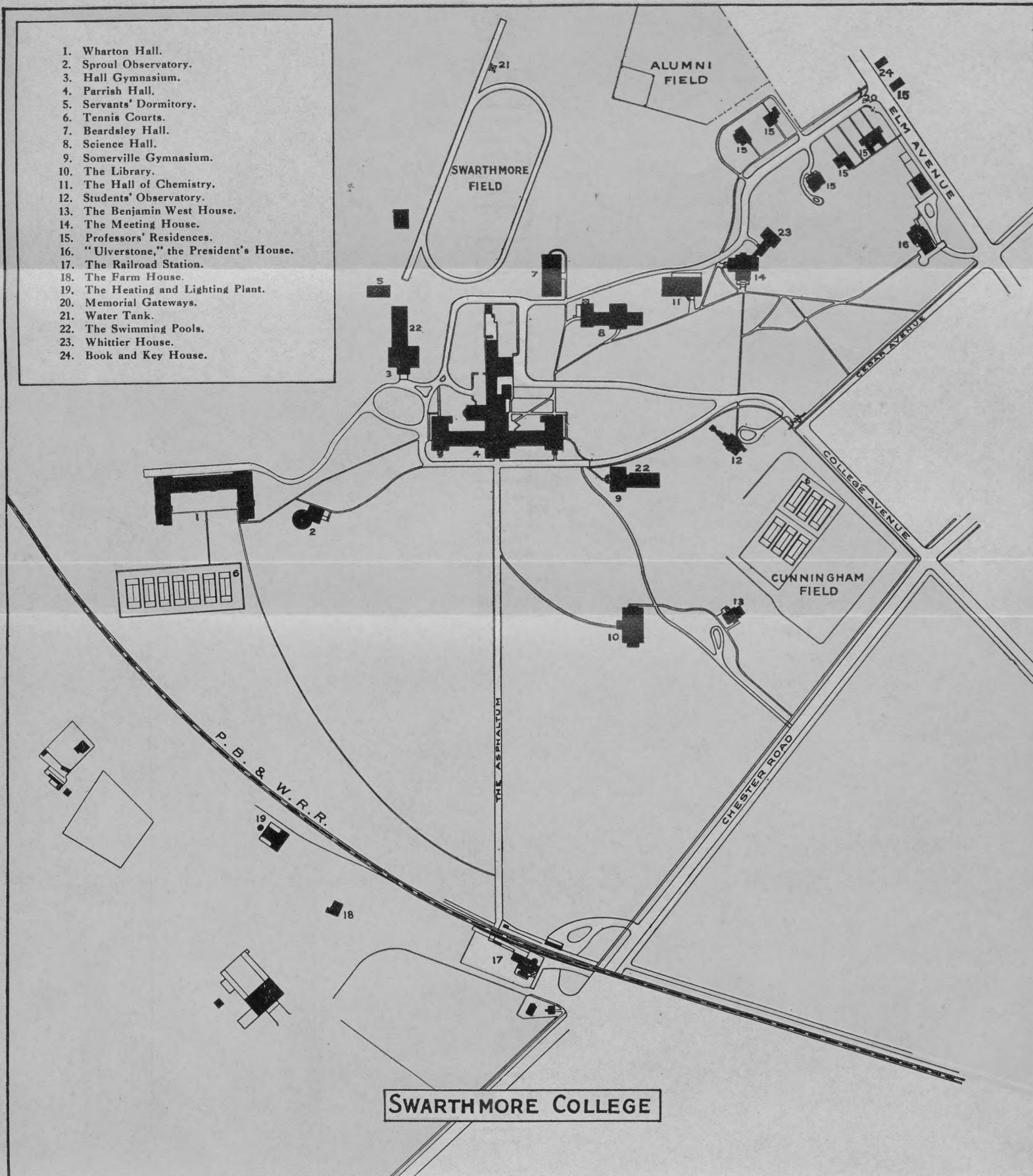
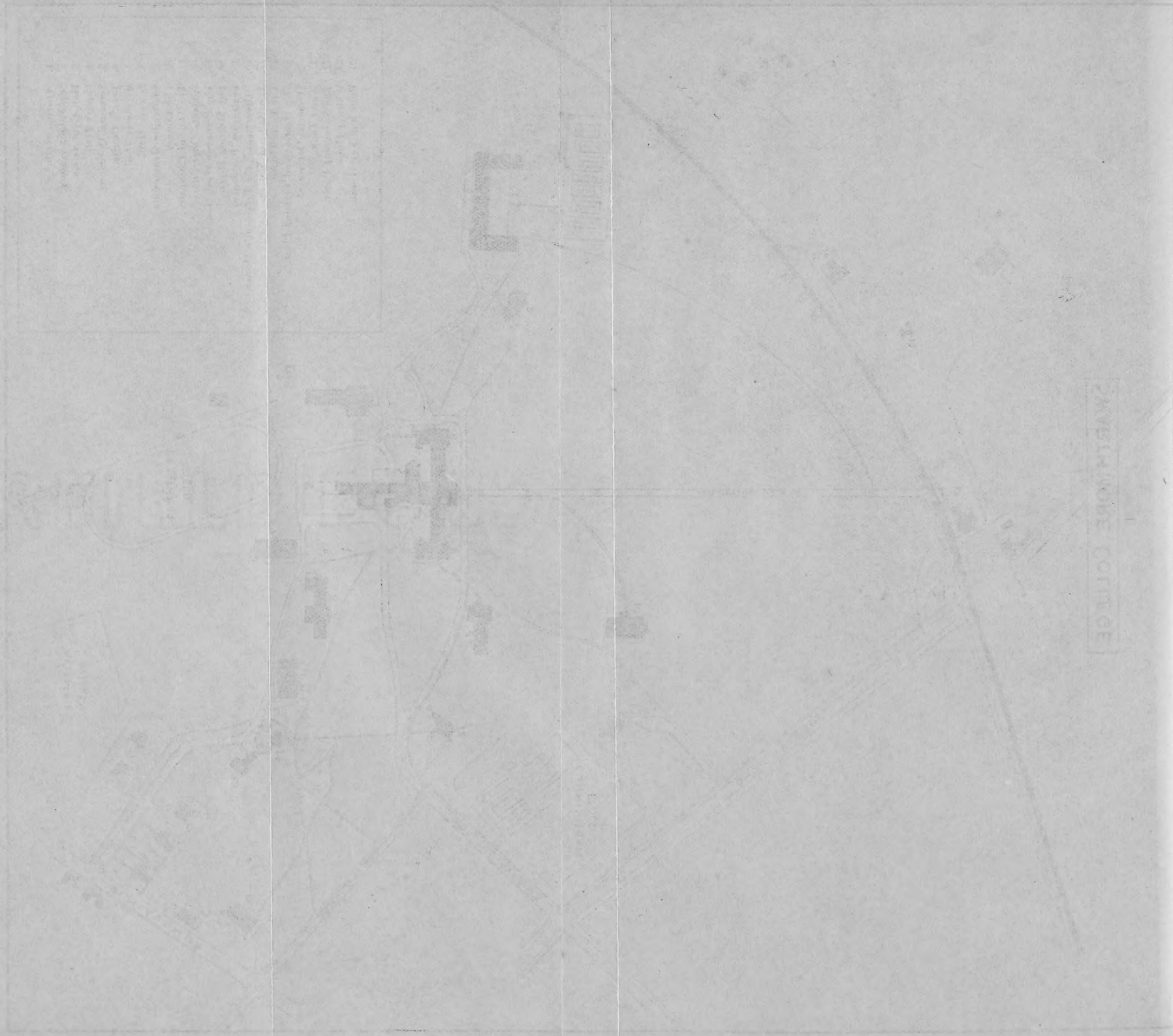


SWARTHMORE COLLEGE

1. Wharton Hall.
2. Sproul Observatory.
3. Hall Gymnasium.
4. Parrish Hall.
5. Servants' Dormitory.
6. Tennis Courts.
7. Beardsley Hall.
8. Science Hall.
9. Somerville Gymnasium.
10. The Library.
11. The Hall of Chemistry.
12. Students' Observatory.
13. The Benjamin West House.
14. The Meeting House.
15. Professors' Residences.
16. "Ulverstone," the President's House.
17. The Railroad Station.
18. The Farm House.
19. The Heating and Lighting Plant.
20. Memorial Gateways.
21. Water Tank.
22. The Swimming Pools.
23. Whittier House.
24. Book and Key House.



SWARTHMORE COLLEGE



# SWARTHMORE COLLEGE BULLETIN

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CATALOGUE NUMBER

FIFTIETH YEAR

1918-1919

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The S. A. T. C.

Visit of the British Educational Commission

General College Information

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SWARTHMORE, PENNSYLVANIA

Printed for the College

Vol. XVI. No. 2. Twelfth Month, 1918

*Entered at the Post-Office at Swarthmore, Pa., as second-class matter*

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1978/1981

## SWARTHMORE COLLEGE

1918-19

In this number of the SWARTHMORE COLLEGE BULLETIN the description of the departments and courses of instruction has been omitted. It is not possible to announce the courses of instruction for the coming year because of the uncertainty hitherto connected with the continuation of the Students' Army Training Corps and the requirements of the Government covering the courses to be organized for members of the Corps. It is the present intention to include in the June, 1919, BULLETIN the announcement of courses of instruction for the year 1919-20.

### THE STUDENTS' ARMY TRAINING CORPS AT SWARTHMORE COLLEGE

With the well-known tradition of Friends in regard to war and the declaration of the Board of Managers of Swarthmore College in regard to military training, it is not to be wondered at that some Friends of the College are surprised that the Board entered into a contract to permit the United States Government to train a unit of the Students' Army Training Corps at Swarthmore.

If one reads the resolution adopted by the Board in May, 1918, carefully, it will be seen that the way was open for those who wished to do so, to secure military training. In accordance with the resolution, after several conferences with Dr. Keppel, Third Assistant Secretary of War, and General R. I. Rees, Chairman of the Educational Committee on Military Training and representing the Government, it was arranged during the past summer that Swarthmore students desiring it and who had the consent of their parents, might secure at the Pennsylvania Military College, Chester, the military training, while carrying their college work at Swarthmore.\* This plan, of course, was with the approval of the authorities at the Pennsylvania Military Col-

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\* In November the War Department gave to Swarthmore a separate unit and ordered the drill to be conducted on the Swarthmore High School grounds.

lege. This arrangement did not contemplate Swarthmore College as such taking any responsibility for the military training except the mere permission to its students who desired to go to Chester for this training. This permission is granted by the resolution of the Board of Managers referred to above.

During the summer, a questionnaire was sent to the patrons of Swarthmore College on the subject of military training and the answers received indicated an overwhelming majority of the patrons of Swarthmore College desired their sons to have military training, but did not wish them to enlist in the army until after they were 21. The answers to questions sent out to parents showed that there were only twenty parents of the two hundred boys who gave their consent to enlistment before their sons were 21 years of age.

It should be kept in mind that this training was desired by the students in order that they might meet the requirements of the War Department for admission direct from College to Officers' Training Camps. After this arrangement had been made, the Government, early in last September, less than two weeks before the opening of College, passed the Man Power bill reducing the draft age from 21 to 18. This changed the whole situation. Students of 18 or more years of age were to be drafted immediately into the army. The Government, in preparing its plans under this bill, gave consideration to its effect on our colleges. Wishing to avoid disrupting them entirely, the Government adopted the plan of establishing in them Students' Army Training Corps. This training was to be a combination of the regular college work and military subjects with military drill and discipline.

Young men of college age would thus be able to continue or enter college and meet the requirements of the Man Power bill by joining the S. A. T. C.

After the passage of this bill, when the question was one of being immediately drafted to go into the army camps or to carry on college work for a time by voluntary induction, the parents almost unanimously (including parents who were Friends) preferred that their sons should return to college and enter the army through voluntary induction into a unit of the S. A. T. C. The Government also decided to make members of the S. A. T. C.

regular members of the army under Government pay and regulations, assuming all the responsibility for military instruction, and since the members of the S. A. T. C. were soldiers subject to the orders of the Government, it was necessary for the War Department to assume the responsibility for their board and instruction. This brought about an entirely new situation, not met by the arrangement made with the Pennsylvania Military College.

The Executive Committee of the Board was called together to decide whether under the changed conditions the College should enter into a contract with the Government to board the members of the S. A. T. C. and give them instruction in the non-military subjects which they are required to take. Under these conditions, the Executive Committee passed the following resolution:

*“Resolved:* That the officers of the College be, and they are hereby authorized and directed to enter into a contract with the Government, on the general lines of the draft submitted, and that a Committee consisting of the President of the Board, the President of the College and Wilson M. Powell, Jr., is appointed, with power to add to their number, to carry out, in coöperation with the Government, all the necessary details in putting it into operation.”

This action was approved at the next meeting of the Board in October.

The problem which the College had to face was a condition and not a theory, since the great majority of its students were subject to draft. The Government gave the boys the alternative of getting this military training at college or in the army camps. The fundamental question then is what is best for the boys and for the Government. President Wilson decided that it was better for the Government and for the boys, that they get this training in the colleges. The authorities of Swarthmore who are responsible for the contract with the Government believe in the power for good of the ideals and the training of the College. They feel that the students will be better men if the training can be given under the wholesome atmosphere of Swarthmore. The authorities of the College, therefore, felt that they would be



guilty of a great wrong to the students if they turned them out of their chosen college home to go elsewhere to secure the training which the service to the Government demands and which can be secured best under the wholesome restraints of their Alma Mater.

The feeling of Swarthmore boys generally, I think, is expressed by Edward W. Large, a student at Cornell, as recorded in the *Intelligencer* of Tenth Month 26th. He says: "I am a conscientious objector to the thing called war, but I am a thousand times more a conscientious and physical objector to the thing called Germany, Prussianism, or 'Kultur.' In other words the Swarthmore young men in general are opposed to war but they believe they would not be true to the best in them if they did not do their part to put down Prussianism, even at the cost of war.\*

#### BRITISH EDUCATIONAL COMMISSION VISITS SWARTHMORE

A very distinguished group of educational men and women are visiting the universities and colleges of America, from Great Britain. The commission consists of the following persons: Dr. A. E. Shipley, Vice Chancellor of Cambridge University; Rev. Edward M. Walker, Fellow of Queen's College, Oxford University; Sir Henry A. Meirs, Vice Chancellor of Manchester University; Professor John Joly, Trinity College, Dublin University; Sir Henry Jones, University of Glasgow; Miss Caroline Spurgeon, Professor of Bedford College, University of London; Miss Rose Sidgwick, Lecturer at University of Birmingham; Professor W. H. Schofield, Harvard University.

All the members of this Commission excepting Miss Spurgeon and Miss Sidgwick, visited Swarthmore on October 19, 1918. They were met in the Managers' Parlor by a committee of the faculty and were shown the grounds and buildings. Swarthmore was the first typical American college they had visited and they were very much interested in what they saw and heard.

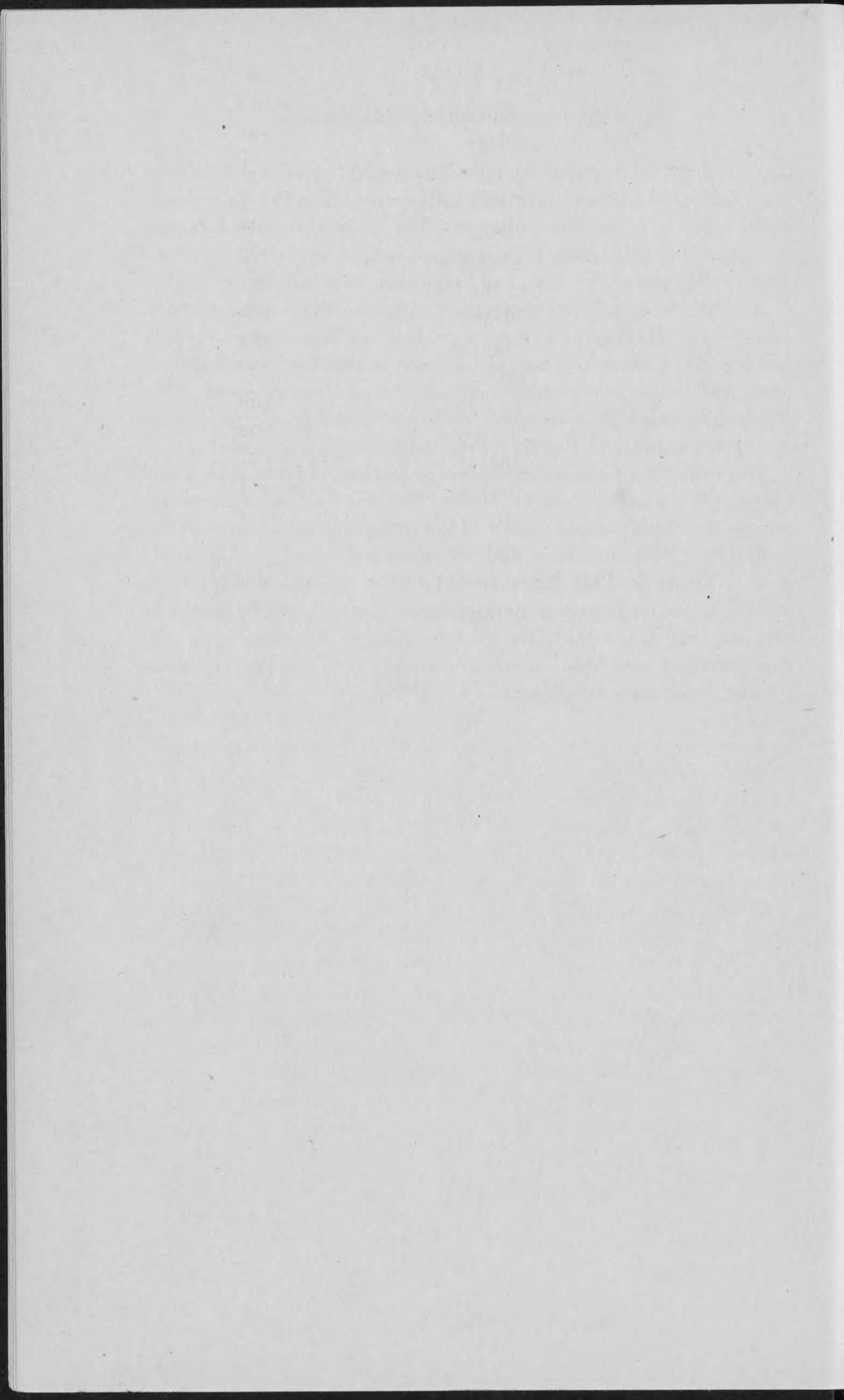
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\* All the units of the S. A. T. C. in the colleges are being demobilized under the order of the War Department. It is expected that demobilization will be completed by December 21st. Thus Swarthmore College will return to its regular schedule after the Christmas vacation.

They were full of questions concerning the manner of living, the success of co-education, and all the problems which go to make up the life of a modern college. They were given an informal reception by the heads of departments and their wives in the Dean's Parlor where light refreshments were served.

Among the guests accompanying them were Professor W. H. Schofield of Harvard University, who is accompanying the Commission, W. Carson Ryan of the United States Bureau of Education, and among local educational men were Provost Smith, Vice Provost Penniman, Dean Ames, and other members of the faculty of the University of Pennsylvania.

The purpose of the Commission in visiting the American colleges and universities is to secure the greatest coöperation between the higher institutions of learning of the United States and Great Britain. It is desired that each country shall make it as easy as possible for the students of the other country to study in the universities and colleges of the other. It is also desired that there shall be an interchange of teachers so that there shall be a cordial understanding between the two countries having a common language.



SWARTHMORE COLLEGE CATALOGUE

FIFTIETH YEAR

1918-1919

SESSION DAYS OF COLLEGE IN BOLD-FACE TYPE

1919

January

S	M	T	W	T	F	S
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30	31					

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31						

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September

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1920

January

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February

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29						

March

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April

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May

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June

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12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

## COLLEGE CALENDAR

1919

- First Month 7.....Third-day .....College Work resumes at 8.00 A. M.  
 First Month 27.....Second-day ....Mid-year Examinations begin.  
 Second Month 4.....Third-day .....Registration and Enrollment in Classes  
 for the Second Semester, 2.00 to  
 5.00 P. M.  
 Second Month 4.....Third-day .....First Semester ends.  
 Second Month 5.....Fourth-day ....Second Semester begins.  
 Second Month 22.....Seventh-day ...College Work suspended for the day.  
 Third Month 11.....Third-day .....Meeting of Board of Managers.  
 Third Month 21.....Sixth-day .....College Work ends at 4.00 P. M. for  
 the Spring Recess.  
 Fourth Month 1.....Third-day .....College Work resumes at 8.00 A. M.  
 Fifth Month 27.....Third-day .....Final Examinations begin.  
 Sixth Month 4.....Fourth-day ....Final Examinations end.  
 Sixth Month 6.....Sixth-day .....Meeting of Board of Managers.  
 Sixth Month 6.....Sixth-day ....Class Day.  
 Sixth Month 7.....Seventh-day ...Alumni Day.  
 Sixth Month 8.....First-day .....Baccalaureate Day.  
 Sixth Month 9.....Second-day ...Commencement.  
 Sixth Month 10 to Ninth Month 15...*Summer Recess.*  
 Ninth Month 15.....Second-day ....Examinations for Admission.  
 Ninth Month 16.....Third-day .....Examinations for Admission.  
 Ninth Month 16.....Third-day .....Matriculation, Registration, and En-  
 rollment in Classes.  
 Ninth Month 17.....Fourth-day ....Examinations for Admission.  
 Ninth Month 17.....Fourth-day ....College Work begins at 8.00 A. M.  
 Tenth Month 7.....Third-day .....Meeting of Board of Managers.  
 Tenth Month 25.....Seventh-day ...Founders' Day. College Work sus-  
 pended for the day.  
 Eleventh Month 26...Fourth-day ....College Work ends at 1.00 P. M. for  
 the Thanksgiving Recess.  
 Twelfth Month 1....Second-day ....College Work resumes at 8.00 A. M.  
 Twelfth Month 2.....Third-day .....*Annual Meeting of Corporation.*  
 Twelfth Month 19....Sixth-day .....College Work ends at 4.00 P. M. for  
 the Christmas Recess.

