

BULLETIN OF SWARTHMORE COLLEGE

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OF  
SWARTHMORE  
COLLEGE

1938-1939

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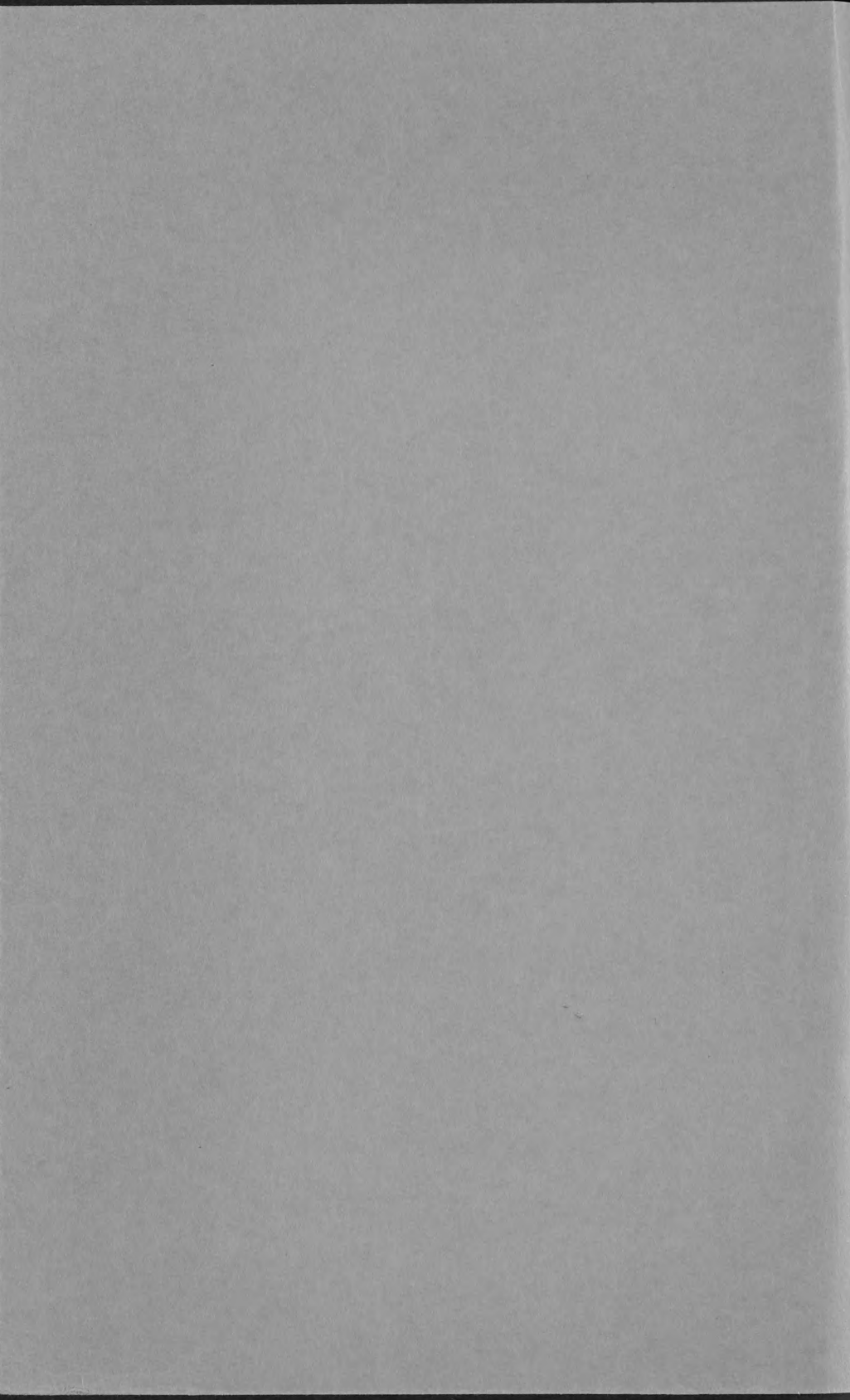


SWARTHMORE, PA.

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*Volume XXXVI, No. 2*

*Tenth Month, 1938*



# SWARTHMORE COLLEGE BULLETIN

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1938-1939

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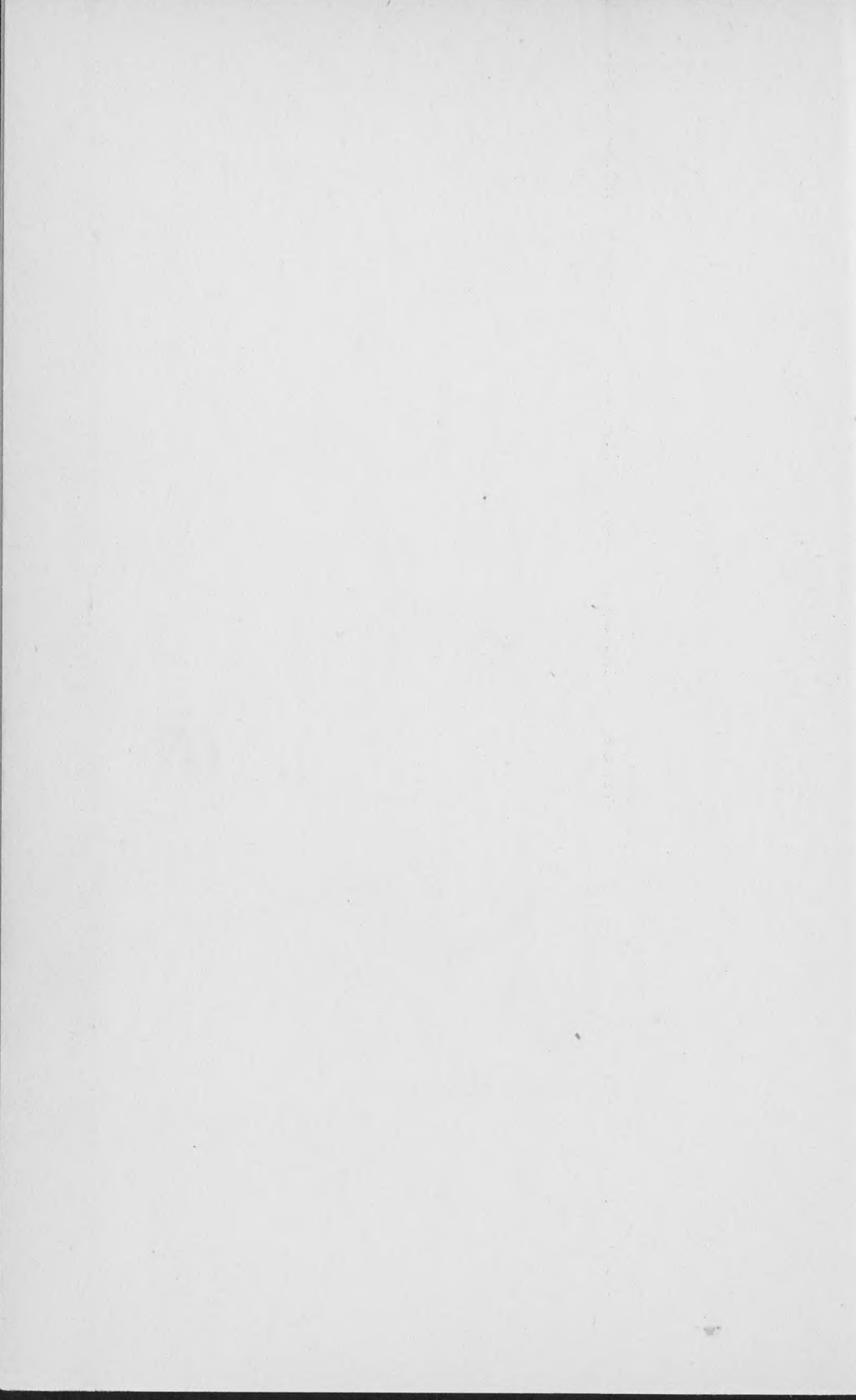
SWARTHMORE, PENNSYLVANIA

Volume XXXVI

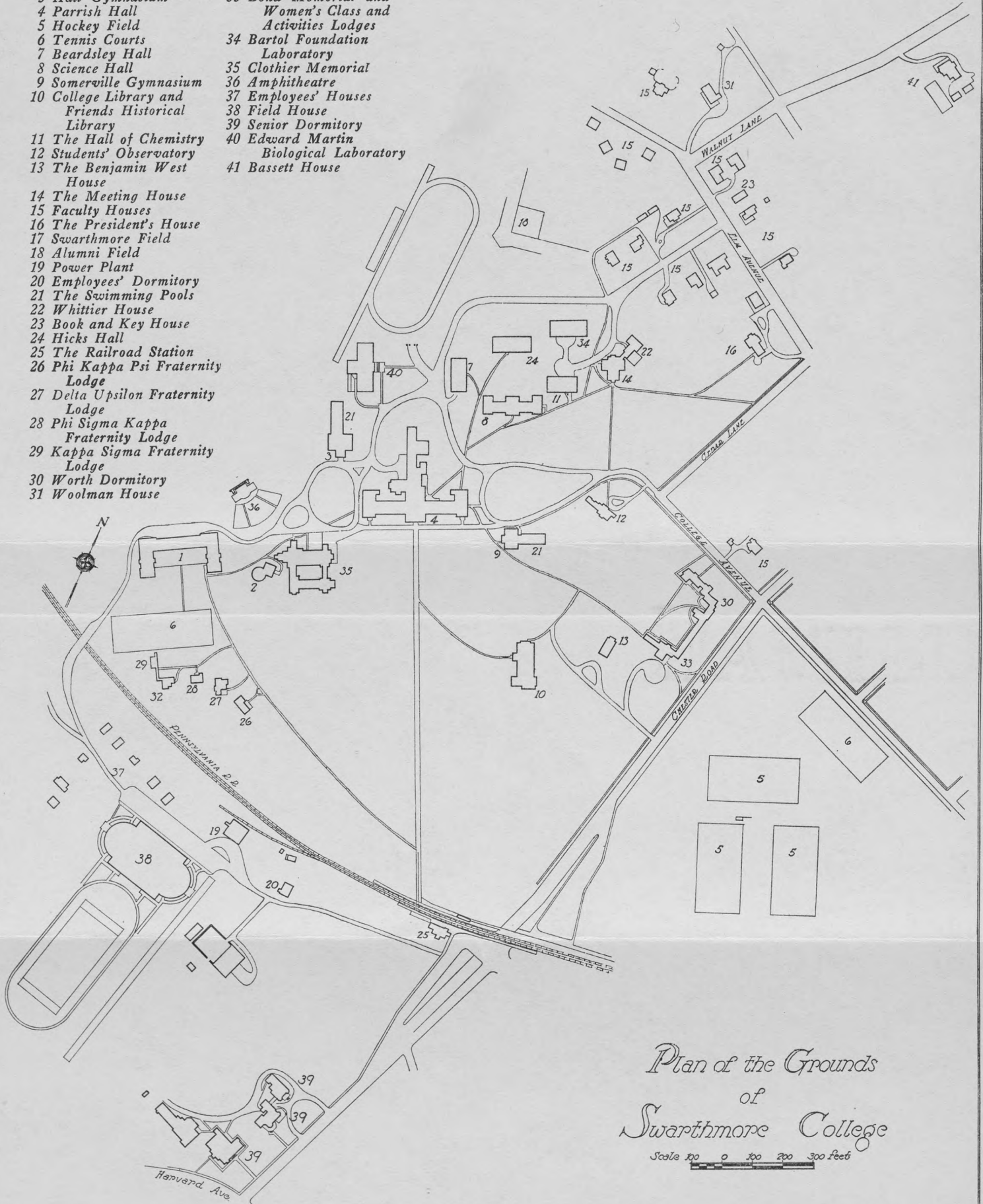
Number 2

Tenth Month, 1938

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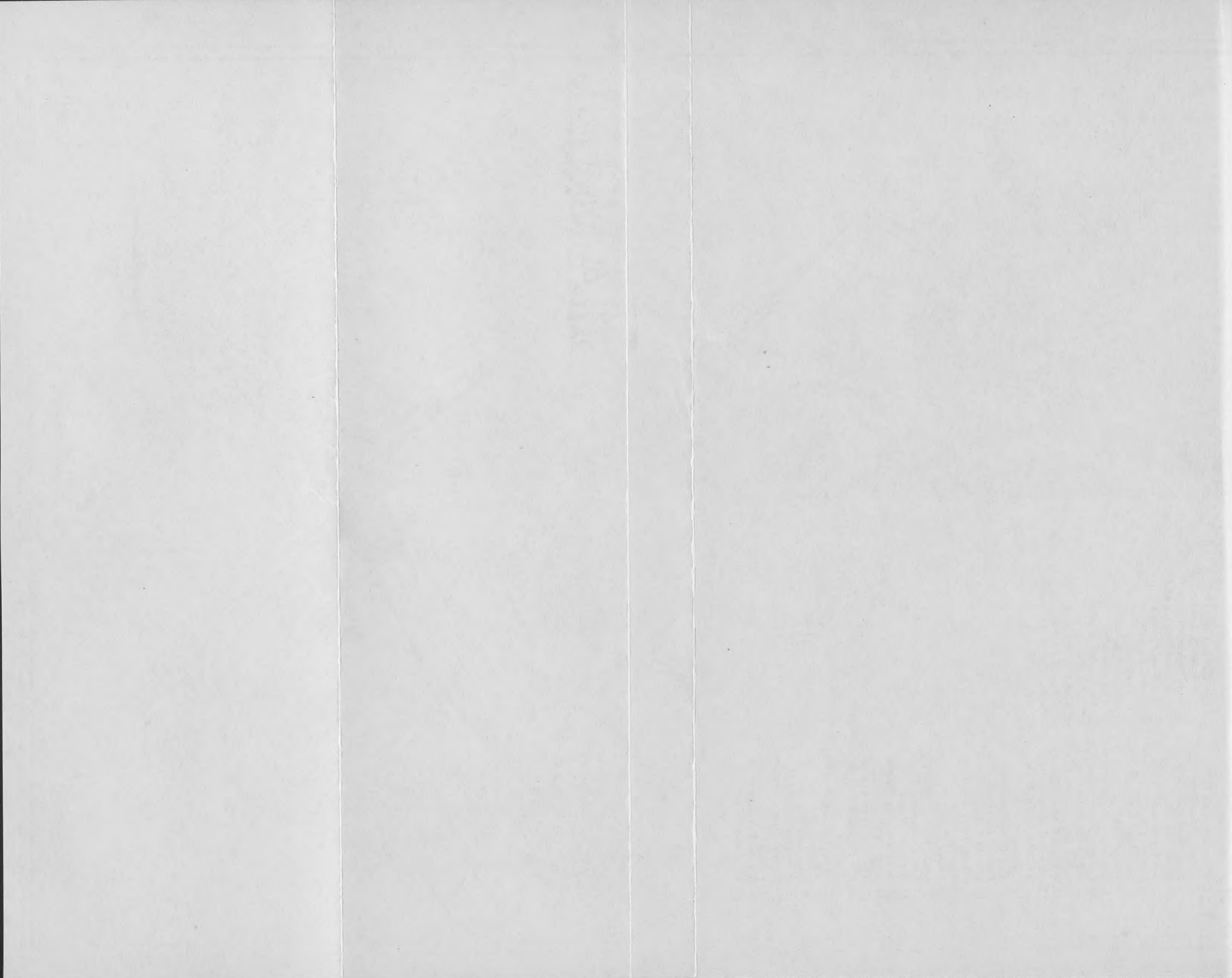


- 1 Wharton Hall
- 2 Sproul Observatory
- 3 Hall Gymnasium
- 4 Parrish Hall
- 5 Hockey Field
- 6 Tennis Courts
- 7 Beardsley Hall
- 8 Science Hall
- 9 Somerville Gymnasium
- 10 College Library and Friends Historical Library
- 11 The Hall of Chemistry
- 12 Students' Observatory
- 13 The Benjamin West House
- 14 The Meeting House
- 15 Faculty Houses
- 16 The President's House
- 17 Swarthmore Field
- 18 Alumni Field
- 19 Power Plant
- 20 Employees' Dormitory
- 21 The Swimming Pools
- 22 Whittier House
- 23 Book and Key House
- 24 Hicks Hall
- 25 The Railroad Station
- 26 Phi Kappa Psi Fraternity Lodge
- 27 Delta Upsilon Fraternity Lodge
- 28 Phi Sigma Kappa Fraternity Lodge
- 29 Kappa Sigma Fraternity Lodge
- 30 Worth Dormitory
- 31 Woolman House
- 32 Phi Delta Theta Fraternity Lodge
- 33 Bond Memorial and Women's Class and Activities Lodges
- 34 Bartol Foundation Laboratory
- 35 Clothier Memorial Amphitheatre
- 36 Employees' Houses
- 37 Field House
- 38 Senior Dormitory
- 39 Edward Martin Biological Laboratory
- 40 Bassett House



*Plan of the Grounds  
of  
Swarthmore College*

Scale 100 0 100 200 300 feet



## CALENDAR FOR 1938

SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
I 2 3	I	I 2 3 4 5	I 2 3
4 5 6 7 8 9 10	2 3 4 5 6 7 8	6 7 8 9 10 11 12	4 5 6 7 8 9 10
11 12 13 14 15 16 17	9 10 11 12 13 14 15	13 14 15 16 17 18 19	11 12 13 14 15 16 17
18 19 20 21 22 23 24	16 17 18 19 20 21 22	20 21 22 23 24 25 26	18 19 20 21 22 23 24
25 26 27 28 29 30	23 24 25 26 27 28 29	27 28 29 30	25 26 27 28 29 30 31
	30 31		

