature;* Nevinson's *Life of Schiller.*

FOURTH YEAR.—Goethe, *Egmont;* Schiller, *Historische Skizzen;* Freytag, *Doktor Luther, Aus dem Staat Friederichs des Grossen;* Buchheim's *Advanced German Prose Composition* (Part II); Goethe, *Dichtung und Wahrheit* (Knabenjahre); lectures on Goethe. Private reading: Simes' *Life of Goethe.*

FIFTH YEAR.—Goethe, *Dichtung und Wahrheit* (selections); *Götz von Berlichingen;* lectures on Faust; Buchheim's *Deutsche Lyrik;* von Scheffel, *Ekkehard;* German prose composition. Private reading: Taylor's *Studies in German Literature;* extracts from Kuno Francke's *Social Forces in German Literature.*

Greek.

WILLIAM H. APPLEEON, *Professor.*

I. Students who present the usual College requisition in Greek (see page 25) will be required to continue the study for two years, with the privilege of electing it thereafter, in accordance with the following scheme:

FRESHMAN YEAR (*Required*).—Poetry—Homer: The Iliad or Odyssey (Selections).

Prose—The Greek Historians: Herodotus and Thucydides (Selections).

SOPHOMORE YEAR (*Required*).—Poetry—Greek Tragedy: Æschylus, Sophocles. One play of each.

Prose—Plato's Apology and Crito, Xenophon's Memorabilia. (A study of Socrates.)

JUNIOR YEAR (*Elective*).—Poetry—Euripides: Several plays.

Prose—Demosthenes: The Oration on the Crown.

SENIOR YEAR (*Elective*).—Poetry—Aristophanes, Lyric poets.

Prose—Plato's Dialogues. Modern Greek. Readings in Vincent and Dickson's Hand-Book, with colloquial exercises. Lectures on the History of Greek Literature.

Note.—All the classes have exercises in Greek Composition with much practice in sight-reading.

II. Students who present no Greek at the admission examinations will be required, in order to graduate with the degree of A. B., to take the language for the entire four years as follows:

FRESHMAN YEAR.—White's Beginner's Greek Book; Xenophon's Anabasis, Book I; Greek Testament.

THE WEST HOUSE.

BIRTHPLACE OF BENJAMIN WEST. ERECTED 1724.

SOPHOMORE YEAR.—Xenophon's Anabasis, Books II, III, IV; Plato's Apology and Crito.

JUNIOR YEAR.—Homer: The Iliad or Odyssey (six books). Greek Historians (Selections).

SENIOR YEAR.—Greek Drama: Two plays. Greek Prose, Modern Greek, Lectures on Greek Literature.

Note.—Greek Composition and sight-reading in all the classes.

History and Political Economy.

WILLIAM I. HULL, *Professor.*

The group of studies included within this department—History, Economics, Political and Social Science—is designed to furnish information necessary for intelligent citizenship, and to provide a preliminary training for those who intend to engage in the practice of law, journalism, business, or the public service. Instruction is given by means of lectures, recitations, and oral and written reports by the students on assigned topics. In the upper classes each student is required to make an independent and detailed study of some assigned or chosen subject. For this purpose the library contains a good working collection of public documents and reports, both Federal and State, in addition to standard treatises.

The following courses are offered:

HISTORY AND POLITICAL SCIENCE.

FRESHMAN YEAR.—The Ancient Orient. Greece. Rome.

SOPHOMORE YEAR.—Middle Ages. Renaissance. Reformation.

JUNIOR YEAR.—England. French Revolution. Europe in the Nineteenth Century.

SENIOR YEAR.—United States History and Civil Government. Protection and Free Trade.

ECONOMICS AND SOCIAL SCIENCE.

JUNIOR YEAR.—Elements of Economics. Socialism. Money and Banking.

SENIOR YEAR.—Primitive Culture and the Philosophy of History. Sociology.

Social Problems of To-day: Pauperism and Charity, Crime and Punishment, Intemperance, Women and Children, Tenement Houses, University and College Settlements.

Latin.

FERRIS W. PRICE, *Professor.*

FRESHMAN CLASS.—*Horace*, Odes; *Cicero's* Letters; Latin Composition; Mythology.

SOPHOMORE CLASS.—*Horace*, Satires and Epistles; *Livy*, Books I, XXI, and XXII; History of Latin Literature, lectures and study of characteristic passages from the most important authors.

JUNIOR CLASS.—Allen's Remnants of Early Latin; *Plautus*, Trinummus; *Terence*, Phormio; *Cicero*, De Senectute; Hymns and other late Latin.

SENIOR CLASS.—Selections from *Lucretius* and *Catullus; Juvenal*, three satires; *Tacitus*, Agricola; *Virgil*, Georgics, and Æneid (Books VII–XII).

Sight-reading throughout the course.

A Classical Club, to which all students of Latin are invited, will meet monthly during the present year.

Mathematics.

SUSAN J. CUNNINGHAM, *Professor;* HENRY V. GUMMERE, *Assistant.*

FRESHMAN CLASS.—Charles Smith's Treatise on Algebra; Elements of Geometry (Halsted); Plane Trigonometry (Loney).

SOPHOMORE CLASS.—Halsted's Geometry, finished; Byerly's Differential Calculus; Charles Smith's Conic Sections.

JUNIOR CLASS.—Byerly's Integral Calculus; Chauvenet's Spherical Trigonometry.

ASTRONOMICAL OBSERVATORY.

ELECTIVE COURSES.

1. Modern Pure Geometry. An advanced course in pure geometry; subjects treated: Harmonic Ranges and Pencils, the theories of Involution, Perspective, Similar Figures, Reciprocation, Inversion, etc.

2. Higher Algebra, beginning with the Theory of Equations (Burnside and Panton) and continuing with Invariants, etc.

3. Plane Analytic Geometry, including Higher Plane Curves; the course will be a continuation of Conic Sections and will be based on Clebsch-Lindemann's Geometrie.

4. Solid Analytic Geometry (Charles Smith).

5. Curve Tracing.

6. Differential Equations.

7. Trigonometric Series, Spherical Harmonics, etc. (Byerly).

8. Elementary Quarternions (Kelland and Tait).

ASTRONOMY (ELECTIVE).

1. Young's General Astronomy.

2. Chauvenet's Spherical and Practical Astronomy.

3. Theoretical Astronomy (Orbit Determination).

Pedagogics.

PRESIDENT DE GARMO.

The work in this department consists of a fundamental study, first, of the growing mind of the child, its natural capacities, tendencies, interests, and methods of growth; then of the choice and co-ordination of studies, together with the best methods of teaching them; and, finally, of the methods whereby the character of the child may best be developed through school discipline and instruction. The works of Herbart and his successors are thoroughly studied.

Philosophy.

PRESIDENT DE GARMO.

SENIOR CLASS.

Psychology.—First Semester: James's Psychology. Special attention paid to the processes of knowledge, feeling, and volition

from the standpoint of modern physiological psychology. Essays based upon a study of the nervous system, together with extensive reference to the standard literature of the various topics selected.

History of Philosophy.—Second Semester: The history of Ancient and Modern Philosophy is taught in alternate years. First course, History of Philosophy, from Thales to Leibnitz, inclusive, with especial reference to Socrates, Plato, and Aristotle; second course, from Descartes to the present. The ethical bearings of each prominent system are dwelt upon.

Physical Culture.