1920

- First Month 6.....Third-day .....College Work resumes at 8.00 A. M.  
 First Month 26.....Second-day ....Mid-year Examinations begin.  
 Second Month 3.....Third-day .....Registration and Enrollment in Classes  
 for the Second Semester, 2.00 to  
 5.00 P. M.  
 Second Month 3.....Third-day .....First Semester ends.  
 Second Month 4.....Fourth-day ....Second Semester begins.  
 Third Month 9.....Third-day .....Meeting of Board of Managers.  
 Third Month 19.....Sixth-day .....College Work ends at 4.00 P. M. for  
 the Spring Recess.  
 Third Month 30.....Third-day .....College Work resumes at 8.00 A. M.  
 Fifth Month 25.....Third-day .....Final Examinations begin.  
 Sixth Month 2.....Fourth-day ....Final Examinations end.  
 Sixth Month 4.....Sixth-day .....Meeting of Board of Managers.  
 Sixth Month 4.....Sixth-day ....Class Day.  
 Sixth Month 5.....Seventh-day ...Alumni Day.  
 Sixth Month 6.....First-day .....Baccalaureate Day.  
 Sixth Month 7.....Second-day ....Commencement.

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 CAROLINE H. WORTH, Coatesville, Pa.  
 ROBERT PYLE, West Grove, Pa.  
 JOSEPH SWAIN, Swarthmore, Pa.  
 EDWARD B. TEMPLE, Swarthmore, Pa.

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HARRIET COX MCDOWELL,	ESTHER H. CORNELL,
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	ROWLAND COMLY.

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	"Ulverstone," College Campus
JOHN ANTHONY MILLER, Ph.D., <i>Vice-President of the College and Professor of Mathematics and Astronomy</i> ,..	Cunningham House, College Campus
WILLIAM ALBERT ALEXANDER, A.B., <i>Dean</i> ,.....	Benjamin West House, College Campus
EDNA HARRIET RICHARDS, A.M., <i>Dean of Women and Instructor in German</i> ,.....	Parrish Hall, College Campus
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SUSAN J. CUNNINGHAM, Sc.D., Hon., <i>Emeritus Professor of Mathematics and Astronomy</i> ,.....	107 N. Thirty-fourth Street, Philadelphia
GEORGE ARTHUR HOADLEY, Sc.D., <i>Emeritus Professor of Physics</i> ,.....	518 Walnut Lane
SPENCER TROTTER, M.D., <i>Professor of Biology</i> ,.....	"Pennyseroft," Cheyney, Pa.
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JESSE HERMAN HOLMES, Ph.D., <i>Professor of the History of Religion and Philosophy</i> ,.....	5 Whittier Place, College Campus
ISABELLE BRONK, Ph.D., <i>Susan W. Lippincott Professor of the French Language and Literature and Secretary of the Faculty</i> ,.....	317 N. Chester Road
GELLERT ALLEMAN, Ph.D., <i>Professor of Chemistry</i> ,.....	8 Whittier Place, College Campus
* PAUL MARTIN PEARSON, Litt.D., <i>Professor of Public Speaking</i> ,.....	516 Walnut Lane
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HAROLD CLARKE GODDARD, Ph.D., <i>Alexander Griswold Cummins Professor of English</i> , .....	3 Whittier Place, College Campus
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CLARA PRICE NEWPORT, Ph.D., <i>Professor of the German Language and Literature</i> ,.....	239 Haverford Avenue
THOMAS KLINGENBERG URDAHL, Ph.D., <i>Professor of Economics</i> ,.....	4941 Catherine Street, Philadelphia
CHALLES HENRY FISHER, A.M., <i>Acting Professor of Education</i> ,.....	West Chester, Pa.

\* Absent on leave.

- WILBUR JONES KAY, *Acting Professor of Public Speaking*,.....  
 "Walhalla," Cheyney, Pa.
- JOHN RUSSELL HAYES, LL.B., *Librarian*,.....517 Elm Avenue
- LEWIS FUSSELL, Ph.D., *Assistant Professor of Electrical Engineering*,...  
 Riverview and Baltimore Avenues
- SAMUEL COPELAND PALMER, Ph.D., *Assistant Professor of Biology*,.....  
 Ogden Avenue and Walnut Lane
- HENRY JERMAIN MAUDE CREIGHTON, D.Sc., *Assistant Professor of Chem-*  
*istry*,.....318 Harvard Avenue
- ETHEL HAMPSON BREWSTER, Ph.D., *Assistant Professor of Greek and*  
*Latin*,.....2 Whittier Place, College Campus
- JOHN HIMES PITMAN, A.M., *Assistant Professor of Mathematics and Astron-*  
*omy*,.....317 N. Chester Road
- CHARLES G. THATCHER, M.E., *Assistant Professor of Mechanical Engineer-*  
*ing*,.....216 S. Chester Road
- EDGAR WHITE BURRILL, A.M., *Assistant Professor of English*,.....  
 620 W. 116th Street, New York City
- MASON E. HUFFORD, Ph.D., *Acting Assistant Professor of Physics*,.....  
 513 Ogden Avenue
- EARLE BRENNEMAN MILLER, A.M., *Acting Assistant Professor of Mathe-*  
*matics*,.....318 N. Chester Road
- EUGENE LEROY MERCER, M.D., *Director of Physical Education of the Men*,..  
 Benjamin West House, College Campus
- HELEN COLLINS CULIN, A.B., *Acting Director of Physical Education of the*  
*Women*,.....1 Whittier Place, College Campus
- MARY R. LEWIS, M.D., *Lecturer in Hygiene*,.....  
 46 N. Fortieth Street, Philadelphia
- MAUD BASSETT GORHAM, Ph.D., *Instructor in English*,..108 Cornell Avenue
- LANDER MACCLINTOCK, Ph.D., *Instructor in French*,.....  
 3 Whittier Place, College Campus
- JOSEPH RUSSELL HULL, A.B., *Instructor in Chemistry*,..308 N. Chester Road
- JOHN JOSEPH MATTHEWS, A.B., *Instructor in Engineering*,.....  
 North Chester Road
- ELIZABETH BIGGINS OLIVER, A.M., *Instructor in Public Speaking*,.....  
 615 W. Broad Street, Chester, Pa.
- ESTHER ELIZABETH BALDWIN, A.M., *Instructor in English*,.....  
 1 Whittier Place, College Campus
- GRACE WINTER GREENE, A.M., *Instructor in English*,..215 College Avenue
- WALTER ANTONIO MÁTOS, A.B., *Volunteer Observer in the Sproul Observa-*  
*tory*,.....309 College Avenue
- MERCEDES C. IRIBAS, *Assistant in Spanish*,.....Cynwyd, Pa.
- CAROLINE HALLOWELL SMEDLEY, A.M., *Assistant in Astronomy and Mathe-*  
*matics*,.....Wharton Hall, College Campus
- EDITH D. DAVISON, *Instructor in Foods and Cookery*,.....  
 Furnald Hall, Columbia University, New York City
- FLORENCE MARGUERITE ROSE, *Assistant in Physical Education of the*  
*Women*,.....Parrish Hall, College Campus

## ADMINISTRATIVE OFFICERS

- JOSEPH SWAIN, M.S., LL.D., *President.*  
JOHN ANTHONY MILLER, Ph.D., *Vice-President.*  
WILLIAM ALBERT ALEXANDER, A.B., *Dean.*  
EDNA HARRIET RICHARDS, A.M., *Acting Dean of Women.*  
JOHN RUSSELL HAYES, A.B., LL.B., *Librarian.*  
HARRIET E. WORRELL, *Secretary to the President.*  
CHESTER ROBERTS, *Superintendent.*  
ELLA MICHENER, *Assistant to the Dean of Women.*  
RUTH STEPHENSON, A.B., *Secretary to the Dean.*  
MARGARET ORMOND, B.S., *Assistant Librarian.*  
ANNE C. BRIERLY, *Dietitian.*  
SARAH DODDRELL COALE, *Matron of Wharton Hall.*  
CAROLINE AUGUSTA LUKENS, B.L., *Matron of Parrish Hall Center.*  
MARY E. COOK, *Director of the Laundry.*  
ELIZABETH REDHEFFER HIRST, *Bookkeeper.*  
FLORENCE B. BARRETT, *Nurse.*  
JULIA R. YOUNG, A.B., *Stenographer to the Dean.*

# SWARTHMORE COLLEGE

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## LOCATION AND FOUNDATION

The Borough of Swarthmore is situated southwest of Philadelphia on the Central Division of the Philadelphia, Baltimore, and Washington Railroad. It is eleven miles from Broad Street Station, with which it is connected by eighteen inbound and twenty-two outbound trains daily, the running time of which varies from nineteen minutes on express schedule to thirty-six minutes on the local schedule. Three trolley lines, running cars at twenty- and thirty-minute intervals, also connect with Philadelphia elevated and surface lines.

The college buildings and campus occupy a commanding position upon a hill not far from the center of the town. The view includes several miles of the Delaware River, the nearest point of which is about four miles distant. The college property comprises over two hundred acres of ground, including a large tract of woodland and the beautiful rocky valley of Crum Creek.

The College was founded in 1864 through the efforts of members of the Religious Society of Friends, for the purpose of securing to the youth of the Society an opportunity for higher educational training under the guarded supervision and care of those of their own religious faith. Other applicants are admitted upon the same terms as Friends, and nothing of a sectarian character exists in the instruction or in the management of the College. According to its first charter, membership on the Board of Managers of the College was limited to persons belonging to the Society of Friends. The purpose of this restriction was not to establish sectarian control, but to prevent forever the possibility of such control by any sectarian element which might otherwise have come to be represented on the Board. This restriction is now believed to be no longer needed and is omitted from the revised charter. The intention of its founders was to make the promotion of Christian character the first consideration, and to provide opportunities for liberal culture while main-

taining a high standard of scholarship. These aims have been faithfully observed in the administration of the institution.

## BUILDINGS

*Parrish Hall* is a massive stone structure, with its central portion separated from the two wings by fireproof compartments. The central building, three hundred and forty-eight feet long and five stories high, furnishes assembly room, lecture rooms, museum, parlors, dining hall, and offices. The wings are four stories high. The ground floor of each wing is used for lecture and recitation rooms; the remaining floors contain the dormitories of the women students. The Dean of Women and several instructors and matrons reside in the building.

*Wharton Hall*, the dormitory for young men, named in honor of its donor, Joseph Wharton, late President of the Board of Managers, was opened for occupancy at the beginning of the college year 1904-05. The third section of the building was completed in 1916. The total capacity of the hall is about two hundred. It stands in the west campus on the same ridge as Parrish Hall, and commands a fine view of the Delaware River valley.

The *Hall of Physics and Engineering* is a two-story stone building devoted to the departments of Physics and Engineering. It contains lecture and recitation rooms, electrical, physical and engineering laboratories, draughting rooms, engine and boiler rooms. All departments are well equipped, and new apparatus and machinery are added as occasion demands.

The *Hall of Chemistry*, which was completed in 1904, is a red brick building two stories high, and contains a finished basement. The basement has an assay laboratory furnished with wind and muffle furnaces, a fireproof combustion room, a laboratory for gas analysis, a photometric dark room, large stock room, and cloak and toilet rooms. On the first floor are offices, and laboratories for quantitative analysis and for general chemistry. The large amphitheater lecture room, seating one hundred persons and extending to the basement, is reached from this floor. The second floor contains the organic laboratory, the laboratory for qualitative analysis, the laboratory for physical chemistry, the



laboratory for electrolytic chemistry, and the library. Two balance rooms, one on the first floor and one on the second floor, contain balances mounted on columns built independently of the foundations and floors of the building. The laboratories are splendidly equipped with all the necessary modern apparatus. The chemical library contains a well-selected list of scientific and technical books pertaining to chemistry, and complete sets of five of the leading chemical journals. Through the generosity of Mrs. Peter T. Berdan, the library has received a complete set of the publications of the London Chemical Society, and a set of the *Journal of the London Society of Chemical Industry*, presented by Mrs. Berdan as a memorial to her son, Frederick T. Berdan, a member of the Class of 1890.

The *Sproul Astronomical Observatory*, equipped by Senator William Cameron Sproul, '91, stands on the site formerly occupied by the President's house, and contains nine rooms. On the first floor are an office, a departmental library, a computation room, two class rooms, and a shop room. On the second floor are a modern lecture room seating seventy-five persons, a dark room, and the dome room. The dome is a steel structure covered with copper, forty-five feet in diameter. It is revolved by an electric motor. Practically all the classes of the department of Mathematics and Astronomy, and some classes of other departments, are held in the Observatory.

The chief instrument of the equipment is an equatorial refractor of twenty-four inches aperture, and thirty-six feet focal length, the mounting and optical parts of which were made by the John A. Brashear Co., Ltd. The mounting is modern and convenient, motors being provided for winding the clock and moving the telescope. The driving clock is electrically controlled. A disc driven by a sidereal clock situated on the north side of the pier reads right ascensions directly. The telescope is provided with the usual oculars, helioscope, position micrometer, double-slide plateholder, and three ray filters.

There is also a photographic telescope of nine inches aperture and forty-five inches focal length, mounted after the design of the Bruce telescope at Yerkes Observatory. The instrument is provided with a heavy mounting, a heavy driving clock, coarse and fine position circles, a guide telescope, and such other

accessories as make it an effective and convenient instrument. There are also two measuring engines for measuring five-by-seven photographic plates. One of these was built by Brashear, the other by Gaertner. There is also a blink microscope.

Stephen Loines has recently given to the observatory a Polar Equatorial, a new type of telescope, designed and built by the Alvan Clark and Sons' Corporation. With this type of telescope the observer is enabled to make his observations while seated in a warm room. It is housed in the Sproul Observatory.

The *Students' Astronomical Observatory*, situated on the campus a short distance southeast of Parrish Hall, is especially equipped for the purposes of instruction. It contains a refracting telescope of six inches aperture, mounted equatorially, fitted with the usual accessories, including a position micrometer and a very good spectroscope. The observatory also contains a transit instrument of three inches aperture, a mean time and a sidereal clock and a chronograph. Mounted in a room adjoining the transit room is a Milne seismograph, presented by Joseph Wharton, which records photographically all vibrations of the crust of the earth. The latest addition to this observatory building contains the photographic telescope referred to above.

*The Library Building.* On the lower east campus, near the Benjamin West House, stands the Library, a fine specimen of the English Scholastic Gothic style. The Library was built and furnished from the \$50,000 generously presented to the College by Mr. Andrew Carnegie and is maintained from the income on a like sum subscribed by several friends of the College. The building is constructed of local granite, with terra cotta and Indiana limestone trimmings and was erected under the supervision of Mr. Edward L. Tilton, of New York. In the second story of the massive entrance tower, is a large fireproof apartment, which contains the Friends' Historical Library; in the third story, are placed the Westminster chimes of four bells and the Seth Thomas Clock presented to the College in June, 1910, by Mr. Morris L. Clothier in commemoration of the twentieth anniversary of the graduation of the class of 1890. The first floor of the main building contains a stack room and a large, well-lighted reading room finished in dark oak. The reading room is two stories high, with a gallery round three sides. On

this gallery open the seminar rooms and the tower room devoted to the Friends' Historical Library; below are alcoves containing reference books and other books in common use.

*Beardsley Hall.* This building is of concrete block construction with reinforced concrete floors, columns, and stairs. It is three stories high. In architectural design it is simple and effective, representing the latest and best type of factory building construction.

*The President's House.* The property on the east edge of the campus on the corner of Elm Avenue and Cedar Lane, recently owned by W. H. Miller, has been purchased by the College and is used for the President's house.

*The Wm. J. Hall Gymnasium* for men is a two-story stone building. On the first floor are offices, examining room, and the main exercise hall, a room fifty by eighty feet, equipped with apparatus for individual and class work and a good court for basketball. A trophy room and running track are on the second floor. In the basement are lockers, shower baths, a dressing room for visiting teams, and handball courts.

*Somerville Hall*, erected in 1893 through the efforts of the Somerville Literary Society, is used as a gymnasium for the women. It is furnished with apparatus adapted to the Swedish system of gymnastics. In the basement are dressing rooms, showers, and lockers for the use of day students who take work in the department of Physical Education.

Two *Swimming Pools*, one for the women and another for the men, were erected during the summer of 1912. These pools were presented to the College by Philip M. Sharples. The building which contains the women's swimming pool is connected by a corridor with Somerville Hall, and the men's pool is connected in like manner with the William J. Hall Gymnasium.

*The Heating and Lighting Plant.* A central heat, light, and power plant was erected in 1911 at a cost of about one hundred thousand dollars. The power house is a single-story brick structure, located south of the P. B. & W. R. R. tracks.

Other buildings upon the campus are the *Meeting-house*, the *Benjamin West House* (birthplace of Benjamin West, P. R. A., erected in 1724), *Cunningham House* (the residence of the Professor of Astronomy and Mathematics), six residences

for members of the Faculty, a laundry building, a lodging house for the domestic servants, and the necessary farm buildings.

*Swarthmore Field* and *Alumni Field* provide excellent facilities for outdoor athletics of the men. Swarthmore Field comprises the football, lacrosse, and soccer grounds, and a good quarter-mile cinder track with a two hundred and twenty yards straight-away. Alumni Field is contiguous with Swarthmore Field and provides an excellent baseball ground. The men's tennis courts are being constructed in front of Wharton Hall.

*Cunningham Field*, the women's athletic ground, includes a part of the east campus beyond Somerville Hall. This field, enclosed by a hedge of California privet, is divided into the three terraces which make ample provision for basketball, tennis, and English field hockey. This field was given by students, alumnæ, and friends of the College as a tribute to Susan J. Cunningham, who has for many years been closely identified with the interests of the women students of Swarthmore.

### SOCIAL LIFE

Swarthmore, as a coeducational institution, undertakes to provide college life in a home setting; to supply an atmosphere in which manly and womanly character may develop naturally and completely. The intercourse of the students is under the care of the Dean of Women and her assistants, who aim to make it a means of social culture.

### RELIGIOUS LIFE

The daily sessions of the College include a gathering of students and instructors for the reading of the Bible, or for some other suitable exercise, preceded and followed by a period of silence. Students under twenty-one years of age are expected to attend either Friends' Meeting, held every First-day morning in the Meeting House, or, at the request of their parents, the church in the borough of the religious denomination to which they belong. A class to which all students are invited is held at 9.00 on First-day mornings for the consideration of religious subjects. Preceding the meeting there are also classes in the

First-day School to which students are invited. By these means, and particularly by individual influence, and by the constant effort to maintain in the institution a spirit in harmony with the purpose of its founders, it is believed that a proper care is exercised to mould the characters of the students in conformity with Christian standards.

### STUDENTS' SOCIETIES

Two literary societies are maintained by the students: the *Athenæum* by the men, the *Somerville* by the women. Each society has, under the management of its own members, but accessible to all students, a library and a reading room containing periodicals and daily papers. The total number of books in these libraries is over four thousand.

The *Cercle français* holds frequent meetings and is open to all students in the French Department after the middle of their first year. Its object is to afford increased opportunities for acquiring a practical knowledge of the French language.

The *Deutscher Verein* holds occasional sessions for the purpose of affording its members a greater ease and facility in expressing themselves in idiomatic German. Students are thus brought into more positive acquaintance with German customs, amusements, music, and literature.

The *Mathematical and Astronomical Club* is an association of students in Mathematics and allied subjects, and of instructors in Mathematics. It meets on the first and third Tuesdays of each month to discuss subjects not pertinent to the class room.

The *Classical Club* meets once a month during the college year. Addresses and papers are given on subjects which emphasize the broader aspect of classical culture and civilization.

The *English Club*, open to all students, meets twice a month to hold discussions and to listen to papers and addresses upon topics of literary and dramatic interest.

The *Engineers Club* has for its purpose the reviewing of recent discoveries and achievements in engineering, discussing questions not raised in the class room, giving power in the presentation of topics, promoting intimacy between faculty and students, and providing guidance in the engineering vocations.

Meetings are held once in each month in the Beardsley Hall Library. Students majoring in engineering are eligible for membership.

The *Athletic Association* is an organization of the men for the encouragement of physical training and athletic sports.

The *Women's Athletic Association* is a similar organization of the women students.

*Christian Associations.* The religious life among the students is furthered by the Young Men's and Young Women's Christian Associations. Formal and informal receptions and other social functions are given with the especial object of promoting closer fellowship and a truly democratic spirit. Public meetings for worship are held every Sunday evening, the young men meeting in Wharton Hall and the young women in Parrish Hall.

No student organization of the College may incur any financial obligation, or make any contract involving a monetary consideration, without first obtaining the sanction of the President of the College, or of the proper faculty committee under whose supervision the organization is placed. Students contemplating a new organization must first consult the President of the College. If he desires to grant them permission to effect such an organization, he will advise the student representatives of the particular faculty committee under whose supervision the organization is placed.

### COLLEGE PUBLICATIONS

Two periodicals are published by the students under the supervision of the faculty: *The Phoenix*, a weekly publication, is devoted to undergraduate journalism; the *Halcyon* is published annually by the Junior Class.

The *Swarthmore College Bulletin* is published every three months and contains a record of the matters of permanent importance in the progress of the College.

### LIBRARIES AND READING ROOMS

The libraries of the College collectively contain over thirty thousand volumes.

The chief sources of income for increasing the collection in the college library are these: the Edgar Allen Brown Fund,

established by his family in memory of Edgar Allen Brown, of the Class of 1890; the Alumni Fund; and the General Library Fund.

The library is open daily except Sunday, as follows: Monday to Friday, inclusive, 8.00 A. M. to 6.00 P. M. and 7.15 to 10.00 P. M.; Saturday, 8.00 A. M. to 5.00 P. M., and 7.15 to 10.00 P. M.

Residents of the borough of Swarthmore are cordially invited to use the library.

The Friends' Historical Library, founded by the late Anson Lapham, of Skaneateles, N. Y., contains a valuable and growing collection of Friends' books, tracts, and early writings (many very rare), photographs of representative Friends, other objects of personal and historic interest, and manuscripts relating to the Society and its history. This collection is stored in rooms practically fireproof, 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 are solicited, and should be addressed to the Friends' Historical Library, Swarthmore, Pa. The library is accessible to all persons interested in the doctrines and history of Friends, and ample arrangements are provided for its use for consultation and for reference.

Moreover, the great collections of books in the Library of the University of Pennsylvania, the Philadelphia Library and its Ridgway Branch, the Mercantile Library, the Free Library of Philadelphia, as well as those in the special and technical libraries of the city, are open to the use of students under proper regulations. The Philadelphia library resources, which are of especial utility in connection with the various departments of the College, are referred to in the departmental statements.

The Library and the departmental reading rooms are supplied with reference books and the leading literary, scientific, and technical journals.

## THE MUSEUM OF BIOLOGY AND GEOLOGY

The Museum contains a collection for educational purposes only, and the specimens from its cases are in constant use in the lecture room and laboratory. It is steadily becoming a more per-

fect means of illustrating the different departments of biology and geology.