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## CALENDAR FOR 1939

JANUARY	FEBRUARY	MARCH	APRIL
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
I 2 3 4 5 6 7	I 2 3 4	I 2 3 4	I
8 9 10 11 12 13 14	5 6 7 8 9 10 11	5 6 7 8 9 10 11	2 3 4 5 6 7 8
15 16 17 18 19 20 21	12 13 14 15 16 17 18	12 13 14 15 16 17 18	9 10 11 12 13 14 15
22 23 24 25 26 27 28	19 20 21 22 23 24 25	19 20 21 22 23 24 25	16 17 18 19 20 21 22
29 30 31	26 27 28	26 27 28 29 30 31	23 24 25 26 27 28 29
			30

MAY	JUNE	JULY	AUGUST
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
I 2 3 4 5 6	I 2 3	I	I 2 3 4 5
7 8 9 10 11 12 13	4 5 6 7 8 9 10	2 3 4 5 6 7 8	6 7 8 9 10 11 12
14 15 16 17 18 19 20	11 12 13 14 15 16 17	9 10 11 12 13 14 15	13 14 15 16 17 18 19
21 22 23 24 25 26 27	18 19 20 21 22 23 24	16 17 18 19 20 21 22	20 21 22 23 24 25 26
28 29 30 31	25 26 27 28 29 30	23 24 25 26 27 28 29	27 28 29 30 31
		30 31	

SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
I 2	I 2 3 4 5 6 7	I 2 3 4	I 2
3 4 5 6 7 8 9	8 9 10 11 12 13 14	5 6 7 8 9 10 11	3 4 5 6 7 8 9
10 11 12 13 14 15 16	15 16 17 18 19 20 21	12 13 14 15 16 17 18	10 11 12 13 14 15 16
17 18 19 20 21 22 23	22 23 24 25 26 27 28	19 20 21 22 23 24 25	17 18 19 20 21 22 23
24 25 26 27 28 29 30	29 30 31	26 27 28 29 30	24 25 26 27 28 29 30
			31

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## CALENDAR FOR 1940

JANUARY	FEBRUARY	MARCH
S M T W T F S	S M T W T F S	S M T W T F S
I 2 3 4 5 6	I 2 3	I 2
7 8 9 10 11 12 13	4 5 6 7 8 9 10	3 4 5 6 7 8 9
14 15 16 17 18 19 20	11 12 13 14 15 16 17	10 11 12 13 14 15 16
21 22 23 24 25 26 27	18 19 20 21 22 23 24	17 18 19 20 21 22 23
28 29 30 31	25 26 27 28 29	24 25 26 27 28 29 30
		31

APRIL	MAY	JUNE
S M T W T F S	S M T W T F S	S M T W T F S
I 2 3 4 5 6	I 2 3 4	I
7 8 9 10 11 12 13	5 6 7 8 9 10 11	2 3 4 5 6 7 8
14 15 16 17 18 19 20	12 13 14 15 16 17 18	9 10 11 12 13 14 15
21 22 23 24 25 26 27	19 20 21 22 23 24 25	16 17 18 19 20 21 22
28 29 30	26 27 28 29 30 31	23 24 25 26 27 28 29
		30

# COLLEGE CALENDAR

1938

- Ninth Month 22, 23, 24, 25, 26. Freshman Placement Days  
 Ninth Month 27. . . . . Registration and Enrolment in Classes, 2:00 to  
 4:00 P. M.  
 Ninth Month 28. . . . . Classes begin at 8:00 A. M.  
 Ninth Month 28. . . . . Opening of Honors Work  
 Tenth Month 4. . . . . Meeting of the Board of Managers  
 Eleventh Month 1. . . . . Executive Committee of the Board of Managers  
 (Election day eleventh month 8)  
 Eleventh Month 24. . . . . Holiday: Thanksgiving  
 Twelfth Month 6. . . . . Annual Meeting of the Board of Managers  
 Twelfth Month 16. . . . . Christmas Recess begins at 6:00 P. M.

1939

- First Month 3. . . . . Executive Committee of the Board of Managers  
 First Month 4. . . . . Christmas Recess ends at 8:00 A. M.  
 First Month 18. . . . . First Semester ends for Honors Seminars  
 First Month 20. . . . . Registration and Enrolment in Classes for the  
 Second Semester, 10:30 A. M. to NOON  
 First Month 23, 24. . . . . Review Period  
 First Month 24. . . . . Second Semester begins for Honors Seminars  
 First Month 25. . . . . Mid-Year Examinations begin at 8:30 A. M.  
 Second Month 2. . . . . Mid-Year Examinations end  
 Second Month 6. . . . . Second Semester begins at 8:00 A. M.  
 Second Month 7. . . . . Executive Committee of the Board of Managers  
 Third Month 7. . . . . Meeting of the Board of Managers  
 Third Month 24. . . . . Spring Recess begins at 6:00 P. M.  
 Fourth Month 4. . . . . Spring Recess ends at 8:00 A. M.  
 Fourth Month 4. . . . . Executive Committee of the Board of Managers  
 Fifth Month 2. . . . . Executive Committee of the Board of Managers  
 Fourth Month 8. . . . . Somerville Day  
 Fifth Month 6. . . . . Honors Seminars for Seniors end  
 Fifth Month 13. . . . . Courses for Seniors end  
 Fifth Month 15. . . . . Honors Written Examinations begin  
 Fifth Month 19. . . . . Enrolment in Classes for the  
 First Semester, 1939-40  
 Fifth Month 22, 23. . . . . Senior Comprehensive Examinations  
 Fifth Month 22, 23. . . . . Review Period  
 Fifth Month 24. . . . . Final Examinations begin  
 Fifth Month 25. . . . . Honors Oral Examinations begin  
 Fifth Month 27. . . . . Honors Examinations end  
 Fifth Month 31. . . . . Final Examinations end  
 Sixth Month 2. . . . . Meeting of the Board of Managers  
 Sixth Month 2. . . . . Class Day  
 Sixth Month 3. . . . . Alumni Day  
 Sixth Month 4. . . . . Baccalaureate Day  
 Sixth Month 5. . . . . Commencement Day  
 Ninth Month 21, 22, 23, 24, 25. Freshman Placement Days  
 Ninth Month 26. . . . . Registration and Enrolment in Classes, 2:00 to  
 4:00 P. M.



Ninth Month 27.....Classes begin at 8:00 A. M.  
 Ninth Month 27.....Opening of Honors Work  
 Tenth Month 3.....Meeting of the Board of Managers  
 Eleventh Month 7.....Executive Committee of the Board of Managers  
 Eleventh Month 30.....Holiday: Thanksgiving  
 Twelfth Month 5.....Annual Meeting of the Board of Managers  
 Twelfth Month 15.....Christmas Recess begins at 6:00 P. M.

## 1940

First Month 3.....Christmas Recess ends at 8:00 A. M.  
 First Month 3.....Executive Committee of the Board of Managers  
 First Month 17.....First Semester ends for Honors Seminars  
 First Month 19.....Registration and Enrolment in Classes for the  
   Second Semester, 10:30 A. M. to NOON  
 First Month 22, 23.....Review Period  
 First Month 23.....Second Semester begins for Honors Seminars  
 First Month 24.....Mid-Year Examinations begin at 8:30 A. M.  
 Second Month 1.....Mid-Year Examinations end  
 Second Month 5.....Second Semester begins at 8:00 A. M.

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J. ARCHER TURNER, *Treasurer*,  
Swarthmore, Pa.

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*Term expires Twelfth Month, 1938*

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*Term expires Twelfth Month, 1939*

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DAVID B. RUSHMORE, University Club, 1 W. 54th St., New York.  
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CLAUDE C. SMITH, Baltimore Pike, Swarthmore, Pa.  
THOMAS B. MCCABE, 607 North Chester Road, Swarthmore, Pa.

*Term expires Twelfth Month, 1940*

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ADA GRAHAM CLEMENT, Meeting House Road, Jenkintown, Pa.  
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J. ARCHER TURNER, 801 Harvard Avenue, Swarthmore, Pa.  
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*Term expires Twelfth Month, 1941*

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ADA GRAHAM CLEMENT	ELISABETH HALLOWELL BARTLETT

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EDITH WILSON JACKSON	ELEANOR STABLER CLARKE
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- ELIZABETH COX WRIGHT, *Assistant Professor of English*.....Moylan  
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\*Part-time leave.

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\*Appointed for the first semester.

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\*Absent on leave.

†Absent on leave, first semester.

‡Absent on part-time leave, four months, second semester.

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### STUDENT AFFAIRS

Speight, *Chairman*; Philips, R. MacLeod, Nason, Hunt.

### TEACHERS' APPOINTMENT

Booth, *Chairman*; Cox, Dresden, Goddard, R. MacLeod.

### TRAVEL ALLOWANCE

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SECRETARY OF THE FACULTY.....Wilcox



SWARTHMORE COLLEGE

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Swarthmore College is situated in the Borough of Swarthmore, eleven miles southwest of Philadelphia on the Octoraro branch of the Pennsylvania Railroad. Two hundred and thirty-seven acres are contained in the College property, including a large tract of woodland and the 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. 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 since 1911 has been omitted from the revised charter. The intention of the founders was to make the promotion of Christian character the first consideration, and to provide opportunities for liberal culture while maintaining a high standard of scholarship. These aims have been followed in the administration of the institution.

The enrolment of the College is limited to approximately six hundred students. The endowment is seven and a half million dollars.

## BUILDINGS AND GROUNDS

The *Isaac H. Clothier Memorial* is the gift of Mrs. Isaac H. Clothier and members of her family in memory of Isaac H. Clothier, for forty-eight years one of the Board of Managers, and for seven years President of the Board. The Memorial is a quadrangle of buildings, including a bell tower connected by cloisters with a suite of seminar rooms and the Managers' Room, and a hall seating one thousand persons, equipped with stage and organ. The organ was the gift of Herbert J. Tily in memory of Isaac H. Clothier.

*Parrish Hall* is the main building of the College. Administrative offices, class-rooms, reception rooms, and the College dining-hall

occupy the ground floor. The upper floors in the central section contain a social hall, class-rooms, offices, and a laboratory; in the wings, dormitory rooms for Freshman, Sophomore, and Junior women, and an infirmary.

*Worth Hall*, the dormitory for Senior women, consists of six cottages contiguous in design but each with its own entrance and staircase. The building was the gift of William P. Worth, 1876, and J. Sharpless Worth, ex-1873, as a memorial to their parents.

*Woolman House*, at Elm Avenue and Walnut Lane, is a smaller dormitory for women students. The house and grounds were given to the College by Emma C. Bancroft, for many years Chairman of the Household Committee of the Board of Managers.

*Bassett Dormitory*, at 519 Walnut Lane, is a dormitory for eighteen upper class women.

*Wharton Hall*, named in honor of its donor, Joseph Wharton, at one time President of the Board of Managers, provides rooms for two hundred men and an infirmary.

Three *Dormitories for Men* have been added through the purchase of buildings from the old Swarthmore Preparatory School. They stand on Chester Road, adjacent to the College Soccer Field.

Two other buildings, also purchased from the Swarthmore Preparatory School, will be ready for use by the College in the near future.

The *Edward Martin Biological Laboratory*, given by Fred M. Kirby of Wilkes-Barre, in honor of Dr. Edward Martin, is now in use by the departments of Botany, Zoölogy, and Psychology. It provides class-rooms and laboratories for both undergraduate instruction and advanced research.

*Trotter Hall*, formerly known as the Science Building, has recently been remodelled. The former quarters of the department of Zoölogy have been made into offices and class-rooms for the departments of Economics, History, Philosophy, and Political Science. The west wing has been converted into headquarters for the activities of groups working in music, dramatics and art. In the central section the department of Physics retains its laboratories, offices and lecture room.

The *Hall of Chemistry* is equipped with laboratories, offices, a lecture amphitheatre, and a library for instruction and research in chemistry.

The *Sproul Astronomical Observatory* houses the astronomical work of the department of Mathematics and Astronomy. The astronomical equipment has been purchased from a fund given by William

C. Sproul, 1891, and is adequate for advanced research. The department has also a Students' Astronomical Observatory, housed in a separate building.

The *Library*, in part the gift of Andrew Carnegie, contains reading rooms, offices, and a collection of 110,000 volumes. An addition providing storeroom for 150,000 volumes was erected in 1935. One wing of the Library was given by Clement M. Biddle, 1896, in memory of his father, Clement M. Biddle, to house the Friends Historical Library. The nucleus of this collection of books on Quaker history, religion and social reform was a gift in 1871 by a member of the Society of Friends, Anson Lapham. The Library includes also a museum of old furniture, costumes, etc., of Friendly interest. Of especial importance is the collection of manuscript records of Friends Meetings.

*Hicks Hall*, the headquarters of the Division of Engineering, was given by Frederick C. Hicks, 1893, in memory of the Hicks family of Long Island—Isaac Hicks, Elias Hicks, Benjamin Hicks, and Alice A. Hicks. The building provides civil, electrical and mechanical laboratories, class-rooms, offices, a library, and an auditorium.

*Beardsley Hall* is the engineering shop building with forge and foundry, machine shop and wood working equipment.

The *Field House* for men has recently been completed. It was designed by Robert E. Lamb, of the Board of Managers. Its dimensions are 315 feet by 115 feet; it includes two basketball floors, and a clay floor large enough for baseball, football, soccer, lacrosse, and other games normally played out of doors. The building also has a running track, tennis court, and rooms for wrestling and boxing.

The *William J. Hall Gymnasium* for men contains offices, examining room, a main exercise hall, and hand ball courts.

*Somerville Hall*, erected in 1893 by the Somerville Literary Society, is the gymnasium for women students.

Connected with each gymnasium is a swimming pool presented to the College by Philip M. Sharples of the Board of Managers.

*Swarthmore Field* and *Alumni Field* for men afford football, baseball, and lacrosse grounds and a quarter-mile cinder track. A permanent grandstand, seating eighteen hundred persons, was the gift of Morris L. Clothier, 1890. Additional playing fields for lacrosse and soccer, and tennis courts are on the lower campus.

*Cunningham Field* for women, was given by students, alumnae, and friends of the College in memory of Susan J. Cunningham, for many years Professor of Mathematics and Astronomy. It includes

hockey fields, tennis courts, practice golf course, and a riding ring.

The *Arthur Hoyt Scott Horticultural Foundation*, the gift of Mrs. Arthur Hoyt Scott, 1896, and Owen and Margaret Moon, is now in process of development.

*Bond Memorial Hall* and the women's activities lodges for class and other activities form with Worth Hall part of a Women's Quadrangle. The Bond Memorial, named in honor of Elizabeth Powell Bond, for many years Dean of the College, is a social center for all students.

The *Bartol Foundation Building*, erected on the campus by the Franklin Institute for research in physics, is entirely independent of the College, but makes a contribution to Swarthmore life by bringing here a group of research physicists.

There is a group of lodges for the men's fraternities. These lodges are used not as dormitories, but solely as social gathering places.

Other buildings of interest upon the campus are the Meeting House of the Swarthmore Monthly Meeting of the Society of Friends and the Benjamin West House, the birthplace of Benjamin West, P.R.A.

The College provides twenty-two houses for the President and members of the faculty.

## RELIGIOUS EXERCISES

### COLLECTION

There is an assembly of the College, called *Collection*, at 9:00 A. M. every Wednesday in the Clothier Memorial; attendance of students is required. The program, which ordinarily lasts 25 minutes, is devoted to addresses or music, preceded by a period of silence according to the Friendly tradition.

A meeting in the manner of the Society of Friends is held on Monday, Tuesday, Thursday and Friday, from 9:00 to 9:15 A. M., in the Friends Meeting House on the campus. No program is arranged. Members of the Faculty or students speak occasionally, but the period is frequently one of silent meditation. Attendance is entirely voluntary.

## ARTS AND CRAFTS

Creative activity at Swarthmore is undertaken for its own sake as a part of undergraduate life. It is generally felt that some form of self-expression, in arts, crafts, or some other medium, is a necessary factor in the educational process. To satisfy this need, the various arts and crafts groups have been organized by students under the guidance and supervision of the faculty and specialists in the different fields. These groups are carried on upon a strictly amateur basis so that students without particular proficiency as well as students with definite creative talents may have an opportunity to discover and pursue an enthusiasm for creative work. It is hoped that all students will take part in some of these activities; that all will exercise such restraint as not to interfere with academic work.

The Secretary for the Arts and Crafts has an office in the Trotter Building, sends out notices for meetings, and keeps an index of the names of students participating in each group or club.

## OTHER STUDENT ACTIVITIES

Most student activities are conducted in cooperation with members of the faculty. They range from informal groups for the discussion of religious and social problems to clubs for the production of plays and concerts or the publication of magazines.

Departmental clubs of undergraduates which hold stated meetings during the academic year include: the Cercle Français, the Chemistry Club, the Classical Club, The Engineers Club, the German Club and the Philosophy Club. The programs of these clubs give the opportunity for the presentation of papers and addresses by undergraduates and frequently by visiting scholars and scientists.

The Somerville Forum is an outgrowth of the Somerville Literary Society, which was established in 1871. All women students are members. The Forum holds open meetings devoted to music, art and literature, and also maintains two fellowships for women for graduate work, the Lucretia Mott Fellowship and the Martha E. Tyson Fellowship. The final meeting in April, known as Somerville Day, is a gathering of alumnae and students.

The Swarthmore Chapter of the American Student Union is an organization of liberal students who have an active interest in public affairs.

The Athletic Association is an organization of men students for the

maintenance of physical training and athletic sports. The Women's Athletic Association is a similar organization of the women students. The latter Association supports an Outing Club which gives women opportunities for mountain climbing and camping.

The College dramatic program has two phases. One of these is the presentation of two or more major productions each year in Clothier Memorial auditorium. These plays are sponsored and managed by the Little Theater Club, an elective organization for which any student demonstrating an active and continued interest in dramatics is eligible. Participation in any branch of these productions is open to all students, except that Freshman women are not permitted to act in a public performance during their first semester in college. Also open to all students are the extra-curricular classes comprising the second phase of the dramatic program—the Laboratory Workshop. Included are courses in directing, acting, playwriting, design, technical work, and make-up, with practical work in each field.

