

# Swarthmore College



## CATALOGUE

1894-'95.





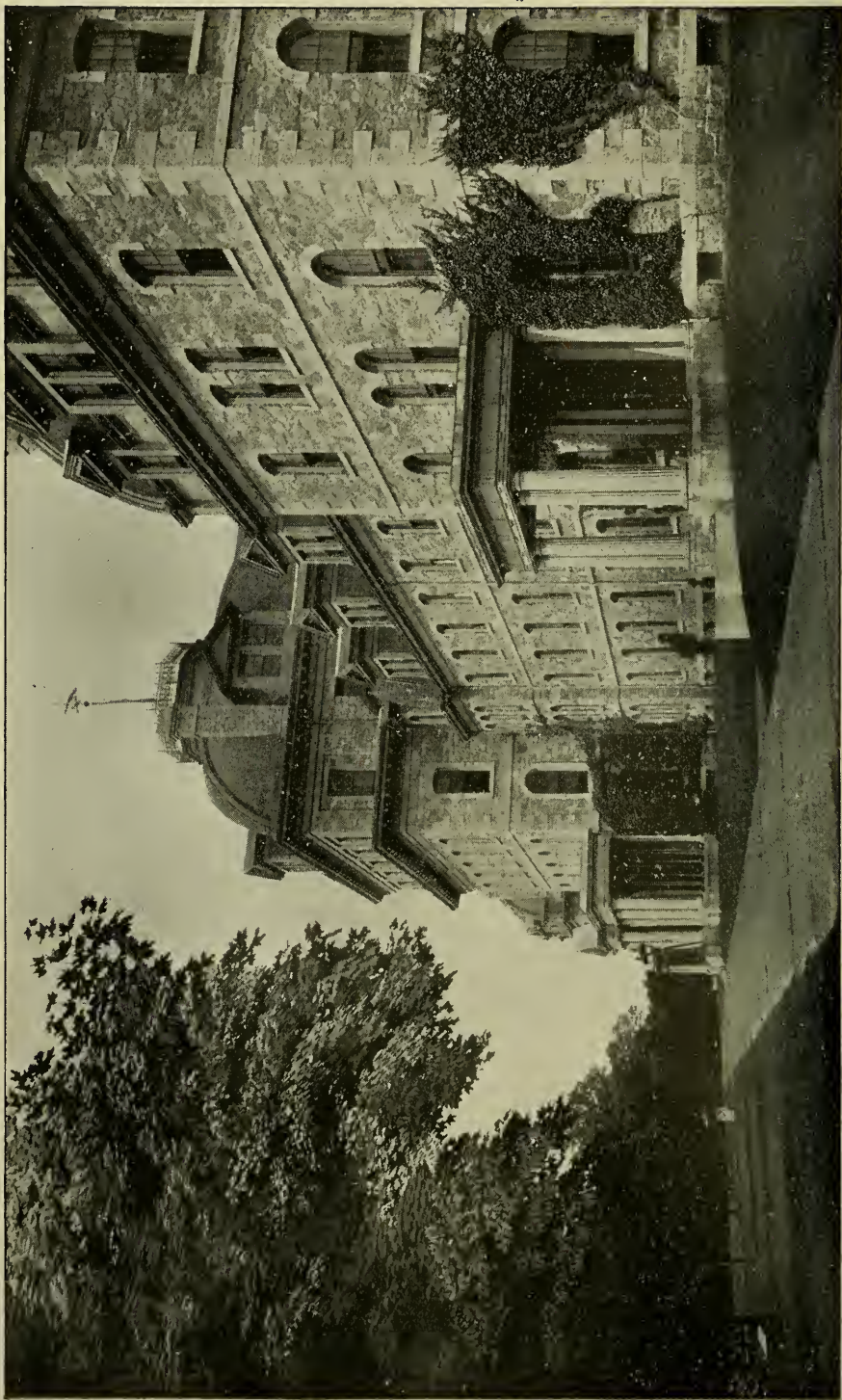
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SWARTHMORE COLLEGE.  
(MAIN BUILDING LOOKING WEST.)

Twenty-Sixth  
Annual Catalogue  
OF  
Swarthmore College

Swarthmore, Pa.

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1894-95.

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# Contents.

THE CALENDAR, . . . . .	3
THE CORPORATION, . . . . .	4
Board of Managers, . . . . .	4
Officers and Committees, . . . . .	6
THE FACULTY, . . . . .	8
OFFICERS OF INSTRUCTION, . . . . .	9
LIST OF STUDENTS.	
Senior Class, . . . . .	12
Junior Class, . . . . .	12
Sophomore Class, . . . . .	14
Freshman Class, . . . . .	15
Unclassified Students, . . . . .	17
Summary, . . . . .	17
GENERAL INFORMATION.	
Buildings and Grounds, . . . . .	18
Principal College Building, . . . . .	18
Science Hall, . . . . .	18
Astronomical Observatory, . . . . .	19
Other Buildings, . . . . .	19
Libraries, . . . . .	19
Friends' Historical Library, . . . . .	20
Reading-Room, . . . . .	20
Literary Societies, . . . . .	20
Gymnasiums, . . . . .	20
GENERAL REGULATIONS.	
Religious Exercises, . . . . .	21
Leave of Absence, . . . . .	21
Commencement and Vacations, . . . . .	21
The Household, . . . . .	21
EXPENSES.	
For Resident Students, . . . . .	23
For Day Students, . . . . .	23
Payments, . . . . .	23
Fellowships, . . . . .	24
Scholarships, . . . . .	24
Pecuniary Aid, . . . . .	25
EXAMINATIONS FOR ADMISSION.	
Introductory, . . . . .	26
Time and Conditions of Ad- mission, . . . . .	26
Summer Examinations, 1895, . . . . .	26
Fall Examinations, 1895, . . . . .	27

Requirements for Admission, . . . . .	27
Admission without Examina- tions, . . . . .	28
Examinations for Higher Classes, . . . . .	29
Partial Courses of Study, . . . . .	29

## COURSES OF INSTRUCTION.

Biology, . . . . .	30
Chemistry, . . . . .	32
Drawing and Painting, . . . . .	34
History of Art, . . . . .	34
Engineering and Mechanic Arts, . . . . .	35
English Language and Litera- -ture, . . . . .	38
French Language and Litera- -ture, . . . . .	41
German Language and Litera- -ture, . . . . .	42
Greek, . . . . .	43
History and Political Economy, . . . . .	44
Latin, . . . . .	46
Mathematics, . . . . .	47
Pedagogics, . . . . .	48
Philosophy, . . . . .	48
Physical Culture, . . . . .	48
Physics, . . . . .	49

## GENERAL REMARKS ON COURSES OF STUDY, . . . . . 51

## ARRANGEMENT OF COURSES OF STUDY, . . . . . 53

Course in Arts, . . . . .	53
Course in Letters, . . . . .	54
Course in Science, . . . . .	55
Course in Engineering, . . . . .	56

## GRADUATION AND DEGREES.

Degree of Bachelor, . . . . .	57
Degree of Master, . . . . .	57
Degree of Civil Engineer, . . . . .	57

## OFFICERS OF THE ALUMNI ASSOCI- ATION, . . . . . 58

LIST OF GRADUATES, . . . . .	59
Honorary Degrees Conferred, . . . . .	69

# Calendar.

1894-95.

- |       |                       |              |  |
|-------|-----------------------|--------------|--|
| 1894. | Ninth Month, 18th,    | Third-day,   | Meeting of the Board of Managers.                                  |
| "     | Ninth Month, 18th,    | Third-day,   | New Students arrive.   |
| "     | Ninth Month, 19th,    | Fourth-day,  | Examinations for Admission.  |
| "     | Ninth Month, 20th,    | Fifth-day,   | Old Students return.   |
| "     | Ninth Month, 21st,    | Sixth-day,   | Regular Exercises begin.   |
| "     | Eleventh Month, 28th, | Fourth-day,  | Thanksgiving Recess begins.  |
| "     | Twelfth Month, 3d,    | Second-day,  | Regular Exercises begin at 8.30 A. M.                              |
| "     | Twelfth Month, 3d,    | Second-day,  | Meeting of the Board of Managers.                                  |
| "     | Twelfth Month, 4th,   | Third day,   | <i>Annual Meeting of the Stockholders.</i>                         |
| "     | Twelfth Month, 4th,   | Third-day,   | Meeting of the Board of Managers.                                  |
| "     | Twelfth Month, 21st,  | Sixth day,   | Winter Recess begins.  |
| 1895. | First Month, 2d,      | Fourth-day,  | Students return.   |
| "     | First Month, 3d,      | Fifth-day,   | Regular Exercises begin.   |
| "     | Second Month, 2d,     | Seventh-day, | First Semester ends.   |
| "     | Second Month, 4th,    | Second-day,  | Second Semester begins.  |
| "     | Third Month, 12th,    | Third-day,   | Meeting of the Board of Managers.                                  |
| "     | Third Month, 30th,    | Seventh-day, | Spring Recess begins.  |
| "     | Fourth Month, 8th,    | Second-day,  | Students return.   |
| "     | Fourth Month, 26th,   | Sixth-day,   | Graduating Essays due from Senior Class.                           |
| "     | Fifth Month, 20th,    | Second-day,  | Senior Examinations begin.   |
| "     | Fifth Month, 20th,    | Second-day,  | Engineering Field-work begins. Continues three weeks.              |
| "     | Fifth Month, 27th,    | Second-day,  | Senior Examinations completed, and the results announced.          |
| "     | Sixth Month, 3d,      | Second-day,  | Final Examinations begin.  |
| "     | Sixth Month, 7th,     | Sixth day,   | } Examinations for Admission.                                      |
| "     | Sixth Month, 8th,     | Seventh day, |  |
| "     | Sixth Month, 10th,    | Second-day,  | Meeting of the Board of Managers.                                  |
| "     | Sixth Month, 10th,    | Second-day,  | Class-Day Exercises.   |
| "     | Sixth Month, 11th,    | Third-day,   | COMMENCEMENT.  |
| "     | Ninth Month, 17th,    | Third-day,   | Meeting of the Board of Managers.                                  |
| "     | Ninth Month, 17th,    | Third-day,   | New Students arrive.   |
| "     | Ninth Month, 18th,    | Fourth-day,  | Examinations for Admission begin, and old Students return.         |
| "     | Ninth Month, 19th,    | Fifth day,   | Examinations for Admission completed, and Regular Exercises begin. |
| "     | Eleventh Month, 27th, | Fourth-day,  | Thanksgiving Recess begins at noon.                                |
| "     | Twelfth Month, 2d,    | Second-day,  | Regular Exercises begin 8.30 A. M.                                 |
| "     | Twelfth Month, 2d,    | Second-day,  | Meeting of the Board of Managers.                                  |
| "     | Twelfth Month, 3d,    | Third-day,   | <i>Annual Meeting of the Stockholders.</i>                         |
| "     | Twelfth Month, 3d,    | Third-day,   | Meeting of the Board of Managers.                                  |
| "     | Twelfth Month, 20th,  | Sixth-day,   | Winter Recess begins.  |
| 1896. | First Month, 2d,      | Fifth-day,   | Students return.   |
| "     | First Month, 3d,      | Sixth-day,   | Regular Exercises begin.   |

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1894-95.