It includes the following collections:

1. The *Joseph Leidy Collection of Minerals*, the result of thirty years' discriminating collection by its founder, consists of exceedingly valuable cabinet specimens of minerals, characteristic rocks and ores, and models of the various systems of crystallization.

2. The *Collection Illustrating Comparative Osteology* is composed of a large series of partial and complete skeletons, prepared at Prof. Henry Ward's Natural History Establishment in Rochester, N. Y. The collection illustrates the structure and framework of vertebrates.

3. The *Wilcox and Farnham Collection of Birds* comprises stuffed specimens of native and foreign birds. Nearly all the species visiting this State are represented.

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

5. The *C. F. Parker Collection of Shells* is made up of choice typical land, fresh water, and marine shells. These specimens were all selected by the late Dr. Joseph Leidy from the extensive collection of the founder, C. F. Parker, who was for many years the Curator in charge of the Academy of Natural Sciences of Philadelphia.

6. The *Robert R. Corson Collection of Stalactites and Stalagmites* is composed of specimens from the Luray Caverns, which illustrates the peculiar limestone formations of Luray and similar districts.

7. The *Eckfeldt Herbarium* contains over two thousand specimens illustrating the flora of Pennsylvania. The *Annie Shoemaker Collection* is a valuable addition to this.

8. The *Joel Scarlet Collection of Minerals and Crystallographic Specimens* was presented to the Chemical Department by the heirs of the late Joel Scarlet of Kennett Square, Pa. This collection, which has been placed in cases located in the library of the Chemical Building, consists of about three thousand well-selected specimens, many rare and valuable. It is used for the course in Mineralogy and is accessible to students under the supervision of the instructor.



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

## EXPENSES

The charge for board, room, and tuition ranges from \$450 to \$550, of which at least \$275 is payable in advance. The remainder is due on the first of January. The charge varies in accordance with the size and location of the room. Every student's bill for the first payment is mailed before the opening of the college year, and the student is held responsible for prompt payment in advance. Thirty days after the opening of college 5 per cent. will be added to all bills unpaid at that time. The bill for the second payment is mailed before the first of January. In case bills are not paid before the end of the first semester, students owing such bills may be excluded from all college exercises for the second semester. Students withdrawing on or before the end of the first semester receive no benefit from scholarships, as scholarships are credited at the beginning of the second semester. All students choose rooms according to date of application for admission. In order to reserve a room in any one of the dormitories each student must make a deposit of \$10 when the room is chosen. This sum will be held as a fund to cover breakage or any other damage to college property, and the loss involved if a student fails to occupy the room reserved for him. When the amount of a student's breakage exceeds \$5 the unexpended balance is returned and a new deposit is required.

The necessary furnishings for the rooms in the dormitories are provided by the college, with the exception of rugs, which are to be furnished by the students.

The tuition fee for non-resident students is \$175 a year, of which \$150 is payable in advance, and the remainder on the first of January.

Special students who enroll for less than the prescribed number of hours will be charged according to the number of hours carried and at the rate of \$10 per credit hour.

The charges for room, meals, and tuition are not subject to remission or deduction under any circumstances. Payments are to be made by check or draft to the order of SWARTHMORE COLLEGE, Swarthmore, Pa.

## DINING-ROOM RATES

Per college year, \$200; per month, \$25; per week, \$7; single breakfast or lunch, 30 cents; single dinner (except Sunday), 40 cents; Sunday dinner, 50 cents; dinners per month, \$10.50; lunches per month, \$7.50; breakfasts per month, \$7.

The college year for instructors and administrative officers begins with the Saturday preceding Registration Day, and ends with the Saturday following Commencement Day, but does not include the Christmas vacation. Instructors and officers who wish meals before the beginning or after the end of the college year are expected to make arrangements in advance at the Superintendent's office.

The charge for board and room for instructors and administrative officers is \$300 per year.

The College is closed during the Christmas recess. Students who desire to remain in Swarthmore or its vicinity at that time may secure board at moderate charge in homes recommended by the faculty. Students who desire to remain at the College during the spring recess will be charged a proportionate sum for board.

Students leaving property in any college building during the summer recess do so at their own risk.

*Freshmen are expected to leave the College immediately after their last examination is over in the spring in order that their rooms may be used by Commencement visitors.*

Students purchase their own books, which are furnished by the College at the lowest rates obtainable. They also buy their own stationery and drawing implements, and pay a reasonable rate for laundry work done at the College.

A fee of \$3 a semester is charged in every laboratory science, except in Chemistry and Engineering.

The fees in the department of Chemistry and Chemical Engineering are as follows: For the course in Assaying, no fee, but students pay for all breakage and all materials used; for the course in Mineralogy \$3 a semester; for all other courses in this department \$10 a semester. In addition to the above-named fees every student graduating in the department of Chemistry and Chemical Engineering is charged \$25 in lieu of fees for apparatus and materials used, in connection with his thesis.

This last named fee is payable at the beginning of the second semester of the Senior year.

A fee of \$5 a semester is charged for each course in wood-working, forging, and machine practice; a fee of \$2 a semester is charged for each course in field practice and surveying; an additional fee of \$2 is charged for the annual survey.

A deposit of \$5 is required for each course in shop work or founding. This deposit will be retained to cover breakage and loss of tools or supplies, and, after deduction for such items, the balance will be refunded upon the completion of the course.

Each student is charged a fee of \$1 a semester for the use of the gymnasium and swimming pools. This amount includes locker rental.

In addition to the payments made directly to the College there are a number of other items of living expense such as clothing, care of health, recreation, traveling, etc., which the student must meet. The combined expenditures of both classes vary considerably, of course, from student to student. In order to ascertain the limits of such variation a careful statistical inquiry was made at the end of the college year 1912-13 among a number of students, who at the beginning of the first semester had been requested to make detailed reports regarding their expenditures for the year. The results are presented in the following tables:

Total				
Expenditures for				
College Year				
1912-13	Women.	Men.	Both.	Per Cent.
Under \$500.....	4	1	5	4.9
\$500 to \$600.....	9	15	24	23.3
\$600 to \$700.....	8	16	24	23.3
\$700 to \$800.....	8	16	24	23.3
\$800 to \$900.....	4	7	11	10.7
\$900 to \$1,000 .....	2	7	9	8.7
Over \$1,000 .....	4	2	6	5.8
	—	—	—	—
Total.....	39	64	103	100.0

Board, clothing, lodging, care of health, tuition, books, apparatus, recreation, traveling, and miscellaneous expenses are included in the above table. The average total expenditure of the thirty-nine women was \$716.98; of the sixty-four men, \$704.09.

It will be noted that slightly more than one half (exactly 51.5 per cent.) of the students of both sexes in the above table spent less than \$700 for the year, and nearly three fourths of them (exactly 74.8 per cent.) less than \$800. Compared with other institutions situated in this part of the country the above figures indicate a very moderate cost of living for the great majority of Swarthmore students.

None of the one hundred and three students included in the above table was in receipt of scholarship or other material aid from the College. In other words they were meeting all expenses on their own account, and their annual totals are, therefore, considerably higher than those of students who receive financial assistance or its equivalent. At present fellowships and scholarships (see pp. 36 to 42) are available for over sixty students who are able to comply with the conditions imposed. In addition to the one hundred and three students whose total expenditures are presented in the above table, eight scholarship holders reported the cost to themselves of the college year 1912-13. Each of the eight received on an average the equivalent of \$131.25 from the College, and spent in addition to this \$437.48. On comparing these figures with the averages of the above table it is evident that the receipt of aid in the case of the nine scholarship students is combined with economy in their other college and living expenses.

Day students residing in Swarthmore avoid payment of board, lodging, washing, etc., to the College. In 1912-13, the average total expenditure of four such students for tuition, books, apparatus, and recreation—the only direct college costs they had to meet—was \$230.25, of which \$161.50, or 70 per cent., was accounted for by tuition fees.

Other forms of economizing may be noted. Day students residing along the line of the P. B. & W. R. R. may take advantage of the very low rates of transportation offered by the forty-six-trip school tickets. On the other hand, a certain loss is incurred by students not in residence and therefore not in close contact at all times with the life of the College. Those who expect to give a portion of their time to remunerative work outside of the College, moreover, should not underestimate the difficulties involved in performing it and complying satisfactorily with col-

lege requirements at the same time. As a general rule, it may be said that only those in good health and of more than the average mental ability can secure results in this way that are commensurate with the sacrifices involved. On the other hand, the democratic atmosphere of the College assures a recognition of the worth of such efforts to work one's way through College.

## FELLOWSHIPS AND SCHOLARSHIPS

### FELLOWSHIPS.

The JOSHUA LIPPINCOTT FELLOWSHIP of \$450 founded by HOWARD W. LIPPINCOTT, A.B., of the Class of 1875, in memory of his father, is awarded annually by the faculty, with the concurrence of the Instruction Committee, to a graduate of the College of at least one year's standing for the pursuit of graduate study under the direction of the faculty or with their approval. Applications for the Joshua Lippincott Fellowship for the year 1919-20 must be received by the faculty before February 20, 1919.

The LUCRETIA MOTT FELLOWSHIP, founded by the Somerville Literary Society and sustained by the contributions of its life members, has yielded an annual income since its foundation of \$525. It is awarded each year by a committee of the faculty (selected by the society), with the concurrence of the life members of the society, to a young woman graduate of that year who is to pursue advanced study at some other institution approved by this committee.

The JOHN LOCKWOOD MEMORIAL FELLOWSHIP of \$450 was founded by the bequest of Lydia A. Lockwood, of New York, in memory of her brother, John Lockwood. It was the wish of the donor that the fellowship be awarded to a member of the Society of Friends. It is to be awarded annually by the faculty, with the consent of the Instruction Committee, to a graduate of the College of at least one year's standing, for the pursuit of graduate studies under the direction of the faculty or with their approval. Applications for this fellowship for 1919-20 must be received by the faculty by February 20, 1919.

The HANNAH A. LEEDOM FELLOWSHIP of \$400 was founded by the bequest of Hannah A. Leedom. It is awarded annually by the faculty with the consent of the Instruction Committee to a graduate of the College of at least one year's stand-

ing for the pursuit of graduate studies under the direction of the faculty or with their approval. Applications for this fellowship for 1919-20 must be received by the faculty by February 20, 1919.

The **MARTHA E. TYSON FELLOWSHIP** of \$450, founded by the Somerville Literary Society in 1913, is sustained by the contributions of the life members of the society. It is awarded annually, by a joint committee of the faculty and the society (elected by the society) with the concurrence of the life members of the society to a woman graduate of Swarthmore College, who has taught successfully for two years after her graduation, and expects to continue teaching. The recipient of the award is to pursue a course of study fitting her for more efficient work in an institution approved by the Committee of Award. Applications for this fellowship for 1919-20 must be received by the Committee of Award not later than February 1, 1919.

#### SCHOLARSHIPS

1. The **WESTBURY QUARTERLY MEETING, N. Y., SCHOLARSHIP** is awarded annually by a committee of that Quarterly Meeting.

2. Each of the following funds yields annually about \$200 and is awarded at the discretion of the College to students needing pecuniary aid, whose previous work has demonstrated their earnestness and ability:

- (a) The **REBECCA M. ATKINSON SCHOLARSHIP FUND.**
- (b) The **BARCLAY G. ATKINSON SCHOLARSHIP FUND.**
- (c) The **THOMAS L. LEEDOM SCHOLARSHIP FUND.**
- (d) The **MARK E. REEVES SCHOLARSHIP FUND.**
- (e) The **THOMAS WOODNUTT SCHOLARSHIP FUND.**
- (f) The **SARAH E. LIPPINCOTT SCHOLARSHIP FUND.**

3. The **ANNIE SHOEMAKER SCHOLARSHIP**, a free scholarship for board and tuition, is awarded annually to a young woman graduate of Friends' Central School, Philadelphia.

4. The **HARRIET W. PAISTE FUND** is limited by the following words from the donor's will: "the interest to be applied annually to the education of female members of our Society of Friends (holding their Yearly Meeting at Fifteenth and Race



Streets, Philadelphia) whose limited means would exclude them from enjoying the advantages of an education at the College."

5. The MARY WOOD FUND is limited by the following words from the donor's will: "the income thereof to be, by the proper officers thereof, applied to the maintenance and education at said college of one female student therein, one preparing for the avocation of a teacher to be preferred as the beneficiary, but in all other respects the application of the income of said Fund to be in the absolute discretion of the college."

6. The WILLIAM C. SPROUL SCHOLARSHIP. William C. Sproul, a graduate of the Class of 1891, offers annually a scholarship to a graduate of the Chester High School. This scholarship may continue throughout the college course. Details may be secured from the principal of the Chester High School.

7. The following scholarships are offered for work done in the College in 1918-19. They are of the value of \$200 each for resident, and \$100 each for day students, and are awarded in each instance to that member of each of the respective classes who shall be promoted without conditions, and shall have the best record of scholarship upon the regular work of the year:

- (a) The DEBORAH FISHER WHARTON SCHOLARSHIP will be awarded to a member of the Junior Class.
- (b) The SAMUEL J. UNDERHILL SCHOLARSHIP will be awarded to a member of the Sophomore Class.
- (c) The ANSON LAPHAM SCHOLARSHIP will be awarded to a member of the Freshman Class.

8. The SAMUEL WILLETS FUND provides several scholarships for resident students needing pecuniary aid, whose previous work has demonstrated their earnestness and their ability. They will be awarded at the discretion of the Committee on Trusts. Application should be made to the President of the College.

9. The ISAAC STEPHENS SCHOLARSHIPS. Four scholarships of \$50 per year.

10. The I. V. WILLIAMSON SCHOLARSHIPS FOR PREPARATORY SCHOOLS. Ten scholarships of the value of \$150 each for resident students, and \$75 each for day students, are offered to members of classes graduating in 1919 in the following schools:

1 to Friends' Central School (Boys' Department) .....	Philadelphia.
1 to Friends' Central School (Girls' Department) .....	Philadelphia.
1 to Friends' Seminary .....	New York, N. Y.
1 to Friends' School .....	Baltimore, Md.
1 to Friends' School .....	Wilmington, Del.
1 to Friends' High School .....	Moorestown, N. J.
1 to Friends' Academy .....	Locust Valley, N. Y.
1 to Friends' Select School .....	Washington, D. C.
1 to George School (Boys' Department)....	George School, Pa.
1 to George School (Girls' Department)....	George School, Pa.

Beginning with the classes graduating in 1920 from the schools listed above, these scholarships will be awarded under the following conditions:

- (a) There must be two or more candidates from each school for the scholarship.
- (b) The candidates will be required to take the examinations of the College Entrance Examination Board. The scholarship will be awarded only to that candidate who makes a passing grade of 60 per cent. in each subject required for admission and who makes the highest average grade.
- (c) Examinations must be completed before July 1 preceding the year of admission to College. A candidate may take any examination for which his preparation is complete in any year of the college preparatory course.
- (d) No scholarships will be awarded to applicants who fail to be admitted without conditions.
- (e) Every holder of such scholarship must pursue in College the studies leading regularly to the degree of Bachelor of Arts.
- (f) The College reserves the right to require some form of service from students receiving scholarships from the College.

11. For the year 1919-20, Swarthmore College offers three scholarships of \$150 each for resident students and \$75 each for day students, to members of classes graduating in 1919 in the following schools:

- 1 to Swarthmore Preparatory School .....Swarthmore, Pa.
- 1 to Swarthmore Public High School.....Swarthmore, Pa.
- 1 to The West Chester High School.....West Chester, Pa.

Beginning with the classes graduating in 1920 from the schools listed above, these scholarships will be awarded under the following conditions:

- (a) There must be two or more candidates from each school for the scholarship.
- (b) The candidates will be required to take the examinations of the College Entrance Examination Board. The scholarship will be awarded only to that candidate who makes a passing grade of 60 per cent. in each subject required for admission and who makes the highest average grade.
- (c) Examinations must be completed before July 1 preceding the year of admission to College. A candidate may take any examination for which his preparation is complete in any year of the college preparatory course.
- (d) No scholarships will be awarded to applicants who fail to be admitted without conditions.
- (e) Every holder of such scholarship must pursue in College the studies leading regularly to the degree of Bachelor of Arts.
- (f) The College reserves the right to require some form of service from students receiving scholarships from the College.

12. The PHOEBE ANNE THORNE FUND provides several scholarships for students needing pecuniary assistance whose previous work has demonstrated their earnestness and their ability. This gift includes a clause of preference to those students who are members of the New York Monthly Meeting of Friends. These scholarships are awarded by the College under the regulations

fixed by the Board. Application should be made to the President of the College.

13. A friend of Swarthmore College and of the University of Pennsylvania offers a scholarship of \$100 for the college year 1919-20 to a graduate of Swarthmore College taking work in any department of the University.

14. The Western Swarthmore Club offers in conjunction with the College, one competitive scholarship of \$450 to a man. The scholarship is open for competition to all high and preparatory school graduates west of the Allegheny Mountains. Students interested are requested to apply to the President of the Club, Professor T. A. Jenkins, University of Chicago, Chicago, Illinois.

15. The MARY COATES PRESTON SCHOLARSHIP FUND. A sum of money has been left by the will of Elizabeth Coates to Josephine Beistle, of Swarthmore, as trustee, the annual interest of which will be about \$300. This amount is given by the trustee as a scholarship to a young woman student in Swarthmore College, preferably to a relative of the donor.

16. The Woman's Medical College of Pennsylvania offers a scholarship of \$175, full tuition, to a young woman graduate of Swarthmore College. This amount is to be given annually during the four years of medical work, thus having a total value of \$700 to the student receiving the scholarship.

17. The Trenton Swarthmore Club offers yearly in conjunction with the College, a competitive scholarship of \$200 for a period of two years. The scholarship is open only to male students in the vicinity of Trenton, N. J., and the award is based upon scholarship, character, leadership, and athletic standing. Students interested are requested to apply to the Secretary of the Club, Owen Moon, Jr., 8 South Stockton Street, Trenton, N. J.

18. The PHILIP M. SHARPLES SCHOLARSHIP. Philip M. Sharples, of West Chester, offers annually two four-year scholarships;

one to a young man and one to a young woman, graduating from the West Chester High School. Fuller details may be secured from the principal of the West Chester High School.

19. The Ivy Medal is placed in the hands of the faculty by a friend of the College, to be awarded on Commencement Day to a male member of the graduating class for character, scholarship, and influence.

## ADMISSION

APPLICATION FOR ADMISSION should be made as early as possible by letter to the Dean of the College. Students are not admitted for a period of less than the current college year, but, when vacancies exist, students may enter profitably upon the work of a sufficient number of courses. All applicants must present satisfactory testimonials of good character from their former teachers, and students coming from other colleges must present certificates of honorable dismissal.

ADMISSION TO THE COLLEGE is granted (1) to candidates who pass satisfactory examinations covering the entrance requirements stated below, pages 45 to 67; and (2) to those who present certificates signed by the principals of duly accredited schools, made out upon forms furnished by the College, affording sufficient evidence that the entrance requirements have been met.

1. EXAMINATIONS FOR ADMISSION must be taken in June if possible. Candidates for admission by examination in June are required to take the examinations of the College Entrance Examination Board. For those who find it impossible to take examinations in June examinations in all subjects will be held at the College in September.

### COLLEGE ENTRANCE EXAMINATION BOARD

#### ENTRANCE EXAMINATIONS, JUNE 16-21, 1919

In June, 1919, there will be separate blank forms for the "Application for Examination" and "Certificate of Recommendation." The former should be addressed to the College Entrance Examination Board, 431 West 117th Street, New York, N. Y., the latter to the Chairman of the Committee on Admission of the university, college, or scientific school that the candidate wishes to enter. Both forms may be obtained from the Secretary of the College Entrance Examination Board upon request by mail.

Provided that the application reach the College Entrance

Examination Board not later than the date specified below, the examination fee will be \$6 if the candidate is to be examined in the United States, \$20 if the candidate is to be examined outside of the United States. The fee should be remitted by postal order, express order, or draft on New York to the College Entrance Examination Board.

Applications and fees of candidates who wish to be examined outside of the United States must reach the Secretary of the Board at least six weeks in advance of the examinations, that is, on or before May 5, 1919.

Applications and fees of candidates who wish to be examined at points in the United States west of the Mississippi River must be received at least four weeks in advance of the examinations, that is, on or before May 19, 1919.

Applications and fees of candidates who wish to be examined at points in the United States east of or on the Mississippi River must be received at least three weeks in advance of the examinations, that is, on or before May 26, 1919.

When the candidate has failed to obtain the required blank form of application for examination, the usual examination fee will be accepted if the fee arrive not later than the specified date accompanied by a memorandum containing the name and address of the candidate, the examination center at which he wishes to present himself, and a list of all subjects in which he may have occasion to take the Board's examinations.

Applications received later than the dates named will be accepted only upon payment of \$6 in addition to the usual fee.

A list of the places at which the examinations are to be held by the Board in June, 1919, will be published about March 1. Requests that the examinations be held at particular points, to receive proper consideration, should be transmitted to the Secretary of the Board not later than February 1.

2. ADMISSION BY CERTIFICATE. Graduates of Friends' schools and of public high schools, approved by the faculty and Instruction Committee, will be admitted to the College on certificate of the principal, but are not in every case received without condition. The faculty admits these students *on trial*, and reserves the right to change their classification or to decline to continue

their connection with the College if they find them to be insufficiently prepared. The privilege of sending students on certificate may be withdrawn from any school whose pupils are found to be deficient. Principals of other schools who wish to have students admitted on their recommendation should correspond with the Dean on the subject.

Certificates issued by the College Entrance Examination Board will be accepted in place of examinations on the subjects therein certified to as passed. See page 43 for information as to the examinations held by this board. Additional information, if needed, may be obtained by addressing The Secretary of the College Entrance Examination Board, 431 West 117th Street, New York, N. Y.

Graduation from an acceptable four years' high school course or its equivalent is required for admission to the Freshman class on certificate. An applicant may offer substitutes for some of the optional subjects listed below, but in such cases the student is required to substitute for college electives such work as had been omitted in preparatory school. Thus there would be no increase in the number of credit hours required for graduation, but fewer electives could be included in the four-year college course.

### ENTRANCE REQUIREMENTS

*It is to be carefully noted* that the subjects included among the entrance requirements are rated as strictly as possible according to the *time* that should have been devoted to preparatory work in each.