FOR YOUNG MEN.

Dr. J. K. Shell.

The system of Physical Culture is based on a thorough examination of each student, carefully noting all defects of development, and functional weakness, and the ratio existing between the tested strength and the muscularity, and on these data formulating a course of exercises such as will meet the requirement of each individual, so as to produce an evenly developed and healthy organism.

The young men are required to give three hours each week for carrying out the prescription of the Director.

The sports of foot-ball, base-ball, and athletics are under the direct supervision of the Director, and only those who are physically fit are allowed actively to compete; great care is taken that the games be kept within proper limits, so as not to take too much of the students' attention or energy.

FOR YOUNG WOMEN.

Dr. Mary V. Mitchell Green.

Rachel L. Hutchinson, *Assistant.*

A careful examination is made of each student's physical condition, and the exercises to suit individual needs are assigned according to the Swedish system.

Tennis, golf, and other out-door exercises are provided for the young women.

PHYSICAL LABORATORY.

Physics.

GEORGE A. HOADLEY, *Professor.*

The Physical Laboratory is already provided with apparatus for determinations in the mechanics of solids and fluids, in heat, sound, light, electricity, and magnetism; as also with a large amount for lecture experiments. Most of this has been selected with care from the best American and foreign makers, but some is of home manufacture; and the co-operation of the Engineering Department and the increasing skill of our students enable us now to make each year a larger proportion for regular use in the Laboratory. It is our aim to afford students continued opportunities for instruction in the principles of construction of ordinary and special apparatus. Power for running dynamos and for other purposes is near at hand. The instruction begins in the Sophomore year, and extends through the course as follows:

FOR STUDENTS IN ARTS AND LETTERS.

SOPHOMORE CLASS.—*General Physics.*—This course consists of the investigation of the general laws of Physics and the consideration of their practical application.

The work of the course is done by lectures and recitations, accompanied by experimental verification of the laws discussed, and extends over the entire year.

JUNIOR CLASS.—During the Junior year the course is an elective in Heat, Magnetism, Electricity, and Light.

FOR STUDENTS IN SCIENCE AND ENGINEERING.

This course occupies two consecutive years, requiring two periods per week in the Sophomore year and four in the Junior. It is intended to be pre-eminently a practical course, consisting largely of laboratory work, in the investigation and verification of the laws of Physics.

The recitation work will cover the topics treated in Ganot's Physics, or some other text-book of equal rank, and will be supplemented by lectures on the various branches of the subject.

The division of the work is as follows:

Sophomore Class.—Applied Mechanics and Dynamics. Gases, Liquids, and Sound.

Junior Class.—Heat, Magnetism, Electricity, and Light.

Senior Class.—Applied Electricity.

This is an elective of eight periods per week, counting as four. In this the Junior work in Magnetism and Electricity is supplemented by the practical study of their application to the telephone, telegraph, dynamo, electric light, motor, transmission of power, etc

Work in the manufacture and use of these various appliances, as well as in the measurement of the electrical current, is accompanied by text-book work in Thompson's Dynamo Electric Machinery, and by the reading and class discussion of current electrical journals. Visits to the electrical plants of the neighboring villages and cities are made at convenient times, for the purpose of studying the machinery in actual use.

General Remarks on the Courses of Study.

In arranging the courses of study, while recognizing the fact that the domain of human knowledge is so vast that he who would succeed best must confine his attention chiefly to some chosen field, we have endeavored not to lose sight of the equally important fact that those are best equipped for work in any particular department who have the most extended view of the realm of learning as a whole.

To secure in a measure both these results, minor courses in many of the subjects of the curriculum are required of all; while the more extended courses in each subject are taken only by those whose taste and inclination lie in that particular direction.

In pursuing this policy for several years, we have developed four distinct lines of study. In each of them are required those subjects which are essential to the logical and natural development of the course. The courses are as follows:

THE COURSE IN ARTS.

The characteristic feature of this course is the study of Classical Antiquity, including the language and literature of the Greeks and

Romans, with their art, philosophy, religion, and political and social history. Combined with this are courses in Modern Languages, Mathematics, and Science, with some elective subjects. While this course affords that broad culture which should be the foundation of any subsequent career, it may be made to afford special preparation for Law or Journalism by including electives in History and Political Economy, or it may be shaped in the direction of Medicine by choosing electives in Biology and Chemistry. This course leads to the degree of *Bachelor of Arts*.

THE COURSE IN LETTERS.

This course is arranged to provide a liberal education for those who do not wish to pursue the study of the ancient languages, nor to take all the science required in the Science Course. Its leading features are a liberal amount of English, French, and German, and of History and Political Science. It includes the amount of Mathematics usually prescribed in a college course, with a fair amount of Science, and some elective subjects, including Latin. This course leads to the degree of *Bachelor of Letters*.

THE COURSE IN SCIENCE.

The characteristic feature of this course is more extended instruction in science than in the preceding courses, together with a fair amount of Mathematics and Modern Language study, including English. The instruction in Physics, Chemistry, and Biology is of a twofold character; first, systematic treatment in experimental lectures; secondly, practical work in the laboratories. Thus the student acquires a familiarity, not only with the more important facts and fundamental principles of those sciences, but also with the correct methods of work, so that his course may form a foundation for subsequent higher work in any department of science. This course leads to the degree of *Bachelor of Science*.

THE COURSE IN ENGINEERING.

This course offers, in its various studies and exercises, a training which is believed to be well adapted to the needs of Civil and of Mechanical Engineers, as well as of the large class who are to be con-

cerned with the material interests of the country, with manufacturing, with industrial pursuits, or with any of the many other occupations allied to Engineering. It embraces liberal and technical instruction in the mathematical, physical, and graphical sciences, and their applications, in practical field engineering, in the arts of design and construction, and in the use of tools, materials, and machinery, and in processes. This course leads to the degree of *Bachelor of Science in Engineering.*

The Course in Arts.

REQUIRED STUDIES.

Greek, 2 or 4 years; Latin, 3 years; Mathematics, 1½ years; History, 1 year; Biology, Chemistry, or Physics, 1 year; Economics, ½ year; Psychology, ½ year; History of Philosophy, ½ year; Elocution, 2 years; Composition, 4 years.

COURSE ELECTIVES (TWO REQUIRED).

Physics, 1 year; Biology, 1 to 2 years; Chemistry, 1 year; Economics, ½ to 1½ years; History, 1 to 2 years; English, 1 to 2 years; French, 1 to 2 years; German, 1 to 2 years; Latin, 1 year; Mathematics, 1 to 2 years.

OPEN SEMESTER ELECTIVES.

Civil Government; Astronomy; Drawing and Painting; Pedagogy; Logic; Mineralogy; Geology; Mathematics; Elocution; Botany; Zoology; Physiology.

Distribution of Studies.

Freshman Year.

FIRST SEMESTER. PERIODS.		SECOND SEMESTER. PERIODS.	
Greek,	4	Greek,	4
Latin,	4	Latin,	4
Mathematics,	4	Mathematics,	4
Biology or History,	4	Biology or History,	4

Elocution and Composition.

Sophomore Year.

Greek,	4	Greek,	4
Latin,	4	Latin,	4
Mathematics,	4	Elective,	4
History, Physics, French, or German,	4	History, Physics, French, or German,	4

Elocution and Composition.

Junior Year.

Greek,	4	Greek,	4
Latin,	4	Latin,	4
Economics,	4	Elective,	4
Elective,	4	Elective,	4

Composition.