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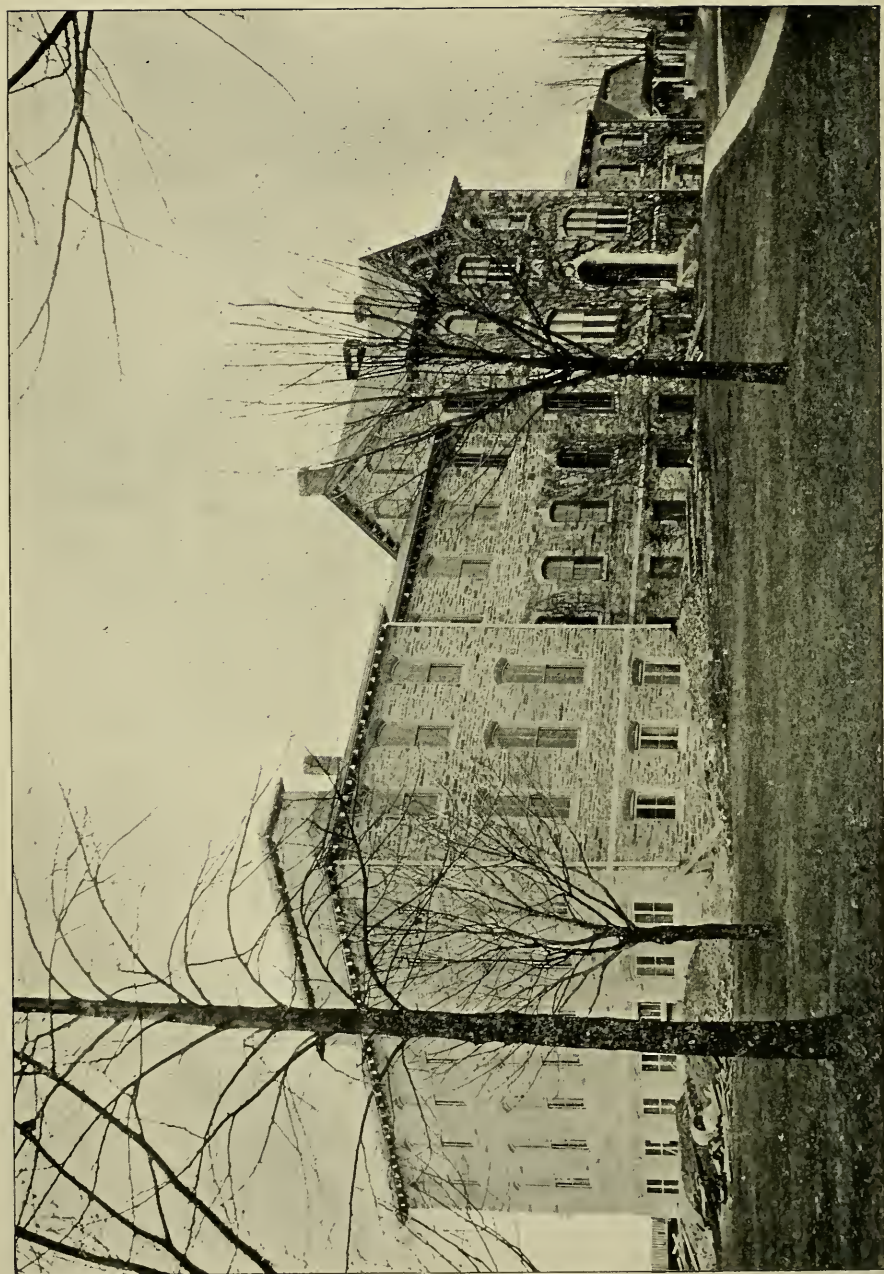
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GEORGE GLEIM, JR. . . . .	<i>Engineering</i> . . . . .	Cornwall, Pa.
T. RUSSEL GLEIM . . . . .	<i>Engineering</i> . . . . .	Cornwall, Pa.
SARAH P. GODFREY . . . . .	<i>Letters</i> . . . . .	Passaic, N. J.
ANNETTA HALL . . . . .	<i>Irregular</i> . . . . .	Philadelphia, Pa.
S. WARREN HALL . . . . .	<i>Irregular</i> . . . . .	Dover, Del.
MABEL A. HARRIS . . . . .	<i>Letters</i> . . . . .	Etna, N. H.
MARIETTA HICKS . . . . .	<i>Letters</i> . . . . .	Westbury Station, N. Y.
CLARENCE B. HOADLEY . . . . .	<i>Science</i> . . . . .	Swarthmore, Pa.
EDITH H. JOHNS . . . . .	<i>Irregular</i> . . . . .	Media, Pa.
HOWARD C. JOHNSON . . . . .	<i>Letters</i> . . . . .	Philadelphia, Pa.
EDITH F. KENDERDINE . . . . .	<i>Arts</i> . . . . .	Germantown, Pa.
HARRY W. LEWIS . . . . .	<i>Engineering</i> . . . . .	Swarthmore, Pa.
MARY M. LEWIS . . . . .	<i>Irregular</i> . . . . .	Media, Pa.
NELLIE LODGE . . . . .	<i>Science</i> . . . . .	Philadelphia, Pa.
ROBERT E. MANLEY . . . . .	<i>Engineering</i> . . . . .	Washington, D. C.
RICHARD B. MARSHALL . . . . .	<i>Arts</i> . . . . .	Media, Pa.
WALKER MATTESON . . . . .	<i>Arts</i> . . . . .	Roslyn, N. Y.

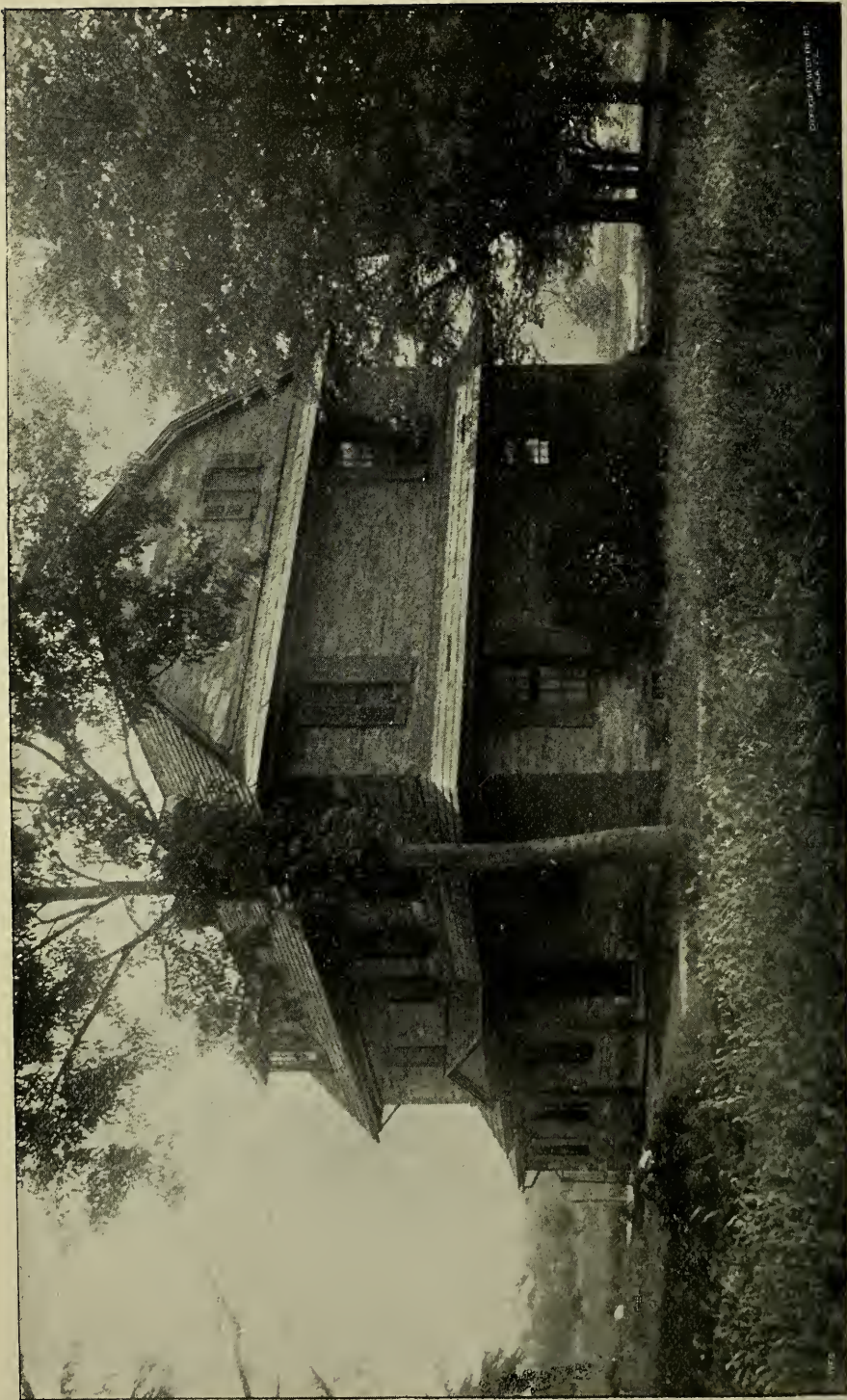
Name.	Course.	Residence.
MARY McALLISTER . . . .	<i>Arts</i> . . . .	Colorado Springs, Col.
LAURA C. MILLER . . . .	<i>Arts</i> . . . .	New York, N. Y.
HERBERT L. NOXON . . . .	<i>Engineering</i> . . . .	Ingersoll, Canada.
PERCIVAL PARRISH . . . .	<i>Irregular</i> . . . .	Newport, R. I.
ELLWOOD C. PARRY . . . .	<i>Letters</i> . . . .	Wyncote, Pa.
N. WILMER PLUMMER . . . .	<i>Engineering</i> . . . .	Frederick, Md.
ROBERT PYLE . . . . .	<i>Arts</i> . . . . .	London Grove, Pa.
SAMUEL RIDDLE . . . . .	<i>Engineering</i> . . . . .	Media, Pa.
MIRIAM SENER . . . . .	<i>Letters</i> . . . . .	Lancaster, Pa.
MARY T. SHOEMAKER . . . .	<i>Letters</i> . . . .	Philomont, Va.
BERTHA J. SMITH . . . . .	<i>Letters</i> . . . . .	Lincoln, Va.
GRACE W. STEVENSON . . . .	<i>Irregular</i> . . . .	Felton, Del.
FRANKLIN D. WALTON . . . .	<i>Letters</i> . . . .	London Grove, Pa.
CHANNING WAY . . . . .	<i>Arts</i> . . . . .	West Chester, Pa.
JOHN E. WELLS . . . . .	<i>Letters</i> . . . . .	Philadelphia, Pa.
EDITH WILDER . . . . .	<i>Letters</i> . . . . .	Johnson City, Tenn.
LYDIA P. WILLIAMS . . . . .	<i>Letters</i> . . . . .	Philadelphia, Pa.
LUSSA WRIGHT . . . . .	<i>Arts</i> . . . . .	Port Chester, N. Y.