In regard to a *unit* of admission requirements, the faculty of Swarthmore College has approved the following statement, which has been adopted by the National Conference Committee on Standards of Colleges and Secondary Schools, the College Entrance Examination Board, and the Carnegie Foundation for the Advancement of Teaching:

*A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work.*

This statement is designed to afford a standard of measurement for the work done in secondary schools. It takes the



four-year high school course as a basis, and assumes that the length of the school year is from thirty-six to forty weeks, that a period is from forty to sixty minutes in length, and that the study is pursued for four or five periods a week. By this standard a satisfactory year's work in any subject cannot be accomplished under ordinary circumstances in less than one hundred and twenty sixty-minute hours or their equivalent. Schools organized on any other than a four-year basis can, nevertheless, estimate their work in terms of this unit.

*The total number of units required on this basis for admission to Swarthmore College is fourteen and a half.*

#### AURAL AND ORAL TESTS IN FOREIGN MODERN LANGUAGES

In accordance with a resolution adopted in 1908 by the Modern Language Association of America and a similar one adopted in 1914 by the Association of Modern Language Teachers of the Middle States and Maryland, it is recommended that the schools preparing students for Swarthmore College prescribe adequate aural and oral tests for all candidates who desire to present a foreign modern language in satisfaction of requirements for admission.

#### I. GENERAL STATEMENT OF SUBJECTS REQUIRED FOR ENTRANCE

1. Elementary Algebra .....	1½ units	} <i>Required subjects, seven and one half units.</i>
2. Plane Geometry .....	1 unit	
3. English .....	3 units	
4. History .....	2 units	
5. Elementary French .....	2 units	} <i>Optional subjects. Of these enough must be offered to aggregate seven units.</i>
6. Intermediate French .....	1 unit	
7. Advanced French .....	1 unit	
8. Elementary German .....	2 units	
9. Intermediate German .....	1 unit	
10. Advanced German .....	1 unit	
11. Greek .....	3 units	
12. Elementary Latin .....	2 units	
13. Advanced Latin .....	1 or 2 units	
14. Elementary Spanish .....	2 units	
15. Elementary Science ...	1 or 2 units	
16. Solid Geometry .....	½ unit	
17. Trigonometry .....	½ unit	

## II. DETAILED STATEMENT OF SUBJECTS REQUIRED FOR ENTRANCE

1. ELEMENTARY ALGEBRA (*one and a half* units).

The four fundamental operations; factoring; simple equations in one, two, and three unknown quantities; radicals; fractional and negative exponents; quadratic equations in one, two, and three unknown quantities; ratio and proportion; binomial theorem for positive integral exponents; arithmetic and geometric series. The students should acquire facility in algebraic manipulation, in the application of algebra to concrete problems, and in the interpretation of results.

2. PLANE GEOMETRY (*one* unit).

The theorems and constructions presented in a good modern high school text. Solution of numerous original exercises and loci problems; application of geometry to mensuration.

3. ENGLISH (*three* units).

## REQUIREMENT IN ENGLISH, 1918-1919

The requirements in English are those recommended by the National Conference on Uniform Entrance Requirements in English.

The study of English in school has two main objects: (1) command of correct and clear English, spoken and written; (2) ability to read with accuracy, intelligence, and appreciation.

## GRAMMAR AND COMPOSITION

## ONE AND ONE HALF UNITS

The first object requires instruction in grammar and composition. English grammar should ordinarily be reviewed in the secondary school; and correct spelling and grammatical accuracy should be rigorously exacted in connection with all written work during the four years. The principles of English composition governing punctuation, the use of words, sentences, and paragraphs should be thoroughly mastered; and practice in composition, oral as well as written, should extend throughout the secondary school period. Written exercises may well com-

prise letter-writing, narration, description, and easy exposition and argument. It is advisable that subjects for this work be taken from the student's personal experience, general knowledge, and studies other than English, as well as from his reading in literature. Finally, special instruction in language and composition should be accompanied by concerted effort of teachers in all branches to cultivate in the student the habit of using good English in his recitations and various exercises, whether oral or written.

### LITERATURE

#### ONE AND ONE HALF UNITS

The second object is sought by means of two lists of books, headed respectively reading and study, from which may be framed a progressive course in literature covering four years. In connection with both lists, the student should be trained in reading aloud and be encouraged to commit to memory some of the more notable passages both in verse and in prose. As an aid to literary appreciation, he is further advised to acquaint himself with the most important facts in the lives of the authors whose works he reads and with their place in literary history.

#### A. READING.

The aim of this course is to foster in the student the habit of intelligent reading and to develop a taste for good literature, by giving him a first-hand knowledge of some of its best specimens. He should read the books carefully, but his attention should not be so fixed upon details that he fails to appreciate the main purpose and charm of what he reads.

With a view to large freedom of choice, the books provided for reading are arranged in the following groups, from each of which at least two selections are to be made, except as otherwise provided under Group I.

#### GROUP I—CLASSICS IN TRANSLATION

The *Old Testament*, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther.

The *Odyssey*, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII.

The *Iliad*, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI.

The *Aeneid*.

The *Odyssey*, *Iliad*, and *Aeneid* should be read in English translations of recognized literary excellence.

For any selection from this group a selection from any other group may be substituted.

#### GROUP II—SHAKSPEARE

<i>Midsummer Night's Dream,</i>	<i>Richard II,</i>
<i>Merchant of Venice,</i>	<i>Richard III,</i>
<i>As You Like It,</i>	<i>Henry V,</i>
<i>Twelfth Night,</i>	<i>Coriolanus,</i>
<i>The Tempest,</i>	<i>Julius Cæsar,*</i>
<i>Romeo and Juliet,</i>	<i>Macbeth,*</i>
<i>King John,</i>	<i>Hamlet.*</i>

#### GROUP III—PROSE FICTION

Malory: *Morte d'Arthur* (about 100 pages).

Bunyan: *Pilgrim's Progress, Part I.*

Swift: *Gulliver's Travels* (voyages to Lilliput and to Brobdingnag).

Defoe: *Robinson Crusoe, Part I.*

Goldsmith: *Vicar of Wakefield.*

Frances Burney: *Evelina.*

Scott's Novels: any one.

Jane Austen's Novels: any one.

Maria Edgeworth: *Castle Rackrent, or The Absentee.*

Dickens' Novels: any one.

Thackeray's Novels: any one.

George Eliot's Novels: any one.

Mrs. Gaskell: *Cranford.*

Kingsley: *Westward Ho! or Hereward, the Wake.*

Reade: *The Cloister and the Hearth.*

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\* If not chosen for study under B.

Blackmore: *Lorna Doone*.

Hughes: *Tom Brown's Schooldays*.

Stevenson: *Treasure Island*, or *Kidnapped*, or *Master of Balantrae*.

Cooper's Novels: any one.

Poe: *Selected Tales*.

Hawthorne: *The House of the Seven Gables*, or *Twice Told Tales*, or *Mosses from an Old Manse*.

A collection of *Short Stories* by various standard writers.

#### GROUP IV—ESSAYS, BIOGRAPHY, ETC.

Addison and Steele: *The Sir Roger de Coverley Papers*, or Selections from the *Tatler* and *Spectator* (about 200 pages).

Boswell: Selections from the *Life of Johnson* (about 200 pages).

Franklin: *Autobiography*.

Irving: Selections from the *Sketch Book* (about 200 pages), or *Life of Goldsmith*.

Southey: *Life of Nelson*.

Lamb: Selections from the *Essays of Elia* (about 100 pages).

Lockhart: Selections from the *Life of Scott* (about 200 pages).

Thackeray: Lectures on *Swift*, *Addison*, and *Steele* in the *English Humorists*.

Macaulay: Any one of the following essays: *Lord Clive*, *Warren Hastings*, *Milton*, *Addison*, *Goldsmith*, *Frederick the Great*, *Madame d' Arblay*.

Trevelyan: Selections from the *Life of Macaulay* (about 200 pages.)

Ruskin: *Sesame and Lilies*, or *Selections* (about 150 pages).

Dana: *Two Years before the Mast*.

Lincoln: *Selections*, including at least the two Inaugurals, the Speeches in Independence Hall and at Gettysburg, the Last Public Address, the Letter to Horace Greeley; together with a brief memoir or estimate of Lincoln.

Parkman: *The Oregon Trail*.

Thoreau: *Walden*.

Lowell: *Selected Essays* (about 150 pages).

Holmes: *The Autocrat of the Breakfast Table*.

Stevenson: *An Inland Voyage* and *Travels with a Donkey*.

Huxley: *Autobiography* and selections from *Lay Sermons*, including the addresses on *Improving Natural Knowledge*, *A Liberal Education*, and *A Piece of Chalk*.

A collection of *Essays* by Bacon, Lamb, DeQuincey, Hazlitt, Emerson, and later writers.

A collection of *Letters* by various standard writers.

#### GROUP V—POETRY

Palgrave's *Golden Treasury (First Series)*: *Books II and III*, with special attention to Dryden, Collins, Gray, Cowper, and Burns.

Palgrave's *Golden Treasury (First Series)*: *Book IV*, with special attention to Wordsworth, Keats, and Shelley (if not chosen for study under B).

Goldsmith: *The Traveler* and *The Deserted Village*.

Pope: *The Rape of the Lock*.

A collection of English and Scottish *Ballads*, as, for example, some *Robin Hood* ballads, *The Battle of Otterburn*, *King Estmere*, *Young Beichan*, *Bewick and Grahame*, *Sir Patrick Spens*, and a selection from later ballads.

Coleridge: *The Ancient Mariner*, *Christabel*, and *Kubla Khan*.

Byron: *Childe Harold, Canto III or IV*, and *The Prisoner of Chillon*.

Scott: *The Lady of the Lake*, or *Marmion*.

Macaulay: *The Lays of Ancient Rome*, *The Battle of Naseby*, *The Armada*, *Ivry*.

Tennyson: *The Princess*, or *Gareth and Lynette*, *Lancelot and Elaine*, and *The Passing of Arthur*.

Browning: *Cavalier Tunes*, *The Lost Leader*, *How They Brought the Good News from Ghent to Aix*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *Hervé Riel*, *Pheidippides*, *My Last Duchess*, *Up at a Villa—Down in the City*, *The Italian in England*, *The Patriot*, *The Pied Piper*, "*De Gustibus—*," *Instans Tyrannus*.

Arnold: *Sohrab and Rustum*, and *The Forsaken Merman*.

Selections from *American Poetry*, with special attention to Poe, Lowell, Longfellow, and Whittier.

## B. STUDY

The books provided for study are arranged in four groups, from each of which one selection is to be made.

## GROUP I—DRAMA

Shakespeare: *Julius Cæsar*, *Macbeth*, *Hamlet*.

## GROUP II—POETRY

Milton: *L'Allegro*, *Il Penseroso*, and either *Comus* or *Lycidas*.  
Tennyson: *The Coming of Arthur*, *The Holy Grail*, and *The Passing of Arthur*.

The selections from Wordsworth, Keats, and Shelley in *Book IV* of Palgrave's *Golden Treasury (First Series)*.

## GROUP III—ORATORY

Burke: *Speech on Conciliation with America*.

Macaulay's *Two Speeches on Copyright*, and Lincoln's *Speech at Cooper Union*.

Washington's *Farewell Address* and Webster's *First Bunker Hill Oration*.

## GROUP IV—ESSAYS

Carlyle: *Essay on Burns*, with a selection from Burns's *Poems*.

Macaulay: *Life of Johnson*.

Emerson: *Essay on Manners*.

When examinations are taken at the College the two examinations in English may be taken separately, one at the close of the college year and the other in the autumn.

Too much emphasis cannot be laid on the necessity, especially in the preparation of the work assigned for careful study, of persistent drill looking toward the attainment of thoroughness, accuracy, and exactness. Both the entrance examination and (in the case of students provisionally admitted on certificate) the work of the first semester may be expected to test these qualities.

## REQUIREMENTS IN ENGLISH, 1920-1922

The study of English in school has two main objects, which should be considered of equal importance: (1) command of

correct and clear English, spoken and written: (2) ability to read with accuracy, intelligence, and appreciation, and the development of the habit of reading good literature with enjoyment.

#### GRAMMAR AND COMPOSITION

The first object requires instruction in grammar and composition. English grammar should ordinarily be reviewed in the secondary school; and correct spelling and grammatical accuracy should be rigorously exacted in connection with all written work during the four years. The principles of English composition governing punctuation, the use of words, sentences, and paragraphs should be thoroughly mastered; and practice in composition, oral as well as written, should extend throughout the secondary school period. Written exercises may well comprise letter-writing, narration, description, and easy exposition and argument. It is advisable that subjects for this work be taken from the student's personal experience, general knowledge, and studies other than English, as well as from his reading in literature. Finally, special instruction in language and composition should be accompanied by concerted effort of teachers in all branches to cultivate in the student the habit of using good English in his recitations and various exercises, whether oral or written.

#### LITERATURE

The second object is sought by means of the reading and study of a number of books from which may be framed a progressive course in literature. The student should be trained in reading aloud and should be encouraged to commit to memory notable passages both in verse and in prose. As an aid to literary appreciation, he is further advised to acquaint himself with the most important facts in the lives of the authors whose works he reads and with their place in literary history. He should read the books carefully, but his attention should not be so fixed upon details that he fails to appreciate the main purpose and charm of what he reads.

A few of these books should be read with special care, greater stress being laid upon form and style, the exact meaning of words and phrases, and the understanding of allusions.



## EXAMINATION, 1920-1922

However accurate in subject-matter, no paper will be considered satisfactory if seriously defective in punctuation, spelling, or other essentials of good usage.

## GRAMMAR AND COMPOSITION

In grammar and composition, the candidate may be asked specific questions upon the practical essentials of these studies, such as the relation of the various parts of a sentence to one another, and those good usages of modern English which one should know in distinction from current errors. The main test in composition will consist of one or more essays developing a theme through several paragraphs; the subjects will be drawn from the books read, from the candidate's other studies, and from his personal knowledge and experience quite apart from reading. For this purpose the examiner will provide several subjects, perhaps eight or ten, from which the candidate may make his own selections. He will not be expected to write more than four hundred words an hour.

## LITERATURE

The examination will include:

(a) Questions designed to test such knowledge and appreciation of literature as may be gained by an intelligent reading of the books given in List A below.

(b) A test on the books in List B below. This will consist of questions upon their content, form, and structure, and upon the meaning of such words, phrases, and allusions as may be necessary to an understanding of the works and an appreciation of their salient qualities of style. General questions may also be asked concerning the lives of the authors, their other works, and the periods of literary history to which they belong.

## DIVISION OF EXAMINATION

When parts A and B of the examination are taken at different times, each will include a test in grammar and composition.

## LIST OF BOOKS, 1920-1922

## A. BOOKS FOR READING

The books provided for reading are arranged in the following groups, from each of which at least two selections are to be made, except that for any book in Group I a book from any other may be substituted.

## GROUP I—CLASSICS IN TRANSLATION

The *Old Testament*, at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther.

The *Odyssey*, with the omission, if desired, of *Books I-V, XV, and XVI*.

The *Aeneid*.

The *Odyssey* and the *Aeneid* should be read in English translations of recognized literary excellence.

## GROUP II—DRAMA

Shakespeare: *Merchant of Venice, As You Like It, Julius Cæsar*.

## GROUP III—PROSE FICTION

Dickens: *A Tale of Two Cities*.

George Eliot: *Silas Marner*.

Scott: *Quentin Durward*.

Hawthorne: *The House of the Seven Gables*.

## GROUP IV—ESSAYS, BIOGRAPHY, ETC.

Addison and Steele: *The Sir Roger de Coverley Papers*.

Irving: *The Sketch Book* (selections covering about 175 pages).

Macaulay: *Lord Clive*.

Parkman: *The Oregon Trail*.

## GROUP V—POETRY

Tennyson: *The Coming of Arthur, Gareth and Lynette, Lancelot and Elaine, The Passing of Arthur*.

Browning: *Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from*

*Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, Up at a Villa—Down in the City, The Italian in England, The Patriot, The Pied Piper, "De Gustibus—," Instans Tyrannus.*

Scott: *The Lady of the Lake.*

Coleridge: *The Ancient Mariner*, and Arnold; *Sohrab and Rustum.*

#### B. BOOKS FOR STUDY

The books provided for study are arranged in four groups, from each of which one selection is to be made.

##### GROUP I—DRAMA

Shakespeare: *Macbeth*, or *Hamlet.*

##### GROUP II—POETRY

Milton: *L'Allegro, Il Penseroso, Comus.*

Book IV of Palgrave's *Golden Treasury (First Series)*, with special attention to Wordsworth, Keats, and Shelley.

##### GROUP III—ORATORY

Burke: *Speech on Conciliation with America.*

Washington's *Farewell Address*, Webster's *First Bunker Hill Oration*, and Lincoln's *Gettysburg Address.*

##### GROUP IV—ESSAYS

Macaulay: *Life of Johnson.*

Carlyle: *Essay on Burns*, with a brief selection from Burns's *Poems.*

#### 4. HISTORY (*two units*).

Preparatory work in any two of the following fields of History will be accepted.

(a) ANCIENT HISTORY, with special reference to Greek and Roman history, a short introductory study of the more ancient nations and the chief events of the early Middle Ages, down to the death of Charlemagne (814).

(b) MEDLÆVAL AND MODERN EUROPEAN HISTORY, from the death of Charlemagne to the present time.

(c) ENGLISH HISTORY.

(d) AMERICAN HISTORY AND CIVIL GOVERNMENT.

Each of the above topics is intended to represent one year of historical work wherein the study is given five times a week, or two years of historical work wherein the study is given three times a week.

The requirement in history involves comparison and the use of judgment on the pupil's part rather than the mere exercise of memory. The requirement presupposes the use of good textbooks, collateral reading, and practice in written work. Geographical knowledge should be tested by requiring the location of places and movements on an outline map.

#### 5. ELEMENTARY FRENCH (*two units*).

Ability to pronounce French accurately, to read at sight easy French prose, to put into French simple English sentences taken from the language of everyday life, or based upon a portion of the French text read, and to answer questions on the rudiments of the grammar as defined below. The preparation should occupy two years, five recitations a week.

The first year's work should comprise: (1) Careful drill in pronunciation; (2) the rudiments of grammar, including the inflection of the regular and the more common irregular verbs, the plural of nouns, the inflection of adjectives, participles, and pronouns, the use of personal pronouns, common adverbs, prepositions, and conjunctions, the order of words in the sentence, and the elementary rules of syntax; (3) numerous easy exercises, designed not only to fix in the memory the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; (4) the reading of from one hundred to one hundred and seventy-five duodecimo pages of graduated texts, with constant practice in translating into French easy variations of the sentences read (the teacher giving the English), and in reproducing from memory sentences previously read; (5) writing French from dictation.

The second year's work should comprise: (1) The reading of from two hundred and fifty to four hundred pages of easy

modern prose in the form of stories, plays, or historical or biographical sketches; (2) constant practice, as in the previous year, in translating into French easy variations upon the texts read; (3) frequent abstracts, sometimes oral and sometimes written, of portions of the text already read; (4) writing French from dictation; (5) continued drill upon the rudiments of grammar, with constant application in the construction of sentences; (6) mastery of the forms and use of pronouns, pronominal adjectives, of all but the rare irregular verb forms, and of the simple uses of the conditional and subjunctive.

Suitable texts for the second year are: About's *Le Roi des montagnes*; Bruno's *Le Tour de la France*; Daudet's easier short tales; De la Bédollière's *La Mère Michel et Son Chat*; Erckmann-Chatrion's stories; Foa's *Contes biographiques* and *Le Petit Robinson de Paris*; Foncin's *Le Pays de France*; Labiche and Martin's *La Poudre aux yeux* and *Le Voyage de M. Perrichon*; Legouvé and Labiche's *La Cigale chez les fourmis*; Malot's *Sans famille*; Mairét's *La Tâche du petit Pierre*; Mérimée's *Colomba*; extracts from Michelet; Sarcey's *Le Siège de Paris*; Verne's stories.

#### 6. INTERMEDIATE FRENCH (*one unit*).

Ability to read at sight, with the help of a vocabulary of special or technical expressions, difficult French not earlier than that of the seventeenth century; to write in French a short essay on some simple subject connected with the works read; to put into French a passage of easy English prose; to answer questions involving an advanced knowledge of syntax, and to carry on a simple conversation in French. After the successful completion of Elementary French, the preparation in Intermediate and Advanced French should cover two years, of five recitations a week.

The year's work of Intermediate French should comprise the reading of from four to six hundred pages of ordinarily difficult French, a portion of which must be in dramatic form; constant practice in giving French paraphrases, abstracts, or reproductions from memory of selected portions of the matter read; the study of a grammar of moderate completeness; writing from dictation.

Suitable texts are: About's stories; Augier and Sandeau's *Le*

*Gendre de M. Poirier*; Béranger's poems; Corneille's *Le Cid* and *Horace*; Coppée's poems; Daudet's *La Belle-Nivernaise*; La Brète's *Mon Oncle et Mon Curé*; Madame de Sévigné's letters; Hugo's *Hernani* and *La Chute*; Labiche's plays; Loti's *Pêcheur d'Islande*; Mignet's historical writings; Molière's *L'Avare* and *Le Bourgeois gentilhomme*; Racine's *Athalie*, *Andromaque*, and *Esther*; George Sand's plays and stories; Sandeau's *Mademoiselle de la Seiglière*; Scribe's plays; Thierry's *Récits des temps mérovingiens*; Thiers's *L'Expédition de Bonaparte en Egypte*; Vigny's *La Canne de jonc*; Voltaire's historical writings.

#### 7. ADVANCED FRENCH (one unit).

The year's work of Advanced French should comprise the reading of from six hundred to one thousand pages of standard French, classical and modern, only difficult passages being explained in the class; the writing of numerous short themes in French; the study of syntax.

Suitable reading matter will be: Beaumarchais's *Barbier de Séville*; Corneille's dramas; the elder Dumas's prose writings; the younger Dumas's *La Question d'argent*; Hugo's *Ruy Blas*, lyrics, and prose writings; La Fontaine's fables; Lamartine's *Graziella*; Marivaux's plays; Molière's plays; Musset's plays and poems; Pellissier's *Mouvement littéraire au XIXe siècle*; Renan's *Souvenirs d'enfance et de jeunesse*; Rousseau's writings; Sainte-Beuve's essays; Taine's *Origines de la France contemporaine*; Voltaire's writings; selections from Zola, Maupassant, and Balzac.

#### 8. ELEMENTARY GERMAN (two units).

(a) During the first year the work should comprise: (1) Careful drill upon pronunciation; (2) the memorizing and frequent repetition of easy colloquial sentences; (3) drill upon the rudiments of grammar, that is, upon the inflection of the articles, of such nouns as belong to the language of everyday life, of adjectives, pronouns, weak verbs, and the more usual strong verbs; also upon the use of the more common prepositions, the simpler uses of the model auxiliaries, and the elementary rules of syntax and word-order; (4) numerous easy exercises designed not only to fix in mind the forms and principles of grammar, but also to

cultivate readiness in the reproduction of natural forms of expression; (5) the reading of from seventy-five to one hundred pages of graduated texts from a reader, with constant practice in translating into German easy variations upon sentences selected from the reading lesson and given by the teacher in English, and in the reproduction from memory of sentences previously read.