Senior Year.

Greek,	4	Greek,	4
Psychology,	4	Philosophy,	4
Elective,	4	Elective,	4
Elective,	4	Elective,	4

Composition.

The Course in Letters.

REQUIRED STUDIES.

French and German, 6 years; Mathematics, 1½ years; English, 3 years; Economics, 1 year; History, 2 years; Biology, Chemistry, or Physics, 1 year; Psychology and Philosophy, 1 year; Elocution, 2 years; Composition, 4 years.

COURSE ELECTIVES (TWO REQUIRED).

Chemistry, 1 year; Biology, 1 to 2 years; Physics, 1 year; Economics, 1 year; History, 1 to 2 years; English, 1 to 2 years; Mathematics, 1 to 2 years; Latin, 1 to 4 years.

OPEN SEMESTER ELECTIVES.

Civil Government; Astronomy; Drawing and Painting; Pedagogy; Logic; Mineralogy; Geology; Mathematics; Elocution; Botany; Zoology; Physiology.

Distribution of Studies.

Freshman Year.

FIRST SEMESTER.	PERIODS.	SECOND SEMESTER.	PERIODS.
French or German,	4	French or German,	4
Mathematics,	4	Mathematics,	4
English,	4	English,	4
Biology, History, or Latin,	4	Biology, History, or Latin,	4

Elocution.

Sophomore Year.

French or German,	4	French or German,	4
Mathematics,	4	English,	4
English,	4	Elective,	4
History, Physics, French, German, or Latin.	4	History, Physics, French, German, or Latin,	4

Elocution.

Junior Year.

French and German,	8	French and German,	8
Economics,	4	Economics,	4
English,	4	English,	4
Elective,	4	Elective,	4

Senior Year.

French and German,	8	French and German,	8
Psychology,	4	Philosophy,	4
Elective,	4	Elective,	4
Elective,	4	Elective,	4

Composition.

The Course in Science.

REQUIRED STUDIES.

French or German, 3 years; Chemistry, 2 years; Biology, 2 years; Physics, 2 years; Mathematics, 1½ years; Psychology and Philosophy, 1 year; Elocution, 2 years; Composition, 4 years.

COURSE ELECTIVES (TWO REQUIRED).

Chemistry, 1 to 2 years; Biology, 1 year; Physics, 1 year; English, 1 to 2 years; Economics, 1 to 2 years; History, 1 to 2 years; French or German, 1 to 2 years; Mathematics, 1 to 2 years.

OPEN SEMESTER ELECTIVES.

Civil Government; Astronomy; Drawing and Painting; Pedagogy; Logic; Mineralogy; Geology; Mathematics; Elocution; Botany; Zoology; Physiology.

Distribution of Studies.

Freshman Year.

FIRST SEMESTER.	PERIODS.	SECOND SEMESTER.	PERIODS.
French or German,	4	French or German,	4
Chemistry,	4	Chemistry,	4
Biology,	4	Biology,	4
Mathematics,	4	Mathematics,	4

Elocution and Composition.

Sophomore Year.

French or German,	4	French or German,	4
Chemistry,	4	Chemistry,	4
Physics,	4	Physics,	4
Mathematics,	4	Elective,	4
Biology,	2	Biology,	2

Elocution and Composition.

Junior Year.

French or German,	4	French or German,	4
Physics,	4	Physics,	4
Biology,	4	Biology,	4
Elective,	8	Elective,	8

Composition.

Senior Year.

Psychology,	4	Philosophy,	4
Elective,	4	Elective,	4
Elective,	4	Elective,	4
Elective,	8	Elective,	8

Composition.

The Course in Engineering.

REQUIRED STUDIES.

Draughting, 3 years; Mathematics, 2½ years; Chemistry, 2 years; English, 1 year; shop work, 3 years; Mechanics and Physics, 2 years; Engineering, Theory, 2 years; Engineering, Applications, 2 years.

COURSE ELECTIVES.

Sanitary Science, ½ year; French or German, 1 year; Electrical Physics, 1 year; English, 1 year; Astronomy, 1 year.

OPEN SEMESTER ELECTIVES.

Civil Government; Astronomy; Drawing and Painting; Pedagogy; Logic; Mineralogy; Geology; Mathematics; Elocution; Botany; Zoology; Physiology.

Distribution of Studies.

Freshman Year.

FIRST SEMESTER.	PERIODS.	SECOND SEMESTER.	PERIODS.
Draughting and Shop Work,	9=4	Draughting and Shop Work,	9=4
Mathematics,	7	Mathematics,	7
Chemistry,	4	Chemistry,	4
English,	4	English,	4

Sophomore Year.

Draughting and Shop Work,	9=4	Descriptive Geometry, etc.,	9=4
Mathematics,	4	Mathematics,	4
Mechanics,	4	Physics,	4
Chemistry,	4	Chemistry,	4
Electives,	2	Electives,	2

Junior Year.

Engineering, Theory,	8	Engineering, Theory,	8
Engineering, Practice,	6=2	Engineering, Practice,	6=2
Physics,	6	Physics,	6
Mathematics,	4	Electives,	4

Senior Year.

Engineering, Theory,	8	Engineering, Theory,	8
Engineering, Practice,	10=4	Engineering, Practice,	10=4
Elective,	4	Elective,	4
Elective,	4	Elective,	4

Graduation and Degrees.

As a condition of graduation, each student must submit to the Faculty a satisfactory Oration or Essay, which he must be prepared to deliver in public, if required to do so.

The Degree of Bachelor.

The degrees of Bachelor of Arts, of Letters, and of Science are conferred on the completion of the corresponding courses.

The Degree of Master.

All candidates for the Master's Degree (A. M., M. L., and M. S.) must have taken the Bachelor's Degree at this College. They are required to pursue a course of study at Swarthmore, or elsewhere, under the direction of the Faculty, and to pass examination in the same. Graduates residing at the College and devoting their whole time to the work can accomplish a sufficient amount in one year; for non-resident candidates, who are at the same time engaged in other work, the course must occupy not less than two years. Application should be made directly to the Faculty, and should state the subject or subjects in which the applicants wish to present themselves. Work will then be assigned to them by the Faculty.

The Examinations for the Degrees will be both oral and written, and will be conducted by a Committee of the Faculty, upon whose report the Faculty will decide upon the fitness of the candidate for the Degree. An extended thesis, bearing upon some part of the work assigned, will in all cases be required.

The Degree of Civil Engineer.

The Degree of C. E. will be conferred upon Bachelors of Science of the Engineering Department who shall have been engaged for not less than three years, in successful professional practice, in positions of responsibility, and who shall present an acceptable thesis upon a subject pertaining to some branch of engineering. Application for this Degree must be made, and the thesis presented at least *three months* before commencement.

Officers of the Alumni Association.

INCORPORATED 1882.

President.

MORRIS L. CLOTHIER, '90, ... 8th and Market Sts., Phila., Pa.

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J. RUSSELL HAYES, '88, ... Swarthmore, Pa.
EMMA CHAMBERS WHITE, '94, . . Atlantic City, N. J.

Secretary.

ESTHER T. MOORE, '73, ... Swarthmore College, Pa.

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WILLIAM J. HALL, '78, ... Swarthmore College, Pa.

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SOMERVILLE GYMNASIUM

Graduates.

Class of 1873.