The Swarthmore College Orchestra and Mixed Chorus present musical programs in the College and outside. The Swarthmore College Glee Club, a men's chorus, gives concerts in various cities under alumni auspices. There are also informal groups of those interested in singing and in instrumental music.

Three periodicals are published by the students: The *Swarthmore Phoenix*, a weekly newspaper; *The Portfolio*, a literary magazine; the *Halcyon*, a year-book edited by the Junior Class. The American Student Union also publishes a Bulletin from time to time. There are informal groups for the study of narrative, poetry, prose and play writing.

The *College Press Board* is responsible for releasing news to the Philadelphia and New York newspapers as well as to the home town papers of the students. The Senior Board works with the College Administration in giving official statements to the newspapers as well as in taking care of the coverage of all undergraduate activities.

The Debate Board, an undergraduate body including all students who have represented the College in public debate, in cooperation with the faculty adviser of debating, directs organized discussion and debate. In addition to the intercollegiate debates, usually broadcast by Philadelphia radio stations, student speakers appear before various clubs and discussion groups in Philadelphia and nearby.

Two public speaking contests are open to all undergraduates: the Delta Upsilon Prize Speaking Contest and the Ella Frances Bunting

Extemporaneous Speaking Contest. Prizes in the first contest total \$25 and in the second \$50.

The William Plumer Potter Fund for the Encouragement of Public Speaking provides a prize of about two hundred and fifty dollars to be awarded to the Junior or Senior who shows the greatest ability in the discussion of public affairs. (For the conditions of award, see p. 33.)

The Sketch and Camera Clubs meet regularly for work in free-hand drawing and in photography.

The Radio Club operates Amateur Radio Station W3YJ and is affiliated with the American Radio Relay League.

Students interested in woodworking, metal working, printing and other crafts have the use of shops at regular hours under supervision.

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 Comptroller 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 faculty committee on Student Affairs.

### COLLEGE PUBLICATIONS

The *Swarthmore College Bulletin*, published quarterly, includes as three of its numbers the College Catalogue, the Annual Report of the President of the college, and the Students' Handbook. The fourth number is devoted to special reports.

### HONORARY SCHOLARSHIP SOCIETIES

The Swarthmore chapter of Phi Beta Kappa, the national society for the recognition of scholarship, was organized in 1896. Each year students in the senior class having the highest standing are elected to membership.

The Swarthmore chapter of Sigma Tau, the national society standing for scholastic attainment in engineering, was established in 1917. Members are chosen from among Junior and Senior students majoring in engineering.

The Swarthmore chapter of Sigma Xi, the national scientific society for the promotion of research, was granted a charter in 1922. Students may become associate members after two and one-half years in college provided that, in the opinion of the members of the society, they evince promise of ability in research, and may become members after they have produced a piece of research worthy of publication.

### THE BENJAMIN WEST SOCIETY

The Benjamin West Society is made up of alumni, students, members of the faculty, and friends of Swarthmore who have a concern for art at Swarthmore.

The name of the Society has special significance because West, an artist of the Eighteenth Century, who became President of the Royal Academy, was born on the Swarthmore campus.

It is the double purpose of the Benjamin West Society to form, by gift and purchase, art collections which shall be the permanent possession of the college and, from time to time, to bring to the college art exhibits and distinguished lecturers on art. The Society hopes ultimately to have a building wherein its collections, already considerable in number and good in quality, may be exhibited appropriately.

Officers of the Association for the year 1938-39 are as follows: President, Frank Aydelotte; Vice-Presidents, Charles F. Jenkins, Alice Sullivan Perkins; Secretary, Florence Wilcox; Treasurer, Leonard C. Ashton; Director, Frederic N. Price.

### THE BRONSON M. CUTTING COLLECTION OF RECORDED MUSIC

The Bronson M. Cutting Memorial Collection of Recorded Music was established at Swarthmore College in 1936 by a gift of approximately four thousand phonograph records, a radio-phonograph, books and musical scores, from the family of Bronson Murray Cutting, late Senator from New Mexico. Its object is to make the best recorded music available to the undergraduates, faculty, and friends of Swarthmore College, in cooperation with the work of the college Department of Music.

### THE WILLIAM J. COOPER FOUNDATION

The William J. Cooper Foundation was established by William J. Cooper, a devoted friend of the College, whose wife, Emma McIlvain Cooper, served as a member of the Board of Managers from 1882 to 1923. Mr. Cooper bequeathed to the College the sum of \$100,000 and provided that the income should be used "in bringing to the College from time to time eminent citizens of this and other countries who are leaders in statesmanship, education, the arts, sciences, learned professions and business, in order that the faculty, students and the College community may be broadened by a closer



acquaintance with matters of world interest." Admission to Cooper Foundation programs is without charge.

### THE ARTHUR HOYT SCOTT HORTICULTURAL FOUNDATION

The Arthur Hoyt Scott Foundation Endowment Fund was established in 1929 by gift of Mrs. Arthur Hoyt Scott and Owen and Margaret Moon for the development of an arboretum and botanical garden on the College campus and property, and for the periodic award of a gold medal and \$1,000 cash prize to the individual or organization judged to be outstanding "in creating and developing a wider interest in gardening." The Fund is a memorial to Arthur Hoyt Scott, 1895.

### THE COLLEGE LIBRARY

The Swarthmore College Library now numbers approximately 110,000 volumes. Some 6,000 volumes are added annually. About 600 periodicals are received regularly. The general collection, including all but the scientific and technical books and journals, is housed in the Library building, situated on the front campus.

To meet the needs of students reading for honors, the college is enriching its collection as rapidly as possible. As a consequence of this growth, it became necessary recently to build an addition containing stacks for 150,000 volumes. Former stack rooms in the main library building have been converted into reading rooms for students and work rooms for the Staff. The Library administration is changing from the Dewey decimal to the Library of Congress system of classification to make possible more rapid and adequate classification and cataloguing of new books.

Important special units of the main Library are the Appleton collection of Classics and English literature and the Potter collection of legal material. The Library is definitely a collection of books and journals for undergraduate use. The demands of honors work, however, make necessary the provision of large quantities of source material not usually found in collections maintained for undergraduates. It is a point of library policy to supply as fully as it can, either by purchase or through inter-library loan, the books needed by students or members of the faculty for their individual research.

Rules regarding the use of the Library and its books are reduced to the minimum. The few in force are maintained so that the Library's holdings may be of the greatest benefit to all users.

The Librarian and each member of the staff welcome chances to aid students in making full use of the Library's resources. The Library is open on Mondays to Fridays, inclusive, from 7:50 A.M. to 10 P.M.; on Saturdays from 7:50 A.M. to 6 P.M., and from 7 P.M. to 9 P.M.; on Sundays from 1 P.M. to 6 P.M., and from 7 P.M. to 10 P.M.

### THE FRIENDS HISTORICAL LIBRARY

The Friends Historical Library, founded in 1870 by Anson Lapham, contains a valuable and growing collection of Friends records, books, tracts, and early writings (many very rare), portraits of representative Friends, pictures of old meeting houses, objects and relics of personal and historic interest, and manuscripts relating to the Society and its history. This collection is housed in the Library, a fireproof building of stone and steel, the gift of Clement M. Biddle in memory of his father, Clement M. Biddle, and it is hoped that Friends and others will deem it a secure place in which to deposit books, papers, portraits, 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.

### FELLOWSHIPS AND SCHOLARSHIPS

Candidates are eligible for scholarships and fellowships awarded by Swarthmore College regardless of their financial need. In the case of applicants who are able to meet the cost of all or part of their education, the stipend will be adjusted in accordance with their means, and any amounts so saved will be applied to increase the funds available for scholarships and fellowships.

#### FELLOWSHIPS

There are six fellowships offered to graduates of Swarthmore College.

Three fellowships are awarded annually by the Faculty, on recommendation of the Committee on Fellowships, to graduates of the College for the pursuit of advanced work under the direction of the Faculty or with their approval. Applications for these fellowships for 1939-40 must be received by the committee before March 1, 1939.

These fellowships are:

The HANNAH A. LEEDOM FELLOWSHIP of \$500, founded by the bequest of Hannah A. Leedom.

The JOSHUA LIPPINCOTT FELLOWSHIP of \$600, founded by Howard W. Lippincott, of the Class of 1875, in memory of his father.

The JOHN LOCKWOOD MEMORIAL FELLOWSHIP of \$600, founded by the bequest of Lydia A. Lockwood, 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.

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.

SIGMA XI RESEARCH FELLOWSHIP. The Swarthmore Chapter of Sigma Xi has founded a fellowship known as the Swarthmore Sigma Xi Research Fellowship. The holder of this fellowship is usually an associate of the chapter who has become an advanced graduate student of outstanding ability. The fellowship is expected to carry a stipend of one thousand dollars and is awarded from time to time as funds are available.

The MARTHA E. TYSON FELLOWSHIP, founded by the Somerville Literary Society in 1913, is sustained by the contributions of life members of the society and yields an income of \$500 or more. It is awarded biennially 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. This fellowship will be awarded for 1939-40. Applications must be received by the Committee of Award not later than February 15, 1939.

#### SCHOLARSHIPS

1. Class Scholarships. The following scholarships are offered for high scholastic standing in the first two years of college. 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 in the regular work of the year:

(a) The ANSON LAPHAM SCHOLARSHIP will be awarded to a member of the Freshman Class.

(b) The SAMUEL J. UNDERHILL SCHOLARSHIP will be awarded to a member of the Sophomore Class.

2. Each of the following funds yields annually about \$225 and is awarded at the discretion of the College to students needing pecuniary aid:

(a) The BARCLAY G. ATKINSON SCHOLARSHIP FUND.

(b) The REBECCA M. ATKINSON SCHOLARSHIP FUND.

(c) The WILLIAM DORSEY SCHOLARSHIP FUND.

(d) The THOMAS L. LEEDOM SCHOLARSHIP FUND.

(e) The SARAH E. LIPPINCOTT SCHOLARSHIP FUND.

(f) The MARK E. REEVES SCHOLARSHIP FUND.

(g) The JOSEPH T. SULLIVAN SCHOLARSHIP FUND.

(h) The DEBORAH F. WHARTON SCHOLARSHIP FUND.

(i) The THOMAS WOODNUTT SCHOLARSHIP FUND.

3. The SARAH KAIGHN COOPER SCHOLARSHIP, founded by Sallie K. Johnson in memory of her grandparents, Sarah Kaighn and Sarah Cooper, is awarded to a man in the Junior Class who is judged by the faculty to have had, since entering College, the best record for scholarship, character, and influence. The value of this scholarship is approximately \$225 annually.

4. The JOSEPH E. GILLINGHAM FUND, with an annual income of approximately \$2,250 was bequeathed to the College in 1907 with the stipulation, "I request but I do not direct that part of the income of this legacy may be used for free scholarships for meritorious students."

5. The GEORGE K. and SALLIE K. JOHNSON FUND provides \$450 a year, to be used, at the discretion of the President of the College, in granting financial aid to young women during their senior year, it being the donor's desire that the President must be satisfied that the applicant is fitted to become a desirable teacher.

6. The income of the KAPPA ALPHA THETA SCHOLARSHIP FUND of \$3,126, given by members and friends of the Kappa Alpha Theta

Fraternity at Swarthmore, is awarded annually to a woman student. One or more members of the fraternity who are on the Board of Managers serve on the Committee of Award.

7. The JAMES E. MILLER SCHOLARSHIP. Under the will of Arabella M. Miller, the sum of \$5,986 was awarded to the Cambridge Trust Company, Trustee under the will of James E. Miller, to be applied to scholarships in Swarthmore College. An annual income of approximately \$340 is available and may be applied toward the payment of board and tuition of students of Delaware County (preference to be given to residents of Nether Providence Township) to be selected by the Trustee in consultation with the Superintendent of Schools of Delaware County and of the City of Chester, and subject to the approval of Swarthmore College.

8. 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." The value of this scholarship is approximately \$360 annually.

9. The T. H. DUDLEY PERKINS MEMORIAL SCHOLARSHIP of \$600 is awarded annually to a young man selected by a committee of the faculty appointed by the President of the College for the purpose. The award will be made and the following points determined by the credentials of the secondary school from which the successful candidate is a graduate. *First*, Qualities of manhood, force of character and leadership, 50 points. *Second*, Literary and scholastic ability and attainments, 30 points. *Third*, Physical vigor as shown by participation in out-of-door sports or in other ways, 20 points.

10. The WILLIAM PLUMER POTTER FUND FOR THE ENCOURAGEMENT OF PUBLIC SPEAKING provides a scholarship of about two hundred and fifty dollars to be awarded to the Junior or Senior who shows the greatest ability in the discussion of public affairs. Competitors submit theses on public questions to a Faculty Committee and also present their main conclusions orally, after which they are cross-examined. Previous participation in debate and scholarship record are also taken into consideration. Theses are due after spring vacation. Students interested in competing should register with Professor Everett Hunt.

11. The MARY COATES PRESTON SCHOLARSHIP FUND. A sum of money has been left by will of Elizabeth Coates to Josephine Beistle, of Swarthmore, as trustee, the annual interest of which will be about \$350. 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.

12. The WILLIAM G. AND MARY N. SERRILL HONORS SCHOLARSHIP is a competitive Honors Scholarship for Men, awarded to a candidate for admission to the College, based upon the general plan of the Rhodes Scholarships. It is tenable for four years, subject to the maintenance of a high standing in College. The annual stipend is \$375. Preference will be given to men who are residents of Abington Township, including Jenkintown and Glenside, Montgomery County, Pa., but if there is no outstanding candidate from this locality, the scholarship will be open to competition generally.

13. The ANNIE SHOEMAKER SCHOLARSHIP is awarded annually to a young woman of the graduating class of Friends Central School, Philadelphia, by a two-thirds vote of their faculty, subject to the approval of Swarthmore College. This scholarship has the value of \$500 for a resident student and \$400 for a day student.

14. The HELEN E. W. SQUIER SCHOLARSHIP, originally one of the Anson Lapham Scholarships, is awarded annually by Mrs. Chester Roberts, of Swarthmore, to a student in need of financial aid.

15. SWARTHMORE COLLEGE OPEN SCHOLARSHIPS FOR MEN. Swarthmore College in 1922 established experimentally five annual open competitive scholarships for men, not confined to any particular school, locality, subject of study, or religious denomination. These scholarships, based upon the general plan of the Rhodes Scholarships, are given to candidates who, in the opinion of the Selection Committee, rank highest in scholarship and character.

The regulations under which these scholarships will be awarded in 1939 are as follows:

The stipend of an Open Scholarship is \$500 a year. Each Scholarship is tenable for four consecutive years, subject to the maintenance of a high standing in College. All holders of Open Scholarships must be resident students, living and taking their meals at the College.

A candidate to be eligible must:

- (1) Be more than fifteen and less than twenty years of age on September first of the year for which he is elected.

- (2) Meet the requirements for admission to Swarthmore College as prescribed in the college catalogue.
- (3) Not have attended another college or university.

Each candidate must secure the endorsement of the principal of his preparatory school.

The records of all Open Scholars will be reviewed by the Committee each year, the record of the first two years being especially considered as a basis for continuing a scholarship. Open Scholars are expected to maintain a high standard throughout the College course. In re-awarding Scholarships vacated because of low academic standing or for any other reason, preference will be given to original competitors for the appointment in question, who have since made outstanding records in Swarthmore College.

Scholars will be selected on the basis of (1) their school record as shown by the material called for in the application blank; (2) an examination to be conducted on April 15, 1939, at one hundred and fifty places in the United States, consisting of the Scholastic Aptitude Test and two achievement tests; and (3) a personal interview with the Selection Committee or its representatives. Whenever possible, candidates will come to the College for their interviews. It is expected, however, that these interviews can be arranged in various parts of the United States, so as to make it unnecessary for candidates to travel any considerable distance. Application blanks duly filled out and accompanied by the material specified must reach the Dean of Men at Swarthmore College before March 31 of the year in which they are awarded. The awards will be announced about June first.

This year there were 144 candidates from 19 states and the District of Columbia. Thirty-one candidates appeared before the final Committee, and the rest were interviewed in various parts of the country by representatives of the Committee of Selection, including Swarthmore Alumni and former Rhodes Scholars. The final Committee was composed of President Frank Aydelotte; Claude C. Smith, '14, member of the Board of Managers; Dean Harold E. B. Speight, Professor Everett L. Hunt, of the Department of English; N. O. Pittenger, Comptroller of the College; two members of the Committee on Alumni Scholarships, Carl K. Dellmuth, '31, and Thomas S. Nicely, '30.

16. SWARTHMORE COLLEGE OPEN SCHOLARSHIPS FOR WOMEN. Mr. and Mrs. Daniel S. White, of the Class of 1875, on the occasion of the Fiftieth Reunion of that class, established three open com-

petitive scholarships for women, in the names of Howard White, Jr., Serena B. White, and Walter W. Green. These scholarships are not confined to any particular school, locality, subject of study, or religious denomination. They are based on the general plan of the Rhodes Scholarships, and are given to candidates who show greatest promise in:

- (1) Qualities of leadership.
- (2) Literary and scholastic ability and attainments.
- (3) Physical vigor, as evinced by interest in outdoor sports or in other ways.

To be eligible a candidate must:

- (1) Be qualified for admission to the Freshman Class; (see College Catalogue, pages 42-44).
- (2) Secure the endorsement of the Principal of her preparatory school.

Candidates will be asked to take the Scholastic Aptitude Test and special achievement tests, to be given by the College Entrance Examination Board on April 15, 1939, in 150 places in the United States. The nature of these tests is such as not to require any special preparation. A fee of \$10.00 is charged each candidate by the College Entrance Examination Board.