## FRESHMAN CLASS.

Name.	Course.	Residence.
SUSAN W. ATKINSON . . . .	<i>Arts</i> . . . .	Holicong, Pa.
MARY E. BARTLESON . . . .	<i>Letters</i> . . . .	Thurlow, Pa.
NANCY M. BATTIN . . . . .	<i>Irregular</i> . . . . .	Omaha, Neb.
WILLIAM I. BATTIN . . . . .	<i>Arts</i> . . . . .	Omaha, Neb.
BRINTON C. BELL . . . . .	<i>Engineering</i> . . . . .	Bayside, N. Y.
WILLIAM H. BRADY . . . . .	<i>Letters</i> . . . . .	Middletown, Del.
CHARLES T. BROWN . . . . .	<i>Arts</i> . . . . .	West Chester, Pa.
HEMAN B. CALLENDER . . . .	<i>Irregular</i> . . . .	Sheffield, Mass.
M. HELEN CATLIN . . . . .	<i>Arts</i> . . . . .	Lexington Mass.
HELEN P. CHEAIRS . . . . .	<i>Irregular</i> . . . . .	Delaware City, Del.
J. HEULINGS COLES . . . . .	<i>Science</i> . . . . .	Camden, N. J.
ROBERT J. CRAWFORD . . . .	<i>Science</i> . . . .	Williamson School, Pa.
WILLIAM W. CURTISS . . . .	<i>Engineering</i> . . . .	Woodside, Md.
BESSIE H. EVES . . . . .	<i>Irregular</i> . . . . .	Chester, Pa.
MARGARET EVES . . . . .	<i>Letters</i> . . . . .	Millville, Pa.

Name.	Course.	Residence.
ELMER O. FISHER . . . .	<i>Letters</i> . . . .	Rutledge, Pa.
LUCRETIA M. GASKILL . . .	<i>Letters</i> . . . .	Swarthmore, Pa.
ADA V. GILLESPIE . . . .	<i>Arts</i> . . . .	Allegheny, Pa.
SAMUEL P. GREEN . . . .	<i>Irregular</i> . . . .	Kennett Square, Pa.
MARIETTA HICKS . . . .	<i>Irregular</i> . . . .	Westbury Station, N. Y.
EDITH LAMB . . . . .	<i>Letters</i> . . . .	Baltimore, Md.
CLARENCE LIPPINCOTT . . .	<i>Letters</i> . . . .	Riverton, N. J.
HAROLD B. LITTLE . . . .	<i>Engineering</i> . . . .	Media, Pa.
CAROLINE A. LUKENS . . . .	<i>Irregular</i> . . . .	Swarthmore, Pa.
LILLA MERRITT . . . . .	<i>Irregular</i> . . . .	Brooklyn, N. Y.
WILLIAM B. MILLER . . . .	<i>Engineering</i> . . . .	Media, Pa.
ALBERT C. MYERS . . . . .	<i>Letters</i> . . . .	Kennett Square, Pa.
EDNA M. NICHOLL . . . . .	<i>Letters</i> . . . .	Scotch Plains, N. J.
M. IDA PALMER . . . . .	<i>Arts</i> . . . . .	Doe Run, Pa.
ANNIE PARRISH . . . . .	<i>Letters</i> . . . .	Woodbury, N. J.
MARY W. PIERCE . . . . .	<i>Letters</i> . . . .	Washington, D. C.
EVA T. RENGIER . . . . .	<i>Letters</i> . . . .	Lancaster, Pa.
EDNA H. RICHARDS . . . . .	<i>Letters</i> . . . .	Salem, O.
M. LOUISE RICHARDS . . . .	<i>Irregular</i> . . . .	New York, N. Y.
EDWARD R. ROCKWELL . . . .	<i>Engineering</i> . . . .	Cleveland, O.
H. MARY SHARPLES . . . . .	<i>Letters</i> . . . .	West Chester, Pa.
W. FREDERICK SIMS . . . . .	<i>Irregular</i> . . . .	Washington, D. C.
MARSHALL P. SULLIVAN . . . .	<i>Irregular</i> . . . .	Moorestown, N. J.
EMMA THOMAS . . . . .	<i>Science</i> . . . .	Moorestown, N. J.
FREDERIC L. THOMAS . . . . .	<i>Engineering</i> . . . .	Ashton, Md.
GEORGIANA TITUS . . . . .	<i>Letters</i> . . . .	Old Westbury, N. Y.
ALBERT T. VERLENDEN . . . .	<i>Science</i> . . . .	Darby, Pa.
GUY T. VISKNISKKI . . . . .	<i>Irregular</i> . . . .	Carmi, Ill.
ARTHUR H. WALKER . . . . .	<i>Engineering</i> . . . .	S. Charleston, O.
HENRIETTA F. WANZER . . . .	<i>Irregular</i> . . . .	Hurstville, N. Y.
HOWARD J. WEBSTER . . . . .	<i>Irregular</i> . . . .	Philadelphia, Pa.
ELIZABETH S. WILLIAMS . . . .	<i>Irregular</i> . . . .	Holicong, Pa.
MARY J. WILLIAMS . . . . .	<i>Arts</i> . . . . .	Trenton, N. J.
JOSEPH A. WILLIS . . . . .	<i>Irregular</i> . . . .	Fowling Creek, Md.
FREDERIC F. WILSON . . . . .	<i>Engineering</i> . . . .	Jersey Shore, Pa.
ALICE WITBECK . . . . .	<i>Letters</i> . . . .	Belvidere, Ill.
MARY J. YOUNG . . . . .	<i>Irregular</i> . . . .	Morton, Pa.





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THE WEST HOUSE.  
BIRTHPLACE OF BENJAMIN WEST.

ERECTED 1724.



UNCLASSIFIED STUDENTS.

Name.	Residence.
EVA E. FOSTER . . . . .	Lancaster, Pa.
MABEL C. GILLESPIE . . . . .	Allegheny, Pa.
SABINA K. GREEN . . . . .	Wynnewood, Pa.
JONATHAN Y. HIGGINSON . . . . .	Pine, Col.
EFFINGHAM LAWRENCE, JR. . . . .	Bayside, N. Y.
ALICE LIPPINCOTT . . . . .	Riverton, N. J.
HENRY S. McILVAIN . . . . .	Darlington, Md.
MABEL G. MILLER . . . . .	Lancaster, Pa.
HARRY A. SAPP . . . . .	Philadelphia, Pa.
SARAH A. SHREVE . . . . .	Philadelphia, Pa.
ELIZABETH L. STROH . . . . .	Kingston, Pa.
MARY P. H. THOMAS . . . . .	Baltimore, Md.
J. ATHOL UDALL . . . . .	Thomaston, N. Y.
JOSEPH E. WAY . . . . .	Kennett Square, Pa.

SUMMARY.

Graduate Student . . . . .	1
Seniors . . . . .	25
Juniors . . . . .	41
Sophomores . . . . .	54
Freshmen . . . . .	52
Unclassified . . . . .	14
	<hr style="width: 10%; margin-left: auto; margin-right: 0;"/>
Total . . . . .	187

## General Information.

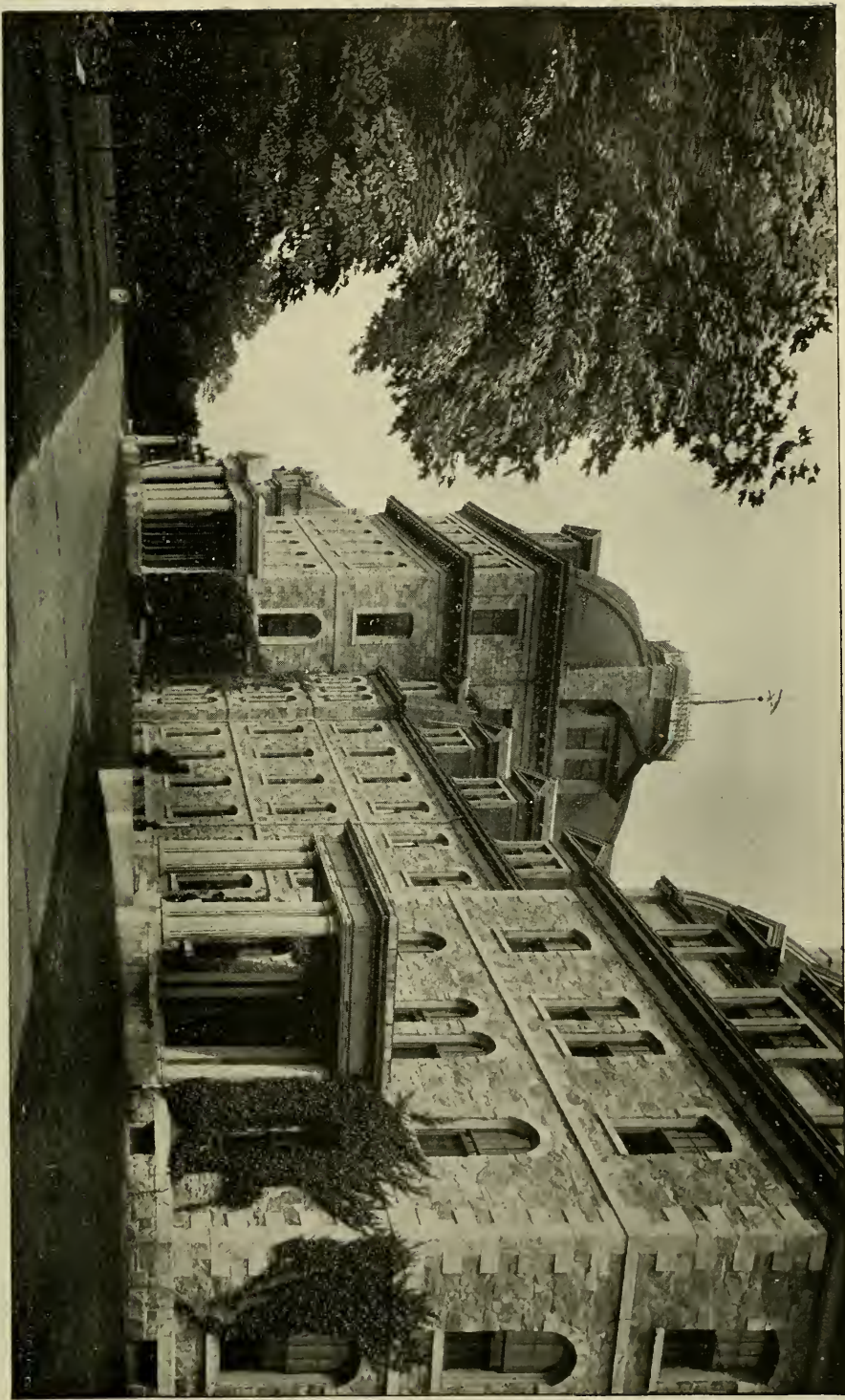
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### Buildings and Grounds.