SARAH H. (ACTON) HILLARD, A.B., ... Salem, N. J.
HELEN (MAGILL) WHITE, A.B., (Ph.D., Boston University, 1877), ... Ithaca, N. Y.
ELIZABETH C. (MILLER) HOLCOMB, A.B., ... Pearl River, N. Y.
ESTHER T. MOORE, A.B., ... Swarthmore College.
*MARIA C. (PIERCE) GREEN, A.B., ... 1877.
LOWNDES TAYLOR, A.B., ... West Chester, Pa.

Class of 1874.

ELLEN H. (EVANS) PRICE, A.M., 1884, ... Swarthmore, Pa.
AMY W. (HALL) HICKMAN, A.B., ... West Chester, Pa.
*ALFRED T. HAVILAND, B.S., ... 1874.
MARY (HIBBARD) THATCHER, A.B., ... Wilmington, Del.
HERMAN HOOPES, C.E., 1879, ... Philadelphia, Pa.
FERRIS W. PRICE, A.M., 1887, ... Swarthmore, Pa.
ELIZABETH S. (WOOLSTON) COLLINS, A.B., ... Swarthmore, Pa.

Class of 1875.

JOHN B. BOOTH, A.B., ... Pittsburg, Pa.
HELEN (COMLY) WHITE, A.B., ... Lansdowne, Pa.
FRANKLIN H. CORLIES, B.S., ... Philadelphia, Pa.
*HERBERT G. DOW, A.B. (and Harvard, 1877), ... 1878.
ELIZABETH (HANES) TAYLOR, A.B., ... Locust Valley, N. Y.
EDITH R. (HOOPER) ROBERTS, A.B., ... Titusville, Pa.
BARTON HOOPES, JR., B.S., ... Philadelphia, Pa.
*OLIVER KEESE, JR., B.S., ... 1879.
J. REECE LEWIS, B.S., ... Waynesville, N. C.
HOWARD W. LIPPINCOTT, A.B., ... Philadelphia, Pa.
MARTHA (MCILVAIN) EASTWICK, A.B., ... Philadelphia, Pa.
JOHN K. RICHARDS, A.B. (and Harvard, 1877), ... Ironton, Ohio.
WILLIAM H. RIDGWAY, C.E., 1879, ... Coatesville, Pa.

Class of 1876.

FRANK L. BASSETT, B.S. (D.D.S., Phila. Dental College, 1878), ... Swarthmore, Pa.

*Deceased.

ARTHUR W. BRADLEY, A.B., ... Cleveland, Ohio.
FRANCES (LINTON) SHARPLES, A.M., 1881 (M.D., Women's Medical College, Phila., 1886), ... West Chester, Pa.
ELIZABETH L. (LONGSTRETH) BOYD, A.B., ... Haverford, Pa.
JAMES T. MCCLURE, B.S., ... Philadelphia, Pa.
EMMA (MCILVAIN) COOPER, A.B., ... Riverton, N. J.
EDWIN MITCHELL, JR., A.B. (B.L. and B.S.R., Sorbonne, Paris, 1877), ... Paris, France.
LUCY R. (PRICE) MCINTYRE, A.B., 1880, ... Philadelphia, Pa.
ISAAC G. SMEDLEY, B.S. (M.D., Hahnemann Medical College, 1879), ... Philadelphia, Pa.
HERBERT W. SMITH, A.B. (and Harvard, 1878, Ph.D., Göttingen, 1884), ... Bryn Mawr College, Pa.
MARY WILLITS, A.M., 1881 (M.D., Women's Medical College, Phila., 1881), ... Norristown, Pa.
WILLIAM P. WORTH, B.S., ... Coatesville, Pa.

Class of 1877.

JOSEPH T. BUNTING, B.S. (LL.B., Univ. of Pa., 1880), . . Philadelphia, Pa.
NORMAN B. CORSON, A.B., ... Norristown, Pa.
EUDORA MAGILL, A.B., ... Swarthmore, Pa.
JESSE R. NORTON, A.B. (and Harvard, 1879), ... Chicago, Ill.
CARROLL R. WILLIAMS, A.M., 1882 (LL.B., Univ. of Pa., 1880), ... Philadelphia, Pa.
M. FLORENCE YEATMAN, A.B., ... Norway, Pa.

Class of 1878.

CAROLINE E. (BURR) HALL, A.B., ... Swarthmore, Pa.
MAYBELL P. (DAVIS), FOSTER, A.B., ... Providence, R. I.
HOWARD DAWSON, A.M., 1882, ... Boston, Mass.
TACY A. (GLEIM) DUNNING, A.B., ... Los Angeles, Cal.
WILLIAM J. HALL, B.S., ... Swarthmore. College.
MARY P. (HALLOWELL) HOUGH, A.M., 1881 (M.D., Women's Medical College, Phila., 1881), ... Ambler, Pa.
CHARLES A. HAWKINS, A.B., ... York, Pa.
WILLIAM PENN HOLCOMB, M.L., 1882 (Ph.D., Johns Hopkins Univ., 1886), ... Pearl River, N. Y.
REBECCA S. (HUNT) WHITE, A.M., 1881 (M.D., Women's Medical College, Phila., 1881), ... Lansdowne, Pa.
ANNA E. (JACKSON) MONAGHAN, B.L., ... West Chester, Pa.
LLEWELLYN H. JOHNSON, B.S., ... Orange, N. J.
EDWARD MARTIN, A.M., 1882 (M.D., Univ. of Pa., 1883), Philadelphia, Pa,
FRANCIS J. PALMER, B.S., ... Brooklyn, N. Y.

ISRAEL ROBERTS, B.S., ... Camden, N. J.
*WILLIAM SEAMAN, C.E., 1884, ... 1892.
C. HARRY SHOEMAKER, B.S., ... Philadelphia, Pa.

Class of 1879.

ISAAC R. COLES, C.E., 1880, ... Glen Cove, N. Y.
WILLIAM P. FENDER, A.B., ... Williamsport, Pa.
WILLIAM LEA FERRIS, A.B., ... San Francisco, Cal.
JOSEPH FITCH, A.B., ... New York, N. Y.
RUTH ANNA FORSYTHE, A.B., ... Philadelphia, Pa.
ELIZABETH (FURNAS) BOGARDUS, B.L., ... New York, N. Y.
P. LESLEY HOPPER, A.B., ... Havre de Grace, Md.
MARIE ANTOINETTE (KEMP) HOADLEY, A.M., 1892, . . Swarthmore College.
ELISHA E. LIPPINCOTT, B.S., ... Gallitzin, Pa.
*SAMUEL CRAIG MCCOMB, C.E., 1882, ... 1891.
CHARLES R. MILLER, B.L. (LL.B., Univ. of Pa., 1881), . Wilmington, Del.
JOSEPHINE (WHITE) BRECKENS, A.B., ... Cheyenne, Wyoming.
ABBY W. (WOODNUTT) MILLER, B.L., ... Wilmington, Del.

Class of 1880.