The scholarships will be awarded to the applicants who appear most promising, judged on the basis of

- (1) School record and recommendations.
- (2) Personal interview with a representative of the College.
- (3) Ratings in the Scholastic Aptitude Test and the Special Achievement Tests of the College Entrance Examination Board.

The College makes arrangements to interview candidates either at Swarthmore or in the vicinity of their own homes.

Application blanks duly filled out and accompanied by the material specified must reach the Dean of Women of Swarthmore College on or before January 1, 1939. The awards will be announced about May 15, 1939.

This year there were 146 candidates for the White Open Scholarships for Women, representing 24 states and the District of Columbia.



The Committee of Award was composed of Dean Frances Blanshard, Professor Ethel H. Brewster, Professor Edith Philips, and four Alumnae: Eleanor Stabler Clarke, 1918, of the Board of Managers; Hannah Clothier Hull, 1891; Alice Smedley Palmer, 1889, and Anna Michener, 1916.

17. The SWARTHMORE ALUMNÆ SCHOLARSHIP, established by the Philadelphia and New York Alumnae Clubs, is awarded on the same basis as the Open Scholarships. It is awarded for one year and is valued at \$500.

18. The JONATHAN K. TAYLOR SCHOLARSHIP, in accordance with the donor's will, is awarded by the Board of Trustees of the Baltimore Monthly Meeting of Friends. This scholarship is first open to descendants of the late Jonathan K. Taylor. Then, while preference is to be given to members of the Baltimore Yearly Meeting of Friends, it is not to be confined to them when suitable persons in membership cannot be found. The value of this scholarship is approximately \$472.50 annually.

19. The PHEBE ANNA THORNE FUND provides an income of approximately \$2,250 for 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.

20. The WESTBURY QUARTERLY MEETING, N. Y., SCHOLARSHIP, amounting to \$350, is awarded annually by a committee of that Quarterly Meeting.

21. The Western Swarthmore Club offers in conjunction with the College one scholarship of \$500 for the Freshman year. The scholarship is open for competition to all men graduates of high schools and preparatory schools west of the Allegheny Mountains. Students interested are requested to apply to the President of the Club. The holder will be eligible for consideration for additional scholarship aid during his Sophomore year.

22. The SAMUEL WILLETS FUND yields an income of approximately \$4,500 annually, "to be applied to educate in part or in whole

such poor and deserving children as the Committee on Trusts, Endowments and Scholarships of said college may from time to time judge and determine to be entitled thereto."

23. In addition to the above fund, Samuel Willets gave four scholarships in the name of his children, FREDERICK WILLETS, EDWARD WILLETS, WALTER WILLETS, and CAROLINE M. FRAME. These scholarships have the value of \$225 each. They are awarded by the respective parties, their heirs or assigns, or in the event that the heirs do not exercise their right, by the College authorities.

24. The I. V. WILLIAMSON SCHOLARSHIP 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 1939 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 Sidwells Friends .....	Washington, D. C.
1	to Brooklyn Friends School .....	Brooklyn, N. Y.
1	to George School (Boys' Department).....	George School, Pa.
1	to George School (Girls' Department).....	George School, Pa.

These scholarships are awarded under the following conditions:

- (a) The candidates will be required to take the examinations of the College Entrance Examination Board in Comprehensive English, Algebra A and one foreign language. The scholarship will be awarded only to that candidate who makes a passing grade of 60 per cent or above in each subject required for admission and who makes the highest average grade.
- (b) Examinations must be completed before July 1 preceding the years of admission to College. A candidate may take any examination for which his preparation is complete in any year of the College preparatory course.
- (c) No scholarship will be awarded to applicants who fail to be admitted without conditions.
- (d) Every holder of such scholarship must pursue in College the studies leading regularly to the degree of Bachelor of Arts.

Any income not utilized in accordance with these conditions is used for free and working-scholarships in accordance with the bequest of the donor.

25. The EDWARD CLARKSON WILSON SCHOLARSHIP. A scholarship with an annual value of \$125 has been established at Swarthmore by friends of Edward Clarkson Wilson, '91, formerly Principal of the Baltimore Friends School. It will be awarded each year to a former student of the Baltimore Friends School, who has been approved by the faculty of the School, on the basis of (1) high character; (2) high standing in scholarship. The scholarship is open both to Freshmen and to members of the upper classes, both to men and women of all denominations. In any year when there is no outstanding candidate from the students of the Baltimore Friends School, the scholarship will be awarded to another young man or woman who shall meet the required standards and who is approved by the School faculty and the College.

26. 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." The value of this scholarship is approximately \$75.00 annually.

27. Additional honorary and "working scholarships" are awarded annually by the College from general funds. Students should apply for these scholarships between April and June of the year before they wish to receive an award. Men should file their applications with the Dean of Men; women, with the Dean of Women. In making awards the Committee recognizes both high scholastic standing and definite financial need.

"Working scholarships" are approximately half earned and half honorary. Recipients are asked to assist in one of the college offices, in the Library, or in the Bookstore for the number of hours a week in which they could normally earn half their scholarships. An award of \$100 demands a maximum of four hours of work a week.

#### SPECIAL AWARDS

The Ivy Medal Fund was created by a gift from Owen Moon, '94. The income of the fund is used to purchase a medal which is

placed in the hands of the faculty for award on Commencement Day to a male member of the graduating class. The regulations governing the award are as follows:

(1) The idea behind the Ivy Medal is in general the Rhodes Scholarship qualifications including (a) qualities of manhood, force of character, and leadership; (b) literary and scholastic ability and attainments. This has been phrased by the donor in the words "leadership based upon character and scholarship."

(2) It is the wish of the donor that the medal should not be awarded on a mere basis of averages. Instead, it is desired that the winner should be a man who gives promise of distinction either in character or in intellectual attainments, as opposed to a man who has merely made the most of mediocre abilities.

(3) On the other hand, it is the wish of the donor that the medal should not go to a man who, while showing excellence in some one respect, has fallen seriously below the standard in others.

The Oak Leaf Medal was established by David Dwight Rowlands of the Class of 1909. It was later permanently endowed in memory of him by Hazel C. Rowlands, '07, and Caroline A. Lukens, '98. The medal is placed in the hands of the faculty to be awarded each year to the woman member of the Senior Class who is outstanding for loyalty, scholarship and service.

The McCabe Engineering Award, founded by Thomas B. McCabe, 1915, is to be presented each year to the outstanding engineering student in the Senior Class. The recipient is chosen by a committee of the faculty of the Division of Engineering.

The A. EDWARD NEWTON LIBRARY PRIZE, endowed by A. Edward Newton, to make permanent the Library Prize first established by W. W. Thayer, is awarded annually to that undergraduate who, in the opinion of the Committee of Award, shows the best and most intelligently chosen collection of books upon any subject. Particular emphasis is laid in the award, not merely upon the size of the collection but also upon the skill with which the books are selected and upon the owner's knowledge of their subject-matter.

The KATHARINE B. SICARD PRIZE, endowed by the Delta Gamma Fraternity in memory of Katharine B. Sicard, ex '34, is awarded annually to the Freshman woman who, in the opinion of the department, shows greatest proficiency in English.

## LOANS

The JOHN A. MILLER LOAN FUND was established by the Class of 1912 at their twenty-fifth reunion. Both principal and income are to be used to provide a loan fund for students in the three upper classes. Individual students may borrow up to \$200 in any one year, such loans to be repayable within five years with interest at four percent. The fund is to be administered by a committee consisting of the Comptroller, the Dean of Women and the Dean of Men.

The SWARTHMORE COLLEGE STUDENT LOAN FUND was established by Mr. Clarence J. Gamble, who, feeling such a fund to be of unusual benefit to worthy students, gave a sum to the College on condition that the Board should set aside an equal amount to be added to the fund. Both principal and income may be used for loans to students, repayable not later than five years after graduation, with interest at the rate of four percent.

The ELLIS D. WILLIAMS FUND. By the will of Ellis D. Williams, a legacy of \$25,000 was left to the College, the income from which is to be used for loans to students, repayable not later than five years after graduation, with interest at the rate of four percent.

## ADMISSION

In considering the application of each candidate the Committee will study his, or her, school record, recommendations, and all available results of tests and examinations which indicate achievement and promise. High ranking in the graduating class or good ratings in the College Entrance Examination Board examinations will be regarded as important evidence of aptitude for college work. Strong intellectual interests and the promise of excellence in some particular direction will receive more consideration than a record which shows a higher average without promise of unusual ability in any one field. In addition, the Committee will place emphasis on the character and purpose of the candidate, together with good health, interest in recreational pursuits, and leadership in school life. The qualities of character sought are the simplicity, moral earnestness and idealism which have been traditionally associated with the Society of Friends and with Swarthmore College. First consideration will be given to children of Friends and Alumni of the College; those who rank high in their graduating class will be assured of admission; those who do not rank high will be considered under the terms of the selective process described above.

All applicants must take either the Scholastic Aptitude Test or the Mathematics Achievement Test of the College Entrance Examination Board, preferably in April or June of their Senior year.

Candidates for admission should make early application, women preferably before January 1 and men preferably before April 15. If possible, records of school work for the first three years, signed by the school Principal, should be submitted one year prior to admission. Application blanks and certificate blanks are furnished by the Deans of the College upon request. Certificates are returned to the school Principals in the spring for the record of the senior year.

Applicants whose school records are good are asked to call at Swarthmore College at special times during the year for interviews. Persons living far from Swarthmore may be interviewed by representatives of the College in any part of the United States or abroad.

The names of men and women applicants accepted for admission are announced as soon as possible after May 1 of the year of admission.

SUBJECT REQUIREMENTS

The subjects required for entrance to Swarthmore College are as follows:\*

Elementary Algebra .....	1½	units	} <i>Required subjects, ten and one-half units.</i>
Plane Geometry .....	1	unit	
English .....	(4 years)	3 units	
†Foreign Language .....	4	units	
History .....	1	unit	
Advanced Algebra .....	½	unit	} <i>Elective subjects, four and one-half units.</i>
‡Solid Geometry .....	½	unit	
‡Plane Trigonometry .....	½	unit	
Latin .....	2, 3 or 4	units	
Greek .....	2, 3 or 4	units	
French .....	2, 3 or 4	units	
German .....	2, 3 or 4	units	
Spanish .....	2, 3 or 4	units	
Ancient History .....	1	unit	
Mediaeval and Modern History .....	1	unit	
Modern History .....	1	unit	
English History .....	1	unit	
American History .....	1	unit	
Civil Government .....	½	unit	
Physics .....	1	unit	
Chemistry .....	1	unit	
Botany .....	½ or 1	unit	
Zoölogy .....	½ or 1	unit	
Physical Geography .....	½ or 1	unit	
Freehand Drawing .....	½ or 1	unit	
Mechanical Drawing .....	½ or 1	unit	
Satisfactory Free Electives .....	3	units	

\*Subject requirements may be modified in the case of applicants from schools cooperating in the experiment of the Progressive Education Association.

†Five units, three of one language and two of another, is recommended whenever possible. Engineering students may offer only two units.

‡Required of engineering students.

USE OF EXAMINATIONS GIVEN BY THE COLLEGE ENTRANCE EXAMINATION BOARD

Swarthmore College normally requires all applicants for admission to take only one College Board Examination, which may be either the Scholastic Aptitude Test or the Mathematics Achievement Test. (See pp. 42, 44.) In special cases, the Committee on Admissions may ask an applicant to make up a deficiency by additional examinations. Because the number of applicants makes admission

highly competitive, the Committee on Admissions *recommends* that ambitious students give evidence of their ability in their strongest subjects by taking examinations in those subjects at the end of their Junior year.

The Committee on Scholarships requires candidates for certain awards (see pp. 34, 35) to take the Scholarship examinations given by the College Board. (See p. 46.) The nature of these examinations is such as to require no special preparation.

## COLLEGE ENTRANCE EXAMINATION BOARD

Examinations of June 17-24, 1939

The College Entrance Examination Board will hold examinations in June, 1939, at more than three hundred points in this country and abroad. A list of these places will be published about March 1, 1939. Requests that the examinations be held at particular points should be transmitted to the Executive Secretary of the College Entrance Examination Board not later than February 1, 1939.

Detailed definitions of the requirements in all examination subjects are given in a circular of information published annually about December 1. Upon request to the Secretary of the College Entrance Examination Board a single copy of this document will be sent to any teacher without charge. In general, there will be a charge of thirty cents, which may be remitted in postage.

All candidates wishing to take these examinations should make application by mail to the Secretary of the College Entrance Examination Board, 431 West 117th Street, New York, N. Y. Blank forms for this purpose will be mailed by the Secretary of the Board to any teacher or candidate upon request by mail.

The applications and fees of all candidates who wish to take the examinations in June, 1939, should reach the Secretary of the Board not later than the dates specified in the following schedule:

For examination centers

- In the United States east of the Mississippi River or on the Mississippi ..... May 29, 1939
- In the United States west of the Mississippi River or in Canada ..... May 22, 1939
- Outside of the United States and Canada, except in Asia ..... May 8, 1939
- In China or elsewhere in the Orient ..... April 24, 1939



An application which reaches the Secretary later than the scheduled date will be accepted only upon payment of \$5 in addition to the regular examination fee of \$10.

When a candidate has failed to obtain the required blank form of application, the regular examination fee will be accepted if the fee arrive not later than the date specified above and if it be accompanied by a memorandum with the name and address of the candidate, the exact examination center selected, and a list of the subjects in which the candidate is to take the Board examinations.

When the examination supplies of the local supervisor permit, candidates who have failed to file an application with the Secretary may be admitted, upon payment to the local supervisor of a fee of five dollars in addition to the regular fee, to all examinations except the Scholastic Aptitude Test. Such candidates should present themselves at the beginning of the period of registration. A candidate who registers with the supervisor will receive from him a blank form of application and an identification card which must be filled out and handed to the supervisor for transmission to the Secretary of the Board.

In order to exhibit their tickets of admission, to present their identification cards, and to obtain seats in the examination room, candidates should report for a morning examination at 8:45 and for an afternoon examination at 1:45. An examination will close for candidates admitted late at the same time as for other candidates. The examinations will be held in accordance with the time (Standard Time or Daylight Saving Time) observed in the local schools.

No candidate will be admitted to the Scholastic Aptitude Test late, that is, after the test has begun.

The Scholastic Aptitude Test may be taken upon the completion of the school course or at the end of the third year of secondary school work. Each candidate desiring to take this test, even though he is to take no other examination, must file with the Secretary of the Board the usual application for examination. Every candidate who registers for the test will receive a practice booklet containing a specimen test with blank spaces to be filled in by the candidate. In order to secure admission to the test, the candidate must present not only his ticket of admission but also this booklet with the spaces filled in as requested. If the Scholastic Aptitude Test is taken in connection with other examinations, no additional fee is required; if taken alone, the fee is \$10.

SCHOLARSHIP EXAMINATIONS AND EARLY EXAMINATIONS FOR  
ADMISSION TO BE HELD ON APRIL 15, 1939

The College Entrance Examination Board will hold examinations at approximately 150 places in the United States on April 15, 1939, for applicants for scholarships and for admission to college. A list of these places will be published about December 15. A detailed announcement regarding the April series of examinations will be ready for distribution on October 1.

Every candidate is required to file an application with the Executive Secretary of the College Entrance Examination Board, 431 West 117th Street, New York, N. Y., not later than March 25, 1939. A candidate who takes the examinations for admission to college should secure a blank form of application for examination from the College Entrance Examination Board; a candidate who takes them in order to qualify for a scholarship must secure the blank form from the college offering the scholarship. In order to facilitate the making of arrangements for the proper conduct of the examinations, it is desired that all applications be filed as early as possible. The examination fee of ten dollars should accompany the application and should be remitted by postal order, express order, or draft on New York to the order of the College Entrance Examination Board.

Applications for examination will be accepted after March 25, 1939, when it is possible to arrange for the examination of the candidates concerned, but only upon payment of five dollars in addition to the regular fee.

When a candidate has failed to obtain the required blank form of application, the regular examination fee will be accepted if it arrive not later than March 25, 1939, and if it be accompanied by a memorandum with the name and address of the candidate, the center at which he will report for examination, the college to which his report is to be sent, and the series of examinations (admission or scholarship) he wishes to take.

No candidate will be admitted to a test late, that is, after the test has begun. Each candidate who is registered for the Scholastic Aptitude Test will receive a booklet containing a specimen test with blank spaces to be filled in by the candidate. In order to secure admission to the test, the candidate must present not only his ticket of admission but also this booklet with the spaces filled in as requested.

Inasmuch as no special preparation will be needed for this series

of examinations, detailed information regarding them, with the exception of the practice booklet for the Scholastic Aptitude Test, will not be distributed to candidates.

The College Entrance Examination Board will report to the institution indicated on the candidate's application the results of his examinations. Candidates should not expect to receive from the Board reports upon their examinations.

### ADVANCED STANDING

For favorable consideration, applicants for advanced standing must have had a high scholastic record in the institution from which they wish to transfer, and must present full credentials for both college and preparatory work and a letter of honorable dismissal. In general, students are not admitted to advanced standing later than the beginning of the Sophomore year.

Applications of women applicants must be filed by January 1.

### REQUIREMENTS FOR GRADUATION

Swarthmore College offers (1) General Courses leading to the degree of Bachelor of Arts or to the degree of Bachelor of Science,\* and (2) Honors Work leading to the same degrees with honors. Four years of resident study are normally required for the completion of the work leading to any of these degrees. The work of the first two years for all students is in General Courses. During the last two years, qualified students may read for Honors. (See page 49 for description of Honors Work.) The student in general courses normally carries four courses each year, and must attain a minimum average of C in sixteen courses in order to qualify for graduation. Students in Honors Work qualify according to the conditions set forth on page 52. The subjects of instruction are classified according to departments, and the departments are grouped into four divisions†: The Division of the Humanities, the Division of the Social Sciences, the Division of Mathematics and the Natural Sciences, and the Division of Engineering.