*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, and 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 students in Engineering, Physics, and Chemistry. It has a frontage of



SWARTHMORE COLLEGE.  
(MAIN BUILDING LOOKING WEST.)



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 16,273 bound volumes, as follows:

The General Library . . . . .	11,000
Literary Societies' Libraries . . . . .	3,231
Friends' Historical Library . . . . .	2,042

Members of the Senior Class are permitted, under proper regulations, to consult the Philadelphia Library, containing 145,000 vol-

umes, 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.

*Commencement and Vacations.*—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, one week in the Third month, and three days at Thanksgiving. (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 comfort 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 :

SARAH D. COALE, Matron of West Wing.

RACHEL S. EVES, Matron of East Wing.

RACHEL B. TOWNSEND, Housekeeper.

MARY P. EVES, Matron of Central Building.

ANNA ELIZA WORRALL, 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.

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 TWO REBECCA M. 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. FRESHMAN HONOR SCHOLARSHIPS.—For the year 1895-96 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.
Chappaqua 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 for the pursuit of special courses 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. The times are as follows for the year 1895.

## Summer Examinations, 1895.

Sixth-day, Sixth month	7th,	at 8.15 A. M. .	Mathematics.
“ “ “ “	“ “ “ “	10.30 A. M. .	English.
“ “ “ “	“ “ “ “	2.00 P. M. .	History.
“ “ “ “	“ “ “ “	3.00 P. M. .	Latin.
“ “ “ “	“ “ “ “	4.00 P. M. .	Greek.
Seventh-day, “ “	8th,	at 8.15 A. M. .	Geography.
“ “ “ “	“ “ “ “	9.15 A. M. .	German.
“ “ “ “	“ “ “ “	10.15 A. M. .	French.

## Fall Examinations, 1895.

Candidates should present themselves at the College on the afternoon of Third-day, Ninth month 17th, 1895.

The examinations will occur as follows :

Fourth-day, Ninth month 18th,	8.15 A. M. .	Mathematics.
“ “ “ “	10.30 A. M. .	English.
“ “ “ “	2.00 P. M. .	History.
“ “ “ “	3.00 P. M. .	Latin.
“ “ “ “	4.00 P. M. .	Greek.
Fifth-day, Ninth month 19th,	8.15 A. M. .	Geography.
“ “ “ “	9.15 A. M. .	German.
“ “ “ “	10.15 A. M. .	French.

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.

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

1. MATHEMATICS.—*Arithmetic*.—Entire.

*Algebra*.—Through Equations of the second degree in a book of High-School grade.

*Geometry*.—The whole of Plane Geometry.

2. ENGLISH.—The candidate will be asked to write a few pages upon some assigned subject, or from dictation. This exercise will be examined with reference to Grammar, Spelling, Paragraphing, Punctuation, and the use of Capitals. An examination will also be given in the principles of the grammar.

3. HISTORY.—A thorough preparation in the outlines of the history of the United States, and a thorough outline course 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: Eggleston's School History of the United States, Gardiner's School History of England, Barnes's General History.

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

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

(1) *For the Classical Course* in

\* LATIN.—Caesar's Gallic War, four books; Virgil's *Æneid*, six books; Cicero, seven orations (including those against Catiline); Collar's Latin Composition.

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.

(2) *For the Literary Course* in English Literature and in French or German, † as follows:

ENGLISH LITERATURE.—Candidates are expected to be familiar with Longfellow's *Tales of a Wayside Inn*, Lowell's *Vision of Sir Launfal*, Irving's *Sketch Book*, Whittier's *Tent on the Beach*, Hawthorne's *House of the Seven Gables*, and to write a short composition upon a subject taken from one of these works.

FRENCH.—*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*; varied selections (*entire*); dictées.

GERMAN.—Elements of German Grammar, and ability to translate, at sight, easy German prose.

(3) *For the Engineering Course*, in English Literature and in French or German, † as above.(4) *For the Science Course*, in English Literature and in French or German, † as above.

*Admission without Examination*.—Graduates of the following Schools are admitted to the Freshman Class without examination upon presenting regular certificates properly filled up by the Principals of the Schools named. ‡

Friends' Central School, . . . . .	Philadelphia, Pa.
Friends' Seminary, . . . . .	New York, N. Y.
Friends' High School, . . . . .	Baltimore, Md.

\* For three books of the *Æneid*, a corresponding amount of Ovid and of Virgil's *Bucolics* will be accepted as an equivalent.

† Latin will be accepted as an equivalent for French or German for admission to this course.

‡ Other Schools may on application be added to this list, if the Faculty and Instruction Committee shall be satisfied that they are taught by competent teachers and are furnishing the requisite preparation for admission.

Woodstown Academy, . . . . .	Woodstown, N. J.
Friends' School, . . . . .	Wilmington, Del.
Friends' High School, . . . . .	West Chester, Pa.
Friends' High School, . . . . .	Moorestown, N. J.
Buckingham Friends' School, . . . . .	Lahaska, Pa.
Friends' Academy, . . . . .	Locust Valley, L. I.
Friends' Select School, . . . . .	Washington, D. C.
Sherwood School, . . . . .	Sandy Spring, Md.
Friends' School, . . . . .	Kennett Square, Pa.
Providence Preparative Meeting School, . . . . .	Media, Pa.
Oakland Boarding School, . . . . .	Fallston, Md.
Friends' Normal Institute, . . . . .	Rising Sun, Md.
Abington Friends' School, . . . . .	Jenkintown, Pa.
Swarthmore Grammar School, . . . . .	Swarthmore, Pa.
George School, . . . . .	Newtown, Pa.
Friends' School, . . . . .	Christiana, Pa.

Blank certificates will be furnished each year to the Principals of these preparatory schools, and to such private teachers as may be named for the privilege. The right is reserved, however, to withdraw from such school or teacher the privilege of sending pupils into College on certificates.

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 19th, 1895.

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 53-56.

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## 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 field and 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.

*Text-books.*—Orton's "Comparative Zoology;" Trotter's "Abstract of Zoology;" Colton's "Practical Zoology."

SOPHOMORE CLASS.—Sanitary Science, elective for Engineers.

JUNIOR CLASS.—I. Physiology of Plant Life.

2. Morphology and Physiology of a high form of animal. Text-books.—Mivart, "The Cat;" Huxley & Youman's "Physiology."

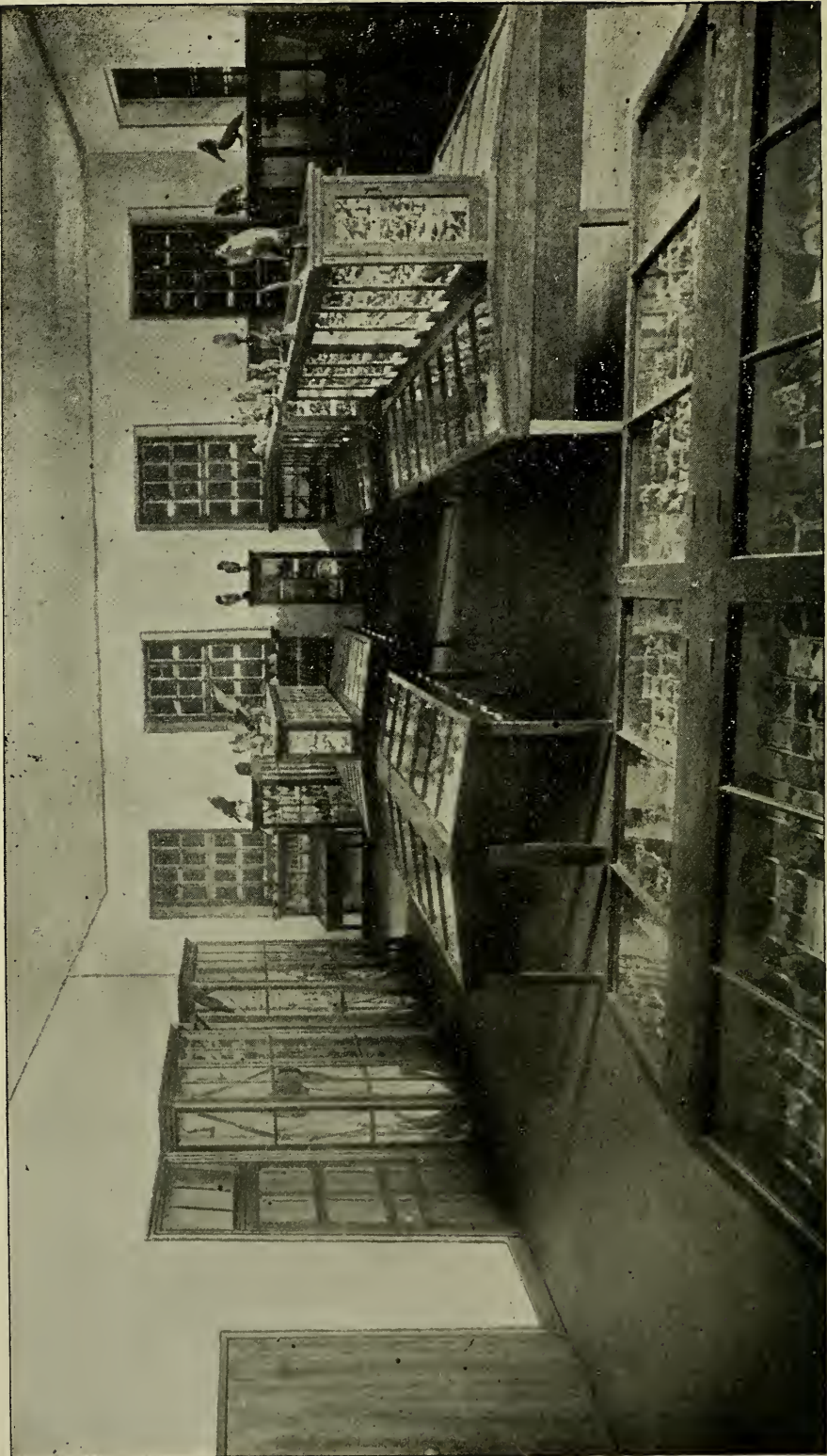
SENIOR CLASS.—Vertebrate Morphology, Economic Botany, Geology. Text-book, "Le Conte's Elements" (elective).