ANNA E. CONSTABLE, A.B., ... Camden, N. J.
ARTHUR COLEMAN DAWSON, B.L., 1882, ... Lake Forest, Ill.
FLORENCE HALL, A.B., ... Swarthmore, Pa.
MYRA T. HILLMAN, A.B., ... Washington, D. C.
EMILY L. (HOUGH) SAVIDGE, A.B. (and Univ. of Minn., 1881), ... Boise City, Idaho.
EDWARD H. KEISER, M.S., 1881 (Ph.D., Johns Hopkins Univ., 1884), ... Bryn Mawr College, Pa.
GEORGINE (KURTZ) MUHLENBERG, A.B., ... Reading, Pa.
ALBERT R. LAWTON, A.M., 1885, ... New York, N. Y.
ROBERT J. MARCHER, B.S., ... Syracuse, N. Y.
THOMAS L. MOORE, A.B., ... Richmond, Va.
ELLEN S. (PRESTON) GRIEST, A.B., ... Millersville, Pa.
JOHN TURTON, B.S., ... New York, N. Y.
FANNIE (WILLETS) LOWTHORP, A.B., ... Trenton, N. J.
HENRY S. WOOD, C.E., 1883, ... San Francisco, Cal.

Class of 1881.

MARTHA BUNTING, B.L., ... Baltimore, Md.
WILLIAM CANBY, JR., B.L., ... St. Paul, Minn.
CHARLES B. DORON, B.L., ... Rochester, N. Y.
MARY J. ELLIOTT, B.L., ... Philadelphia, Pa.

*Deceased.

EMMA KIRK, B.L., ... Ithan, Pa.
GERTRUDE B. MAGILL, A.B., ... Boise City, Idaho.
EUGENE PAULIN, JR., A.B. (and Harvard, 1883), ... Albuquerque, N. M.
MARTHA E. (RHINOEHL) OSBORN, A.B., ... Philadelphia, Pa.
EDWARD C. RUSHMORE, B.S. (M.D., Columbia, 1885), . . Tuxedo Park, N. Y.
HENRY B. SEAMAN, C.E., 1884, ... Mt. Vernon, N. Y.
CHARLES E. SHARPLESS, C.E., 1884, ... Philipsburg, Pa.
ALVIN T. SHOEMAKER, B.L., ... New York, N. Y.
*I. BYRON THOMAS, B.S., ... 1891.
ERNEST F. TUCKER, A.B. (M.D., Harvard, 1884), ... Portland, Ore.

Class of 1882.

WILLIAM LLEWELLYN BANER, A.B. (M.D., Columbia, 1885), New York, N. Y.
EDITH B. BLACKWELL, A.B. (M.D., Woman's Med. Col., N. Y. Inf., 1891), ... New York, N. Y.
CHARLOTTE E. (BREWSTER) JORDAN, M.L., 1886, . . . Newark, Del.
WILLIAM BUTLER, JR., A.B., ... West Chester, Pa.
C. HERBERT COCHRAN, A.B., ... Philadelphia, Pa.
BERTHA (COOPER) BREWER, B.L., ... Narcosse, Fla.
P. FANNIE FOULKE, A.B., ... Philadelphia, Pa.
MARY E. GALE, A.M., 1891, ... Bryn Mawr, Pa.
*SARAH S. (GREEN) PIERCE, A.B., ... 1886.
MARGARET E. (HALLOWELL) POWELL, A.B., ... Lansdowne, Pa.
*ELIZABETH E. HART, B.L., ... 1891.
ELIZABETH HASLAM, B.L., ... Philadelphia, Pa.
ELIZABETH M. OGDEN, B.L., ... West Chester, Pa.
CHARLES PALMER, A.M., 1885, ... Chester, Pa.
*GEORGE C. PHILLIPS, B.S., ... 1883.
HORACE L. ROSSITER, A.B., ... Cleveland, Ohio.
CHARLES B. TURTON, B.S., ... New York, N. Y.
GERRIT E. H. WEAVER, A.B. (and Harvard, 1884), A.M., 1886, ... Philadelphia, Pa.
EMILY E. (WILSON) LAWTON, A.M., 1885, ... New York, N. Y.
EDGAR M. ZAVITZ, A.B., ... Coldstream, Ontario, Can.

Class of 1883.

CHARLES A. BUNTING, B.S., ... Steelton, Pa.
*JOHN L. COCHRAN, B.S., ... 1885.
EDGAR CONROW, B.L., ... Moorestown, N. J.
LYDIA S. (GREEN) HAWKINS, A.B., ... Media, Pa.
FLORENCE N. HANES, A.B., ... Woodstown, N. J.
ALICE W. JACKSON, A.B., ... Swarthmore, Pa.
WILLIAM A. KISSAM, JR., B.S., ... Little Neck, N. Y.

*Deceased.

BERTHA (MATLACK) RUE, B.L., ... Camden, N. J.
GUION MILLER, A.M., 1888, ... Washington, D. C.
S. DUFFIELD MITCHELL, A.B. (LL. B., Univ. of Pa.), . . . Pittsburg, Pa.
EDWARD A. PENNOCK, A.B., ... Boston, Mass.
GEORGE L. PENNOCK, B.S., ... Lansdowne, Pa.
CHARLES S. PYLE, B.S., ... Rising Sun, Md.
HELEN C. (PYLE) BUNTING, B.L., ... Steelton, Pa.
FREDERICK A. SEAMAN, JR., B.S., ... Madison, N. J.
ANNIE E. (TYLOR) MILLER, M.L., 1888, ... Washington, D. C.
JAMES E. VERREE, B.L., ... Philadelphia, Pa.
EMMA (WEBB) PRICE, A.B., ... Overbrook, Pa.

Class of 1884.

HORACE L. DILWORTH, B.S., ... Philadelphia, Pa.
REBECCA M. (DOWNING) BULLOCK, B.L., ... Germantown, Pa.
JOHN D. FURNAS, B.S., ... Waynesville, Ohio.
SARAH L. (HALL) STIRLING, A.B., ... Philadelphia, Pa.
HENRY J. HANCOCK, A.B. (LL.B., Univ. of Pa., 1886), . . . Philadelphia, Pa.
EDWIN HAVILAND, JR., B.S., 1885, ... Salt Lake City, Utah.
MARY E. HUGHES, A.B., ... Hughesville, Va.
LAURA H. SATTERTHWAITE, A.B. (M.D., Women's Medical College, Phila., 1888), ... Trenton, N. J.
FREDERICK J. TAYLOR, B.S., ... Helena, Mont.
MARY WILLITS, A.B., ... Syosset, N. Y.

Class of 1885.

MINNIE F. BAKER, A.B., ... Washington, D. C.
ABIGAIL EVANS, A.B., ... Cinnaminson, N. J.
FREDERIC P. MOORE, A.B., ... New York, N. Y.
MARY D. (PRATT) RHODES, A.B., ... Bowdle, S. Dak.

Class of 1886.

EMMA S. (BONES) STONE, B.L., ... New Brighton, N. Y.
ARTHUR S. COCHRAN, B.S., ... Westtown, Pa.
GEORGE J. FREEDLEY, B.S., ... Richmond, Va.
HELEN G. JOHNSON, A.B., ... Muncy, Pa.
ELLA (MERRICK) TOMLINSON, A.B., ... Brownsburg, Pa.
EDGAR M. SMEDLEY, B.S., ... Media, Pa.
ROWLAND J. SPENCER, B.L., ... Salem, Ore.
MARTHA M. (WATSON) SUTPHEN, A.M., 1891, ... Holland, Mich.
C. PERCY WILLCOX, B.S. (Ph. B., Yale Univ., 1887; LL.B., Univ. of Pa., 1891), ... Philadelphia, Pa.

Class of 1887.