In addition to scholastic requirements for graduation, all students are held for physical education as set forth in the statement of that department (see pp. 103, 105) and for attendance at the Collection exercises of the College (see p. 24).

\*The degree of Bachelor of Science is given only in the Division of Engineering.

†For grouping of departments see page 17.

## WORK OF THE FIRST TWO YEARS

The general requirements for the first two years are the same for all students except those in the Division of Engineering (see pp. 71 *ff.*) and are as follows:

- (a) The minimum language requirements as outlined below;
- (b) one full course in two of the three Divisions: Humanities, Social Sciences, Mathematics and the Natural Sciences.

The minimum language requirements are:

Each student will pursue one foreign language to a point equivalent to the completion of Course 2. Achievement in this course or its equivalent will be measured by a test given in September as an aid to placement, and in January and June at the regular examination periods. All students will be required to pass this test in the language which they are offering toward completing the requirement. The standard for admission to Course 2 is such as might reasonably be expected from a student who has had two years' preparation in the language; the standard for completion or equivalence in Course 2 is such as might be expected from a student who has had four years' preparation in the language.

During his first two years the student should plan his major and minor subjects in order to take courses which may be prerequisites for later work. He should study departmental statements (pp. 59 *ff.*) and consult the Deans and departmental course advisers to this end. By the end of the first two years the student must have completed eight full courses, including the above requirements.

## WORK OF THE LAST TWO YEARS IN GENERAL COURSES

The work of the last two years in General Courses must include a major, one related minor, and electives; in Honors, the work consists of a major and two related minors; in both cases majors and minors must fall in the same Division.

At the end of the Sophomore year, a student's choice of his major and minor subjects must be approved by the departments concerned.

Each student in General Courses offers for graduation at least four full courses or their equivalent in his major subject and at least three full courses or their equivalent in his minor subject.

The completion of sixteen full courses, with a minimum average of C (see p. 53), normally constitutes the course requirement for a

degree in General Courses. A student may carry extra work with the approval of his course adviser and of the Committee on Prescribed and Extra Work. In addition to completing his courses, the student at the end of his Senior year must pass a comprehensive examination in his major subject, set by the faculty of the major department.

#### HONORS WORK

Students who have shown themselves capable of higher than average intellectual achievement are permitted to read for the bachelor's degree with honors during their last two college years. The theory underlying honors work was outlined by President Aydelotte in his inaugural address at Swarthmore College on October 22, 1921, as follows:

"We are educating more students up to a fair average than any other country in the world, but we are wastefully allowing the capacity of the average to prevent us from bringing our best up to the standards they could reach. Our most important task at the present is to check this waste. The method of doing it seems clear: to give to those students who are really interested in the intellectual life harder and more independent work than could profitably be given to those whose devotion to matters of the intellect is less keen, to demand of the former, in the course of their four years' work, a standard of attainment for the A.B. degree distinctly higher than we require of them at present. . . . With these abler students it would be possible to allow them to specialize more because their own alertness of mind would of itself be sufficient to widen their intellectual range and give them that acquaintance with other studies necessary for a liberal point of view. . . . Our examinations should be less frequent and more comprehensive, and the task of the student should be to prepare himself for these tests through his own reading and through the instruction offered by the college."

Honors Work is offered in each of the four divisions of the College. (See page 17.) It comprises a complete course of study in itself. A student who reads for honors is relieved entirely from ordinary class or course requirements. He devotes half of his time during the last two years to the subject of his major interest and divides the remainder between two related subjects which must fall within the same division. Exceptions to this distribution of time are occasionally granted by the divisions concerned. Exceptions which involve

a cross-divisional combination of subjects must be approved by the Instruction Committee of the Faculty.

Small groups of students meet their instructors in weekly conferences, known as seminar meetings. It is customary for students to present frequent papers at seminars, although the methods of stimulating discussion vary greatly. In scientific subjects additional time is spent in the laboratory. The work is so planned that a student takes two seminars each semester, making a total of eight seminars during his last two years. The length of the weekly seminar meeting varies from a minimum of two hours, according to the amount of discussion provoked by the topics presented. Departments may permit their major students to prepare a thesis in lieu of one seminar.

No examinations or grades are given from semester to semester.\* At the end of the Senior year honors students take written and oral examinations given by examiners from other institutions.† Upon the recommendation of these examiners, candidates are awarded the bachelor's degree with honors, high honors, or highest honors. In the case of a candidate whose work is not, in the opinion of the examiners, of sufficiently high quality for honors, his examination papers shall be returned to the division concerned. The Chairman of the division shall form a committee of the candidate's instructors who will examine the papers as a substitute for the comprehensive examination required for a degree in course, and shall determine

\*It is customary for honors students to take practice examinations at the end of the Junior year over the work covered thus far. These papers are read by the instructor concerned and are used as a basis for advice and guidance for the work of the Senior year.

†Honors Examiners, May, 1938:

#### DIVISION OF THE HUMANITIES

*Classics:*

PROFESSOR GEORGE DEPUE HADZSITS, University of Pennsylvania

*English:*

PROFESSOR WILLARD THORP, Princeton University

PROFESSOR WILLIAM C. DeVANE, Cornell University

PROFESSOR SUSANNE H. NOBBE, Columbia University

*French:*

PROFESSOR LOUIS CONS, Harvard University

*German:*

PROFESSOR JOHN C. BLANKENAGEL, Wesleyan University

PROFESSOR ROLAND G. KENT, University of Pennsylvania

*History:*

PROFESSOR H. DONALDSON JORDAN, Clark University

PROFESSOR WALTER C. LANGSAM, Columbia University

PROFESSOR CONYERS READ, University of Pennsylvania

PROFESSOR CAROLINE WARE, American University

PROFESSOR ROGER H. WELLS, Bryn Mawr College

*Philosophy:*

PROFESSOR CLIFFORD BARRETT, Princeton University

PROFESSOR W. P. MONTAGUE, Columbia University

*Psychology:*

PROFESSOR SHAMMAI FELDMAN, Cornell University

PROFESSOR DONALD W. MACKINNON, Bryn Mawr College

on the basis of these papers and their knowledge of a candidate's past work whether or not he is entitled to a degree in course.

Students admitted to honors work who prove unable to meet the requirements or who for other reasons return to regular classes may receive proportional course credit for the work they have done while reading for honors.

Regulations governing possible combinations of major and minor subjects in the four divisions appear below. Lists of seminars offered in preparation for examinations follow departmental statements of general courses.

## COMBINATIONS OF MAJORS AND MINORS

### DIVISION OF THE HUMANITIES

Major subjects include English, French, German, Greek, History, Latin, Philosophy and Psychology: related minor subjects include those already listed, and Fine Arts. At least half of the stu-

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### DIVISION OF THE SOCIAL SCIENCES

*Economics:*

PROFESSOR KARL ANDERSON, Bryn Mawr College  
 DR. CORWIN EDWARDS, Federal Trade Commission  
 PROFESSOR CAROLINE WARE, American University

*History:*

PROFESSOR H. DONALDSON JORDAN, Clark University  
 PROFESSOR WALTER C. LANGSAM, Columbia University  
 PROFESSOR CONYERS READ, University of Pennsylvania  
 PROFESSOR CAROLINE WARE, American University  
 PROFESSOR ROGER H. WELLS, Bryn Mawr College

*Philosophy:*

PROFESSOR CLIFFORD BARRETT, Princeton University  
 PROFESSOR W. P. MONTAGUE, Columbia University

*Political Science:*

PROFESSOR PHILLIPS BRADLEY, Amherst College  
 PROFESSOR ROGER H. WELLS, Bryn Mawr College

*Psychology:*

PROFESSOR SHAMMAI FELDMAN, Cornell University  
 PROFESSOR DONALD W. MACKINNON, Bryn Mawr College

### DIVISION OF MATHEMATICS AND THE NATURAL SCIENCES

*Botany:*

PROFESSOR EDGAR T. WHERRY, University of Pennsylvania  
 PROFESSOR WESLEY G. HUTCHINSON, University of Pennsylvania  
 DR. ANNA YOUNG WHITING, University of Pennsylvania

*Chemistry:*

PROFESSOR VICTOR K. LAMER, Columbia University  
 PROFESSOR ARTHUR HILL, Yale University

*Mathematics and Astronomy:*

PROFESSOR J. R. KLINE, University of Pennsylvania

*Physics:*

PROFESSOR LEE A. DUBRIDGE, University of Rochester

*Zoölogy:*

PROFESSOR S. A. MATTHEWS, Williams College  
 PROFESSOR A. C. REDFIELD, Harvard University  
 PROFESSOR BENJAMIN F. WILLIER, University of Rochester

### DIVISION OF ENGINEERING

*Civil Engineering:*

PROFESSOR HARRY L. BOWMAN, Drexel Institute of Technology

*Electrical Engineering:*

PROFESSOR CHESTER L. DAWES, Harvard University

*Mechanical Engineering:*

PROFESSOR M. C. STUART, Lehigh University

dent's time will probably be devoted to his major subject, the remainder being divided between two related subjects within the division.

#### DIVISION OF THE SOCIAL SCIENCES

Major and minor subjects include Economics, History, Philosophy, Psychology, and Political Science. Students in this division may devote half their time to their major subject, dividing the remainder equally between two related subjects; or they may do an equal amount of work in two departments (one of which is to be designated as the major department) and spend a quarter of their time on another subject.

#### DIVISION OF MATHEMATICS AND THE NATURAL SCIENCES

Major subjects include Botany, Chemistry, Mathematics, Physics, Psychology, Zoölogy; related minor subjects include the subjects listed, and Astronomy and Philosophy. At least half of the student's time will probably be devoted to his major subject, with the remainder divided between two other related subjects within the division.

#### DIVISION OF ENGINEERING

Major subjects for honors work in this division include Civil Engineering, Electrical Engineering and Mechanical Engineering; a minor may be taken in either or both of the engineering departments in which the student does not have his major, or in Chemistry, Mathematics, Physics or Economics. At least one-half of the student's time will be devoted to his major in engineering. The degree granted is the B.S. in Engineering.

The final examination will include papers on the fundamentals of the three professional departments of engineering, four papers on the seminars of the senior year, and one or two additional papers based upon the course which the student has taken, the number of the papers and their subjects to be determined by the faculty of the division. (See pp. 71-80.)

#### PROCEDURE FOR ADMISSION TO HONORS WORK

A candidate for admission to an honors division must file his application in the spring of his Sophomore year with the chairman of his major departments, and must indicate the particular combination



of related subjects on which he wishes to be examined for his degree. His acceptance by the division depends in part upon the quality of his previous work as indicated by the grades he has received but mainly upon his seeming capacity for assuming the responsibility of honors work. The names of successful candidates are announced later in the spring. The major department will then arrange, in consultation with the student, a definite program of subjects to constitute the field of knowledge on which he will be examined at the end of his senior year. That department is responsible for drawing up the original plan of his work, for supervising his choice of seminars in all departments and for keeping in touch with his progress from semester to semester. The division is responsible for approval of the student's original program and for any subsequent changes in that program. Proposals for combinations of subjects or departments not provided for in the divisional arrangements must be submitted by the division to the Instruction Committee of the Faculty for final approval.

### COURSE ADVISERS

The course advisers of Freshmen and Sophomores are the Dean of Men and the Dean of Women, in cooperation with the Chairmen of Departments in which the students are enrolled as Majors. For Juniors and Seniors the advisers are the Chairmen of their Major Departments.

### SYSTEM OF GRADES

Instructors report to the Dean's office at intervals during the year upon the work of students in Courses. Informal reports during the semester take the form of comments on unsatisfactory work. At the end of each semester formal grades are given in each course under the letter system, by which *A* means excellent work; *B* means good work; *C* means fair work; *D* means poor work, and *E* shows failure. *W* signifies withdrawn and *Cond.* signifies conditioned in the course.

For graduation in General Courses, a *C* average is required; for graduation in Honors work, the recommendation of the external examiners. (See p. 50.)

The mark "conditioned" indicates either (1) that a student has done unsatisfactory work in the first half of a course, but by creditable work during the second half, may earn a passing grade for the full course, and thereby remove his condition; (2) that a student's work is incomplete in respect to specific assignments or examinations, but

otherwise satisfactory; when he completes it, he will remove his condition. Students should immediately ascertain from the instructor concerned the exact terms upon which a condition may be removed.

Reports are sent to parents and to students at the end of each semester.

### 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 normally 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; by special permission of the instructor the time for making up the condition may be extended to the second semester following. 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.

### SUMMER SCHOOL WORK

Students desiring to transfer credit from a summer school are required to obtain the endorsement of the chairman of the department concerned before entering upon the work, and after completing the work are required to pass an examination set by the Swarthmore department.

### COOPERATION WITH NEARBY INSTITUTIONS

Since 1933, Swarthmore College and three nearby institutions—the University of Pennsylvania, Bryn Mawr College, and Haverford College—have been developing a cooperative plan which involves some sharing of libraries and occasional interchange of instructors and students. By special arrangement students at Swarthmore may enroll for work in one of the other three institutions.

### ATTENDANCE AT CLASSES AND COLLECTION

Members of the Faculty will hold students responsible for regular attendance at classes.

The last meeting before vacation and the first meeting after vacation *in each course* must be attended. The minimum penalty for violation of this rule is probation: for absence at Thanksgiving, pro-

bation until the end of the semester; for absence at Christmas, probation until spring vacation; for absence at Washington's Birthday, probation until May 1; and for absence at spring vacation, probation for the rest of the year. The exact definition of probation in individual cases is left to the Deans with the understanding that it shall include attendance at all classes without cuts.

Absences from Collection are acted upon by the Collection Committee of the Faculty, which may give excuses for non-attendance by day students under certain conditions. All students are allowed two absences from Collection each semester.

### ABSENCES FROM EXAMINATION

Any student who is absent from an examination, announcement of which was made in advance, shall be given an examination at another hour only by special arrangement with the instructor in charge of the course.

No examination *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.

### REQUIREMENT OF VACCINATION

All accepted applicants for admission must present a certificate of successful vaccination.

### INFIRMARY REGULATIONS

1. Students suffering from a communicable disease or from illness which makes it necessary for them to remain in bed must stay in the infirmaries for the period of their illness.

2. ABSENCE FROM CLASSES.—*When illness necessitates absence from classes the student should report at once to the nurses or to the college physicians.*

3. Students have the opportunity to select their own physicians. The college physicians are available at their office hours for advice on matters of health. No charge is made for their service during office hours.

### REGULATION AGAINST MAINTENANCE OF AUTOMOBILES AT SWARTHMORE

By action of the Faculty, approved by the Board of Managers, undergraduates are forbidden to maintain automobiles at the College or in the Borough of Swarthmore. The regulation is as follows:

Resident students are not allowed to keep automobiles on the cam-

pus or in the Borough of Swarthmore. The rule prohibits equally the keeping of automobiles owned by students and those owned by other persons but placed in the custody or control of students. Day students may use cars in commuting to college.

Under exceptional circumstances, a student may obtain permission from one of the Deans to keep an automobile in the Borough for a limited time.

*Parents and students must realize that this regulation will be strictly enforced; students who do not observe it will be asked to withdraw from College.*

### EXCLUSION FROM COLLEGE

The College reserves the right to exclude at any time students whose conduct or academic standing it regards as undesirable, and without assigning any further reason therefor; in such cases the fees due or which may have been paid in advance to the College will not be refunded or remitted, in whole or in part, and neither the College nor any of its officers shall be under any liability whatsoever for such exclusion.

### DEGREES

#### BACHELOR OF ARTS

#### BACHELOR OF SCIENCE

The degrees of Bachelor of Arts and Bachelor of Science are conferred upon students who have met the requirements for graduation as stated on pages 47-49; 71.

#### MASTER OF ARTS

#### MASTER OF SCIENCE

1. The degrees of Master of Arts and Master of Science may be conferred upon graduates of Swarthmore College or of other institutions of satisfactory standing who spend at least a year in residence at this College, pursuing a course of study approved by the faculty. 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. In recent years the policy of the faculty has been opposed to accepting candidates for the Master's degree.

## ADVANCED ENGINEERING DEGREES

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 engaged in engineering work for *five* 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.
4. The thesis must be submitted for approval 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.

## EXPENSES

The charge for tuition is \$400.00 a year, payable in advance. No reduction of the tuition charge can be made on account of absence, illness, dismissal during the year, or for any other reason whatsoever, and no refunding will be made on account of any such causes.

The charge for board and residence is \$500, of which at least half is payable in advance. The remainder is due on the first of January. If any student for any reason whatsoever shall withdraw or be withdrawn from College, no portion of the payment for room-rent shall be refunded or remitted.

A deposit of \$50 is required of each student, payable with the regular September bill, to cover incidental bills including books, laundry, telephone and room breakage. When this deposit has been exhausted a new deposit will be required immediately. Any unused balance will be returned at the end of each year.

A fee of \$25 per semester is charged all students, to cover laboratories, athletics, social activities, dramatics, debate, class dues, and postoffice boxes. This is payable with the regular semester bills.

Bills for the first payment are mailed before the opening of the College year, and bills for the second payment are mailed before the first of January following. Payments shall be made by check or draft

to the order of SWARTHMORE COLLEGE. Every student is responsible for prompt payment when due.

In case bills for the first semester are not paid by November 1, and bills for the second semester by March 1, students owing such bills may be excluded from all college exercises.

The funds used in paying for scholarships are derived from the income of the endowment fund, and are received from time to time during the year. Students receiving these benefits will have the amount deducted from their bill due on January first. Should the amount of the scholarship exceed the amount of the January bill it will be deducted from the bill for the entire year, the balance becoming due in September.

Special students who enroll for less than the prescribed number of courses will be charged \$50 per half course.

All men students except Freshmen choose their rooms in order determined by lot. All Freshmen, both men and women, are assigned to rooms in order of date of application for admission. Upper class women have a preferential system carried out by a committee of students and members of the administrative staff.