*Independent Work.*—Preparation and writing of a thesis on some biological subject.

Time for work to be arranged with the Professor.







MUSEUM.

## 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 backboneed 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.

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.

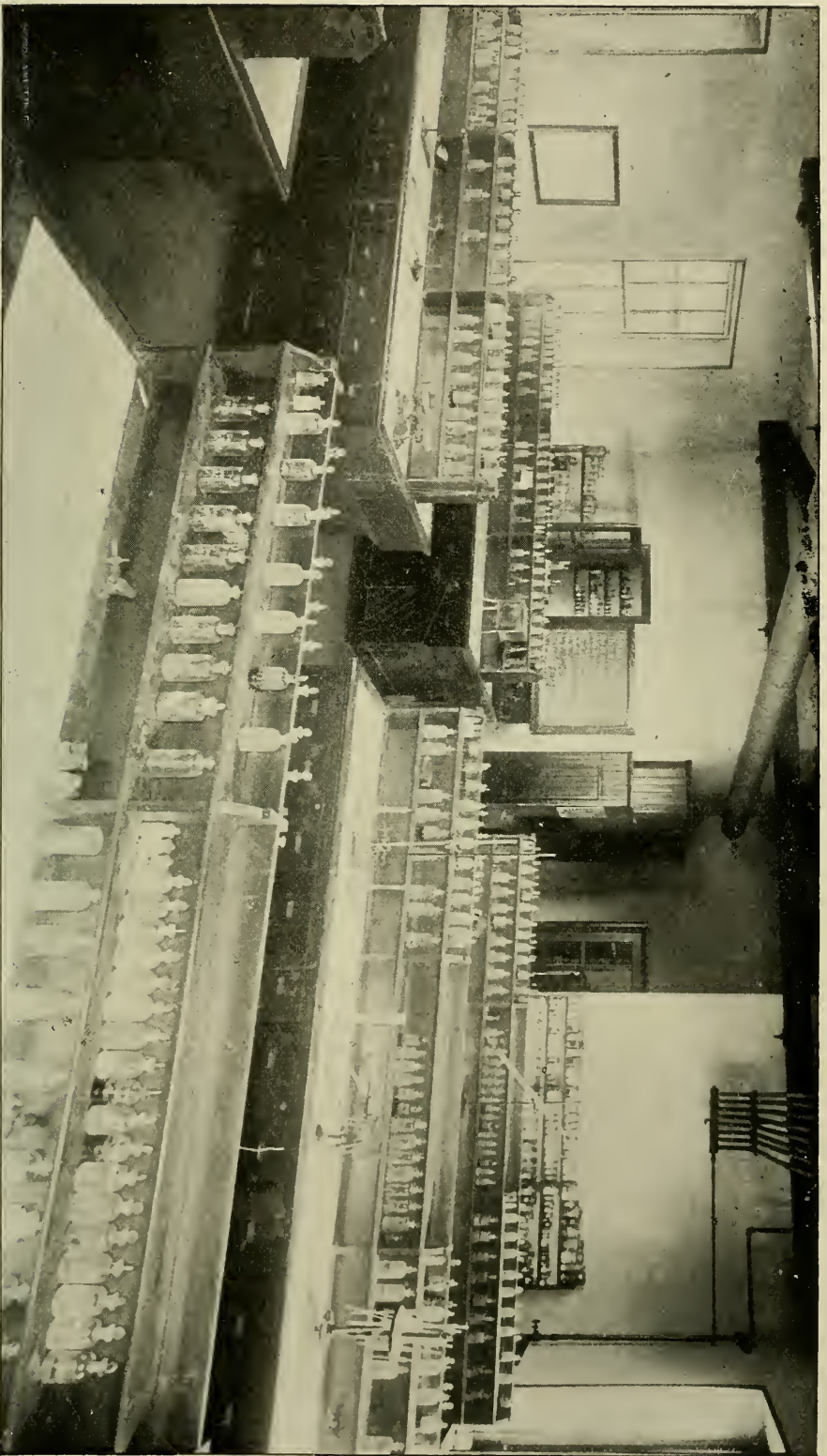
WILLIAM C. DAY, *Professor.*

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 preparations 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



CHEMICAL LABORATORY.



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.

## 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 consists 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. Painting, 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.

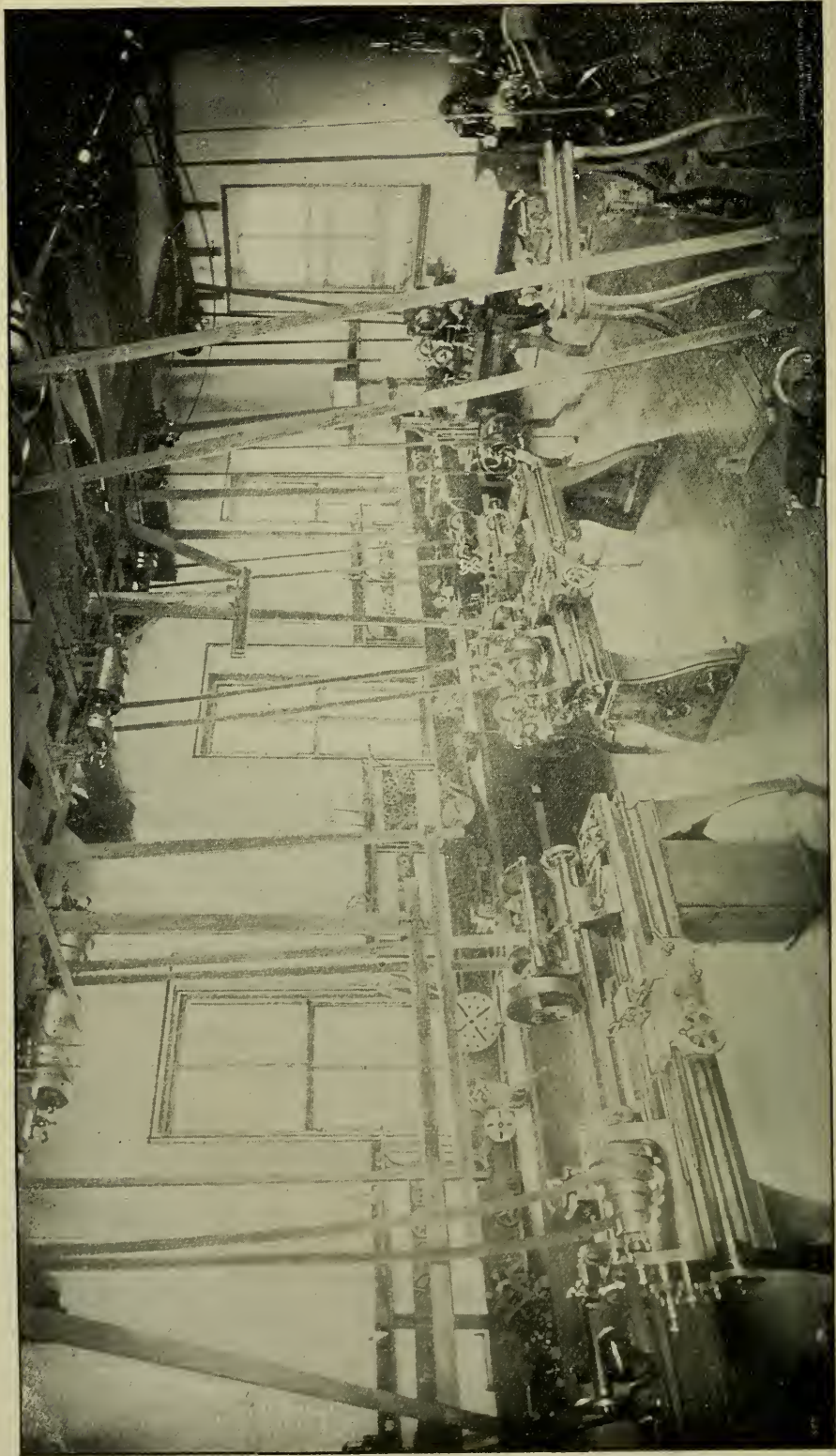
The students are required to present written sketches upon the subjects under consideration and to visit the different art exhibitions held in Philadelphia during each season.

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\* For the present year MABEL B. EDWARDS, *Instructor*.







MACHINE SHOP.

## Engineering and Mechanic Arts.

ARTHUR BEARDSLEY, *Professor*; JOSEPH BAYLEY, JR., *Assistant*.

This department, in connection with that of Physics, 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 charge 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.

*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 20 benches with vises, and 20 sets of wood-working tools, a grindstone, and 8 wooden-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 a full set 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.

*Shop Practice.*—Wood-working and Pattern-making, Blacksmithing and Foundry Practice. Vise work, chipping and filing to line, scraping, fitting, tapping, reaming, hand-turning in brass and iron.

*Drawing.*—Special geometric problems, working drawings, orthographic projections, shadows, brush work and tinting, machine drawing from copy and from measurements, gears, eccentrics, cams, pulleys, belting, etc.

*Engineering.*—Lectures on use of tools, on the properties of materials, etc.

## SOPHOMORE CLASS.

*Engineering.*—Analytical mechanics of solids and fluids; descriptive geometry, with careful construction of the more important problems; land surveying, with field practice and map drawing.

*Machine-Shop Practice.*—Lathe work, turning, boring, screw-cutting, drilling, planing, milling, grinding, polishing, etc., construction of a project. Lectures on machine tools, on materials of construction, etc.

*Drawing.*—Working drawings, sketches, drawings and blue prints for special work and projects, elements of machines, shadows and intersections.

## JUNIOR CLASS.

*Engineering.*—Theory and practice of road surveying and engineering, shades, shadows, and perspective.

*Geodesy.*—Theory, adjustment and use of engineering field instruments; farm surveying; leveling; topographical, triangular, and hydrographical surveying.

*Applied Mechanics.*—Friction and other resistances; stress and strength of materials.

*Drawing and Mechanism.*—Problems in shades, shadows, and perspective; topographical, structure, and machine drawing; principles of mechanism; visits to and sketches of special machinery and structures; finished drawings.

*Practical Exercises* in the field in the Fall and Spring months, and in general laboratory practice, including the testing of metals and building materials, the setting up, testing, and management of steam-engines, boilers, and machinery, throughout the year; with occasional visits to mechanical establishments, and to important engineering works in or near Philadelphia.

For the Electrical Work, see department of Physics.

## SENIOR CLASS.

*Engineering.*—Theory and practice of road surveying and engineering, continued; building materials; stability of structures; foundations and superstructures; bridge construction; specifications and contracts.

*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.

*Drawing.*—Stone-cutting problems ; topographical, structure, and machine drawing ; plans, profiles, and sections of road surveys ; working drawings.

*Practical Exercises.*—As in Junior year, continued ; tests of building materials ; graduating thesis.