ALICE T. (BATTIN) LEWIS, A.B., ... Media, Pa.
HARRIET J. (COX) MCDOWELL, B.S., ... New York, N. Y.
HORACE DARLINGTON, B.S., ... Darling, Pa.
HARRY B. GOODWIN, B.S., ... Bordentown, N. J.
ANNA M. (JENKINS) WEBSTER, A.B., ... Mankato, Minn.
THOMAS A. JENKINS, A.B. (Ph.B., Univ. of Pa., 1888; Ph.D., Johns Hopkins Univ., 1894), ... Nashville, Tenn.
FREDERICK K. LANE, B.S., ... Lancaster, Pa.
LINDA B. PALMER, A.M., 1893, ... West Chester, Pa.
HORACE ROBERTS, A.B., ... Fellowship, N. J.
ELIZABETH B. SMEDLEY, A.M., 1896, ... Malvern, Pa.
ELIZABETH B. (SMITH) WILSON, A.B., ... Lincoln, Va.
WILLIAM G. UNDERWOOD, B.S., ... Philadelphia, Pa.

Class of 1888.

ALICE M. ATKINSON, A.B. (and Cornell Univ., 1889), . . Portland, Ore.
THOMAS BROWN, B.S., ... Washington, D. C.
*FRANK CAWLEY, C.E., 1891, ... 1896.
JESSIE L. COLSON, B.S., ... Daretown, N. J.
SADIE M. (CONROW) HUTCHINSON, A.B., ... Plainfield, N. J.
WILLIAM L. DUDLEY, B.S., ... New York, N. Y.
ROBERT P. ERVIEN, B.S., ... Clayton, N. M.
E. LAWRENCE FELL, B.S., ... Philadelphia, Pa.
JOYEUSE L. (FULLERTON) SWEET, A.B. (and Cornell Univ., 1889), ... Denver, Col.
EMMA (GAWTHROP) HAYES, B.S., ... Swarthmore, Pa.
ALICE HALL, A.B., ... Swarthmore, Pa.
P. SHARPLES HALL, B.S. (M.D., Hahn. Med. Col., Phila., 1891), ... Philadelphia, Pa.
WALTER HANCOCK, B.S., ... St. Paul, Minn.
J. RUSSELL HAYES, A.B. (and Harvard, 1889; LL.B., Univ. of Pa., 1892), ... Swarthmore, Pa.
MARTHA P. (JONES) MILLER, A.B., ... Harrisburg, Pa.
T. MONTGOMERY LIGHTFOOT, M.S., 1890 (Ph.D., Univ. of Pa., 1893). . . . . Philadelphia, Pa.
HETTY C. (LIPPINCOTT) MILLER, A.B., ... Riverton, N. J.
ELLIS P. MARSHALL, JR., B.S., ... London Grove, Pa.
WILLIAM S. MARSHALL, B.S. (Ph.D., Leipsic, 1892), . . . Madison, Wis.
AARON C. PANCOAST, B.S., ... San Antonio, Texas.
JESSIE PYLE, A.B. (and Cornell Univ., 1889), ... London Grove, Pa.
JOSEPH J. RHOADS, B.S., ... Bordentown, N. J.
KATHERINE M. RIDER, B.L., ... Brooklyn, N. Y.

*Deceased.

WILLIAM H. SEAMAN, B.S., ... Glen Cove, N. Y.
AMELIA SKILLIN, A.B., ... New Milford, Conn.
CARROLL H. SUDLER, A.B., ... Chicago, Ill.
CHARLOTTE M. WAY, B. S. (A.B., Leland Stanford, Jr., Univ.), New York, N. Y.
ANNIE E. WILLITS, A.B., ... Syosset, N. Y.
ESTHER M. (WILLITS) FELL, B.L., ... Philadelphia, Pa.
FRANK P. WILSON, A.B., ... In Europe.

Class of 1889.

JUSTIN K. ANDERSON, B.S., ... Breading, W. Va.
ALEXANDER G. CUMMINS, JR., A.B., ... New York, N. Y.
HOWARD A. DILL, B.S. (and Mass. Inst. Tech., 1891), . . . Indianapolis, Ind.
HORACE B. FORMAN, JR., B.S., ... New York, N. Y.
ELLIS M. HARVEY, B.S. (M.D., Univ. of Pa., 1893), ... Media, Pa.
CLARA HAYDOCK, B.L., ... Boston, Mass.
J. CARROLL HAYES, A.B. (and Harvard, 1890, LL.B., Univ. of Pa., 1893), ... West Chester, Pa.
JULIA HICKS, B. S., ... Brooklyn, N. Y.
MARY KIRK, A.B., ... Washington, D. C.
MARGARET J. (LAURIE) SEAMAN, A.B., ... Glen Cove, N. Y.
GEORGE A. MASTERS, B.S., ... Philadelphia, Pa.
ALICE S. PALMER, A.B., ... West Chester, Pa.
LOUELLA (PASSMORE) HAYES, A.B., ... West Chester, Pa.
FREDERICK B. PYLE, B.S., ... Washington, D. C.
RALPH STONE, A.B., ... Grand Rapids, Mich.
ELSIE D. STONER, B.L., ... Columbia, Pa.
WILLIS W. VAIL, B.S., ... Quakertown, N. J.
JENNIE F. WADDINGTON, M.S., 1892, ... Salem, N. J.

Class of 1890.

ALVAN W. ATKINSON, A.B. (M.D., Hahneman Medical College, Phila., 1893), ... Trenton, N. J.
SARA H. ATKINSON, A.B., ... Holicong, Pa.
GEORGE H. BARTRAM, B.S., ... Lenape, Pa.
MARTHA M. BIDDLE, B.L., ... Riverton, N. J.
EMMA J. BROOMELL, B.S. (and Univ. of Mich., 1893), ... Baltimore, Md.
MORRIS L. CLOTHIER, B.S , ... Wynnewood, Pa.
BEULAH W. DARLINGTON, A.B., ... West Chester, Pa.
EDWARD DARLINGTON, B.S., ... Chaddsford, Pa.
GEORGE ELLSLER, A.B., ... New Brunswick, N. J.
CAROLINE R. GASTON, A.M., 1895, ... Philadelphia, Pa.
JOHN C. GIFFORD, B.S., 1893, ... May's Landing, N. J.
ABBY M. HALL, A.B. (and Cornell Univ., 1893), ... Swarthmore, Pa.
CLARA A. (HUGHES) MARSHALL, A.B., ... Madison, Wis.
SAMUEL R. LIPPINCOTT, B.S., ... Riverton, N. J.

WILLIAM D. LIPPINCOTT, B.S., ... Cinnaminson, N. J.
*WILLARD L. MARIS, M.S., 1892 (B.S., Univ. of Mich., 1891). . . . . 1895.
ROBERT S. MCCONNELL, B.S., ... Philadelphia, Pa.
FRANCES E. OTTLEY, A.B., ... Austin, Texas.
*MARY D. PALMER, A.B., ... 1892.
MARY E. PANCOAST, B.L., ... Marple, Pa.
JAMES W. PONDER, A.B., ... Wilmington, Del.
ELLIS B. RIDGWAY, B.S., ... Coatesville, Pa.
WALTER ROBERTS, A.B. (M.D., Univ. of Pa., 1893), . . . Philadelphia, Pa.
RICHARD C. SELLERS, B.S., ... Swarthmore, Pa.
FRANCES B. (SMITH) HERR, A.B., ... Moorestown, N. J.
MARY F. (SOPER) PANCOAST, B.S., ... San Antonio, Texas.
R. BARCLAY SPICER, A.B., ... Cincinnati, Ohio.
WILLIAM E. SWEET, A.B., ... Denver, Col.
ALICE W. TITUS, M.L., 1892, ... Old Westbury, N. Y.
MARY H. WHITE, A.B., ... Lansdowne, Pa.