(b) During the second year the work should comprise: (1) The reading of from one hundred and fifty to two hundred pages of literature in the form of easy stories and plays; (2) accompanying practice, as before, in the translation into German of easy variations upon the matter read, and also in the unprepared reproduction, sometimes oral and sometimes in writing, of the substance of short and easy selected passages; (3) continued drill upon the rudiments of the grammar, directed to the ends of enabling the pupil, first, to use his knowledge with facility in the formation of sentences, and, secondly, to state his knowledge correctly in the technical language of grammar.

Stories suitable for the elementary course can be selected from the following list: Andersen's *Maerchen* and *Bilderbuch ohne Bilder*; Arnold's *Fritz auf Ferien*; Baumbach's *Die Nonna* and *Der Schwiegersohn*; Gerstaecker's *Germelshausen*; Heyse's *L'Arrabbiata*, *Das Maedchen von Treppi*, and *Anfang und Ende*; Hillern's *Hoher als die Kirche*; Jensen's *Die Braune Erica*; Leander's *Träumereien* and *Kleine Geschichten*; Seidel's *Maerchen*; Stoekl's *Unter dem Christbaum*; Storm's *Immensee* and *Geschichten aus der Tonne*; Zschokke's *Der Zerbrochene Krug*.

The reading of long plays is not advisable for the elementary course, but one short play is recommended. Among shorter plays the best available ones are perhaps Benedix's *Der Prozess*, *Der Weiberfeind*, and *Guenstige Vorzeichen*; Eiz's *Er ist nicht Eifersuechtig*; Wichert's *An der Majorsecke*; Wilhelmi's *Einer Muss Heiraten*. A good selection of reading matter for the second year would be Andersen's *Maerchen*, or *Bilderbuch* or Leander's *Träumereien*, to the extent of, say, forty pages. After that such a story as *Das Kalte Herz*, or *Der Zerbrochene Krug*; then *Hoher als die Kirche*, or *Immensee*; next a good story by Heyse, Baumbach, or Seidel; lastly, *Der Prozess*.

9. INTERMEDIATE GERMAN (*one unit*).

The work of the third year should comprise, in addition to the elementary course, the reading of about four hundred pages of moderately difficult prose and poetry, with constant practice in giving orally and in writing paraphrases, abstracts, or reproductions from memory of selected portions of the matter read; also grammatical drill upon the less usual strong verbs, the use of articles, cases, auxiliaries of all kinds, tenses and modes (with special reference to the infinitive and subjunctive), and likewise upon word-order and word-formation.

Suitable reading for the third year can be selected from such works as the following: Ebner-Eschenbach's *Die Freiherren von Gemperlein*; Freytag's *Die Journalisten* and *Bilder aus der Deutschen Vergangenheit*, for example, *Karl der Grosse*, *Aus den Kreuzzuegen*, *Doktor Luther*, *Aus dem Staat Friedrichs des Grossen*; Fouqué's *Undine*; Gerstaecker's *Irrfahrten*; Goethe's *Hermann und Dorothea* and *Iphigenie*; Heine's poems and *Reisebilder*; Hoffman's *Historische Erzählungen*; Lessing's *Minna von Barnhelm*; Meyer's *Gustav Adolf Page*; Moser's *Der Bibliothekar*; Riehl's *Novellen*, for example, *Burg Neideck*, *Der Fluch der Schoenheit*, *Der Stumme Ratsherr*, *Das Spielmanns-kind*; Rosegger's *Waldheimat*; Schiller's *Der Neffe als Onkel*, *Der Geisterseher*, *Wilhelm Tell*, *Die Jungfrau von Orleans*, *Das Lied von der Glocke*, *Balladen*; Scheffel's *Der Trompeter von Saekkingen*; Uhland's poems; Wildenbruch's *Das Edle Blut*.

10. ADVANCED GERMAN (*one unit*).

The work of the fourth year should comprise the reading of about five hundred pages of good literature in prose and poetry, reference readings upon the lives and works of the great writers studied, the writing in German of numerous short themes upon assigned subjects, independent translation of English into German.

11. GREEK (*three units*).

(a) Elementary Greek. Grammar (Goodwin's recommended); Elementary Composition; Xenophon's *Anabasis*, Book I.

(b) Advanced Greek. *Anabasis*, Books II, III, IV; *Iliad*, Books I, II, III; Greek Prose Composition; Translation at sight.



[Students who offer Advanced Greek are expected to offer also General History of Greece to the death of Alexander.]

12. ELEMENTARY LATIN (*two units*).

First Latin Book; reading which shall not be less in amount than Cæsar's *Gallic War*, I-IV, and which may be selected from Cæsar (*Gallic War* and *Civil War*) and Nepos (*Lives*); the writing of simple Latin prose.

13. ADVANCED LATIN (*two units*).

Reading which shall not be less in amount than Cicero, *The Orations against Catiline, For the Manilian Law* and *For Archias*; and Virgil, *Aeneid*, I-VI. This amount of reading may be selected from the following: Cicero (*Orations, Letters, and De Senectute*) and Sallust (*Catiline and Jugurthine War*); Virgil (*Bucolics, Georgics, and Aeneid*) and Ovid (*Metamorphoses, Fasti, and Tristia*). With this reading there should be carried on systematic and regular work in composition, involving a thorough knowledge of all regular inflections, all common irregular forms, and the ordinary syntax and vocabulary of the prose authors read.

Candidates should be examined in translation at sight of both prose and verse. The vocabulary, construction, and range of ideas of the passages set will be suited to the preparation secured by the reading indicated above. Exercises in translation at sight should begin in school with the first lessons in which Latin sentences of any length occur, and should continue throughout the course with sufficient frequency to insure correct methods of work on the part of the student. From the outset particular attention should be given to developing the ability to take in the meaning of each word—and so, gradually, of the whole sentence—just as it stands; the sentence should be read and understood in the order of the original, with full appreciation of the force of each word as it comes, so far as this can be known or inferred from that which has preceded and from the form and the position of the word itself. The habit of reading in this way should be encouraged and cultivated as the best preparation for all the translating that the student has to do. Finally, the full meaning of the passage to be translated should be expressed in clear

and natural English. The school work in Latin should include also much reading aloud, writing from dictation, and translation from the teacher's reading. Learning suitable passages by heart is also very useful, and should be practiced.

#### 14. SPANISH (*two units*).

The requirement in Spanish, which follows the form and spirit of the recommendations made for French and German by the Committee of Twelve of the Modern Language Association, is based upon recommendations made by a committee of that Association in December, 1910.

#### THE AIM OF THE INSTRUCTION

At the end of the elementary course the pupil should be able to pronounce Spanish accurately, to read at sight easy Spanish prose, to put into Spanish simple English sentences taken from the language of every-day life or based upon a portion of the Spanish text read, and to answer questions on the rudiments of the grammar, as indicated below.

#### THE WORK TO BE DONE

During the first year the work should comprise:

- (1) Careful drill in pronunciation.
- (2) The rudiments of grammar, including the conjugation of the regular and the more common irregular verbs, the inflection of nouns, adjectives, and pronouns, and the elementary rules of syntax.
- (3) Exercises containing illustrations of the principles of grammar.
- (4) The careful reading and accurate rendering into good English of about 100 pages of easy prose and verse, with translation into Spanish of easy variations of the sentences read.
- (5) Writing Spanish from dictation.

During the second year the work should comprise:

- (1) The reading of about 200 pages of prose and verse.
- (2) Practice in translating Spanish into English, and English variations of the text into Spanish.
- (3) Continued study of the elements of grammar and syntax.

(4) Mastery of all but the rare irregular verb forms and of the simpler uses of the modes and tenses.

(5) Writing Spanish from dictation.

(6) Memorizing easy short poems.

The emphasis should be placed on careful thorough work with much repetition rather than upon rapid reading. The reading should be selected from the following: A collection of easy short stories and lyrics, carefully graded; Juan Valera, *El pájaro verde*; Perez Escrich, *Fortuna*; Ramos Carrión and Vital Aza, *Zaragüeta*; Palacio Valdés, *José*; Pedro de Alarcón, *El Capitán Veneno*; the selected short stories of Pedro de Alarcón or Antonio de Trueba.

Every secondary school in which Spanish is taught should have in its library several Spanish-English and English-Spanish dictionaries, the all-Spanish dictionary of the Royal Spanish Academy; one or more manuals of the history of Spanish literature, such as that by Fitzmaurice-Kelly, and Ticknor's *History of Spanish Literature*.

#### 15. ELEMENTARY SCIENCE (*one or two units*).

The equivalent of a year's course, five periods a week, in each of two branches of science, each to comprise both class room and laboratory work. Time spent in the laboratory shall be counted at one-half its face value. A year's course in any branch *without laboratory work* will count as only one half of a unit, and four such courses will be necessary to meet the requirement in Elementary Science. A selection may be made from the following list of sciences:

PHYSICS.—The course of instruction in physics should include:

(1) The study of one standard textbook, for the purpose of obtaining a connected and comprehensive view of the subject. The student should be given opportunity and encouragement to consult other scientific literature.

(2) Instruction by lecture-table demonstrations, to be used mainly for illustration of the facts and phenomena of physics in their qualitative aspects and in their practical applications.

(3) Individual laboratory work consisting of experiments requiring at least the time of thirty double periods. The experi-

ments performed by each student should number at least thirty. The work should be so distributed as to give a wide range of observation and practice.

The aim of laboratory work should be to supplement the pupil's fund of concrete knowledge and to cultivate his power of accurate observation and clearness of thought and expression. The exercises should be chosen with a view to furnishing forceful illustrations of fundamental principles and their practical applications. They should be such as yield results capable of ready interpretation, obviously in conformity with theory, and free from the disguise of unintelligible units.

Slovenly work should not be tolerated, but the effort for precision should not lead to the use of apparatus or processes so complicated as to obscure the principle involved.

Throughout the whole course special attention should be paid to the common illustrations of physical laws and to their industrial applications.

In the solution of numerical problems, the student should be encouraged to make use of the simple principles of algebra and geometry to reduce the difficulties of solution. Unnecessary mathematical difficulties should be avoided and care should be exercised to prevent the student from losing sight of the concrete facts in the manipulation of symbols.

CHEMISTRY.—It is recommended that the candidate's preparation in chemistry should include:

(1) Individual laboratory work, comprising at least forty exercises selected from a list of sixty or more, not very different from the list given by the College Entrance Examination Board.

(2) Instruction by lecture-table demonstrations, to be used mainly as a basis for questioning upon the general principles involved in the pupil's laboratory investigations.

(3) The study of at least one standard textbook, to the end that the student may gain a comprehensive and corrected view of the most important facts and laws of elementary chemistry.

BOTANY.—The work in this subject should include those topics in the leading divisions of the subject which are now regarded

by most teachers as fundamental. The general sequence of topics is that recommended by the College Entrance Examination Board, but this point is not regarded as especially important, and the sequence, the methods, and the textbooks are left to the judgment of the individual teacher.

The amount of work in this course is designed to occupy a year of five periods a week. Where special circumstances, such as exceptional difficulty in obtaining material, etc., prevent the completion of the entire amount, it is recommended as better to omit some of the minor topics here and there and concentrate on the more important topics than to attempt to cover them all superficially.

Individual laboratory work by the students is essential and should receive at least double the amount of time given to recitation. Records of the laboratory work, properly certified by the teacher, in which stress is laid upon diagrammatically accurate drawing and precise, expressive description, should be required.

PHYSICAL GEOGRAPHY.—The candidate's preparation should include:

- (1) The study of one of the leading secondary textbooks in physical geography, that a knowledge may be gained of the principles, and of well-selected facts illustrating those principles.
- (2) Individual laboratory work, comprising at least forty exercises selected from a list not very different from the one given by the College Entrance Examination Board. From one third to one half of the candidate's classroom work should be devoted to laboratory exercises. In the autumn and spring, field trips should take the place of laboratory exercises.

ZOÖLOGY.—The requirement in this subject is based upon the statement of a committee appointed by the American Society of Zoölogists. The outline of a course in general zoölogy is contained in the publications of the College Entrance Examination Board. The outline should be developed on the basis of a course of laboratory study guided by definite directions. This should be supplemented by the careful reading of at least one modern elementary textbook in general zoölogy. At least two thirds of the time should be devoted to the practical studies of the labora-

tory. If good nature-studies have not preceded the course in high-school zoölogy, pupils should be encouraged to do supplementary work in the line of natural history. A notebook including drawings of the chief structures studied anatomically, and also drawings required in natural history, with notes on demonstrations and in explanation of drawings, should be required.

16. SOLID GEOMETRY (*one-half* of a unit).

The theorems and constructions in a good modern text, including the sphere and spherical figures. Solution of many original exercises, loci problems, and numerical examples.

No entrance credit in solid geometry will be allowed to a student who has spent less than one half year, of four or five recitations a week, in its preparation.

17. TRIGONOMETRY (*one-half* of a unit).

The trigonometric ratios; solution of trigonometric equations; reduction of trigonometric identities; multiple angles; theory and use of logarithms and tables; solution of triangles.

No entrance credit in trigonometry will be granted to a student who has spent less than one half year, five recitations a week, in its preparation.

### ADVANCED STANDING

No student is admitted to advanced standing later than the beginning of the senior year. Students entering from other colleges must complete at least one full year's work at Swarthmore College in fulfillment of the requirements for the degree of Bachelor of Arts. Students who come from other colleges must present full credentials for both college and preparatory work, and a letter of honorable dismissal. If the credentials are satisfactory to the Committee on Admission, the candidate will be given, without examination, an equivalent amount of credit upon the records of the College. All applicants for advanced standing for work done in other than approved colleges or universities will be admitted to such standing only by examination. Examinations for such credit shall cover the full equivalent of corresponding courses at Swarthmore College. Application for advanced standing should be made in writing to the Dean. Examinations will be held only at the College.

## REQUIREMENTS FOR GRADUATION

### THE GENERAL UNDERGRADUATE COURSE OF STUDY

The degree of Bachelor of Arts is conferred upon those who complete the undergraduate course as outlined below. This course is based upon uniform requirements for admission, and upon certain studies which are prescribed for all matriculates. In addition to securing this fundamental uniformity, it provides for the varied needs and capacities of individuals by permitting a wide range of election on the part of the student or his adviser; and it seeks, also, to provide a thorough training, extending over three or four years, in some one department of study. The requirement of a thesis from a candidate for the Bachelor's degree is left to the option of the head of the department in which the major is taken.

Candidates for graduation in the Department of Liberal Arts are required to complete one hundred and twenty-four "hours" in addition to the prescribed work in physical education. For the number of hours required for graduation in the Departments of Engineering and in the Department of Chemistry, see the courses of study outlined under the various departments. *The foregoing are minimum requirements. Students may be required to complete additional "hours" for graduation as penalties for absences from collection or from class room, laboratory, or other college exercises.* An "hour" signifies one recitation or lecture (or its equivalent) a week throughout one college semester. A recitation or lecture is regularly fifty-five minutes long, and the preparation of the student is estimated at an average of two hours for each class exercise. In the Departments of Engineering, Biology, and Chemistry a laboratory period is three hours in length. In other departments, where additional work is required outside of the laboratory, the laboratory period is two hours in length. It is designed to make the laboratory exercise, as nearly as possible, equivalent in its demands to the hour defined above.

The prescribed number of hours for students majoring in the Departments of Liberal Arts is seventeen for each semester

of the freshman year and fifteen for each semester of the sophomore, junior, and senior years. The prescribed number of hours for students majoring in Engineering ranges from fifteen to twenty for each semester.

*Quality Points.*—An average quality grade shall be required for graduation, and for the purpose of determining this quality grade, numerical values called "points," shall be given to the grade letters, as follows: for grade A, three points for each semester hour of course in which the grade is received; for grade B, two points; for Grade C, one point; for grade D, no point. The grade D is sufficient to pass a course, but does not count any "point."

In accordance with this valuation the requirements in "points" for graduation of all students, both those in arts and in applied science, is one hundred and twenty-four. This is a requirement for Arts students of an average grade of C. In other words, Arts students are required for graduation to present one hundred and twenty-four hours of credit and one hundred and twenty-four "points." Students in applied science will be required for graduation to present the number of hours of credit now prescribed (ranging from one hundred and thirty-two to one hundred and fifty-one) and one hundred and twenty-four "points."

*Extra or Less Hours.*—Students are not allowed to carry more nor less than the prescribed amount of work except in special cases approved by the Committee on Prescribed and Extra Work. Students often find it difficult, however, to make out a course of study for the exact number of hours, and for this reason a variation of one hour more or less than the prescribed number of hours may be allowed by the course adviser. In such cases the endorsement of the course adviser must be secured in writing on the Enrollment Card.

Students desiring to carry more than one hour in excess of the prescribed number, or more than one hour below the prescribed number, must make application to the Committee on Prescribed and Extra Work on a regular form provided for the purpose by the Dean. No student whose marks have fallen below C in any subject or below B in more than one department during the preceding semester shall be permitted to enroll for



more than one hour in excess of the prescribed number. For students entering from other schools or colleges these grades shall be determined from their entrance certificates. No application of a student to enroll for more or less than the prescribed number of hours shall be considered by the committee unless accompanied by the written endorsement of the course adviser.

I. *Prescribed Studies.*—These studies must be taken by all students who are candidates for graduation, unless for special reasons permission to substitute some other work is obtained from the proper faculty committee. The whole of the first year is devoted to five of the prescribed studies with one elective.

The time and order in which the remaining studies are taken may vary according to the requirements of each department. The prescribed work, amounting to forty-three hours, exclusive of the Physical Education, includes the following studies:

Group 1. English.—Ten hours, four of which must be taken in English Composition, and six in English Literature.

Group 2. Greek, Latin, French, German, Spanish.—Twelve hours in any one of these languages, or six hours in each of two.

Group 3. Nine hours, three of which must be taken in Bible Study, and six in one of the following departments: History, History of Religion and Philosophy, Economics, Political Science, Psychology and Education.

Group 4. Biology, Chemistry, Physics.—Six hours, to be taken in any one of the three departments, and to include at least one credit-hour of laboratory work throughout a year.

Group 5. Mathematics, Astronomy.—Six hours, to be taken in either one of the two studies.

Group 6. Physical Education.—For the prescribed amount of work in this department, see the statements under the Department of Physical Education.

Students who fail in the required courses of the freshman year should enroll in these courses during the sophomore year. No deviation from this rule will be allowed except on the written endorsement of the course adviser, and after notification to the professor in charge of the subject in which the student failed.

All prescribed studies must be completed or in actual process of completion at the beginning of the senior year except in cases where such prescribed work is not offered until the second semester of the senior year.

No substitution of elective for prescribed work where more than one semester is involved shall be permitted after the beginning of the senior year, nor in any case after the beginning of the second semester of the senior year.

Application for permission to substitute an elective for a prescribed study must be made to the Committee on Prescribed and Extra Work on a regular form provided by the Dean for the purpose.

II. *Major Subject*.—Every candidate for graduation is required to select the work of some one department as his major. In most cases the selection may well be postponed until the beginning of the second year. In the department thus chosen the student must complete eighteen hours as a minimum (the prescribed work done in the major study to be included in this minimum), and the professor in charge may, at his option, determine the work of thirty-six hours, provided six hours shall not be in his own department. If the major study is one of the languages, at least six hours of the prescribed work must be taken in another language. No matter how much credit may have been given on entrance, no student is allowed to graduate who has not been enrolled as a student of Swarthmore College at least one year and who has not had in the College at least one year's work in his major.

If the major study is changed from any branch of Engineering to a department in arts, the number of credit hours then on record will be adjusted to the basis of 124 hours.

III. *Elective Studies*.—The remaining work required for graduation may be elected from any department or departments of the College.

The following subjects are open to election, in so far as the exigencies of the college programme will permit:

Anthropology,  
Art,  
Astronomy,  
Bible Study,  
Biology,  
Botany,  
Chemistry,  
Economics,  
Education,

Engineering,  
English,  
French,  
Geology,  
German,  
Greek,  
History,  
History of Religion,  
Latin,

Law,  
Mathematics,  
Philosophy,  
Physics,  
Political Science,  
Psychology,  
Public Speaking,  
Spanish,  
Zoölogy.

UNIFORM CURRICULUM FOR THE FRESHMAN YEAR IN THE COURSES  
IN ARTS

FRESHMAN YEAR

	<i>First Semester</i>	Hours per Week		
		Class	Lab'y	Credits
See Bulletin, June, 1919, for description of courses.	Major Study or Elective.....	—	—	3
	English 1.....	2	—	2
	English 4.....	3	—	3
	Mathematics 251.....	3	—	3
	or			
	Astronomy 262.....	—	—	—
	Language.....	3	—	3
	Elective.....	—	—	3
	Physical Education.....	2	—	—
	Totals.....	13	—	17

*Second Semester*

See Bulletin, June, 1919, for description of courses.	Major Study or Elective.....	—	—	3
	English 1.....	2	—	2
	English 4.....	3	—	3
	Mathematics 253.....	3	—	3
	or			
	Astronomy 262.....	—	—	—
	Language.....	3	—	3
	Elective.....	—	—	3
	Physical Education.....	2	—	—
	Totals.....	13	—	17

THE COURSES OF STUDY IN APPLIED SCIENCE

The degree of Bachelor of Arts in the Departments of Mechanical, Civil, Electrical, and Chemical Engineering, and in the Department of Chemistry, is conferred upon those students who complete the prescribed work as outlined under the various departments above named.

IRREGULAR COURSES OF STUDY

Irregular courses of study, not including in due proportion the prescribed major and elective studies, may be pursued by

students who have been regularly admitted to the College by examination or by certificate only in special cases and by approval of the Faculty Committee on Prescribed and Extra Work.

UNIFORM CURRICULUM FOR THE FRESHMAN AND SOPHOMORE  
YEARS IN APPLIED SCIENCE

The curriculum for the first and second years of the four-years' courses leading to degrees in the Departments of Mechanical, Civil, Electrical, and Chemical Engineering is the same in every respect. For the first and second year students in Chemistry as applied science and in Chemical Engineering follow the same courses as given below except that women students are required to take certain electives instead of the prescribed courses, where specified.