In September, students are not admitted to the dormitories before the day preceding registration except by special permission in advance from the Deans.

The College dining-room is closed during the Christmas and spring recesses. The College dormitories are closed during the Christmas recess. Students leaving property in any College building during the summer recess do so at their own risk.

*All Freshmen must leave the College immediately after their last examination in the spring in order that their rooms may be used by Commencement visitors.*

The expenses of a student at Swarthmore, beyond the payments made directly to the College, vary according to the individual. Budgets reported by present students show that total expenditures for tuition, board, books, clothing, and recreation are approximately \$1,200 for the academic year.

# COURSES OF INSTRUCTION

## BOTANY

PROFESSOR: SAMUEL COPELAND PALMER, *Chairman*

ASSISTANT PROFESSOR: LUZERN G. LIVINGSTON

INSTRUCTORS: RUTH MCCLUNG JONES

NORRIS JONES

### GENERAL COURSES

1. General Botany. Mr. Livingston.

*Full course.*

A course designed to give the student a broad view of the general field of botany. Training in the use of the microscope.

2. Plant Physiology. Mr. Livingston.

*Half course, first semester.*

A course with laboratory work designed to give the student an insight into the fundamentals of plant function.

3. Evolution, Genetics, and Eugenics. Mr. Palmer.

*Full course.*

The theories of evolution and closely related subjects. The fundamental principles of genetics. The application of the principles of genetics to eugenics.

4. Taxonomy. Mr. Palmer.

*Half course, second semester.*

A course devoted to a study of the horticultural as well as native species and varieties of the campus and woods. A large species are available for comparison.

5. Microscopic Anatomy of Plants. Mrs. Jones.

*Half course, second semester.*

A course open to biology majors to introduce the technique of normal plant tissue preparation and the fundamentals of plant microscopic anatomy.

6. Cytology. Mrs. Jones.

*Half course, second semester.*

An advanced course including a study of both cytoplasmic and nuclear structures. Prerequisite either Botany 5 or Zoölogy (Histology).

7. Scientific Drawing. Mr. Jones.

*Full course.*

An elementary course in freehand drawing and painting for those who wish to learn the proper methods of graphic representation of biological forms.

8. Advanced Scientific Drawing. Mr. Jones.

*Full course.*

Special problems in biological illustrating. Prerequisite Botany 6.

## 9. Plant Pathology. Mr. Livingston.

*Half course, second semester.*

A course designed to give the student an insight into the fundamental principles of the study of plant diseases.

## 10. Geology. Mr. Palmer and Mr. Jones.

*Half course, second semester.*

A lecture course in general geology designed to acquaint the student with the forces at work fashioning the earth into its present form. Some time given to the study of historical geology, with special reference to the problem of evolution.

## 11. Plant Ecology. Mr. Palmer and Mr. Livingston.

*Half course.*

Lectures and field work; closely related to course in Taxonomy.

## 12. Special Topics. Mr. Palmer, Mr. and Mrs. Jones, and Mr. Livingston.

*Half course.*

Open to Seniors who wish to do special advanced work. Hours to be arranged with the instructor.

Numerous libraries, museums and parks in and around Philadelphia offer unusual opportunities to students to carry on investigations in the botanical sciences.

## HONORS WORK

*Prerequisites.* The following regular courses, or their equivalents, are required for admission to Honors work in Botany: General Botany, General Zoölogy, General Inorganic Chemistry.

Honors Seminars are offered preparing students for examination papers in:

1. Botanical History: A study of the development of biology from an historical standpoint with special reference to botany.
2. Organic Evolution: An examination of the most important theories of present and past with a study of types to illustrate.
3. Plant Physiology: A study of the most important of plant functions such as Osmosis, Photosynthesis, transpiration, translocation, digestion, Enzyme action, etc.
4. Genetics: A study of the structure and development of the cell-theories of inheritance, Mendelism, Eugenics, etc.
5. Plant Distribution: Studies involving problems in distribution of plants including soil relations, desert areas, water relations, etc., and their economic importance.
6. Taxonomy: A close study of the classification and distribution of the most important of our plant families with field work. A history of the development of classification systems will be included.
7. Cytology: A detailed study of plant and animal tissues and cells from the point of view of morphology and function.
8. Bacteriology: A course designed to give the student an intelligent understanding of the chief principles of disease, immunity, serums, etc., and methods of laboratory technique.
9. Plant Pathology: A course designed to give the student an insight into the fundamental principles of the study of plant diseases.



## CHEMISTRY

PROFESSORS: H. JERMAIN CREIGHTON, *Chairman*

EDWARD H. COX

ASSOCIATE PROFESSOR: DUNCAN G. FOSTER

ASSISTANT PROFESSOR: WALTER B. KEIGHTON, JR.

INSTRUCTOR: SAMUEL R. ASPINALL

## GENERAL COURSES

## 1. Inorganic Chemistry. Mr. Creighton and Mr. Keighton.

*Full course.*

Lectures, demonstrations, written exercises, individual laboratory practice and weekly conferences on the general principles of inorganic chemistry. This course is primarily for students majoring in chemistry and the other sciences and *is a prerequisite for Chemistry 2*. It consists of two lectures, one four-hour laboratory period and a one-hour conference weekly. Text-books: Hildebrand, *Principles of Chemistry*; Bray and Latimer, *A Course in General Chemistry*.

## 2. Analytical Chemistry. Mr. Foster.

*Full course.*

First semester: Qualitative analysis. The theory and practice of the detection of the commoner chemical elements. Text-book, Hammett, *Solutions of Electrolytes*.

Second semester: Quantitative analysis: The principles and practice of volumetric analysis. Text-book, Talbot, *Quantitative Chemical Analysis*. Reference-book, Fales, *Inorganic Quantitative Analysis*.

One lecture, one recitation or conference and two laboratory periods per week. Prerequisite, Chemistry 1.

## 4. Analytical Chemistry. Mr. Foster.

*Full course. Offered every other year alternately with Chemistry 5.*

A laboratory course in the principles of gravimetric analysis, organic and gas analysis. Text-books, Talbot, *Quantitative Chemical Analysis*; Gattermann, *Praxis des Organischen Chemikers*; reference-books, Treadwell-Hall, *Analytical Chemistry* and Fales, *Inorganic Quantitative Analysis*. Nine hours' laboratory work with conferences when necessary, to be arranged at the beginning of the course. Given in 1939-40.

## 5. Physical Chemistry. Mr. Keighton.

*Full course. Offered alternate years.*

Two hours of conference and lectures and one four-hour laboratory period weekly. The lectures and conferences include elementary chemical thermo-dynamics; equilibria and chemical kinetics; the physical properties of gases, liquids, and crystals; the properties of solutions; elementary electrochemistry; colloids; and the structure of matter. In the laboratory students determine molecular weights; measure such properties as surface tension, vapor pressure, and viscosity of pure liquids; investigate the rates of chemical reactions; make observations on the behavior of solutions; and acquaint themselves with the use of the refractometer, the polarimeter, and other physical-chemical apparatus. Books recommended: Rodebush, *An Introductory Course in Physical Chemistry*; Daniels, Mathews, and Williams, *Experimental Physical Chemistry*; Mack and France, *Laboratory Manual of Elementary Physical Chemistry*.

Prerequisites, Chemistry 1 and a course in General Physics. This course is offered to Juniors and Seniors and alternates with Chemistry 4. Given in 1938-39.

## 6. Organic Chemistry. Mr. Aspinall.

*Half course, first semester.*

Lectures, demonstrations, written exercises, and laboratory work. Two lectures, one

conference, and one four-hour laboratory period a week. In the laboratory, the students carry out reactions and syntheses of various organic compounds, as given in Adams and Johnson, *Laboratory Experiments in Organic Chemistry*. The lectures follow such texts as Conant, *Organic Chemistry* (revised edition) and cover both the aliphatic and aromatic series. The course is designed for students majoring in zoölogy and pre-medical work. Prerequisite—Chemistry 1.

6a. Organic Chemistry. Mr. Aspinall.

*Half course, second semester.*

This course is a continuation of course 6. In the laboratory, the students carry out some of the more difficult preparations as given in Adams and Johnson, Gilman, *Organic Syntheses*, and other laboratory manuals. In the lectures the aliphatic and aromatic series are reviewed from an advanced point of view, and follow such texts as Conant, *Chemistry of Organic Compounds*; Schmidt-Rule, *Organic Chemistry*, and current review articles. This course is designed for students majoring in chemistry and for pre-medical students who desire more organic chemistry. Prerequisite—Chemistry 6.

### HONORS WORK

The Department offers the following Honors Seminars:

1. Analytical Chemistry. Mr. Foster.

*First semester.*

A laboratory seminar designed to give the student as thorough a groundwork in the principles and practice of quantitative analytical chemistry as the time will allow. Approximately eighteen hours a week are spent in the laboratory under the guidance, but not the supervision of the instructor, carrying out examples of gravimetric, organic, combustion and gas analytical methods.

2. Physical Chemistry. Mr. Creighton and Mr. Keighton.

*Both semesters.*

Weekly seminar and laboratory. The work of the seminar includes the study of the states of aggregation of matter, elementary principles of thermodynamics, chemical kinetics and equilibrium, the theory of solutions, photochemistry, electrochemistry and colloid chemistry. One day per week is spent in the laboratory.

3. Advanced Physical Chemistry. Mr. Creighton and Mr. Keighton.

*Second semester.*

Weekly seminar and laboratory. The work of the seminar includes the study of recent advances in the theory of valence, the parachor, dipole moments, molecular spectra, polarization and over-voltage, thermodynamics, the activity concept and activity coefficients, the Debye-Hückel theory of strong electrolytes, and acid-base catalysis. One day per week is spent in the laboratory.

4. Organic Chemistry. Mr. Cox and Mr. Aspinall.

*Second semester.*

Conferences and laboratory work. A five hour conference and an eight hour laboratory period once a week. The ground work for the conferences is taken from such texts as, Conant, Reid, Schmidt-Rule, and is covered in three months. For the remaining time, students prepare written papers for discussion on reaction mechanisms and advanced topics. In the laboratory, students prepare various organic compounds as given in Adams and Johnson, *Laboratory Experiments in Organic Chemistry*.

## 5. Organic Chemistry. Mr. Cox and Mr. Aspinall.

*First semester.*

For students of Zoölogy-Physiology. The conferences and laboratory follow those given in Honors IV except that the biological aspects of organic chemistry are stressed. In addition to organic texts and manuals students consult Mathews, Bordansky, Hawk-Bergheim. Comprehensive papers are prepared on carbohydrates, fats, and proteins.

## 6. Advanced Organic Chemistry. Mr. Cox.

*Second semester.*

A continuation of Honors IV. Students write 15 weekly comprehensive papers on advanced topics. These papers are gathered from Reviews, Monographs and original English, French, and German articles. In the laboratory students prepare more difficult organic compounds. Students are given a short sight reading in scientific French and German.

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#### REQUIREMENTS FOR MAJOR AND MINOR

Students majoring in chemistry follow a course of study leading to the degree of A.B. This degree may be taken either in general courses or with Honors. In either case there must be completed, during the first two years the following: Two courses in chemistry, two courses in mathematics, one course in physics, and two courses in German (or their equivalent).

In the junior and senior years, students in general courses are required to complete courses 4, 5 and 6 in the department of chemistry and to complete the requirements in their minor subject. For students who have been accepted for Honors work there are offered Honors seminars preparing them for examination papers in: 1. Analytical Chemistry, 2. Physical Chemistry, 3. Advanced Physical Chemistry, 4. Organic Chemistry, 5. Advanced Organic Chemistry. At the end of their senior year, Honors students majoring in chemistry take (1) not less than four nor more than five examination papers in Chemistry; (2) one paper in Physics; (3) and the remaining papers in topics selected from the following: Mathematics, Physics, Philosophy, Physiology.

For admission to minor Honors work in chemistry, one *full* course in chemistry is a prerequisite.

Students intending to prepare for the medical profession will find it to their advantage to take as many as possible of the following courses in chemistry: Nos. 1, 2, 5, 6.

## CLASSICS

PROFESSORS: E. H. BREWSTER, *Chairman*

L. R. SHERO

RESEARCH ASSOCIATE: WALTER F. SNYDER

## GREEK

## GENERAL COURSES

## 1. Elementary Greek. Mr. Shero.

*Full course.*

Study of the essentials of Greek grammar and reading of easy selections from Greek literature, with collateral study of various aspects of Greek civilization.

## 2. Intermediate Greek. Mr. Shero.

*Full course.*

Selections from Homer and from Herodotus, Plato's *Apology*, and a tragedy are read. Students planning to read for honors will be permitted to do some of the reading for this course in Latin, if it is impossible for them to take Latin 4.

## 3. Greek Survey. Mr. Shero.

*Full course. (Omitted in 1938-39.)*

A survey of Greek literature with reading of some of the masterpieces of prose and of poetry of the classical period.

## 4. Advanced Greek Reading. Mr. Shero.

*Full course. (Omitted in 1938-39.)*

The reading done in this course is determined by the interests and needs of the members of the class.

## 5. The History of Greece. Mr. Shero.

*Half course, first semester. (Omitted in 1938-39.)*

A study of Greek civilization in its most significant aspects to the time of the Hellenistic Kingdoms, preceded by a brief survey of the Oriental civilizations by which the Greeks were influenced. Special attention is given to the 6th and 5th centuries B.C.

## 6. Greek Literature in English. Mr. Shero.

*Half course, second semester. (Omitted in 1938-39.)*

Study in English translation of some of the masterpieces of Greek literature (the Homeric epics, several of the dramas, Plato's *Republic*, etc.) and of important texts in the special fields of interest of the various members of the class; part of the reading is individually assigned in accordance with the student's own particular requirements. No knowledge of Greek is required.

## 7. Greek Life and Thought. Mr. Shero.

*Half course, second semester.*

A general survey of those aspects of Greek civilization which have had special significance for the modern world, with detailed study of some of the masterpieces of Greek art and of Greek literature (in translation).

## 8. Introduction to Classical Archaeology. Mr. Shero.

*Half course, first semester. (Omitted in 1938-39.)*

A study of the methods of archaeological investigation, with a survey of the development of Greek and Roman architecture, sculpture, painting, ceramics, numismatics, and town-planning. Special attention is given to the early Greek period.

## LATIN

## GENERAL COURSES

## 1. Sub-Freshman Latin.

*Full course. (Offered as required.)*

A study of grammar and selected readings. Designed for those who begin Latin in college or for those who are not prepared to enter Latin 2.

## 2. Intermediate Latin. Mr. Shero.

*Half course, each semester.*

Selections from prose and verse writers according to the interests and needs of the members of the class. Designed for students who have had three or more years of preparatory Latin and are not prepared to enter Latin 3.

## 3. Latin Survey. Miss Brewster.

*Full course.*

A survey of Latin literature with emphasis upon Plautus, Livy, Horace, and the Elegiac Poets. The course aims to give students some conception of the Roman spirit as manifested in Latin literature and in the personality of Latin writers. Open to those whose Placement Tests indicate adequate preparation.

## 4. Advanced Latin Reading. Mr. Shero, Miss Brewster.

*Half course, each semester.*

Catullus, Virgil's *Eclogues* and *Georgics*, selections from the Letters of Cicero and of Pliny, Tacitus's *Agricola*.

## 5. Roman Satire and Epigram. Miss Brewster.

*Half course, first semester. (Omitted in 1938-39.)*

## 6. Latin Philosophical Writings. Miss Brewster.

*Half course, second semester. (Omitted in 1938-39.)*

## 7. Latin Language and Prose Composition. Miss Brewster.

*Half course, second semester.*

A review of forms and syntax, practice in reading and writing Latin, and the translation of Latin (including mediaeval Latin) at sight.

## 8. Comprehensive Survey. Miss Brewster.

*Half course, second semester. (Omitted in 1938-39.)*

Review readings and supplementary reading in Latin authors and in modern authorities on Roman history, public and private life, art, literature, and religion. Designed to enable students, through independent study and occasional conferences, to prepare themselves for final comprehensive examinations. Open to Seniors with a major in Latin, who may substitute this work for part of either course 5 or course 6.

## 9. The History of Rome. Miss Brewster.

*Half course, first semester.*

Lectures, reading, and reports on the history of Rome from the earliest times to the accession of Marcus Aurelius. The course stresses the Roman genius for organization and administration.

10. European Backgrounds. Miss Brewster.

*Half course, second semester. (Omitted in 1938-39.)*

A study of the Roman Empire as it figures in Europe to-day. Lectures, reading, and reports supplemented by a variety of illustrative material and visits to collections of antiquities.

11. Christianity in Pagan Centuries. Miss Brewster.

*Half course, second semester.*

A study of the development of Christian forms and ideas in the Roman Empire before the Edict of Constantine. Lectures and reports supplemented by readings, in translation, from pagan and Christian sources.

12. Latin Literature—in Latin and in English. Miss Brewster.

*Half course, first semester.*

Designed for non-classical majors who may desire a classical background for their special fields. The Loeb Series of texts and translations of classical authors will be used.

## HONORS WORK

## I. General prerequisites:

For a major in Greek or Latin: Elementary Greek (1), Intermediate Greek (2), Latin Survey (3).

For a minor in Greek: Elementary Greek (1), Intermediate Greek (2).  
For a minor in Latin: Latin Survey (3).

## II. Supplementary preparation advised: History of Europe (1), Introduction to Philosophy (2), French (or German) reading.

## III. Seminars offered:

1. History of Ancient Greek and Roman Civilization, a survey concentrating upon political institutions, art, and religion. Mr. Shero.  
*First semester.*

2. Intensive Study of a Special Period of Greek or Roman History:  
*First semester.*  
Solon to the End of the Peloponnesian War. Mr. Shero.  
The Gracchi to Nero. Miss Brewster.