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

## English Language and Literature.

RICHARD JONES, *Professor.*

WILLIAM H. APPLETON, *Early English.*

MYRTIE E. FURMAN, *Elocution and Oratory.*

J. RUSSELL HAYES, *Assistant in English.*

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, 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.

## I. 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. The authors selected for this more minute study during the first semester of the present year are Whittier and Tennyson. 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.

II. Independent of the above, there is given a special one-year course, required of Freshmen students in Engineering. In this course there are given lectures on English Literature, prefaced by lectures on the Greek and the Roman literatures. Critical reading is required in Pope's Homer's *Iliad*, Chaucer, Spenser, Shakespeare, Milton, and Tennyson. Essay writing throughout the course.

## 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.

## SENIOR YEAR.

A course in World Literature in English translation is given in the Senior year. The design is to give students who have not read the great works of other literatures in the original an opportunity to become to some extent familiar with the thought, at least, of some of these "eternal records of eternal truth," even though somewhat of the beauty of form be lost in the translation. The emphasis is, as a matter of course, placed upon the content of the poem, upon the view of life therein enshrined.

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.

The study of model orations, as to form and content, and practice in writing orations.

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 "Hand-book 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., continued, 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 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.

Required for entrance to Freshman Class by those who offer a year's work in French; also first year's work for those who must begin French after entering the Freshman Class.

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

Required of students of French who have completed Course I or have passed an entrance examination upon it.

COURSE III. Time, one year. Magill's "Modern French Series," Vol. III; Corneille's Cid and Polyucte; Racine's Athalie and Esther; Molière's Misanthrope and Les Précieuses Ridicules; Victor Hugo's Hernani and other selections (entire) from modern French writers; Dictées; Mme. Delphine Duval's Littérature Française; Conversation and Correspondence.

Required of students of French who have completed Courses I and II.

COURSE IV. Time, one year. Conversation and Correspondence in French; Dictées, Essays, Critiques; Magill's "Modern French Series," Vol. IV, and varied selected works (entire) of authors of the nineteenth century.

NOTE.—Students in Letters and Science who complete French during their Freshman and Sophomore years will take German during their Junior and Senior years, and *vice versa*.

## German Language and Literature.

MARIE A. KEMP, *Professor*.

The course in German language and literature extends through four years. Its object is to give the student a reading and—in so far as possible—speaking knowledge of modern colloquial German; also a general acquaintance with German literature, to be gained from lectures, private reading, and critical study of some of the German classics.

### FIRST YEAR.

Joynes-Meissner's German Grammar (Part I).

Selections from Grimm's *Märchen*.

Riehl, two *Novellen*.

Lessing, *Minna von Barnhelm*, or Freytag, *Die Journalisten*.

Prose composition.

Memorizing of lyrics and ballads.

## SECOND YEAR.

Joynes-Meissner's German Grammar (continued).  
 Freytag, *Aus dem Staat Friedrichs des Grossen*.  
 Goethe, *Götz von Berlichingen*.  
 Schiller, *Historische Skizzen*.  
 Private reading from Scherer's *History of German Literature*.

## THIRD YEAR.

Schiller, *Wallenstein*.  
 Heine, *Harzreise* (ed. Buchheim).  
 Goethe, *Iphigenia auf Tauris*.  
 Lectures on History of German Literature.  
 Private reading from Buchheim's *Deutsche Lyrik*.

## FOURTH YEAR.

Goethe, *Egmont* (ed. Buchheim).  
*Briefwechsel Zwischen Goethe und Schiller* (ed. Cotta).  
 Goethe, *Faust* (ed. Thomas).  
 Von Scheffel, *Ekkehard* (first part).  
 Private reading: *Ekkehard* (concluded), Sime's *Life of Goethe*.

## Greek.

WILLIAM H. APPLETON, *Professor*.

I. Students who present the usual College requisition in Greek (see page 28) 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.

## 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 pre-

liminary 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 is a statement of the courses :

## HISTORY AND POLITICAL SCIENCE.

### FRESHMAN YEAR.

First Semester : History of the Oriental Nations and Greece.

Second Semester : The History of Rome.

### SOPHOMORE YEAR.

First Semester : History of the Middle Ages and the Renaissance, including a study of the Barbarian Invasions, Primitive Christianity and the History of the Church during the Middle Ages, the Crusades, the Mediæval Empire, Feudalism, the Rise of Free Cities, and the Revival of Learning.

Second Semester : The Reformation and the French Revolution, including a study of the Protestant Revolution, the Old Régime, the Establishment of Democracy, and the Napoleonic Age.

### JUNIOR YEAR.

The History of England and the Nineteenth Century.

### SENIOR YEAR.

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

## POLITICAL ECONOMY AND SOCIAL SCIENCE.

### JUNIOR YEAR.

First Semester : Elements of Political Economy.

Second Semester : Socialism ; Money and Banking.

## SENIOR YEAR.

First Semester: Protection and Free Trade ; Social Problems.

Second Semester: Social Problems ; Taxation. The course in Social Problems includes such topics as Pauperism and Charity, Crime and Penology, the Tenement House Question, the Child Problem, Woman as a Social Factor, Intemperance, 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 ; History of Latin Literature, lectures and study of characteristic passages from all the most important authors.

## JUNIOR CLASS.

Remnants of Early Latin ; Plautus, Trinummus ; Terence, Phormio ; Cicero, De Senectute ; Latin Hymns.

## 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 Latin Seminary, designed to supplement the work of the classroom, is held monthly, in two sections.

The object of the Seminary work this year will be, primarily, to familiarize the members with the history and results (particularly *recent*) of the study of Roman antiquities. Becker's Gallus and Lanciani's Ancient Rome will be read and commented upon by carefully prepared papers and round-table talks.

Other features of this year's meetings will be reviews of books and current literature of interest to classical students, metrical translations, sight-reading of Pliny's letters, and answers to queries.

## 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.

### 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's).

5. Curve Tracing.

6. Differential Equations.

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

8. Elementary Quaternions (Kelland and Tait).

### ASTRONOMY (ELECTIVE).

1. Young's General Astronomy.

2. Chauvenet's Spherical and Practical Astronomy.

3. Theoretical Astronomy (Orbit Determination).

## Pedagogy.

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 Herbert and his successors are thoroughly studied.

## Philosophy.

PRESIDENT DE GARMO.

SENIOR CLASS.

*Psychology.*—First Semester: (1) Lindner's Empirical Psychology. Special attention paid to the processes of knowledge, feeling, and volition; also, to the psychological basis of moral character. (2) Rational Psychology—Dr. Wm. T. Harris's Introduction to Philosophy. The self-active, spiritual nature of mind is herein exhibited, also the essentials of logic.

*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.

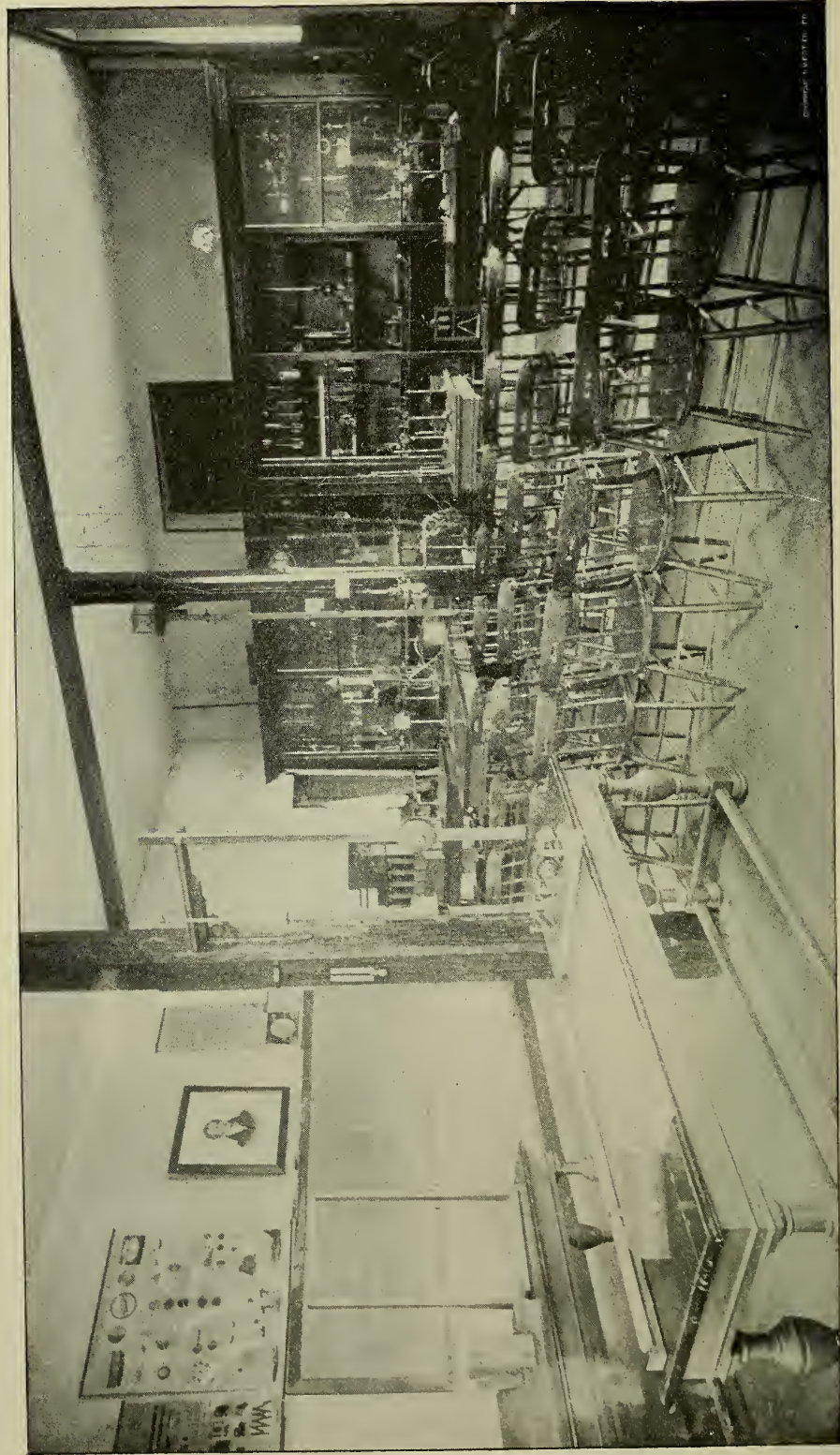
FOR YOUNG MEN.

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.







PHYSICAL LABORATORY.

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.

MARION HUNTER, *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.

## 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, 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.

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## 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 feat-

ures 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 two-fold 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 concerned 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 or German, 4 years; Mathematics, 1½ years; English, 3 years; Economics, 1 year; History, 1 year; Biology, Chemistry, or Physics, 1 year; Psychology and Philosophy, 1 year; Elocution, 2 years; Composition, 4 years.