FRESHMAN YEAR

		<i>First Semester</i>		Hours per Week		
				Class	Lab'y	Credit
See Bulletin, June, 1919, for description of courses.	Shop 203*	Pattern-making	—	6	2	
	Mathematics 251	Solid Geometry	3	—	3	
	Mathematics 252	Algebra	3	—	3	
	English 1	Composition	2	—	2	
	English 4	General Introduction	3	—	3	
	Chemistry 171	General Inorganic	2	3	3	
	Drawing 191	Engineering	—	6	2	
	Physical Education		2	—	—	
	Totals		15	15	18	

*Second Semester*

See Bulletin, June, 1919, for description of courses.	Shop 203 and 204*	Pattern-making and Foundry	—	6	2
	Mathematics 253	Trigonometry	3	—	3
	Mathematics 252	Algebra	3	—	3
	English 1	Composition	2	—	2
	English 4	General Introduction	3	—	3
	Chemistry 171	General Inorganic	2	3	3
	Drawing 192	Engineering	—	6	2
	Physical Education		2	—	—
	Totals		14	15	17

\* Women majoring in Chemistry may substitute an elective for Shop Work and Drawing.

## SOPHOMORE YEAR

	<i>First Semester</i>		Hours per Week		
			Class	Lab'y	Credit
See Bulletin, June, 1919, for description of courses.	Drawing <b>193</b> *	Descriptive Geometry	—	6	2
	Shop <b>205</b> and <b>206</b> *	Forge work and Machine work	—	6	2
	Mathematics <b>254</b> *	Analytical Geometry	3	—	3
	Chemistry <b>172</b>	Qualitative Analysis	1	6	3
	Group 2†		3	—	3
	Physics <b>271</b>	General Physics	2	2	3
	Mechanical Engineering <b>213</b>	Materials of Construction	2	—	2
	Physical Education		2	—	—
		Totals	13	20	18

	<i>Second Semester</i>		Hours per Week		
			Class	Lab'y	Credit
See Bulletin, June, 1919, for description of courses.	Drawing <b>194</b> *	Empirical Design	—	6	2
	Shop <b>206</b> *	Machine work	—	6	2
	Mathematics <b>255</b> *	Differential Calculus	3	—	3
	Chemistry <b>172</b>	Qualitative Analysis	1	6	3
	Group 2†		3	—	3
	Physics <b>271</b>	General Physics	2	2	3
	Civil Engineering <b>223</b> or Elective*	Surveying	—	4	2
	Annual Survey <b>230</b> *	Long Survey	—	—	1
	Physical Education		2	—	—
		Totals	11	24	19

\* Women majoring in Chemistry may substitute electives for Drawing, Shop, and Surveying.

† The courses to be followed in Group 2 are determined by the student's previous training in these languages.

## COURSE ADVISERS

All students are expected to confer with their respective course advisers before enrolling in classes. The professor in charge of the major subject will serve as course adviser for each student who has chosen a major subject. The President will designate the course adviser for students who have not chosen their major subjects.

## EXTRA WORK DONE OUTSIDE OF CLASSES

No student will be granted credit for work in excess of that regularly listed on the Enrollment Card unless permission to do so is granted by the Committee on Prescribed and Extra Work at the written request of the course adviser. All students except those desiring credit for intercollegiate debating must gain permission of the Committee on Prescribed and Extra Work before the work is entered upon.

## SUMMER SCHOOL WORK

Students desiring to transfer credit in a prescribed subject from a University Summer School are required to secure the endorsement of the head of the department concerned before entering upon the work.

## REMOVAL OF CONDITIONS

Members of the graduating class must make up all outstanding conditions and deficiencies by the end of the first semester of the senior year, and no student whose record is not then clear shall be considered a candidate for graduation in that year.

All conditions must be made up in the semester immediately following that in which the work reported as conditioned was done, and as early in the semester as possible; except that by special permission of the professor concerned the time for making up the condition may be extended to the second semester following in case (1) the course for which the condition was imposed is not repeated until said second semester, and (2) it is

considered necessary by the professor that the student should make up part or all of the class or laboratory work involved at the time the course is repeated. Any condition not made up within a year from the time it is imposed shall thereafter have the effect upon the records of an "E," *i. e.*, complete failure, which cannot be made up.

### SYSTEM OF GRADES

Reports of students' work are received at the Dean's office four times a year; at the end of each semester and at each mid-semester. All grades are mailed to parents at the end of each semester, and are also given out to students at each mid-semester and the end of the first semester.

The following system of marking is used by instructors: A (excellent, 100-90 per cent.); B (good, 89-80 per cent.); C (fair, 79-70 per cent.); D (poor, 69-60 per cent.); E (failed); W (withdrawn); Cond. (Conditioned).

The mark "conditioned" shall be reported for only two reasons: (1) for unsatisfactory work in a semester course in which the condition may be removed by doing satisfactory work either in another semester course which involves the subject-matter of the first course or in the second semester of a year's course; (2) when the work of a course is incomplete; that is, when the work done in the course is satisfactory with the exception of a small, definite part of it; for example, the writing of a theme, the reading of an assignment, or the taking of a final examination. The mark "conditioned" shall not be given to a student whose work in a course has been below the passing grade. Such a student shall be reported "E" (failed).

When the reports of grades are filed at the Dean's office, the exact character of the conditions imposed will be defined, and the nature of the work required to remove conditions reported in writing. The students will then be notified by the Dean of the terms of the conditions.

### EXEMPTION FROM EXAMINATIONS

No underclassmen shall be exempted from semester final examinations; seniors with grades of A or B at the beginning of



final examinations shall be exempt in the final examinations of the second semester.

### ABSENCES FROM EXAMINATION

Any student who is absent from an examination, announcement of which was made in advance of the date of the examination, shall be given an examination at another than the scheduled hour only after presentation by the student to the instructor in charge of the course (1) of a certificate from the Committee on Absences that the student has submitted a written statement satisfactorily explaining the cause making the absence from examination imperatively necessary, and (2) of a receipt from the office of the superintendent for a fee of \$2. This fee shall be remitted only in the case of duly certified quarantine. In case of continuous illness the maximum fee shall be \$5.

No examinations *in absentia* shall be permitted. This rule shall be interpreted to mean that instructors shall give examinations only at the college and under direct departmental supervision.

### ABSENCES FROM CLASSES

Each instructor shall make on the form provided for the purpose daily reports of student absences to the office of the Dean.

All powers of supervision and discipline over student absences are vested in a Committee on Absences to be composed of the Dean, The Dean of Women, both *ex officio*, and three other faculty members appointed annually by the President of the College, who shall designate the Chairman of the Committee from among its members.

In dealing with all student absences the Committee on Absences shall classify them either (a) as allowable absences, or (b) as disallowed absences. Allowable absences are absences which in the opinion of the Committee on Absences are incurred for sufficient cause. By sufficient cause is meant any grounds for absence which would justify failure to keep a stated business appointment; provided, however, that no absence shall be considered allowable by the Committee on Absences unless a written explanation of it is made by the student incurring it on a form provided for this purpose at the Dean's office. Such ex-

planation must be made by the student in advance of the absence, when possible. Written explanations of all absences must be filed at the Dean's office within three college days after the absence, or such absences will be disallowed automatically.

All absences not coming under the definition of allowable absences shall be considered disallowed absences subject to discipline. In the exercise of their powers of discipline over absences of the latter character the Committee on Absences may warn students, parents, or guardians; may place students on probation and fix the terms of said probation; and may require students to make hours of credit for graduation in addition to the requirements as stated in the Catalogue; provided, however, that such credit penalties shall not exceed the ratio of the number of absences to the number of hours of attendance required to make one hour of credit, and, provided further, that, in the case of students who reach the end of the first semester of their senior year with a penalty of less than one full hour of credit imposed under this section, said penalty may be removed by the Committee on Absences.

Disallowed absences incurred in any course in which the number of absences already recorded is equal to the number of hours per week for which the course is given shall be counted double.

For each disallowed absence on days beginning or ending all vacations and holidays, including the summer vacation, students shall be required to make one half hour of credit for graduation in addition to the requirements as stated in the Catalogue. Absences penalized under this section shall not be subject to discipline provided under other sections of these rules.

Students shall have the right to a hearing before the Committee on Absences in cases involving the imposition of credit penalties by the Committee, and the right to petition the Faculty in cases where, after such hearing has been given, they are dissatisfied with the decision of the Committee. In all questions involving the number of a student's absences the reports of Instructors shall be considered authoritative.

## DEGREES

### BACHELOR OF ARTS

The degree of Bachelor of Arts is conferred upon students who have complied with the requirements for graduation as stated on pages 68 to 72.

### MASTER OF ARTS \*

1. The degree of Master of Arts may be conferred upon graduates of Swarthmore College or of other institutions of satisfactory standing who have spent at least a year in residence at this College, pursuing a systematic course of non-professional study approved by the faculty. The amount of work required of candidates for the Master's degree consists of the equivalent of thirty credit hours in courses of instruction of advanced grade, of which at least twenty hours shall be in a major subject and the remainder in a minor subject to be approved by the professor in charge of the major subject. All candidates must have completed the work of the major subject in the undergraduate course as stated on page 71, before entering upon graduate work. *No work counted for the first degree will be accepted for the second degree.* In no case will the Master's degree be conferred upon resident students in less than one year after the conferring of the Bachelor's degree. It must be understood, however, that only students of ability and maturity will be able to finish the work in one year. No person will be recommended for the Master's degree who shall not have attained a grade of A or B on examination in each subject.

2. The degree may be conferred upon graduates of Swarthmore College who have devoted one year to graduate work in residence at another college or university, and who have fulfilled the requirements indicated in the preceding section.

3. The degree may be conferred upon graduates of Swarthmore College not in residence at any college or university, who

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\* Candidates holding the degree of Bachelor of Science, who have fulfilled all the requirements prescribed for the degree of Master of Arts, may at their option receive the degree of Master of Science.

have completed a course of non-professional advanced study approved by the faculty, substantially equivalent in kind, grade, and amount to that prescribed for the resident candidates for that degree. Courses of study will be assigned to candidates upon an application to the faculty, in which they state the subjects they desire to pursue.

All candidates *in absentia* must register (by correspondence, if necessary) at the beginning of each college year, and make reports to the faculty at the end of each semester.

*Each candidate* for the Master's degree must prepare a satisfactory thesis on a subject assigned by the professor in charge of the major subject, and must pass a final oral examination before a committee of the faculty composed of the professors in charge of the major and minor subjects respectively, and three other members of the faculty appointed by the President of the College. A majority vote of this committee is required for favorable recommendation to the faculty. This examination will be held only when notification of the intention to appear for examination is given to the Dean on or before the first of April of the year in which the candidate desires to receive the degree. The thesis must be presented on or before May 25th of the year in which the candidate desires to receive the degree, and a bound copy of the thesis must be deposited in the college library by July following.

Every resident candidate shall pay the regular tuition for each year of residence and a diploma fee of \$5. Every non-resident candidate shall pay a registration fee of \$5 and an additional fee of \$20 when the degree is conferred.

#### ADVANCED DEGREES IN CIVIL, MECHANICAL, AND ELECTRICAL ENGINEERING

The advanced degrees of Mechanical Engineer (M.E.), Electrical Engineer (E.E.), and Civil Engineer (C.E.), may be obtained by graduates who have received their Bachelor's degree in engineering upon the fulfilling of the requirements given below:

1. The candidate must have been connected with practical engineering work for three years since receiving his first degree.

2. He must have had charge of engineering work and must be in a position of responsibility and trust at the time of application.

3. He must make application and submit an outline of the thesis he expects to present, one full year before the advanced degree is to be conferred. After this application is made he will receive an outlined course of study to pursue during the year.

4. The thesis must be submitted for approval, and satisfactory evidence given that the reading requirement has been met one calendar month before the time of granting the degree.

5. Every candidate shall pay a registration fee of \$5 and an additional fee of \$20 when the degree is conferred.

## STUDENTS, 1918-19

### GRADUATE STUDENT

Name.	Major Subject.	Residence.
STEPHENSON, RUTH,		Philadelphia.
	<i>A.B., Swarthmore College, 1916.</i>	

### UNDERGRADUATE STUDENTS

ACHARD, MARCELLE MARIE,		Lyon, France.
ADAMS, ALICE NAOMI,	<i>Psychology,</i>	Swarthmore.
AINSWORTH, FRANK,	<i>Mech. Engin.,</i>	Swarthmore.
ALBERTSON, JOHN GILBERT,	<i>Mech. Engin.,</i>	Hillsdale, N. J.
ALBRIGHT, AGNES MARY,	<i>Biology,</i>	Harrisburg.
ALVINO, IDA ELIZABETH,		New York, N. Y.
ANDERSON, DOROTHY FLORENCE,	<i>English,</i>	Glenside.
ARTHUR, DORIS AYLMER,	<i>Mathematics,</i>	Rosemont.
ASHMEAD, CHARLES COLLIDAY,	<i>Elect. Engin.,</i>	Beesley's Point, N. J.
ATHERHOLT, ELIZABETH MIDDLETON,	<i>Chemistry,</i>	West Chester.
ATKINSON, ELEANOR WILLIAMS,	<i>German,</i>	Trenton, N. J.
ATKINSON, THOMAS HOWARD	<i>Elect. Engin.,</i>	Trenton, N. J.
BAILY, MIRIAM EDITH,	<i>French,</i>	Northbrook.
BALDWIN, ARDIS MAYHEW,	<i>English,</i>	Baltimore, Md.
BALLARD, JUDSON TUPPER,	<i>Chemistry,</i>	Philadelphia.
BALLINGER, GRACE AGNES,	<i>Pol. Science,</i>	Philadelphia.
BARKER, JOHN BRYANT,		Pittsburgh.
BARNARD, NORRIS CLEMENTS,	<i>Mech. Engin.,</i>	Brooklyn, N. Y.
BARTH, ELIZABETH FREDRIKKE,	<i>English,</i>	Philadelphia.
BARTLESON, EDWARD EVANS, 3D,	<i>Mech. Engin.,</i>	Chester.
BATTERSBY, WILLIAM LORD,	<i>Chem. Engin.,</i>	Philadelphia.
BAUMGARTNER, MARY ISABEL,	<i>English,</i>	Philadelphia.
BAXTER, ALBERT LAURENCE,		Chester.
BEATTY, ANNA JEMIMA,	<i>Latin,</i>	Chester.
BELVILLE, CATHARINE READING,	<i>Economics,</i>	Trenton, N. J.
BENJAMIN, GRANT EMERSON,	<i>Pol. Science,</i>	Philadelphia.
BIDDLE, HELEN ROBERTA,	<i>Biology,</i>	Riverton, N. J.
BITLER, HENRY HALLIWELL, JR.,	<i>Chem. Engin.,</i>	Rutledge.
BLACKBURN, DOROTHY SELLERS,	<i>English,</i>	Lock Haven.
BLACKBURN, JACKSON MILLER,	<i>Mech. Engin.</i>	Philadelphia.
BLAIR, FRANCIS CATON,		Springfield, Ill.
BLISS, ERNEST MASON,	<i>Chem. Engin.,</i>	Philadelphia.
BOGARDUS, JAMES FURNAS,	<i>Pol. Science,</i>	Swarthmore.
BONNER, BERNICE GORDON,		Philadelphia.
BONSALL, THOMAS FREDERICK,	<i>Engineering,</i>	Glenolden.

Name.	Major Subject.	Residence.
BOPE, JULIA THURSTON,	<i>Mathematics,</i>	Akron, Ohio.
BOREMAN, SARAH INGRAM,		Parkersburg, W. Va.
BORING, DOROTHY BEACH,	<i>English,</i>	Ashbourne.
BRACKIN, ELISABETH CURREY,		Lansdowne.
BRAUNWORTH, CAROLYN GENEVIEVE,	<i>Latin,</i>	Hopewell, N. J.
BRESSLER, ALEXANDER LUPOLD,	<i>Mech. Engin.,</i>	Philadelphia.
BREUNINGER, RUTH,	<i>French,</i>	Washington, D. C.
BRIEGEL, KATHARINE WESCOTT,		Philadelphia.
BRINTON, GRACE,	<i>English,</i>	Christiana.
BROSIUS, WILLIAM BRINTON,	<i>Chem. Engin.,</i>	Avondale.
BROWN, BOYD JANNEY,	<i>Chemistry,</i>	Washington, D. C.
BROWN, JANE PANCOAST,	<i>English,</i>	Leesburg, Va.
BROWN, JANET MCPHERSON,	<i>Psychology,</i>	Washington, D. C.
BROWN, LOUISE RHINELANDER,	<i>French,</i>	Camden, Del.
BRUNENMILLER, JUANITA ALBERTA,	<i>French,</i>	Swarthmore.
BRYAN, WILHELMINA DOROTHY,		Swarthmore.
BUNTING, CHARLOTTE ANDREWS,	<i>Economics,</i>	Swarthmore.
BUNTING, STEPHEN CLARENCE,	<i>Engineering,</i>	Llanerch.
BURKE, MILDRED RUNKLE,		Harrisburg.
BURN, PHILIP HAVILAND,		Philadelphia.
BURNETT, GEORGE LESLIE,	<i>Engineering,</i>	Philadelphia.
BUSH, EDWIN MONROE,	<i>Mech. Engin.,</i>	Lebanon, Ind.
BUTLER, ELEANORE ALBINA,	<i>English,</i>	Narberth.
BUTLER, SARAH SHEPPARD,	<i>English,</i>	Bridgeton, N. J.
BUTTERWORTH, HAROLD LURCOTT,	<i>Economics,</i>	Cheltenham.
CAMPBELL, EDWARD LAMBERT,	<i>Economics,</i>	Hopkinsville, Ky.
CAMPBELL, MARY ALEXANDER,	<i>Economics,</i>	Hopkinsville, Ky.
CAMPBELL, RICHARD DODGE,	<i>Chemistry,</i>	Washington, D. C.
CARMAN, LOUISE,	<i>English,</i>	Washington, D. C.
CARRIS, EDWARD CLAYTON,	<i>Elect. Engin.,</i>	Haddonfield, N. J.
CARTER, JAMES FENTON,	<i>Biology,</i>	Millville, N. J.
CARTER, WILLIAM PORTER,		Philadelphia.
CASEY, GEORGE WHITMAN, JR.,	<i>Mathematics,</i>	Swarthmore.
CHANDLER, PAUL WILLIAM,	<i>Economics,</i>	Kennett Square.
CHRISMAN, CHARLOTTE STEVENS,		West Chester.
CHRISTENSEN, ALFRED,		Philadelphia.
CHRISTIE, LORNA BEATRICE,	<i>English,</i>	New Brunswick, N. J.
CISNEY, WILLIAM RUFUS,	<i>Mathematics,</i>	Richmond Hill, N. Y.
CLANCEY, JAMES DAWSON,	<i>Chemistry,</i>	Merchantville, N. J.
CLARK, ALLEN GRAY,	<i>Mech. Engin.,</i>	Philadelphia.
CLARK, HERSCHEL LEROY,		Jamestown, Ind.
CLARK, JANET,	<i>Biology,</i>	Media.
CLARK, LENA CAROLINE,	<i>Mathematics,</i>	Southwest Harbor, Me.
CLECKNER, KATHRYN ELIZABETH,	<i>English,</i>	Harrisburg.
COFFIN, DOROTHY DREW,	<i>Economics,</i>	Indianola, Iowa.
COLEMAN, VIRGINIA LAWS,	<i>French,</i>	Swarthmore.

Name.	Major Subject.	Residence.
COLES, CHARLES BENJAMIN,	<i>Chemistry,</i>	Moorestown, N. J.
COLES, CHARLESANNA BENAJAH,	<i>Chemistry,</i>	Moorestown, N. J.
COLLINS, LEON HOWARD, JR.,	<i>Biology,</i>	Merchantville, N. J.
COLLISON, NORMAN HARVEY,	<i>Engineering,</i>	Ocean City, N. J.
CONAHEY, GEORGE, JR.,	<i>Civil Engin.,</i>	Port Norris, N. J.
CONNER, VIOLA MARTHA,	<i>History,</i>	Centerville, Del.
CONRAD, HELEN DOROTHY,	<i>Pub. Speaking,</i>	Doylestown.
COOK, SARAH LONG,		Hopkinsville, Ky.
CORNOG, WILLIAM LINDSAY,	<i>Chemistry,</i>	Ithan.
CROSLEY, MARY INGRAHM,	<i>English,</i>	Melrose Park.
CROSS, RUTH HAY,	<i>Mathematics,</i>	Cynwyd.
CUGLEY, EDITH GILSON,		Philadelphia.
CULIN, MARGARET,		Ogontz.
CURRAN, THOMAS AMBROSE,	<i>Civil Engin.,</i>	Morton.
DALLER, GEORGE MORTON,		Chester.
DARLINGTON, DOROTHEA LINDSAY,	<i>Biology,</i>	Darling.
DARLINGTON, HANNAH MARY,		Pocopson.
DARLINGTON, RICHARD ARMENT,	<i>Chemistry,</i>	Chadd's Ford Junction.
DASSEL, VIRGIL HOMER,	<i>Chemistry,</i>	Elberfeld, Ind.
DAVENPORT, LAMAR HAY,		Du Bois.
DAVIES, EDNA MAY,	<i>English,</i>	Philadelphia.
DELL, JEANNETTE,	<i>English,</i>	Woodbury, N. J.
DENNISON, DAVID MATHIAS,	<i>Mathematics,</i>	Swarthmore.
DEPUTY, MARION ESTELLE,	<i>English,</i>	Glenolden.
DEWEES, CLARA KNERR,	<i>Mathematics,</i>	Birchrunville.
DIGGINS, GEORGE JOSEPH, JR.,	<i>Elect. Engin.,</i>	Chester.
DONNELLY, KATHERINE ELIZA,	<i>Mathematics,</i>	Trenton, N. J.
DONOVAN, MARY NATALIE,	<i>Mathematics,</i>	Wilmington, Del.
DOTTERER, MARY,	<i>Latin,</i>	Wayne.
DOTY, MARGARET VERNA,		Montpelier, Vt.
DOWNING, WILLIAM KIRK,		Locust Valley, N. Y.
DREW, MARGUERITE PENDLETON,	<i>English,</i>	Philadelphia.
DUDLEY, FRANK SIDEBOTHAM,		Philadelphia.
DUDLEY, JOHN WOOLMAN,	<i>Chem. Engin.,</i>	Washington, D. C.
DUFENDACH, HAROLD ENOS,	<i>Physics,</i>	Kokomo, Ind.
DURBIN, DOROTHY MARGARET,		Narberth.
EARP, JOHN EVANSON,	<i>Elect. Engin.,</i>	Philadelphia.
EAVENSON, HANNAH TOMLINSON,	<i>Biology,</i>	Masonville, N. J.
ELSBREE, WILLARD SLINGERLAND,	<i>Pol. Science,</i>	Preston Hollow, N. Y.
EMBERY, MARGARET WILSON,	<i>Economics,</i>	Philadelphia.
ESIBILL, NORMAN F.,		Millville, N. J.
ESREY, ALEXANDER JOHNSON,	<i>Civil Engin.,</i>	Llanerch.
ESSLINGER, GEORGE FRANK,		Elkins Park.
EVANS, EDNA P.,	<i>English,</i>	Masonville, N. J.
FAHNESTOCK, KATHERINE V.,	<i>Pub. Speaking,</i>	Harrisburg.
FALCK, ELLA HANSELL,	<i>Mathematics,</i>	Philadelphia.