3. Greek Philosophy. (See p. 100 under Department of Philosophy.)

4. Greek or Latin Prose Composition and Sight Reading. Miss Brewster.

*First semester.*

5. Prose Authors: Greek—Thucydides, Plato, the Attic Orators. Mr. Shero.

*Second semester, 1938-39.*

Latin, with emphasis upon Cicero and the Historians. Miss Brewster.

*Second semester.*

6. Poets: Greek, with emphasis upon Epic and Tragedy. Mr. Shero.  
*Second semester.*

Latin, with emphasis upon Epic (including Lucretius) and Satire. Miss Brewster.

*First semester, 1938-39.*

7. Greek and Roman Archaeology.

*Offered as required.*

8. Greek and Roman Political Thought.

*Offered as required.*

Required for a major in Greek or Latin: Nos. 5, 6, either 3 or 4, and one elective from the group above.

Required for a minor in Greek or Latin: Nos. 5 and 6 above and an additional paper testing Translation at Sight.

## IV. A thesis may be substituted for No. 1 or No. 2 above if students have adequate preparation in History, Ancient Art, and Modern Languages.

## ECONOMICS

PROFESSORS: HERBERT F. FRASER, *Chairman*  
CLAIR WILCOX

ASSISTANT PROFESSOR: PATRICK MURPHY MALIN

INSTRUCTOR: JOSEPH D. COPPOCK

## GENERAL COURSES

Economics 1 is prerequisite to all other courses in Economics except Economics 2. Economics 1, 2, 9, and 10 are open to all students. Other courses are open only to Juniors and Seniors. Economics 1, 2, and 3 are offered annually. Other courses are offered in alternate years.

1. Introduction to Economics. All Members of the Department.

*Full course.*

Economic organization: natural resources, population, technology, capitalism, the corporation, marketing, and consumption. Value, price, and the distribution of income. Money and banking, business fluctuations, international economics, and public finance. Public control of business: competition and monopoly, agriculture, transportation, and public utilities. Labor organization, social legislation, and the economics of socialism and fascism. Supplementary reading on economic history and other topics.

One lecture and two or more class discussions weekly. Book reports and an essay on a topic of special interest to the student.

2. Methods of Economic Analysis (Engineering 10 and 11).

Messrs. Johnson and Jenkins.

*Full course.*

This is a course intended to familiarize the student with the tools which must be used in quantitative investigation in applied economics. One semester deals with the theory of corporate accountancy; the terminology, the functions, and the interpretation of financial statements including credit analysis and financial and operating ratios. The other semester is a study and application of fundamental statistical methods which can be used in an analysis of business conditions and changes and which aid in a clearer understanding of economic data.

3. Money and Banking. Mr. Coppock.

*Full course.*

Money, credit, commercial banking. The banking system of the United States, with special reference to experience since the war and to recent legislation. Prices, standards, monetary policy and control, with particular attention to recent American experiments.

Required of all Economics majors in course. Should be taken during the Junior year.

4. Economics of Business. Mr. Fraser.

*Full course. (Offered in 1938-39.)*

Corporate organization and finance. Investment banking and the securities exchanges. Marketing problems and price policies. Risk, speculation, and insurance. The economic problems which confront the business executive.



## 5. International Economics. Mr. Fraser.

*Half course, first semester. (Offered in 1939-40.)*

The economic aspects of foreign trade. Analysis of the theory of international trade; the practical problems: financing, marketing, transportation, etc. The relation of governments to trade, protective tariffs, international debts and economic imperialism.

## 6. Public Finance. Mr. Fraser.

*Half course, second semester. (Offered in 1939-40.)*

A study of government expenditures, revenues and indebtedness, with particular emphasis upon the economics of taxation.

## 7. Public Control of Business. Mr. Wilcox.

*Full course. (Offered in 1939-40.)*

A study of federal anti-trust policy, railroad regulation, public utility regulation, the National Recovery Administration, the public control of extractive industries, the Agricultural Adjustment Administration, public regulation of corporate financial practices, and federal control of the securities exchanges.

## 8. Social Economics. Mr. Wilcox.

*Full course. (Offered in 1938-39.)*

An examination of the extent, consequences and causes of economic inequality. An appraisal of the institutions of modern capitalism and of possible methods of economic reform.

## 9. Labor. Mr. Malin.

*Full course. (Offered in 1939-40.)*

The position of the industrial worker, with special reference to wage-hour legislation and unemployment and relief. Employer approaches to labor relations; labor organization; governmental participation in employer-employee relations. Hired farm labor; the tenant farmer and the share-cropper. Negro economic life. International aspects of labor economics.

## 10. Resources, Population and Technology. Mr. Malin.

*Full course. (Offered in 1938-39.)*

Advanced work in general economic analysis, introduced by a survey of economic history, with special reference to the United States in the twentieth century. Economic geography; American economic regions, particularly the South; the situation with regard to natural resources. Population and migration, chiefly in the United States. Economic aspects of tools, machines and technical methods; the economic significance of cities. General examination of present-day American economic organization and processes, with emphasis on business fluctuations.

## HONORS WORK

Prerequisite—Economics 1. For majors, Economics 2 is recommended.

## 1. Money and Banking. Mr. Malin.

*Each semester.*

Money, credit and commercial banking. Bank operations; banking systems; liquidity and central banking. American banking history since the World War; continuing problems. Price theory; the question of a monetary standard. Prosperity and depression from a monetary angle; government policy, with special reference to the relation between money and the national debt; the question of inflation. General monetary policy and methods. Systematic seminar discussion and tutorial conferences on the basis of directed readings; several short essays and one longer paper.

Required of all students taking three or four seminars in economics. Should be taken during the Junior year.

## 2. Economics of Business. Mr. Malin.

*Second semester.*

Business management—its daily decisions and their economic significance. Investment and finance, with special reference to the corporation; investment banking; the security exchanges. Marketing institutions, including the commodity exchanges and advertising; insurance. Representative industries, including transportation and construction.

Seminar discussion on the basis of directed readings and frequent student reports, oral or written; one longer paper.

## 3. Economic Theory and Business Cycles. Mr. Fraser.

*Each semester.*

A study of the application of scientific method and analysis in Economics. The theory of value, price and distribution with its application to practical problems. Business cycle theory and the control of industrial fluctuations. Directed reading, seminar discussion and written reports.

## 4. International Economics. Mr. Fraser.

*First semester.*

The subject matter is identical with that of Course 5 above, but the topics are considered at much greater length. The method of directed reading is used, supplemented by systematic seminar discussion. Each student is expected to write papers on four topics.

## 5. Government and Business. Mr. Wilcox and Mr. Coppock.

*First semester.*

Public finance: government expenditures, borrowing, and taxation. Public control of business: transportation, public utilities, competition and monopoly in manufacturing and marketing, natural resource industries, agriculture, and land use planning. Each student is required to engage in independent research and present a written report.

## 6. Social Economics. Mr. Wilcox.

*Second semester.*

An appraisal of the institutions of modern capitalism. An examination of the extent, consequences and causes of economic inequality. A study of economic reform, with particular reference to social insurance, socialism, the labor movement and the social use of the taxing power. Independent reading under guidance in an extensive bibliography. No written reports.

## 7. Thesis.

A thesis may be substituted for one of the honors examinations, under exceptional circumstances, by special arrangement.

## ENGINEERING

PROFESSOR: SCOTT B. LILLY, *Chairman*

ASSOCIATE PROFESSORS: CHARLES G. THATCHER  
HOWARD M. JENKINS

ASSISTANT PROFESSORS: \*ANDREW SIMPSON  
GEORGE B. THOM  
SAMUEL T. CARPENTER

INSTRUCTORS: GEORGE A. BOURDELAIS  
JOHN D. MCCRUMM

INSTRUCTORS, PART TIME: S. W. JOHNSON  
T. H. JOHNSON

There are three departments of Engineering: Civil, Electrical and Mechanical. These departments cooperate in a program of (1) introductory courses, taken normally by Freshman and Sophomore engineers; (2) general courses, open to all students in the College. Each department offers also its own separate program of advanced work.

An engineering student devotes about half his time to engineering courses; the other half he divides between basic sciences, such as physics and mathematics, and the non-technical fields useful for a liberal education.

During their first three years, all engineering students follow the schedule of courses outlined below. During the sophomore year, students are divided into two groups, "A" and "B." Group "A" is made up of those whose ability in the field of mathematics and the natural sciences is marked, including those who intend to go on into graduate work. Group "B" comprises those whose greatest interest lies in administration, operation or management of engineering enterprises.

These two groups devote their last two years: (1) to developing their special interests, (2) to fulfilling the major requirements of one of the departments of Engineering, (3) to certain basic courses required of all engineers. (For details see pp. 72; 76-78; 80.)

Engineering students qualify for the degree of Bachelor of Science in Engineering.

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\*Absent on leave.

## OUTLINE OF THE CURRICULUM IN ENGINEERING

*Freshman Year—Four Courses*

Humanities or Social Science elective  
 Mathematics 1, 2  
 Chemistry 1  
 Engineering 1, 2, 3  
 Summer Session Engineering 4, 5

*Sophomore Year—Four Courses*

Humanities or Social Science elective  
 Mathematics 11, 12  
 Physics 1  
 Engineering 6, 7  
     in addition, Group "A" students should take  
 Principles of Electrical Engineering 8 (Second semester only)

*Junior Year—Four Courses*

Humanities, Social Science or Natural Science elective  
 Mechanics of Fluids, consisting of  
     22—Fluid Mechanics  
     40—Thermodynamics  
 Mechanics of Solids, consisting of  
     20—Analytic Mechanics  
     21—Strength of Materials  
 Electrical Engineering 30-A or  
 Electrical Machinery 30-B

The courses taken in the Senior year are described under the headings Civil, Electrical and Mechanical Engineering.

## HONORS WORK

In the Division of Engineering, since so much of the prescribed work is of a fundamental nature, honors work is limited to the Senior year. For a general statement, see page 52, *et seq.*, and for details see statements of the Departments of Civil, Electrical and Mechanical Engineering, pages 76, 78, 80.

## COURSES OF INSTRUCTION

## INTRODUCTORY COURSES

## 1. Surveying. Mr. Carpenter.

*One-quarter course, first semester.*

Surveying instruments and their adjustment; practice in taping, leveling, running traverses, taking topography, stadia work, preparation of profiles and maps from field notes.

Required course for freshman engineers. Open to all students who have had trigonometry in high school or college.

## 2. Freshman Drawing and Shop Practice. Mr. Bourdelais.

*Half course, all year.*

Woodworking, pattern making, principles of foundry practice, forging and welding and machine shop. Industrial trips. Orthographic projection and modern drafting practice. Sketching with emphasis on accurate visualization.

Required course for freshman engineers; open to all students.

## 3. Descriptive Geometry. Mr. Carpenter.

*One-quarter course, second semester.*

A continuation of the principles of orthographic drawing as applied to problems of location and description of bodies in space. It is concerned with the solutions of problems that arise in connection with the determination of distances, angles, and intersections. Emphasis is placed upon the application to practical engineering problems.

Two three-hour laboratory periods.

Required course for freshman engineers; open to all students.

## 4. Long Survey. Mr. Carpenter.

*One week during the summer following the freshman year.*

Supplementary to Engineering 1. One week of continuous work in surveying and mapping, including running of levels and of a topographical survey by the stadia method.

Required course for freshman engineers; open to all students who have taken Engineering 1.

## 5. Advanced Drawing and Shop Practice. Mr. Bourdelais.

*Two weeks during the summer.*

Machine shop practice. Industrial trips. Sketching of original ideas. Limited number of carefully made drawings.

Required course for sophomore engineers; open to all students who have taken Engineering 2.

Given in June after closing of college; 2 weeks of work, 8 hours a day.

## 6. Kinematics. Mr. Thom.

*Half course, first semester.*

A comprehensive study of the relative motions of links in a mechanism; the determination of the velocities and accelerations of these members; the development of cams, of gears and transmission machinery from the standpoint of motion. Drawing room solutions of problems of a practical nature.

Required course for sophomore engineers; open to all students.

## 7. Materials of Engineering. Mr. Thatcher, Mr. Bourdelais, Mr. Foster.

*Half course, second semester.*

Study of the chemistry and metallurgy, physical properties, practical and economic uses of the common metals and alloys, wood, cement, and concrete. Laboratory exercises and written reports. Trips to nearby plants.

Required course for sophomore engineers; open to all students who have had chemistry in high school or college.

## 8. Principles of Electrical Engineering. Mr. Jenkins.

*One-quarter course, second semester.*

This course is open to all who are taking General Physics and Calculus, particularly those in Group "A" (see page 71). This is an introductory course to further work in Elec-

tical Engineering in the junior year. It includes the study of fundamental electrical quantities and the solution of typical problems of electrodynamics and simple electrical apparatus.

Required course for Group "A" sophomore engineers; open to students who have taken Physics 1.

#### GENERAL COURSES

10.\* Accounting. Mr. S. W. Johnson.

*Half course, first and second semesters.*

Theory of corporate accountancy; the terminology, the functions and the interpretation of financial statements, including credit analysis and financial and operating ratios.

Open to all students.

11.\* Business Statistics. Mr. Jenkins.

*Half course, first and second semesters.*

Study and applications of fundamental statistical methods which can be used in an analysis of business conditions and changes, and which aid in a clearer understanding of economic data.

Open to all students.

12. Industrial Management. Mr. Thom.

*Full course, all year.*

A survey study of the organization and management of industrial activities, including historical background, organization, physical plant, standardization, job standardization, wages, personnel and control.

Open to all students.

14. Art Metal and Wood Working. Mr. Bourdelais, Mr. Jones.

*One afternoon a week, all year. No credit.*

Designed to give the student a chance to express himself with his hands. The medium is usually wood or metal, the project varying with the desire of the student. Emphasis is placed on both the artistic and the practical side, and on developing powers of observation of detail.

Open to all students.

15. Contemporary Engineering Topics. Mr. Thom.

*One hour per week, alternate weeks, all year. No credit.*

This course includes the preparation of at least three carefully written papers on contemporary engineering topics, and the oral presentation of the subject matter involved from notes. The program is varied by extemporaneous speeches by students, or talks by outside speakers.

Required of all seniors majoring in engineering.

#### CIVIL ENGINEERING

SCOTT B. LILLY, *Chairman*

#### GENERAL COURSES

20. Analytic Mechanics. Mr. Lilly.

*Half course, first semester.*

Composition and resolution of forces; center of gravity; moments; acceleration; velocity; collision of bodies; the integration of simple equations of motion. This course is a study of the behavior of particles and solid bodies, when acted upon by forces, assuming that the solid bodies do not change form under such action.

Open to students who have taken Mathematics 12 and Physics 1.

\*Courses No. 10 and No. 11, combined, are known as "Methods of Economic Analysis" (Economics No. 2).

**21. Strength of Materials. Mr. Carpenter.***Half course, second semester.*

This course treats of the internal stresses and changes of form which always occur when forces act upon solid bodies. The mechanics involved in the design of simple engineering structures is presented, so that the student may realize the problems which must be solved in order to secure the required strength and stiffness in such structures.

Open to students who have taken Engineering 20.

**22. Fluid Mechanics. Mr. Lilly.***Half course, first semester.*

Properties of fluids; statics of fluids; flotation; accelerated liquids in relative equilibrium; dynamics of fluids; impulse and momentum in fluids; dynamic lift and propulsion; the flow of viscous fluids, flow of fluids in pipes; flow with a free surface; flow through orifices and tubes; the resistance of immersed and floating bodies; dynamics of compressible fluids; thermodynamics of compressible viscous fluids; dynamic similarity.

**23. Structural Theory and Design. Mr. Carpenter.***Full course, all year.*

Analysis of determinate and indeterminate structures; design of structural members and connections; design of reinforced concrete. The work of the first semester is arranged to meet the requirements of mechanical and electrical engineers.

Open to students who have taken Engineering 21 and 22.

Required of seniors majoring in civil engineering; Credit given for first semester to seniors majoring in electrical or mechanical engineering.

**24. Engineering Economy. Mr. Lilly.***Half course, second semester.*

A study of the methods which the engineer uses when he investigates a proposed course of action in order that he may decide whether it will prove to be economical in the long run. Open to all students.

**25. Civil Engineering Option. Mr. Lilly, Mr. Carpenter.***Full course.*

This course is designed to give the student an opportunity to apply the fundamental principles of the mechanics of solid bodies or of the mechanics of fluids to some particular field. This further training will include more fundamental theory. Especial emphasis will be placed on the methods of attacking problems in engineering rather than a minute application of the theory to practical problems. The subjects to be studied will be decided upon by the student and the instructor. In 1938-39 the students will spend approximately one-quarter of their time on each of the following subjects: railroad and highway surveying; soil mechanics and foundations; water supply; sewerage systems and sewage disposal. These subjects will be studied in series.

**29. Thesis. Mr. Lilly, Mr. Carpenter.***Half course, second semester.*

### MAJOR IN CIVIL ENGINEERING

The curriculum for the first three years for a student who plans to major in civil engineering is given on page 72.

The courses which must be taken in the Senior year are:

23. Structural Theory and Design
25. Civil Engineering Option
41. Heat Power Engineering
24. Engineering Economy

Since Heat Power Engineering and Engineering Economy are half courses, one-quarter of the student's time in the Senior year is open, and he may elect any course in the Division of Engineering, Division of the Social Sciences, or Division of Mathematics and the Natural Sciences to complete his program. This elective must receive the approval of his course adviser and must be related to his course as a whole.

The fundamental theory of the Four Course Plan, under which the college is operating, is that the student shall confine his efforts to not more than four subjects at the same time. Therefore the two courses, Structural Theory and Design, No. 23, and Civil Engineering Option, No. 25, are broad in scope. Course 23 includes a review of fundamental mechanics and continues with the computation of stresses, and the design of structures in steel, wood and concrete. Course 25 may include railway and highway surveying, highway engineering, soil mechanics and foundations, hydrology, water supply, sewage disposal and sewerage systems. In no year would all of them be taught, the subject matter being varied in content and emphasis to meet the needs and interests of different groups. The subjects mentioned are taken up in series, making it possible to avoid repetition and increase the efficiency of the teaching.