## COURSE ELECTIVE (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, } . . . . .	4	History, Physics, French, } . . . . .	4
German, or Latin, }		German, or Latin, }	
		Elocution.	

## Junior Year.

French or German, . . . . .	4	French or German, . . . . .	4
Economics, . . . . .	4	Economics, . . . . .	4
English, . . . . .	4	English, . . . . .	4
Elective, . . . . .	4	Elective, . . . . .	4

## Senior Year.

French or German, . . . . .	4	French or German, . . . . .	4
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
		Elocution and Composition.	

### Junior Year.

French or German, . . . . .	4	French or German, . . . . .	4
Physics, . . . . .	4	Physics, . . . . .	4
Biology, . . . . .	4	Biology, . . . . .	4
Elective, . . . . .	4	Elective, . . . . .	4
		Composition.	

### Senior Year.

Psychology, . . . . .	4	Philosophy, . . . . .	4
Elective, . . . . .	4	Elective, . . . . .	4
Elective, . . . . .	4	Elective, . . . . .	4
Elective, . . . . .	4	Elective, . . . . .	4
		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

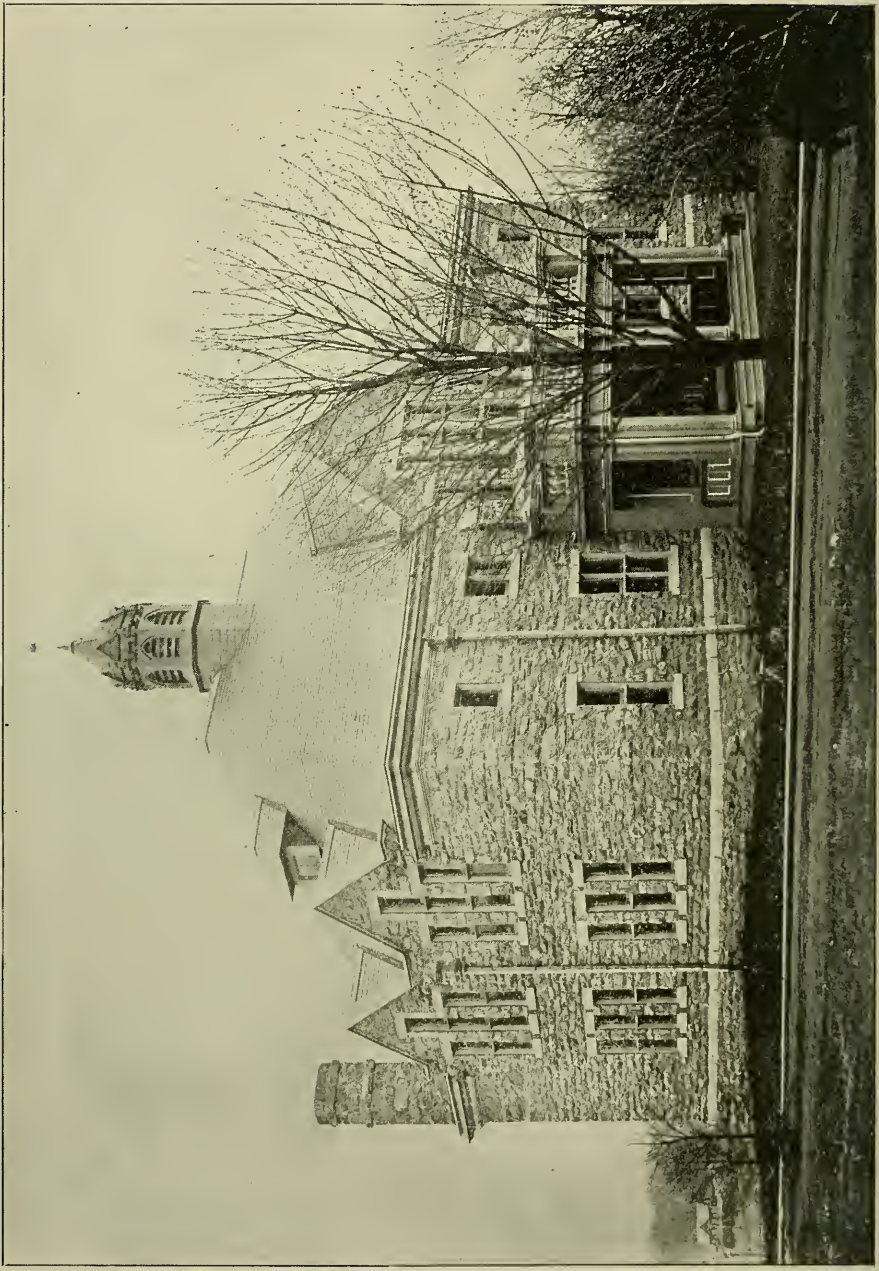
### Junior Year.

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





SOMERVILLE GYMNASIUM.

## 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.

Candidates for the Master's Degree (A. M., M. L., and M. S.) 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. Persons 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 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.

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

## Vice-Presidents.

ALICE HALL, '88, . . . . . Swarthmore, Pa.

MARY WILLITS, '84, . . . . . Syosset, N. Y.

FREDERICK A. SEAMAN, '83, . . . . . Madison, N. J.

## Secretary.

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

## Treasurer.

FERRIS W. PRICE, '74, . . . . . Swarthmore, Pa.

## Board of Directors.

P. LESLEY HOPPER, '79, . . . . . Havre de Grace, Md.

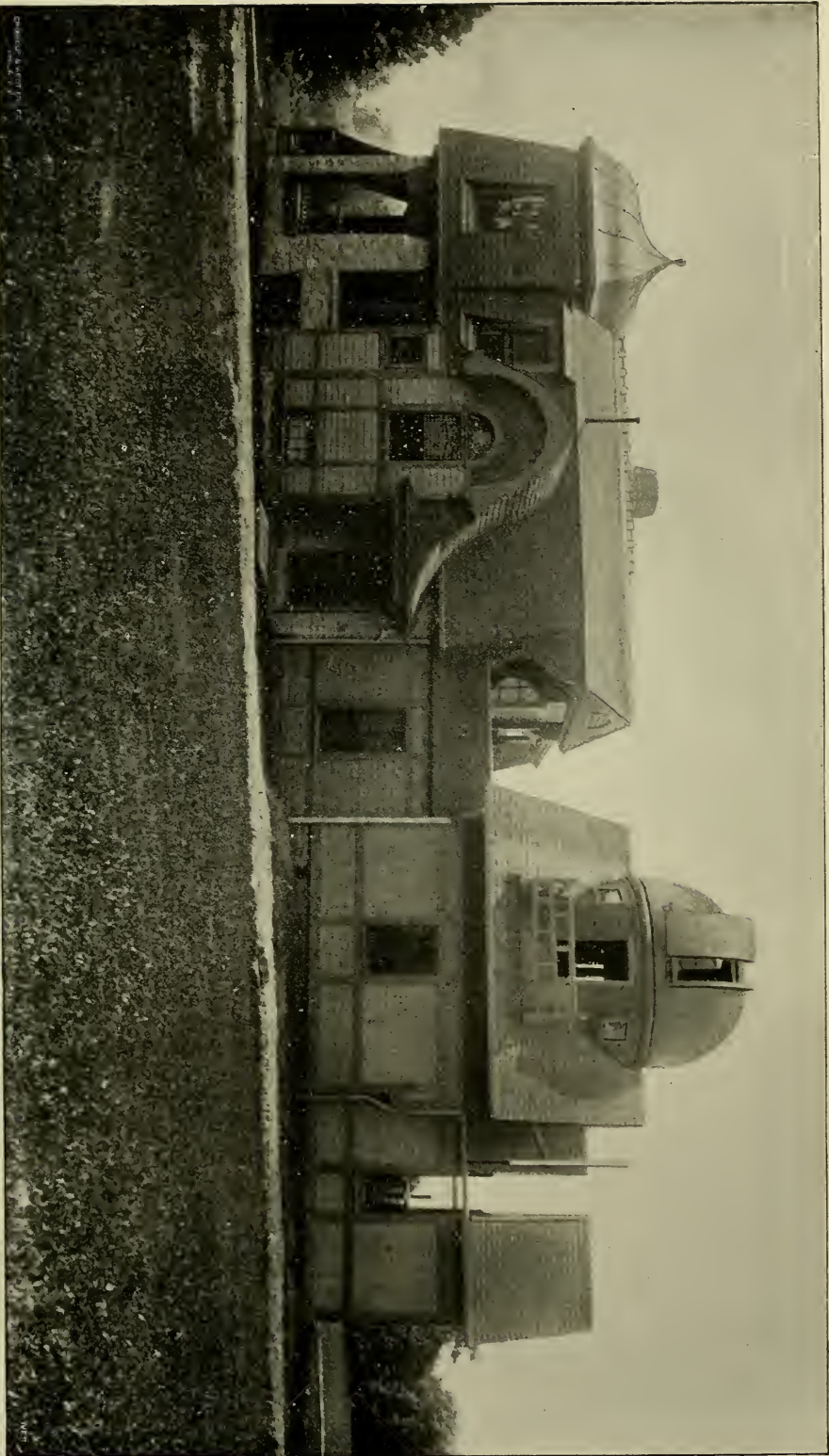
ISAAC G. SMEDLEY, '76, . . . . . Philadelphia, Pa.

ALICE W. TITUS, '90, . . . . . Old Westbury, N. Y.

WILLIAM H. RIDGWAY, '75, . . . . . Coatesville, Pa.

CHARLES PALMER, '82, . . . . . Chester, Pa.

ALICE S. PALMER, '89, . . . . . West Chester, Pa.



ASTRONOMICAL OBSERVATORY.





# 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., . . . . . Brooklyn, N. Y.  
ESTHER T. MOORE, A.B., . . . . . Swarthmore College, Pa.  
\*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.  
LIZZIE (HANES) TAYLOR, A. B., . . . . . Woodstown, N. J.  
EDITH R. (HOPPER) 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 (MCLVAIN) EASTWICK, A.B., . . . . . Boston, Mass.  
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.

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\*Deceased.

- ARTHUR W. BRADLEY, A.B., . . . . . Germantown, Pa.  
 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), . . . . . New York, N. Y.  
 LUCY R. (PRICE) MCINTYRE, A.B., 1880, . . . . . Philadelphia, Pa.  
 ISAAC G. SMEDLEY, B.S. (M.D., Hahnemann Medical Col-  
 lege, 1879), . . . . . Philadelphia, Pa.  
 HERBERT W. SMYTH, A.B. (and Harvard, 1878, Ph.D.,  
 Göttingen, 1884), . . . . . Bryn Mawr College, Pa.  
 MARY WILLITS, A.M., 1881 (M.D., Women's Medical Col-  
 lege, 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.  
 FLORENCE M. 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., . . . . . Tacoma, Wash.  
 WILLIAM J. HALL, B.S., . . . . . Swarthmore College, Pa.  
 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 Hop-  
 kins Univ., 1886), . . . . . Brooklyn, 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., . . . . .	Aspen, Col.
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, A.M., 1892, . . . . .	Swarthmore College, Pa.
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, . . . . .	Chicago, 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., . . . . .	Cedarville, Va.
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.
EMMA KIRK, B.L., . . . . .	Ithaca, Pa.
GERTRUDE B. MAGILL, A.B., . . . . .	Boise City, Idaho.