Class of 1891.

EMILY ATKINSON, A.B., ... Moorestown, N. J.
COSMELIA J. (BROWN) HUGHES, B.L., ... Lincoln, Va.
LOUIS P. CLARK, B.S., ... Philadelphia, Pa.
HANNAH H. CLOTHIER, B.L., ... Wynnewood, Pa.
EVA M. (DANIELS) CAPEN, B.S., 1892, ... Boston, Mass.
ELIZA R. HAMPTON, A.B., ... Spring Brook, N. Y.
ISAAC O. HARPER, B.S., ... Baltimore, Md.
ESTHER HAVILAND, B.L., ... Brooklyn, N. Y.
ELIZA G. HOLMES, A.B., ... Moorestown, N. J.
JOHN W. HUTCHINSON, JR., B.S., ... New York, N. Y.
DORA LEWIS, B.L., ... Media, Pa.
*LUCY S. LIPPINCOTT, A.B., ... 1891.
CHESTER P. MARTINDALE, B.L., ... West Chester, Pa.
HARRY L. MCDONALD, B.S., ... Kansas City, Mo.
SARAH T. MOORE, B.L., ... Sandy Spring, Md.
A. MITCHELL PALMER, A.B., ... Stroudsburg, Pa.
ELLEN (PASSMORE) PYLE, B.L., ... Washington, D. C.
MARIANNA (SMITH) RAWSON, B.L., ... New York, N. Y.
WILLIAM C. SPROUL, B.S., ... Chester, Pa.
EDWARD B. TEMPLE, B.S., ... Lansdowne, Pa.
KATHARINE L. TYLER, B.S., ... Philadelphia, Pa.
FRANCES M. WHITE, B.L., ... Atlantic City, N. J.
EDWARD C. WILSON, B.S., ... Washington, D. C.
M. LILIAN (YARNALL) DE COU, A.B., ... Trenton, N. J.

* Deceased.

Class of 1892.

M. Ellen (Atkinson) Jenkins, B.L., ... Chicago, Ill.
M. Rosamond (Baker) Haines, A.B., ... Philadelphia, Pa.
Benjamin F. Battin, A.B., ... Newtown, Pa.
Josephine Beistle, A.B., ... Swarthmore, Pa.
Mary E. Broomell, B.L., ... Locust Valley, N. Y.
Frederic N. Carr, B.L., ... Charleston, W. Va.
Howard N. Eavenson, B.S., ... Philadelphia, Pa.
Henry H. Garrett, B.S., ... Philadelphia, Pa.
Howard B. Green, B.S., ... Penn Grove, N. J.
Charles Hart, B.S., ... Pittsburg, Pa.
Annie Hillborn, B.L., ... Swarthmore, Pa.
Edward A. Jenkins, B.S., ... Chicago, Ill.
Charles B. Ketcham, A.B., 1893, ... New York, N. Y.
Phebe H. (Ketcham) McAllister, B.S., ... Colorado Springs, Col.
Henry McAllister, Jr., B.L., ... Colorado Springs, Col.
Bernard S. McIlvain, B.L., ... Darlington, Md.
John F. Murray, B.S., ... Wallingford, Pa.
Ellen Pyle, A.B., ... Newtown, Pa.
Mary E. Stebbins, B.L., ... Baltimore, Md.
Joseph J. Walker, B.S., ... Pittsburg, Pa.
William E. Walter, B.S., ... Philadelphia, Pa.
Florence N. Wolverton, A.B., ... Swarthmore, Pa.
Mary L. Wolverton, A.B., ... Swarthmore, Pa.

Class of 1893.

Jane Atkinson, A.B., ... Holicong, Pa.
George H. Brooke, B.S., ... University of Pa.
Francis E. Broomell, B.S., ... Chicago, Ill.
John L. Carver, B.L., ... Media, Pa.
Joseph T. Freeman, B.S., ... Rochester, N. Y.
Dora A. Gilbert, A.B., ... Chester, Pa.
Charles S. Hallowell, B.S., ... New York, N. Y.
*Clement Lodge, B.S., ... 1895.
Lorena B. Matlack, A.B., ... West Chester, Pa.
Carlie McClure, A.B., ... Girard, Pa.
Omar B. Pancoast, B.S., ... Johns Hopkins Univ.
Jesse H. Reinhardt, B.S., ... Salem, N. J.
Julius Staab, A B., ... New York, N. Y.
John B. Stetson, B.S. (M.D., Med. Chi. Col., Phila., 1896), Lansdale, Pa.
Esther E. Spicer, B.L., ... Media, Pa.
Frances B. Stevenson, A.B., ... Felton, Del.

*Deceased.

George H. Strout, A.B., ... Boston, Mass.
Esther H. Sutton, B.L., ... Chappaqua, N. Y.
Henry C. Turner, B.S., ... New York, N. Y.
Carrie B. Way, B.L., ... Kennett Square, Pa.
Lila K. Willets, B.L., ... Roslyn, N. Y.
E. Newlin Williams, B.S., ... New Hope, Pa.
S. Ellen (Williams) Battin, B.S., ... Newtown, Pa.
Genevieve S. Zane, A.B., 1894, ... West Chester, Pa.

Class of 1894.

Mabel Alexander, B.L., ... Philadelphia, Pa.
Anna S. Atkinson, A.B., ... Buckingham, Pa.
Lydia Biddle, B.L., ... Lansdowne, Pa.
Edwin P. Bond, A.B., ... Philadelphia, Pa.
Bertha L. Broomell, B.S., ... Jenkintown, Pa.
Emma S. (Chambers) White, A.B., ... Atlantic City, N. J.
Elizabeth Conrow, A.B., ... Cornell University.
Herman Conrow, B.S., ... Brockton, Mass.
Altha T. Coons, B.S., ... Swarthmore, Pa.
Hetty L. Cox, B.L., ... Oxford, Eng.
Joseph C. Emley, B.S., ... Philadelphia, Pa.
Frederic H. Gawthrop, B.S., ... Baltimore, Md.
John W. Gregg, B.L., ... Cornell University.
George G. Griest, B.S., ... Hartford, Conn.
Mary A. Hayes, A.B., ... West Chester, Pa.
Helen R. Hillborn, A.B., ... Swarthmore, Pa.
Helen S. Hutchinson, B.S., ... Baltimore, Md.
Mary B. (Janvier) Pugh, B.L., ... Philadelphia, Pa.
Harriet M. Kent, A.B., ... Swarthmore, Pa.
Helen P. Lamb, B.L., ... Baltimore, Md.
M. Elizabeth Lamb, B.L., ... Baltimore, Md.
Owen Moon, Jr., B.S., ... Trenton, N. J.
Marion D. Perkins, A.B., ... Moorestown, N. J.
Margaret D. Pfahler, B.S., ... Philadelphia, Pa.
David B. Rushmore, B.S. (M.E., Cornell Univ., 1895), . Montreal, Can.
Caroline P. Sargent, A.B., ... St. Paul, Minn.
Philip Sellers, B.S., ... Swarthmore, Pa.
Cornelia J. Shoemaker, B.L., ... Baltimore, Md.
Edward A. Staab, A.B., ... Philadelphia, Pa.
Mary W. Titus, B.L., ... Old Westbury, N. Y.
Helen (Train) Tannehill, B.S., 1895, ... McConnelsville, Ohio.
Daniel Underhill, Jr., B.S., ... Jericho, N. Y.
Mary Underhill, M.S., 1895, ... Langhorne, Pa.
Allen K. White, B.S., ... Atlantic City, N. J.