Name.	Major Subject.	Residence.
FARQUHARSON, EVALYN FRANCES,	<i>French,</i>	Media.
FELL, MARJORIE LAWRENCE,		Philadelphia.
FERRIS, WALTON CANBY,	<i>Engineering,</i>	Milwaukee, Wis.
FETTER, FRANK WHITSON,	<i>Mathematics,</i>	Princeton, N. J.
FLETCHER, VERA SHEARER,		Bedford.
FORD, CARROLL PATERSON,	<i>Civil Engin.,</i>	Norwood.
FRANCIS, ALFRED TENCH,	<i>Mech. Engin.,</i>	Brooklyn, N. Y.
FRESCOLN, MARY LOVETT,	<i>History,</i>	Swarthmore.
FRORER, ELIZABETH NEUMANN,	<i>Mathematics,</i>	Philadelphia.
GAITO, WILLIAM ANTHONY,	<i>Civil Engin.,</i>	Bridgeport, Conn.
GARDINER, ARTHUR WILFRED,	<i>Civil Engin.,</i>	West Chester.
GARRETT, MARION BAKER,	<i>History,</i>	Philadelphia.
GATCHELL, EDITH ELIZABETH,	<i>English,</i>	Rutledge.
GAULT, ANNE MARY,	<i>Mathematics,</i>	Philadelphia.
GAWTHROP, HELEN,	<i>French,</i>	Wilmington, Del.
GEGG, MARY GLADYS,	<i>Latin,</i>	Tampa, Fla.
GEIGES, CARL JOSEPH,	<i>Economics,</i>	Camden, N. J.
GIBBS, GRACE CAROL,	<i>Biology,</i>	New York, N. Y.
GILLESPIE, EDWARD ARMSTRONG,	<i>Engineering,</i>	Swarthmore.
GIRDWOOD, EUGENE NELSON,	<i>Economics,</i>	Moylan.
GOODALL, MARY HALL,	<i>History,</i>	Philadelphia.
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GOWDY, EDWIN TUDOR,	<i>History,</i>	Thompsonville, Conn.
GRAHAM, ELIZABETH BLAKELEY,	<i>French,</i>	Chester.
GREEN, ELEANOR WICKERSHAM,	<i>Biology,</i>	Fox Chase.
GREINER, HARRIETTE LOUISE,		Lansdowne.
GRIFFEN, CHARLOTTE HAND,	<i>Biology,</i>	Brooklyn, N. Y.
GRIFFITHS, JOSEPHINE MURRAY,	<i>Mathematics,</i>	Norristown.
GRIM, MILDRED ELIZABETH,	<i>English,</i>	Perkasie.
GRISCOM, ELIZABETH BRADWAY,		Salem, N. J.
GRISCOM, HELEN LYDIA,	<i>Biology,</i>	Salem, N. J.
GROBERT, NORMAN BIRD,	<i>Chemistry,</i>	East Orange, N. J.
GUNDLACK, ALFRED BAYNARD,	<i>Engineering,</i>	Philadelphia.
HAINES, DOROTHY FRANCES,	<i>French,</i>	Swarthmore.
HAINES, HOWARD LIPPINCOTT, JR.,	<i>Chemistry,</i>	Philadelphia.
HALDEMAN, ANNA ELIZABETH,	<i>English,</i>	Malvern.
HALDEMAN, CHARLES WALDO,	<i>Economics,</i>	Malvern.
HALDEMAN, GLADYS CHRISTINE,		Winchester, Va.
HALBAUER, EMILY ELIZABETH,		Philadelphia.
HAMMOND, DOROTHY MCCLELLAN,	<i>English,</i>	West Chester.
HAMMOND, GLADYS BOWER,	<i>English,</i>	Boonton, N. J.
HAMPSON, ORMSBY DUVAL,	<i>Chem. Engin.,</i>	Govans, Md.
HANNUM, CHARLES BEVERLY,	<i>Chem. Engin.,</i>	Rosedale.
HARVEY, WILLIAM MINTON,	<i>Chemistry,</i>	Chester.
HAUSE, FRANCES,	<i>French,</i>	West Chester.
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HETTINGER, BERTHA CAMPF,		Bridgeton, N. J.
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HIBBERD, ELISABETH ANDREWS,	<i>English,</i>	Oakland, Cal.
HICKLING, BARBARA FORRESTER,	<i>English,</i>	Swarthmore.
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HINDS, ETHEL,		Washington, D. C.
HODGE, DAVID MALCOLM,	<i>Pol. Science,</i>	Chester.
HOKE, CUSHMAN JACOB,	<i>Economics,</i>	Indianapolis, Ind.
HOKE, FRANK,	<i>Engineering,</i>	Indianapolis, Ind.
HOLMES, JESSE HERMAN, JR.,	<i>Engineering,</i>	Swarthmore.
HORN, HERMAN WILLIAM,	<i>Chem. Engin.,</i>	Philadelphia.
HORNER, HELEN ELIZABETH,	<i>English,</i>	Moorestown, N. J.
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HULL, MARY CLOTHIER,		Swarthmore.
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HUTTON, MIRIAM ALICE,	<i>French,</i>	Richmond, Ind.
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JACOBS, ISABEL SUTTON,	<i>Pub. Speaking,</i>	Philadelphia.
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JENKINS, HOWARD MALCOLM,	<i>Elect. Engin.,</i>	Swarthmore.
JENKINS, MIRIAM ATKINSON,	<i>French,</i>	Swarthmore.
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JONES, ELIZABETH CATHERINE,	<i>History,</i>	Ebensburg.
JONES, ELIZABETH GEST,		Pottstown.
JONES, FLORENCE ALLINE,		Conshohocken.
JOSEPH, EDWIN MORRIS,		Cleveland, Ohio.
JOYCE, ROBERT SWIFT,	<i>Mech. Engin.,</i>	Swarthmore.
JUDD, PRESTON HENRY,	<i>Latin,</i>	Elkland.
JUDGE, ELEANOR MARY,	<i>French,</i>	Mansfield.
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KATZENBACK, HOWARD BLEASDALE,	<i>Engineering,</i>	Philadelphia.
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KELLER, HENRIETTA IDA,	<i>English,</i>	Philadelphia.
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Name.	Major Subject.	Residence.
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KIRK, HULDAH JONES,		Carlisle.
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KLEMM, ELIZABETH BOPP,	<i>Biology,</i>	Philadelphia.
KLOPP, JOHN WILLIAM,	<i>Biology,</i>	Philadelphia.
KNABE, ELIZABETH,	<i>Chemistry,</i>	Philadelphia.
KNIGHT, HELEN COOPER,	<i>French,</i>	Philadelphia.
KNOWLES, JEAN BERTRAM,		Flushing, N. Y.
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LATSHAW, BEATRICE ANGELINE,	<i>French,</i>	Royersford.
LATSHAW, CHRISTINE LANGHAM,	<i>Latin,</i>	Royersford.
LAUER, WILKIN LILLIBRIDGE,		Port Allegany.
LEEDER, GEORGE BROWN,	<i>Chemistry,</i>	Upland.
LEMKE, FRANK HENRY,	<i>Civil Engin.,</i>	Chester.
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LIPPINCOTT, LUCY,	<i>Psychology,</i>	Riverton.
LIPPINCOTT, OLIN WHITE,	<i>Economics,</i>	Indianola, Iowa.
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LUTES, HELEN MAY,		Chester.
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MCCONNELL, OVIATT,	<i>English,</i>	Buffalo, N. Y.
MCCULLOUGH, CAMPBELL ROGERS,	<i>Chemistry,</i>	East Orange, N. J.
MC EVOY, LAWRENCE JOSEPH,	<i>Economics,</i>	Philadelphia.
MCGUGAN, DANIEL,	<i>Chemistry,</i>	Glenolden.
McKINLEY, MORRISON CUSHMAN,	<i>Chemistry,</i>	Philadelphia.
McMULLEN, MARY BLANCHE,	<i>English,</i>	West Chester.
McNEEL, LETITIA TYLER,	<i>English,</i>	Birmingham, Ala.
MACNEILL, NEALE, JR.,		Philadelphia.
MACARTNEY, HELEN VOGDES,	<i>Latin,</i>	Philadelphia.
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MAYHEW, SARA JANE,	<i>History,</i>	Bridgeton, N. J.
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MOORE, GRACE EDNA,	<i>English,</i>	Philadelphia.
MOORE, JESSE ROGER,	<i>Chem. Engin.,</i>	West Chester.
MOORHEAD, JOSEPHINE LAWYER,		Rutledge.
MORGAN, DONALD SWAIN,	<i>Engineering,</i>	Knightstown, Ind.
MOYLAN, WILLIAM STAUNTON,	<i>Mech. Engin.,</i>	Swarthmore.
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NASSAU, DOROTHY PATEN,		Philadelphia.
NEFF, CHARLES,	<i>Civil Engin.,</i>	Philadelphia.
NEVYAS, JACOB,	<i>Chemistry,</i>	West Chester.
NEVYAS, JESSE,	<i>Chemistry,</i>	West Chester.
NEWCOMER, ESTHER ANNE,	<i>Economics,</i>	Philadelphia.
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NEWTON, MABEL GLADYS,	<i>English,</i>	Lake Ronkonkoma, N. Y.
NOBLE, EMILY LUCILE,	<i>Latin,</i>	Collingswood, N. J.
OEHRLE, MARY ELIZABETH,	<i>French,</i>	Philadelphia.
O'NEILL, WESLEY RICHARD, JR.,	<i>Chemistry,</i>	Russellville.
OGDEN, JOHN MAHLON,	<i>Economics,</i>	Ogden.
OGDEN, WARREN HARVEY,	<i>Chemistry,</i>	Ogden.
ORNDORFF, RUTH MARIE,	<i>English,</i>	Philadelphia.
PACKARD, VIRGINIA MORSE,	<i>English,</i>	Atlantic City, N. J.
PAGELOW, PAULA,	<i>English,</i>	Media.
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PARK, PUM KOO,	<i>Biology,</i>	Waiau, Oahu, T. H.
PASSMORE, HORACE BRANSON,	<i>Chemistry,</i>	Oxford.
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PAXSON, MARY DOROTHY,	<i>Latin,</i>	Parkesburg.
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PEARSON, LEON MORRIS,	<i>English,</i>	Swarthmore.
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Name.	Major Subject.	Residence.
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PENROSE, LUCY MARIE,	<i>History,</i>	Philadelphia.
PHILIPS, CAROLINE,	<i>French,</i>	Swarthmore.
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POLLARD, ROBERT SPOTSWOOD,	<i>Elect. Engin.,</i>	Swarthmore.
POUCHOT, FRANCIS OSBORNE,	<i>History,</i>	Thompsonville, Conn.
POWELL, GEORGE ALFRED,	<i>Mech. Engin.,</i>	Glen Head, N. Y.
POWELL, MARGARET ELGAR,	<i>Astronomy,</i>	Lansdowne.
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PRICE, THOMAS ROWE, JR.,	<i>Chemistry,</i>	Glyndon, Md.
PURDY, FRANCES LOUISE,	<i>Mathematics,</i>	Fort Howard, Md.
PUTNAM, ALLEN LEON,	<i>Chemistry,</i>	Swarthmore.
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QUAYLE, OSBORNE ROBINSON,	<i>Chem. Engin.,</i>	Wilmington, Del.
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RALSTON, ELIZABETH ISABELLA,	<i>Pub. Speaking,</i>	Sharon Hill.
RAMSEY, HELEN ALEXANDER,	<i>French,</i>	Swarthmore.
REESE, WILLIAM CLARENCE,	<i>Mech. Engin.,</i>	Rutledge.
REICHARD, GLADYS AMANDA,	<i>Latin,</i>	Bangor.
REID, HELEN HUTCHINSON,	<i>History,</i>	Lansdowne.
REMS, IRENE ELIZABETH,	<i>Chemistry,</i>	Philadelphia.
RENSHAW, HARRIET HALE,	<i>English,</i>	Philadelphia.
REYNOLDS, GREGG DAVID,	<i>Chemistry,</i>	West Chester.
RHOADS, CATHARINE OTT,	<i>History,</i>	Lansdowne.
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RICHMOND, FLORENCE DUNLAP,	<i>History,</i>	Philadelphia.
RICKERT, JAMES REUBEN,	<i>Civil Engin.,</i>	Sellersville.
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RODENBOH, RUTH PRATT,	<i>English,</i>	West Chester.
ROSE, FLORENCE MARGUERITE,		Chester.
ROSE, REBECCA,		Chester.
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RUSSELL, IRMA KIPP,	<i>Psychology,</i>	Bedford.
RUTTER, EDWARD JACKSON,	<i>Civil Engin.,</i>	Glenolden.
RYAN, LOIS,	<i>Latin,</i>	Forest Grove.
SAGEBEER, RICHARD GRAFFLIN,		Berwyn.
SAMUEL, HELEN ETHEL,	<i>English,</i>	Morton.
SATTERTHWAITE, MARIAN WILLIS,		Trenton, N. J.
SATTERTHWAITE, RUTH,		South Langhorne.
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Name.	Major Subject.	Residence.
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SELLERS, ELIZABETH TAYLOR,		Swarthmore.
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SHARP, KENNETH ALFONCES,	<i>Chemistry,</i>	Leesburg, N. J.
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SMITH, ELIZABETH COLWELL,	<i>English,</i>	West Chester.
SMITH, ELSIE ISABEL,		New York, N. Y.
SMITH, GORDON,	<i>Engineering,</i>	Philadelphia.
SMITH, HENRIETTA ALBERT,	<i>English,</i>	Swarthmore.
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STABLER, CORNELIA MILLER,	<i>Pub. Speaking,</i>	Swarthmore.
STABLER, SARAH MARSHALL,	<i>Pub. Speaking,</i>	Swarthmore.
STACKHOUS, MIRIAM GERTRUDE,	<i>Pub. Speaking,</i>	Hallowell.
STANTON, JOHN LEECH,	<i>Engineering,</i>	Chester.
STETTNER, MARIE JULIA,	<i>Latin,</i>	Slatington.
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STEWART, HENRIETTA FLOYD,	<i>English,</i>	Wilksburg.
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STRAWN, CLAIRE KATHLEEN,	<i>Mathematics,</i>	Bethlehem.
STRAWN, EVELYN MARTHA,	<i>Mathematics,</i>	Bethlehem.
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TAYLOR, ESTHER GERTRUDE,	<i>English,</i>	Philadelphia.
TAYLOR, LEONARD K. M.,	<i>Mech. Engin.,</i>	West Chester.
TAYLOR, THELMA MARGUERITE,	<i>History,</i>	Jenkintown.
TAYLOR, WILLIAM THOMSON,	<i>Mech. Engin.,</i>	Ogontz.
TERRY, CHARLES LAYMON, JR.,		Camden, Del.
THOMAS, DOROTHY,	<i>French,</i>	Glen Cove, N. Y.
THOMPSON, RUTH MARTHA,	<i>French,</i>	Kennett Square.
THOMPSON, THEODORE RICHARDS,	<i>Biology,</i>	Kennett Square.
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TOERRING, HELENE CARLOTTA,	<i>History,</i>	Philadelphia.
TOURNY, EMMA ELOISE,		Camden, N. J.
TOWNSEND, ERIC BERESFORD,	<i>Chemistry,</i>	Baltimore, Md.
TSAKONAS, AXEL FEIBIGER H.,	<i>Chemistry,</i>	Glenolden.
TURNER, HENRIETTA JACKSON,		Belvidere, N. J.
TWINING, FLORENCE WOOD,	<i>Pub. Speaking,</i>	Ivyland.
TYLER, MARY ELIZABETH,	<i>Mathematics,</i>	Philadelphia.
TYSON, JOSEPHINE ELIZABETH,	<i>Latin,</i>	Philadelphia.
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VALENTINE, ALAN C.,		Glen Cove, N. Y.
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WALKER, HARRY EDWARD,	<i>Chem. Engin.,</i>	Trenton, N. J.
WALKER, NELLIE LEE,		Norristown.
WALTER, ELIZABETH ANN,		Swarthmore.
WAPLES, JAMES EDWARD,	<i>Chem. Engin.,</i>	Hammonton, N. J.
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WARE, WILLIAM PETTIT,		Salem, N. J.
WARNER, MARION SHOEMAKER,	<i>English,</i>	Horsham.
WASHBURN, CHARLOTTE GRAVES,	<i>French,</i>	Washington, D. C.
WASHBURN, RUTH MEKEEL,		Chappaqua, N. Y.
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WATSON, ELIZABETH ATKINSON,	<i>History,</i>	Doylestown.
WAY, VIRGINIA,	<i>Mathematics,</i>	Glen Cove, N. Y.
WEBB, SAMUEL BENTLEY,	<i>Elect. Engin.,</i>	West Chester.
WEBER, ELEANOR,	<i>Biology,</i>	Norristown.
WEBSTER, HAROLD SHOEMAKER,	<i>Mech. Engin.,</i>	Philadelphia.
WEIHENMAYER, WINNIE MILLER,		Philadelphia.
WEISS, LENA AMELIA,	<i>English,</i>	Newton Falls, Ohio.
WELLINGTON, FRANCES,		Baltimore, Md.
WEST, GEORGE MALCOLM,	<i>Mech. Engin.,</i>	Sayre.
WESTCOTT, MILTON RILEY,	<i>Pol. Science,</i>	Gradyville.
WETZEL, HARRIET ELIZABETH,		Trenton, N. J.

Name.	Major Subject.	Residence.
WHITE, CAROLIEN HAYES,	<i>English,</i>	Atlantic City, N. J.
WHITE, EMILIE HINDS,	<i>Mathematics,</i>	Plainfield, N. J.
WHITE, RUSSELL,	<i>Engineering,</i>	Philadelphia.
WHITESIDE, BEATRICE,	<i>French,</i>	Philadelphia.
WHITTIER, JOHN WILMOT,	<i>Engineering,</i>	Swarthmore.
WICH, EVELYN ENGEL,	<i>Biology,</i>	Wilkes-Barre.
WICKERSHAM, FRANCIS DALE,	<i>Mech. Engin.,</i>	Russellville.
WIESE, JOSEPH FREDERIC,		Parkesburg.
WILDMAN, FLORENCE MARSHALL,		Langhorne.
WILDMAN, JOSEPHINE,		Langhorne.
WILLIAMS, ANNE SHOURDS,	<i>History,</i>	Bridgeton, N. J.
WILLIAMS, FRANCES BAKER,	<i>Pol. Science,</i>	Norristown.
WILLIAMS, MORRISA WALN,		Glenolden.
WILLIAMSON, ROBERT MORGAN,		Philadelphia.
WILLIARD, MILDRED ESTELLE,	<i>English,</i>	Philadelphia.
WILLS, ELIZABETH BEATRICE,	<i>Mathematics,</i>	Berwyn.
WILSON, GRACE TAYLOR,		Lansdowne.
WILSON, MARY ELIZABETH,	<i>English,</i>	Toughkenamon.
WILSON, RALPH ERDMAN,	<i>Chemistry,</i>	Leesburg, N. J.
WISE, MALCOLM ROSE,		Clifton Heights.
WITHERS, LYDIA LOIS,	<i>French,</i>	Elizabethtown.
WOODROW, ALINE MATHIESON,	<i>Latin,</i>	Ridgewood, N. J.
WOODWARD, RUTH HARRIET,	<i>Biology,</i>	Mendenhall.
WORRELL, HARRIET ELIZABETH,		Ogden.
WRIGHT, BERNICE,	<i>Pol. Science,</i>	Williamson School.
WRIGHT, JAMES RALPH,	<i>Chemistry,</i>	Chester.
YARNALL, META D.,	<i>English,</i>	Yeadon.
YOUNG, DOROTHY,	<i>Pub. Speaking,</i>	Easton.
YOUNG, EDITH,	<i>Mathematics,</i>	Swarthmore.
YOUNG, FRANCES WILLARD,	<i>English,</i>	Philadelphia.
YOUNG, HELEN GERTRUDE,	<i>Mathematics,</i>	West Chester.
YOUNG, JANET GRAHAM,	<i>French,</i>	Philadelphia.
YOUNG, WILLIAM CARLETON,	<i>Mech. Engin.,</i>	Atglen.
YOUNG, WILLIAM CURTIS,	<i>Chemistry,</i>	Millville, N. J.
ZANE, CHARLES ROLLIN,	<i>Chemistry,</i>	Leesburg, N. J.
ZARTMAN, JOSEPHINE DEAN,	<i>English,</i>	Philadelphia.
ZEISER, MYRA JEANNE,		Wilkes-Barre.