\*Deceased.

EUGENE PAULIN, JR., A.B. (and Harvard, 1883), . . . . .	Bloomfield, 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., . . . . .	El Mora, N. J.
CHARLOTTE E. (BREWSTER) JORDAN, M.L., 1886, . . . . .	Philadelphia, Pa.
WILLIAM BUTLER, JR., A.B., . . . . .	West Chester, Pa.
C. HERBERT COCHRAN, A.B., . . . . .	Philadelphia, Pa.
BERTHA (COOPER) BREWER, B.L., . . . . .	Rochester, N. Y.
P. FANNIE FOULKE, A.B., . . . . .	Philadelphia, Pa.
MARY E. GALE, A.M., 1891, . . . . .	Laconia, N. H.
*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., 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.
BERTHA (MATLACK) RUE, B.L., . . . . .	Camden, N. J.
GUION MILLER, A.M., 1888, . . . . .	Washington, D. C.

\*Deceased.

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. (TAYLOR) MILLER, M.L., 1888, . . . . .	Washington, D. C.
JAMES E. VERREE, B.L., . . . . .	Philadelphia, Pa.
EMMA (WEBB) PRICE, A.B., . . . . .	Philadelphia, 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. FREDLEY, 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, A.M., 1891, . . . . .	Trenton, N. J.
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., . . . . .	Bordertown, 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), . . . . .	Swarthmore, Pa.
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.B., . . . . .	Malvern, Pa.
ELIZABETH B. (SMITH) WILSON, A.B., . . . . .	Lincoln, Va.
WILLIAM G. UNDERWOOD, B.S., . . . . .	Elizabeth City, N. C.

## Class of 1888.

ALICE M. ATKINSON, A. B. (and Cornell Univ., 1889), . .	Holicong, Pa.
THOMAS BROWN, B.S., . . . . .	Washington D. C.
FRANK CAWLEY, C.E., 1891, . . . . .	Montreal, Can.
JESSIE L. COLSON, B.S., . . . . .	Daretown, N. J.
SADIE M. CONROW, A.B., . . . . .	Cinnaminson, 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 College.
ALICE HALL, A.B., . . . . .	Swarthmore, Pa.
P. SHARPLES HALL, B.S. (M.D., Hahn, Med. Col., Phila., 1891), . . . . .	Philadelphia, Pa.
WALTER HANCOCK, B.S., . . . . .	Minneapolis, Minn.
J. RUSSELL HAYES, A.B. (and Harvard, 1889; LL.B., Univ. of Pa., 1892), . . . . .	Swarthmore College.
MARTHA P. (JONES) MILLER, A.B., . . . . .	Harrisburg, Pa.
T. MONTGOMERY LIGHTFOOT, M.S., 1890, . . . . .	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., . . . . .	Pittsburg, Pa.
KATHERINE M. RIDER, B.L., . . . . .	Brooklyn, N. Y.
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., . . . . .	Leland Stanford, Jr., Univ.
ANNIE E. WILLITS, A.B., . . . . .	Syosset, N. Y.
ESTHER M. (WILLITS) FELL, B.L., . . . . .	Philadelphia, Pa.
FRANK P. WILSON, A.B., . . . . .	Locust Valley, N. Y.

## Class of 1889.

JUSTIN K. ANDERSON, B.S., . . . . .	Breeden, Va.
ALEXANDER G. CUMMINGS, JR., A.B., . . . . .	Paris, France.
HOWARD A. DILL, B.S. (and Mass. Inst. Tech., 1891) . . . . .	Indianapolis, Ind.
HORACE B. FORMAN, JR., B.S., . . . . .	Coeburn, Va.
ELLIS M. HARVEY, B.S. (M.D., Univ. of Pa., 1893) . . . . .	Media, Pa.
CLARA HAYDOCK, B.L., . . . . .	New York, N. Y.
J. CARROLL HAYES, A.B. (and Harvard, 1890, LL.B., Univ. of Pa., 1893), . . . . .	West Chester, Pa.
JULIA HICKS, B.S., . . . . .	Old Westbury, N. Y.
MARY KIRK, A.B., . . . . .	Rio Janeiro, Brazil.
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, Pa.
JENNIE F. WADDINGTON, M.S., 1892, . . . . .	Salem, N. J.

## Class of 1890.

ALVAN W. ATKINSON, A.B., . . . . .	Trenton, N. J.
SARA H. ATKINSON, A.B., . . . . .	Holicong, Pa.
GEORGE H. BARTRAM, B.S., . . . . .	Milltown, Pa.
MARTHA M. BIDDLE, B.L., . . . . .	Riverton, N. J.
EMMA J. BROOMELL, B.S. (and Univ. of Mich., 1893), . . . . .	Newtown, Pa.
MORRIS L. CLOTHIER, B.S., . . . . .	Wynnewood, Pa.
BEULAH W. DARLINGTON, A.B., . . . . .	Locust Valley, N. Y.
EDWARD DARLINGTON, B.S., . . . . .	Chaddsford, Pa.
GEORGE ELLSLER, A.B., . . . . .	Baltimore, Md.
CAROLINE R. GASTON, A.B., . . . . .	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., . . . . .	Cinnaminson, N. J.
WILLIAM D. LIPPINCOTT, B.S., . . . . .	Cinnaminson, N. J.
WILLARD L. MARIS, M.S. 1892 (B.S. Univ. of Mich., 1891), . . . . .	Newtown, Pa.
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.

\* Deceased.

ELLIS B. RIDGWAY, B.S., . . . . .	Coatesville, Pa.
WALTER ROBERTS, A.B. (M.D., Univ. of Pa., 1893), . . . . .	Philadelphia, Pa.
RICHARD C. SELLERS, B.S., . . . . .	Locust Valley, N. Y.
FANNIE B. SMITH, A.B., . . . . .	Newtown, Pa.
MARY F. SOPER, B.S., . . . . .	Jersey City, N. J.
R. BARCLAY SPICER, A.B., . . . . .	Baltimore, Md.
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, B.L., . . . . .	Lincoln, Va.
LOUIS P. CLARK, B.S., . . . . .	Haverford, Pa.
HANNAH H. CLOTHIER, B.L., . . . . .	Wynnewood, Pa.
EVA M. (DANIELS) CAPEN, B.S., 1892, . . . . .	Boston, Mass.
ELIZA R. HAMPTON, A.B., . . . . .	Horsham, Pa.
ISAAC O. HARPER, B.S., . . . . .	Baltimore, Md.
ESTHER HAVILAND, B.L., . . . . .	Langhorne, Pa.
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., . . . . .	Ward, Pa.
KATHARINE L. TYLER, B.S., . . . . .	Philadelphia, Pa.
FRANCES M. WHITE, B.L., . . . . .	Lansdowne, Pa.
EDWARD C. WILSON, B.S., . . . . .	Washington, D. C.
M. LILIAN YARNALL, A.B., . . . . .	Trenton, N. J.

## Class of 1892.

M. ELLEN ATKINSON, B.L., . . . . .	Buckingham, Pa.
M. ROSAMOND BAKER, A.B., . . . . .	Philadelphia, Pa.
BENJAMIN F. BATTIN, A.B., . . . . .	Newtown, Pa.
JOSEPHINE BEISTLE, A.B., . . . . .	Swarthmore, Pa.
MARY E. BROOMELL, B.L., . . . . .	Jenkintown, Pa.

\* Deceased.



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's Grove, N. J.
CHARLES HART, B.S., . . . . .	Doylestown, Pa.
ANNIE HILLBORN, B.L., . . . . .	Swarthmore, Pa.
EDWARD A. JENKINS, B.S., . . . . .	Gwynedd, Pa.
CHARLES B. KETCHAM, A.B., 1893, . . . . .	New York, N. Y.
PHEBE H. KETCHAM, B.S., . . . . .	Jericho, N. Y.
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., . . . . .	London Grove, 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., . . . . .	Quakertown, N. J.
MARY L. WOLVERTON, A.B., . . . . .	Quakertown, N. J.

## 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., . . . . .	Philadelphia, Pa.
CLEMENT LODGE, B.S., . . . . .	Philadelphia, Pa.
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., . . . . .	Harvard Univ.
JOHN B. STETSON, B.S., . . . . .	Lansdale, Pa.
ESTHER E. SPICER, B.L., . . . . .	Baltimore, Md.
FRANCES B. STEVENSON, A.B., . . . . .	Felton, Del.
GEORGE H. STROUT, A.B., . . . . .	Boston, Mass.
ESTHER H. SUTTON, B.L., . . . . .	Chappaqua, N. Y.
HENRY C. TURNER, B.S., . . . . .	Philadelphia, Pa.
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, B.S., . . . . .	Holicong, Pa.
GENEVIEVE S. ZANE, A.B., 1894, . . . . .	West Chester, Pa.

## Class of 1894.

MABEL ALEXANDER, B.L.,	Philadelphia, Pa.
ANNA S. ATKINSON, A.B.,	Locust Valley, N. Y.
LYDIA BIDDLE, B.L.,	Lansdowne, Pa.
EDWIN P. BOND, A.B.,	Ogontz, Pa.
BERTHA L. BROOMELL, B.S.,	Jenkintown, Pa.
EMMA S. CHAMBERS, A.B.,	Wilmington, Del.
ELIZABETH CONROW, A.B.,	West Chester, Pa.
HERMAN CONROW, B.S.,	Mt. Vernon, N. Y.
ALTHA T. COONS, B.S.,	Flushing, N. Y.
HETTY L. COX, B.L.,	Baltimore, Md.
JOSEPH C. EMLEY, B.S.,	Philadelphia, Pa.
FREDERIC H. GAWTHROP, B.S.,	Baltimore, Md.
JOHN W. GREGG, B.L.,	Moorestown, Pa.
GEORGE G. GRIEST, B.S.,	Philadelphia, Pa.
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, B.L.,	Wilmington, Del.
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.,	Cornell Univ.
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.,	Harvard Univ.
MARY W. TITUS, B.L.,	Old Westbury, N. Y.
DANIEL UNDERHILL, JR., B.S.,	Jericho, N. Y.
MARY UNDERHILL, B.S.,	Swarthmore College.
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.,	Easton, Md.
HARRY P. YOUNG, B.S.,	Morton, Pa.

## 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.

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- EDMUND WEBSTER,  
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