STUART WILDER, B.S., ... Johnson City, Tenn.
JOHN M. WILLIS, B.S., ... Williamson School, Pa.
MARY E. YEO, B.S., ... Easton, Md.
*SUSANNA S. YEO, B.L., ... 1895.
HARRY P. YOUNG, B.S., ... Morton, Pa.

Class of 1895.

FRANK C. ANDREWS, B.S., ... Cornell Univ.
ELIZABETH M. BAILY, B.S., ... Norristown, Pa.
WILLIAM S. BARKER, B.S., ... Lansdowne, Pa.
HARRY E. BEAN, B.S., ... Philadelphia, Pa.
HILDEGARD BROOKS, B.S., ... Newburg, N. Y.
FRANCES W. (CHEAIRS) MANNING, B.L., ... Trenton, N. J.
WALTER CLOTHIER, B.L., ... Wynnewood, Pa.
MAY GIFFORD, B.L., ... May's Landing, N. J.
ANNA R. H. HARRISON, B.L., ... Xenia, Ohio.
MARY B. HOLLINGSHEAD, A.B., ... Pemberton, N. J.
EMMA S. HUTCHINSON, B.L., ... Chappaqua, N. Y.
ROLAND G. KENT, A.B., B.L., 1896, ... Wilmington, Del.
JOHN A. LAFORE, B.S., ... Philadelphia, Pa.
C. IRVINE LEIPER, B.S., 1896, ... Wallingford, Pa.
EGBERT P. LINCOLN, B. S., ... Naples, N. Y.
BERTHA LIPPINCOTT, B.L., ... Riverton, N. J.
EDGAR LIPPINCOTT, B.S., ... Riverton, N. J.
JOSEPH R. LIPPINCOTT, A.B., ... Moorestown, N. J.
ELIZABETH B. MILLER, A.B., ... Media, Pa.
CHARLES S. MOORE, B.L., ... Moorestown, N. J.
SAMUEL C. PALMER, A.B., ... Swarthmore, Pa.
LYDIA M. PARRY, A.B., ... Hainesport, N. J.
ALFRED E. PFAHLER, B.S., ... Philadelphia, Pa.
M. ELIZABETH POWNALL, B.L., ... Christiana, Pa.
*FRANK L. PRICE, A.B., ... 1896.
ARTHUR H. SCOTT, B.S., ... Swarthmore, Pa.
JANE C. SHAW, B.L., ... Williamsport, Pa.
HELEN B. SMITH, A.B., ... Media, Pa.
G. EDMUND STRATTAN, B.S., ... Altoona, Pa.
WILLIAM H. WANZER, A.B., ... Hurstville, N. Y.
EMMA A. WASLEY, B.L., ... Shenandoah, Pa.
HOWARD WHITE, JR., B.S., ... Earlington, Ky.
ALICE P. WILLITS, A.B., ... Newtown Square, Pa.
ALBERT T. YARNALL, B.L., ... Woodstown, N. J.

* Deceased.

Class of 1896.

Mary S. Bartram, A.B., ... London Grove, Pa.
William I. Battin, A.B., ... Armour Inst., Chicago.
Leopold W. Bierwirth, B.S., ... Dover, N. J.
Mellie E. Bishop, B.L., ... Monmouth, Ore.
Albert L. Buffington, A.B., ... Rising Sun, Md.
Carolien H. Chambers, B.L., ... Unionville, Pa.
Charles Chandler, B.S., ... Bushnell, Ill.
William B. Chapin, B.S., ... Goldgulch, Cal.
Isaac H. Clothier, Jr., A.B., ... Wynnewood, Pa.
Frances Darlington, A.B., ... Glen Mills, Pa.
Aïda T. Evans, B.L., ... Malvern, Pa.
George B. Ferrier, Jr., B.S., ... Moorestown, N. J.
E. Harper Firth, B.S., ... East Williston, N. Y.
Sylvester S. Garrett, B.S., ... Swarthmore, Pa.
T. Russell Gleim, B.S., ... Cornwall, Pa.
Ellen Gunton, A.B., ... New York, N. Y.
Hallie H. Haines, B.L., ... Rising Sun, Md.
Violette T. Haines, A.B., ... Rising Sun, Md.
Charles G. Hodge, B.L., ... Washington, D. C.
Iolene M. Hollenshead, A.B., ... Swarthmore, Pa.
Howard C. Johnson, B.L., ... Philadelphia, Pa.
Charles Kaighn, B.S., ... S. McAlester, Ind. Ter.
Philip S. Knauer, A.B., ... Warwick, Pa.
Mary C. McAllister, A.B., ... Colorado Springs, Col.
Mary S. McDowell, A.B., ... Oxford, Eng.
Arabella E. Moore, B.L., ... Philadelphia, Pa.
William J. Morrison, B.S., ... Trenton, N. J.
Percival Parrish, B.L., ... Newport, R. I.
N. Wilmer Plummer, B.S., ... Frederick, Md.
Charles A. Schooley, B.S., ... Philadelphia, Pa.
Mary T. Shoemaker, B.L., ... Philomont, Va.
J. Chauncey Shortlidge, A.B., ... Locust Valley, N. Y.
Lauretta T. Smedley, A.B., ... Chappaqua, N. Y.
A. Ella Spicer, A.B., ... Baltimore, Md.
Albert H. Taylor, B.S., ... Philadelphia, Pa.
Franklin D. Walton, B.L., ... London Grove, Pa.
John E. Wells, B.L., ... Philadelphia, Pa.
Hanson Z. Wilson, B.S., ... Port Jervis, N. Y.
Keturah E. Yeo, B.S., ... Easton, Md.

Honorary Degrees Conferred.

1888.

William Hyde Appleton, Ph.D., (A.B., Harvard, 1864; A.M., LL.B., Harvard, 1869), Professor of Greek and of English Literature.

Susan J. Cunningham, Sc.D., Professor of Mathematics and Astronomy.

1889.

Arthur Beardsley, Ph.D., (C.E., Rensselaer Polytechnic Institute, 1867), Professor of Engineering and Director of Mechanic Arts.

Isaac Sharpless, LL.D., (B.S., Harvard, 1873; Sc.D., Univ. of Pa., 1883), President of Haverford College.

1890.

Olivia Rodham, A.B., late Assistant Librarian and Instructor in Botany.

Committee on Trusts, Endowments, and Scholarships.

EDWARD H. OGDEN,
314 Vine Street, Philadelphia, Pa.

EMMOR ROBERTS,
Fellowship, N. J.

DANIEL UNDERHILL,
Jericho, L. I.

EDMUND WEBSTER,
1156 South Broad Street, Philadelphia, Pa.

SUSAN W. LIPPINCOTT,
Cinnaminson, N. J.

REBECCA C. LONGSTRETH, *Secretary.*
Sharon Hill, Pa.