## GEOGRAPHICAL DISTRIBUTION OF STUDENTS

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Kentucky .....	4
Connecticut .....	3
Iowa .....	3
Virginia .....	3
France .....	2
Alabama .....	1
California .....	1
Colorado .....	1
Florida .....	1
Georgia .....	1
Hawaii .....	1
Illinois .....	1
Maine .....	1
Missouri .....	1
West Virginia .....	1
Wisconsin .....	1
Vermont .....	1
Total .....	
	487

## FELLOWS AND SCHOLARS, 1918-19

- \*Joshua Lippincott Fellow*: JOHN EWING ORCHARD, A.B., 1916.
- Lucretia Mott Fellow*: EDITH WILSON MENDENHALL, A.B., 1918. Student, Columbia University.
- \*John Lockwood Memorial Fellow*: WALTER HARRISON MOHR, A.B., 1914.
- Hannah A. Leedom Fellow*: CHARLOTTE BREWSTER JORDAN, B.L., 1882; M.L., 1886. Student, Madrid, Spain.
- Martha E. Tyson Fellow*: EDNA ANNA TYSON, A.B., 1909. Student.
- Swarthmore-University of Pennsylvania Scholar*: FRANCES EMMA SMITH, A.B., 1918. Student, University of Pennsylvania.
- Western Swarthmore Club Scholar*: WALTON CANBY FERRIS, 1922.
- Trenton Swarthmore Club Scholar*: No award, 1918-19.
- Deborah Fisher Wharton Scholar*: ISABEL BRIGGS MYERS, 1919.
- Samuel J. Underhill Scholar*: MARGUERITE PENDLETON DREW, 1920.
- Anson Lapham Scholar*: ALINE MATHIESON WOODROW, 1921.
- Woman's Medical College of Pennsylvania Scholar*: EMILY LOIS VAN LOON, A.B., 1918.
- William C. Sproul Scholars*: EDGAR ZAVITZ PALMER, 1919. JOHN MADDUX HILGERT, 1921. FRANK HENRY LEMKE, 1922.
- Philip M. Sharples Scholars*: JACOB NEVYAS, 1919. HELEN GERTRUDE YOUNG, 1919. ARTHUR WILFRED GARDINER, 1920. HELEN MOORE MARTIN, 1920. SAMUEL BENTLY WEBB, 1921. DOROTHY MCCLELLAN HAMMOND, 1921. JESSE ROGER MOORE, 1922. MARY BLANCHE McMULLEN, 1922.
- Philadelphia Board of Education Scholars*: ESTHER G. TAYLOR, 1919. HELEN VOGDES MACARTNEY, 1920. HENRIETTA ALBERT SMITH, 1920. MILDRED ESTELLE WILLIARD, 1920. BEATRICE WHITESIDE, 1920. MARGARET WILSON EMBREY, 1921. ELIZABETH KNABE, 1921. EMILY HALLAUER, 1921. JOSEPHINE TYSON, 1921.
- I. V. Williamson Scholars*: Friends' Central School, DOROTHY PATEN NASSAU, 1922. JACKSON MILLER BLACKBURN, 1922. George School, ELIZABETH ROBERTS MILLER, 1922. Swarthmore Public High School, ELIZABETH TAYLOR SELLERS, 1922.

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\* The graduate studies have been deferred on account of services connected with the war.

## HOLDERS OF THE JOSHUA LIPPINCOTT FELLOWSHIP

1893-94.

THOMAS ATKINSON JENKINS, A.B., 1887; Ph.B., University of Pennsylvania, 1888; Ph.D., Johns Hopkins University, 1894; Professor of French Philology, University of Chicago.

BENJAMIN FRANKLIN BATTIN, A.B., 1892; studied in Berlin; Ph.D., Jena, 1900. Lecturer in the German Language and Literature, Swarthmore College.

1894-95.

DAVID BARKER RUSHMORE, B.S., 1894; M.E., Cornell University, 1895; C.E., Swarthmore, 1897. Engineer, General Electric Co., Schenectady, N. Y.

1895-96.

HOWARD WHITE, JR., B.S., 1895; M.S., University of Michigan, 1896; C.E., Swarthmore, 1900. Deceased.

1896-97; 1897-98.

JOHN W. GREGG, B.L., 1894; A.M., Cornell University, 1898; LL.B., George Washington University, 1906. Lawyer.

1898-99.

ELLWOOD COMLY PARRY, B.L., 1897; studied in Berlin; M.L., Swarthmore, 1900; Ph.D., University of Pennsylvania, 1903. Professor of German, Central High School, Philadelphia.

1899-1900; 1900-01.

JOHN EDWIN WELLS, B.L., 1896; M.L., 1899; A.M., Columbia, 1900; Ph.D., Yale University, 1915. Head of the Department of English, Connecticut College for Women.

1901-02.

MARY GRAY LEIPER, B.L., 1899; studied in Berlin.

1902-03.

BIRD THOMAS BALDWIN, B.S., 1900; A.M., Harvard University, 1903; Ph.D., *Ibid.*, 1905. Major in Sanitary Corps, U. S. Army. Walter Reed General Hospital, Tocomo Park, Washington, D. C.

1903-04.

ALBERT COOK MYERS, B.L., 1898; M.L., 1901; studied in Universities of Wisconsin and Harvard. Historical Writer.

1904-05.

MARION VIRGINIA PEIRCE, A.B., Swarthmore, 1903; A.M., University of Chicago, 1904; studied in Ecole des Hautes Etudes, Sorbonne, and Collège de France in Paris, and in the Libraries of Madrid. Interpreter, Aviation Section, Paris, France.

1905-06.

LEWIS FUSSELL, B.S., 1902; M.S., 1903; E.E. and Ph.D., University of Wisconsin, 1907. Assistant Professor of Electrical Engineering, Swarthmore College.

1906-07.

LOUIS NEWTON ROBINSON, A.B., 1905; Ph.D., Cornell University, 1911; studied in University of Halle and Berlin, 1906-07; Fellow in Cornell University, 1907-08. Probation officer, Municipal Court of Philadelphia.

1907-08.

SAMUEL COPELAND PALMER, A.B., 1895; A.M., 1907; A.M., Harvard University, 1909; Ph.D., *Ibid.*, 1912. Assistant Professor of Biology, Swarthmore College.

1908-09.

MARY ELIZA (NORTH) CHENOWETH, A.B., 1907; A.M., 1910; studied in Oxford University, England.

1909-10.

MARY TALBOTT (JANNEY) COXE, A.B., 1906; studied in University of Berlin, Germany.

1910-11.

SAMUEL COPELAND PALMER, A.B., 1895; A.M., 1907; A.M., Harvard University, 1909; Ph.D., *Ibid.*, 1912. Assistant Professor of Biology, Swarthmore College.

1911-12.

JOHN HIMES PITMAN, A.B., 1910; A.M., 1911; studied in University of California. Assistant Professor of Mathematics and Astronomy, Swarthmore College.

1912-13.

IOLA KAY EASTBURN, B.L., 1897; A.M., 1906; Ph.D., University of Pennsylvania, 1913; Professor of German, Wheaton College, Norton, Mass.

1913-14.

EDWIN ANGELL COTTRELL, A.B., 1907; A.M., Harvard University, 1913. Professor of Political Science and Director of the Bureau of Governmental Research, University of Ohio.

1914-15.

FREDERICK MYERLE SIMONS, JR., A.B., 1909; A.M., 1912; studied in the University of Chicago. Industrial Engineer, Montgomery, Ward & Co.

1915-16.

FRANK H. GRIFFIN, B.S., 1910; studied in Columbia University.

1916-17.

RAYMOND T. BYE, A.B., 1914; A.M., Harvard University, 1915; Ph.D., University of Pennsylvania, 1918.

1917-18.

CHARLES J. DARLINGTON, A.B., 1915; A.M., 1916. Chemist with DuPont's.

1918-19.

JOHN E. ORCHARD, A.B., 1916.

### HOLDERS OF THE LUCRETIA MOTT FELLOWSHIP

1895-96.

HELEN BRIGHT (SMITH) BRINTON, A.B., 1895; studied in Oxford University; A.M., Swarthmore, 1899.

1896-97.

MARY STONE MCDOWELL, A.B., 1896; studied in Oxford University; A.M., Columbia University, 1903. Teacher, George School, Pa.

1897-98.

SARAH (BANCROFT) CLARK, B.S., 1897; studied in Newnham College, Cambridge.

1898-99.

EDNA HARRIET RICHARDS, B.L., 1898; studied in Berlin; A.M., Columbia University, 1904. Acting Dean of Women, Swarthmore College.

1899-1900.

MARY ELIZABETH SEAMAN, A.B., 1899; studied in Newnham College, Cambridge. Teacher.

1900-01.

ANNA GILLINGHAM, A.B., 1900; A.B., Radcliffe, 1901. Teacher in Ethical Culture School, New York, N. Y.

1901-02.

LILLIAN WINIFRED (ROGERS) ILLMER, A.B., 1901; studied in Berlin.

1902-03.

MARGARET HOOD TAYLOR, B.L., 1902; studied in Berlin.

1903-04.

ANNIE ROSS, A.B., 1903; Ph.M., University of Chicago, 1904. Teacher of French, High School, Flushing, L. I., N. Y.

1904-05.

CHARLOTTE RITZEMA BOGERT, A.B., 1904; A.M., Columbia University, 1905.

1905-06.

ELIZABETH HALL, A.B., 1905; A.M., Columbia University, 1906. Teacher, Media Public School.

1906-07.

BERTHA CAROLINE PIERCE, A.B., 1906; A.M., Cornell University, 1907. Teacher.

1907-08.

JEANNETTE (CURTIS) CONS, A.B., 1907; A.M., 1909; studied in University of Berlin, Germany.

1908-09.

LIZZIE SYKES JAMES, A.B., 1908; studied in University of Berlin, Germany; A.M., University of Pennsylvania, 1911; Ph.D., University of Pennsylvania, 1914. Teacher of Latin and German, William Penn High School, Philadelphia, Pa.

1909-10.

HELEN HARRIET PORTERFIELD, A.B., 1909; studied in University of Chicago.

1910-11.

JEAN HAMILTON (WALKER) CREIGHTON, A.B., 1910; studied in University of Chicago.

1911-12.

ANNA HEYDT, A.B., 1911; A.M., Radcliffe College, 1912. Teacher in Palmerston, N. J., High School.

1912-13.

CAROLINE HALLOWELL SMEDLEY, A.B., 1912; A.M., 1918; studied in University of California. Assistant in Mathematics and Astronomy, Swarthmore College.

1913-14.

ESTHER MIDLER, A.B., 1913; studied in University of Berlin, Germany.

1914-15.

MARIE SAFFORD (BENDER) DARLINGTON, A.B., 1914; A.M., University of Chicago, 1916.

1915-16.

REBA MAHAN CAMP, A.B., 1915; A.M., Radcliffe College, 1916. Teacher of Mathematics, High School, Latrobe, Pa.

1916-17.

ANNA M. MICHENER, A.B., 1916; A.M., Columbia University, 1917. Bureau of Municipal Research, New York City.

1917-18.

HILDA A. LANG, A.B., 1917; studied in University of Wisconsin.

1918-19.

EDITH W. MENDENHALL, A.B., 1918; student, Columbia University.

### HOLDERS OF THE JOHN LOCKWOOD MEMORIAL FELLOWSHIP

1910-11.

EDWIN CARLETON MACDOWELL, A.B., 1909; studied in Harvard University; M.S., Harvard University, 1911; Ph.D., *Ibid.*, 1912. Friends' Reconstruction Unit, 53 Rue de Rivoli, Paris, France.

1911-12.

HENRY FERRIS PRICE, A.B., 1906; studied in University of Pennsylvania; A.M., University of Pennsylvania, 1913; Ph.D., University of Pennsylvania, 1915. Teacher of Mathematics, Portland, Ore., High School.

1912-13.

WALTER FRANK RITTMAN, A.B., 1908; A.M., 1909; M.E., 1911; Ph.D., Columbia University, 1914. Consulting Chemical Engineer, U. S. Government.

1913-14.

HELEN PRICE, A.B., 1907; studied in University of Pennsylvania; Ph.D., University of Pennsylvania, 1915. Professor of Greek and Latin, Oxford College, Oxford, Ohio.

1914-15.

HELEN HEED, A.B., 1905; studied in Radcliffe College; A.M., Radcliffe College, 1915. Teacher of English, High School, Pleasantville, N. Y.

1915-16.

FRANCES DARLINGTON, A.B., 1896. Teacher.

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1916-17.

RACHEL KNIGHT, B.L., 1898; A.M., 1909; student University of Iowa; student, Haverford Graduate School.

1917-18.

RALPH LINTON, A.B., 1915. Private in artillery, A. E. F., France.

1918-19.

WALTER HARRISON MOHR, A.B., 1914. Y. M. C. A. war work.

HOLDERS OF THE HANNAH A. LEEDOM FELLOWSHIP

1913-14.

ARTHUR PERCIVAL TANBERG, A.B., 1910; A.M., 1913; Ph.D., Columbia University, 1915; studied in Columbia University. Chemist, E. I. duPont de Nemour Co.

1914-15.

ARCHER TAYLOR, A.B., 1909; A.M., University of Pennsylvania, 1910; studied in Harvard University; Ph.D., Harvard University, 1915. Assistant Professor of German, Washington University, St. Louis, Mo.

1915-16.

HAROLD S. ROBERTS, A.B., 1912; A.M., Princeton University, 1915; student in the University of Wisconsin, 1915-17. U. S. Field Artillery.

1916-17.

HANNAH B. (STEELE) PETTIT, A.B., 1909; A.M., 1912; student, Yerkes Observatory. Astronomer.

1917-18.

JAMES MONAGHAN, JR., A.B., 1913; A.M., University of Pennsylvania, 1918. Instructor, School of Aerial Photography, Ithaca, N. Y.

1918-19.

CHARLOTTE BREWSTER JORDAN, B.L., 1882; M.L., 1886; studied in Madrid, Spain. Translator.

HOLDERS OF THE MARTHA E. TYSON FELLOWSHIP

1914-15.

HELEN PRICE, A.B., 1907; studied in the University of Pennsylvania; Ph.D., University of Pennsylvania, 1915. Professor of Greek and Latin, Oxford College.

1915-16.

ANNE SHOEMAKER HAINES, A.B., 1912; A.M., University of Wisconsin, 1916.



1916-17.

KATHERINE PROCTER GREEN, A.B., 1907; A.M., Columbia University, 1917.  
Teacher of Latin in High School, Freehold, N. J.

1917-18.

CHARLOTTE BREWSTER JORDAN, B.L., 1882; M.L., 1886; studied in Madrid,  
Spain. Translator.

1918-19.

EDNA ANNA TYSON, A.B., 1909. Student Columbia University.

### HOLDERS OF THE IVY MEDAL \*

1898. ANNA BELLE EISENHOWER, A.B., 1899; A.B., Radcliffe College, 1900;  
A.M., *Ibid.*, 1907.
1899. MARY G. LEIPER, B.L., 1899.
1900. MARY S. HAVILAND, B.L., 1900; A.B., Radcliffe, 1901.
1901. GEORGE A. SEAMAN, A.B., 1901.
1902. ELLIOTT RICHARDSON, B.S., 1902; C.E., 1905.
1903. SAMUEL T. STEWART, A.B., 1903.
1904. HALLIDAY R. JACKSON, A.B., 1904.
1905. LOUIS N. ROBINSON, A.B., 1905; Ph.D., Cornell University, 1911.
1906. T. H. DUDLEY PERKINS, A.B., 1906.
1907. AMOS J. PEASLEE, A.B., 1907; LL.B., Columbia University, 1911.
1908. HERMAN PRITCHARD, B.S., 1908; A.M., 1911.
1909. WALTER F. RITTMAN, A.B., 1908; A.M., 1909; M.E., 1911; Ph.D.,  
Columbia University, 1914.
1910. JOHN JOHNSON, B.S., 1910.
1911. JOSEPH H. WILLITS, A.B., 1911; A.M., 1912; Ph.D., University of  
Pennsylvania, 1916.
1912. HERMAN ELLIOTT WELLS, B.S., 1912.
1913. HENRY LEE MESSNER, A.B., 1913.
1914. ALBERT ROY OGDEN, A.B., 1914.
1915. THOMAS BAYARD McCABE, A.B., 1915.
1916. HUGH FREDERICK DENWORTH, A.B., 1916; A.M., University of Penn-  
sylvania, 1918.
1917. WILLIAM WEST TOMLINSON, A.B., 1917.
1918. FREDERICK STOCKHAM DONNELLY, A.B., 1918.

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\* This medal is placed in the hands of the faculty without restriction for such disposition as may be deemed best. It is usually awarded for Character, Scholarship, and Influence. Until the year 1910 it was known as the College Medal.

## DEGREES CONFERRED IN 1918

### BACHELOR OF ARTS

#### *In Biology.*

EMILY PRESTON BUCKMAN.....	Trenton, N. J.
ELIZABETH RULON MILLER.....	Riverton, N. J.
BEATRICE KENT NEWCOMER.....	Philadelphia.
ESTHER HEWES PHILIPS.....	Plainfield, N. J.
VIRGINIA POSTLETHWAITE.....	New Rochelle, N. Y.
MARY ELIZABETH POWERS.....	Lancaster.
EMILY LOIS VAN LOON.....	Philadelphia.

#### *In Chemistry.*

DOROTHEA BELL.....	New York, N. Y.
FREDERICK ANTHONY BOUGHTON.....	Tuxedo, N. Y.
KENNETH RENT BROWN.....	Pendleton, Ind.
G. WARREN BRYAN.....	Ingraham, Ill.

#### *In Chemical Engineering.*

JAMES EVERETT ALLEN.....	West Chester.
WILLIAM RALPH GAWTHROP.....	Lancaster.
ALLEN ISAAC MYERS.....	Hagerstown, Md.
CARL DAVIS PRATT.....	West Chester.
WILLIAM SIMPSON TAYLOR.....	Chester.

#### *In Economics.*

DAVID MONROE BODINE, JR.....	Trenton, N. J.
MARGARETTA COPE.....	Philadelphia.
JESS HALSTED.....	Sheboygan, Wis.
DOROTHY BELLE PAINE.....	Scranton.
SARAH TAYLOR ROGERS.....	Asheville, N. C.
GEORGE LLOYD WILSON.....	Ridley Park.

#### *In English.*

ELIZABETH HOLBERT ANDREWS.....	Rutherford, N. J.
HELEN ELIZABETH BALLEIN.....	Winfield, Kans.
ABIGAIL MARY ELLSWORTH.....	Riverton, N. J.
JANE REICHNER FARIES.....	Bala.
ESTHER NICHOLS HALL.....	Chester.
GEORGE PASSMORE HAYES.....	West Chester.
MARIANA MARKLE.....	Coatesville.
EDNA MYRTLE POWELL.....	Chester.
KATHERINE VIRGINIA PRICE.....	Brookline, Mass.

WILLIAM JOSEPH REILLY.....	West Chester.
FLORENCE MATHER SHOEMAKER.....	Philadelphia.
LOUISE WYNKOOP WAYGOOD.....	Glenside.
CATHARINE WRIGHT .....	Baltimore, Md.

*In French.*

CLARA ATLEE .....	Riverton, N. J.
FLORENCE LONGSTRETH COOK.....	Philadelphia.
LOUISE KER LEWIS.....	West Chester.
MARION TEMPLETON ROBERTSON.....	Philadelphia.

*In German.*

MARGARET RUTHERFORD LITTELL.....	Philadelphia.
----------------------------------	---------------

*In Greek and Latin.*

FRANCES LAURA BAIRD.....	Wilmington, Del.
HELEN GERTRUDE GASKILL.....	Bala.
ELSIE MAY HUGHES.....	Rutherford, N. J.
MABEL MORGAN KURTZ.....	Reading.
MARY LYNDELL LUKENS.....	Philadelphia.
EDITH WILSON MENDENHALL.....	Toughkenamon.
ABIGAIL IRENE MOORE.....	York.
HELEN MARIE WESTFALL.....	Milwaukee, Wis.

*In History.*

GERALDINE MILES COY.....	Glencoe, Ill.
HELEN ELIZABETH DARLINGTON.....	Pomeroy.
VIRGINIA AVALON GLENN.....	Punxsutawney.
WILLETTA BLANCHE KING.....	Philadelphia.
CLARENCE PAUL NAY.....	Sheridan, Ind.
NELLIE RUTH REESE.....	West Chester.
EDMUND ROBERT WILLETS, JR.....	Trenton, N. J.
MARGARET VAIL WILLETS.....	Trenton, N. J.
HELEN ELIZABETH WILSON.....	Harrisburg.

*In Mathematics.*

EMILY GAIL BENJAMIN.....	Swarthmore.
ROBERT SLOSS BLAU.....	Cleveland, Ohio.
ETHELWYN BOWER .....	New York, N. Y.
EVA HELEN CHAPPELL.....	Barnesville, Ohio.
EWING TIBBELS CORSON.....	Ocean City, N. J.
HELEN GERTRUDE DEPUTY.....	Glenolden.
FREDERICK STOCKHAM DONNELLY.....	Trenton, N. J.
DOROTHY AGNES JOHNSON.....	Alexandria, Va.
MARY OPAL ROBINSON.....	Winchester, Va.

JOHN WILLIAM TRIMMER.....Mechanicsburg.  
 ETHEL REID YOUNG.....Philadelphia.

*In Political Science.*

ESTHER FISHER HOLMES.....Riverton, N. J.  
 DAVID ALLEN LANDIS.....East Petersburg.  
 DEAN COPPER WIDENER.....Okmulgee, Okla.

*In Psychology and Education.*

CLARE FRANCES RICHARDSON.....Philadelphia.  
 FRANCES EMMA SMITH.....Chatham.  
 MARY ESTHER SNYDER.....Quakertown.  
 ELEANOR PALMER STABLER.....Swarthmore.

*In Public Speaking.*

HELEN MARIE ATKINS.....Merchantville, N. J.  
 ELLA BARBARA BUCHER.....Lansdowne.  
 ALICE BIRD FRICKE.....Swarthmore.  
 RUTH KISTLER.....Shenandoah.  
 MARY A. THATCHER.....Swarthmore.

*In Civil Engineering.*

RALPH HANDERSON HEACOCK.....Swarthmore.

*In Electrical Engineering.*

HAROLD FREEMAN BARNES.....Swarthmore.  
 LOUIS NICHOLS DAVIS, JR.....West Chester.  
 PUSEY BANCROFT HEALD.....Wilmington, Del.

*In Mechanical Engineering.*

FRANK OTIS EWELL.....Philadelphia.  
 GEORGE MOORE KNOX.....West Chester.

MASTER OF ARTS.

*In Astronomy.*

HAZEL HEMPHILL BROWN.....Philadelphia.  
 A.B., Swarthmore College, 1916.

*In Mathematics and Astronomy.*

CAROLINE HALLOWELL SMEDLEY.....Los Angeles, Cal.  
 A.B., Swarthmore College, 1912.

*In Psychology and Education.*

L. ELOISE VEST.....Ottumwa, Iowa.  
 A.B., Swarthmore College, 1915.

## MASTER OF ARTS (Honorary)

ROBERT M. JANNEY.....Philadelphia.  
E. PUSEY PASSMORE.....Philadelphia.

## DOCTOR OF LETTERS (Honorary)

EDGAR FAHS SMITH.....Philadelphia.

## DOCTOR OF LAWS (Honorary)

ISAAC H. CLOTHIER.....Philadelphia.  
Hon. A.M., Swarthmore College, 1903.

COMMITTEE ON TRUSTS

CHARLES F. JENKINS,  
West Washington Square, Philadelphia.

ISAAC H. CLOTHIER,  
Eighth and Market Streets, Philadelphia.

HOWARD COOPER JOHNSON,  
1210-1214 Commonwealth Building, Philadelphia.

JOSEPH SWAIN,  
Swarthmore, Pa.

T. STOCKTON MATTHEWS,  
Calvert and German Streets, Baltimore, Md.

PHILIP M. SHARPLES,  
West Chester, Pa.