### HONORS IN CIVIL ENGINEERING

Senior students, normally of Group "A," having completed their junior year as outlined above, may apply to read for honors. The topics of final examinations in civil engineering are:

1. Analytic Mechanics and Strength of Materials
2. Structural Theory
3. Municipal Engineering
4. Reinforced Concrete
5. Soil Mechanics and Foundations

The fundamental ideal of the work in honors is to encourage each student to go as far as he is capable in some one phase of civil engineering. He is urged to make himself familiar with all the latest develop-



ments in that field so that he may realize that engineering science is a living, growing profession, and that he may well spend his best energies to further that growth.

A major in civil engineering will take eight honors examinations, at least three of which shall be from the above list; at least one in electrical engineering; at least one in mechanical engineering, and the remainder in engineering, mathematics, physics, chemistry or the social sciences.

### ELECTRICAL ENGINEERING

HOWARD M. JENKINS, *Chairman*

#### GENERAL COURSES

30A. Electrical Machinery. Mr. Jenkins and Mr. McCrumm.

30B. Electrical Engineering. Mr. Jenkins and Mr. McCrumm.

*Full courses.*

These two courses cover the same general topics; it is expected that majors in electrical engineering and others of Group "A" will take course 30A; all other engineering majors, 30B.

These courses cover the laws, principles, and operation of large-power electrical apparatus; direct and alternating current. The laboratory work will consist of two parts: (a) the testing of typical machines and the preparation of adequate reports based on the tests, (b) a computation period to solve some of the more routine problems involved in the preparation of the reports.

Course 30A is open to students who have taken Engineering 8.

Electrical Engineering Options. Mr. Jenkins and/or Mr. McCrumm.

*Full courses for one or two semesters.*

These optional courses are to be taken in the senior year by those majoring in electrical engineering and others interested in some fundamental phase of electrical engineering. The courses listed below may be chosen by properly qualified students as determined by a personal interview. These courses may or may not require laboratory work and may extend through the year or be terminated at the end of a single semester as the needs of the individual student demand.

31. Transients. Mr. Jenkins.

32. Vacuum Tubes. Mr. Jenkins.

33. Alternating Current Machinery. Mr. McCrumm.

34. Transmission and Distribution. Mr. McCrumm.

39. Thesis. Electrical Engineering Department Staff.

Open to those who have taken Engineering 30A or 30B, 8, or General Physics and Calculus.

### MAJOR IN ELECTRICAL ENGINEERING

The general plan is that from the subjects listed above, and by courses offered elsewhere in the college, the student will work out a logically integrated, cognate, intensive study of one or more phases of the theory of electrical engineering.

It is expected that a student majoring in electrical engineering will have joined Group "A" (see page 71) in time to have taken Engineering 8 in the second semester of his sophomore year. Other

courses which must be taken to fulfill the requirements for the Bachelor of Science with major in electrical engineering include:

(1) General science subjects as listed under the general statement of the Division of Engineering, pages 71, 72. These subjects are pursued in the first three years in classes with the students in other branches of engineering, and are considered the essential foundation for all studying applied science.

(2) Subjects in the Divisions of the Humanities or Social Sciences. At least three subjects not offered in the scientific division must be taken over the period of the four college years. The choice is optional, the only requirement being that the three courses should form a rational whole.

(3) Additional subjects in allied scientific departments. Advanced calculus and differential equations are required for electrical engineering majors; in addition all or part of the following courses will be recommended for certain students:

- 41. Heat Power Engineering
- 24. Engineering Economy
- Electricity and Magnetism
- Atomic Physics

(4) Major studies in electrical engineering. According to the time available and the needs of the individual, one, at least, of the following "options" will be taken in the senior year:

- 31. Transients
- 32. Vacuum Tubes
- 33. Alternating Current Machinery
- 34. Transmission and Distribution

#### HONORS IN ELECTRICAL ENGINEERING

For senior engineering students of Group "A" who have been accepted for honors work, there are offered honors seminars preparing them for examination papers in:

- 1. Electric Circuit Analysis
- 2. Electronics
- 3. Alternating Current Machines

Honors students majoring in electrical engineering take:

(1) Not less than three nor more than four papers in electrical engineering,

(2) At least one paper each in civil and mechanical engineering.

(3) Papers in other departments in which honors work has been taken in the junior or senior years, to make a total of at least eight examinations.

MECHANICAL ENGINEERING  
 CHARLES G. THATCHER, *Chairman*  
 GENERAL COURSES

40. Thermodynamics. Mr. Thatcher.

*Half course, second semester.*

Fundamental thermodynamics. Properties of gases and vapors. Gas and vapor cycles. Applications to modern power plants. Class, problem and laboratory work.  
 Open to students who have had Mathematics 12 and Physics 1.

41. Heat Power. Mr. Thatcher.

*Half course, first semester.*

Theoretical and practical considerations of steam plants and internal combustion engines. Class and laboratory work, written reports. Calibration of instruments, testing of fuels and lubricants, engines, boilers, pumps and hydraulic equipment.  
 Open to students who have had Engineering 40.

42. Internal Combustion Engines. Mr. Thom.

*Half course, first semester.*

Application of the fundamental principles of thermodynamics and mechanics to the design of internal combustion engines; combustion of actual mixtures; analysis of cycles; carburetion and fuel injection; mixture distribution; balancing. Principles of machine design and practical design methods are introduced where applicable. Class and drawing room work supplemented by laboratory exercises.

Open to students who have had Engineering 20, 21 and 40.

43. Refrigeration and Air-Conditioning. Mr. Thom.

*Half course, second semester.*

A comprehensive study of refrigerants, cycles and performance of refrigerating equipment; principles of air-vapor mixtures; humidification, dehumidification; and distribution of air; analysis of heating and cooling systems and apparatus. Principles of machine design and practical procedure are introduced where applicable. Class and drawing room work are supplemented by laboratory exercises.

Open to students who have had Engineering 20, 21 and 40.

44. Metallography. Mr. Thatcher.

*Half course, second semester.*

The use of the microscope in study of structures and properties of metals and alloys, with emphasis on the ferrous metals. Class and laboratory work.

Open to students who have had Engineering 7 or Introduction to Physical Chemistry 3.

45. Administrative Engineering. Mr. Thom.

*Half course, second semester. (Not offered in 1938-39.)*

The purpose of this course is to provide further training of a broad and practical nature for those whose interests and capabilities point toward executive participation in the operation of an industrial enterprise. Representative problems of equipment selection, plant layout, job analysis, production control and personnel relationship are evaluated; however, no attempt is made to provide specialized training in these fields. Although classroom work is supplemented by inspection trips to nearby plants, students planning to take this course are strongly urged to secure summer industrial employment for experience and background.

Open to students who have had Engineering 12.

49. Thesis. Mr. Thatcher, Mr. Thom.

*Half course, second semester.*

### MAJOR IN MECHANICAL ENGINEERING

#### *Group "A"*

Students in this group, having completed the first three years as outlined on page 72 under the Division of Engineering, are required to take in their Senior year:

41. Heat Power
24. Engineering Economy
42. Internal Combustion Engines
43. Refrigeration and Air-Conditioning

The above courses, all being half courses, leave half of the Senior student's time for electives. He may choose these from any division of the college.

#### *Group "B"*

Students in this group are required to take Course 41, Heat Power, in their Senior year. In addition, the following are recommended, although suitable substitutes will be accepted:

12. Industry
13. Management
24. Engineering Economy
45. Administrative Engineering

### HONORS IN MECHANICAL ENGINEERING

Senior students, normally of Group "A," having completed the first three years as outlined above, may apply to read for honors. The topics of final examinations in mechanical engineering are:

1. Thermodynamics
2. Heat Power
3. Internal Combustion Engines
4. Refrigeration and Air-Conditioning
5. Industrial Management

A major in mechanical engineering will take eight honors examinations, at least three of which shall be from the above list; at least one in civil engineering; at least one in electrical engineering; and the remainder in either engineering, mathematics, physics, chemistry or the social sciences.

## ENGLISH

PROFESSORS: HAROLD C. GODDARD, *Chairman\**  
 EVERETT L. HUNT  
 PHILIP MARSHALL HICKS, *Acting Chairman, 1938-39*  
 ROBERT E. SPILLER  
 ASSISTANT PROFESSORS: TOWNSEND SCUDDER, 3RD  
 ELIZABETH COX WRIGHT  
 INSTRUCTOR: FREDRIC S. KLEES  
 ASSISTANTS: BEATRICE BEACH MACLEOD†  
 KEITH W. CHALMERS‡

## GENERAL COURSES

## 1. Representative Writers.

*Full Course, made up of two of the following:*

Elizabethan Literature. Mr. Klees. *Half Course, each semester.*  
 The Eighteenth Century. Mr. Scudder. *Half Course, each semester.*  
 The Romantic Movement. Mrs. Wright. *Half Course, each semester.*  
 Victorian Literature. Mr. Hunt. *Half Course, first semester.*  
 American Literature. Mr. Spiller. *Half Course, second semester.*  
 Contemporary Literature. Mr. Hicks. *Half Course, each semester.*  
 Great Books. Mr. Spiller and Mr. Hunt. *Half Course, each semester.*

## 2. Chaucer. Mr. Klees.

*Half course, second semester.*

## 3. Shakespeare. Mr. Goddard and Mrs. Wright.

*Full course.*

## 4. Milton and the Seventeenth Century. Mr. Hunt.

*Half course, first semester.*

Poetry of the Old Testament, John Donne, Milton.

## 5. English Poetry. Mr. Scudder.

*Full course.*

A study of a selected period or aspect of English poetry. In 1938-39: Nineteenth Century Poetry.

## 6. The English Novel. Mr. Hicks.

*Full course.*

## 7a. Comedy. Mr. Klees.

*Half course, first semester.*

## 7b. Tragedy. Mr. Klees.

*Half course, second semester.*

## 8a. The Essay and Social Criticism. Mr. Klees.

*Half course, first semester.*

## 8b. Travel and Biography. Mr. Klees.

*Half course, second semester.*

## 9. Modern Literature. Mr. Goddard.

*Full course. (Omitted in 1938-39.)*

A study of modern comparative literature.

\*Absent on leave.

†Absent on leave during the second semester.

‡Appointed for the second semester.

## 10. World Literature. Mr. Goddard.

*Full course. (Omitted in 1938-39.)*

## 11. American Literature. Mr. Spiller.

*Full course.*

In 1938-39: first semester, American Fiction; second semester, American Poetry.

## 13. Criticism. Mr. Hunt.

*Half course, second semester.*

Classical background of English criticism in Plato, Aristotle, Longinus and Horace; representative essays of the major English critics from Philip Sidney to Walter Pater; brief survey of problems and writers in contemporary criticism.

## 15. Mediaeval Poetry and Romance. Mrs. Wright.

*Full course. (Omitted in 1937-38.)*

## Greek Drama in English. (Greek 6) Mr. Shero.

*Half course, second semester.*

A study, in translation, of the extant Greek plays and of some of the Latin adaptations from the Greek, with consideration of the influence of Greek and Latin Drama on later literature. No knowledge of Greek or Latin is required.

## Latin Literature. (Latin 12.) Miss Brewster.

*Half course, first semester.*

Designed for non-classical majors who may desire a classical background for their special fields. The Loeb Series of texts and translations of classical authors will be used.

*Writing and Speaking.* Students who are reported by any member of the College faculty as deficient in written English may be given tutorial guidance for the removal of the deficiency. Written work in courses and in honors seminars takes the place of advanced courses in composition. Student organizations and informal groups for practice in creative writing, acting drama, extempore speaking, and debating meet with members of the English faculty.

## HONORS WORK

*Prerequisites.* For admission to Honors work with a major in English, the requirements are at least one-half course in the "Representative Writers" group; and either Chaucer, Shakespeare, or Milton and the Seventeenth Century. Students are advised to take also *The History of Europe or The History of England.*

For admission with a minor in English, the requirement is one year in English, including at least one-half course in the "Representative Writers" group.

## SCHEDULE OF HONORS SEMINARS, 1938-39

## GROUP I

- Chaucer. Mr. Scudder. *Second semester.*  
A study of Chaucer's poetry and age.
- Shakespeare. Mr. Hicks. *Both semesters.*  
A study of Shakespeare's principal plays, with a rapid reading of the rest of his work.
- Milton and the Seventeenth Century. Mr. Hunt. *First semester.*  
Donne, Milton, and the poetry of the Bible.

## GROUP II

- Poetry.
- A. Mr. Scudder. *First semester.*  
The nature and function of poetry; Wordsworth, Keats or Shelley, and Arnold.
- B. Mrs. Wright. *Second semester.*  
Tennyson, Browning, and Christina Rossetti, with studies in Hopkins, Housman, and one or two contemporary writers.
- Drama. Mr. Hicks. *Second semester.*  
Representative plays from different periods; the comic and tragic spirits.
- Novel. Mrs. Wright. *First semester.*  
The novel as a literary form; Fielding, Meredith, Hardy, and Conrad.
- Literary Criticism. Mr. Hunt. *Second semester.*  
English literary criticism from Sidney to Pater, with some study of classical backgrounds and contemporary developments.

## GROUP III

- Modern Literature. Mr. Goddard. *Not offered in 1938-39.*  
Masterpieces of English and European writers of the past 75 years, with emphasis on the Russians.
- American Literature. Mr. Spiller. *First semester.*  
The American mind as expressed in the writings of Emerson, Melville, Whitman, Mark Twain, and Henry Adams.
- Social Criticism. Mr. Hunt. *Second semester.*  
Social criticism in English literature from Burke to Aldous Huxley.
- Problems of Literary Study. Mr. Spiller. *Both semesters.*  
The methods of literary research and criticism as applied to the study of a single problem, usually the work of a major author, resulting in a thesis.

Linguistic Science. Mr. Reuning.

*Not offered in 1938-39.*

Admitted as a seminar in English for majors who concentrate on English or American language problems; may also be considered as a minor for students majoring in English.

Thesis.

Students who wish to write theses not properly within the scope of the seminar on Problems of Literary Study may apply to the Chairman of the Department for permission to substitute such projects for the fourth seminar of major work.

Candidates for honors with a major in English must take at least one seminar from the first group and at least one from the second. Shakespeare shall be chosen from the first group if not previously elected in course. Four seminars are required for a major in English.

Candidates for honors with a minor in English may enroll in any two or three of the above seminars upon the recommendation of their major department.

#### REQUIREMENTS FOR MAJOR AND MINOR

*Major:* The work of the major in General Courses normally consists of at least four full courses, including Representative Writers in the first year, either Chaucer, Shakespeare, or Milton and the Seventeenth Century in the second year, and during the last two years Shakespeare, if not elected in the second year, and a course in one of the types. The comprehensive examination at the close of the senior year is based on this work, but also includes questions on the other courses offered by the department for those prepared in these fields.

*Minor:* The work of the minor in General Courses normally consists of three full courses elected upon the recommendation of the major department, including at least one-half course in the "Representative Writers" group.

#### DEPARTMENTAL LANGUAGE REQUIREMENTS

The foreign language requirement may be fulfilled by a reading knowledge of one or more of the following: French, German, Latin or Greek. Students planning to continue English studies in graduate school are advised to acquire a reading knowledge of Latin, French, and German.



## FINE ARTS

INSTRUCTOR: ETHEL STILZ, *Acting Chairman*LECTURERS: JOSEPHINE ADAMS  
MARTIN WEINBERGER  
DIMITRIS TSELOS

## GENERAL COURSES

## 1. History of Architecture. Mr. Tselos.

*Full course.*

The history and development of architecture from earliest times to the present.

## 2. Art Survey. Miss Adams.

*Full course.*

\* A general course on the significance and history of art, covering architecture, sculpture, painting, and the allied arts.

## 5. Interior Decoration. Miss Stilz.

*Full course.*

Principles of color and design as applied to the planning and furnishing of houses, with lectures on the historic development of domestic architecture.

## 6. History of Painting. Miss Adams.

*Full course.*

## HONORS WORK

## I. General prerequisites:

History of Architecture 1  
Art Survey 2  
Aesthetics

## II. Supplementary preparation recommended:

Introduction to Archaeology or a course in Ancient Civilization.

## III. Seminars offered:

1. French Gothic Architecture
2. Mediaeval English Architecture
3. Modern Architecture
4. Origins of Modern Painting. Mr. Weinberger, first semester.

## GERMAN LANGUAGE AND LITERATURE

ASSISTANT PROFESSORS: \*KARL REUNING, *Chairman*

LYDIA BAER

INSTRUCTORS: HERBERT SPIEGELBERG

EDITH LENEL

## GENERAL COURSES

1. Elementary German. Miss Baer, Miss Lenel, Mr. Reuning and Mr. Spiegelberg.

*Full course.*

Training in grammar, composition, conversation, and expressive reading. A. J. F. Zieglschmid, *Creative German*, and several elementary texts.

- rs. Elementary German for Science Students. Miss Baer, Miss Lenel, Mr. Reuning and Mr. Spiegelberg.

*Full course.*

The purpose of this course is to develop as rapidly as possible a thorough reading knowledge on the basis of the necessary training in grammar. Max Diez, *Introduction to German*, and several elementary texts, including some simplified science texts.

2. German Prose and Poetry, Grammar and Composition. Miss Baer, Miss Lenel, Mr. Reuning and Mr. Spiegelberg.

*Full course.*

Reading of recent short stories and novels, of representative modern and classical plays, of lyrics and ballads, and other suitable material. Review of grammar, practice in composition, conversation, and expressive reading. B. Q. Morgan and E. T. Mohme, *German Review Grammar and Composition Book*; Eichendorff, *Aus dem Leben eines Taugenichts*; Schnitzler, *Stories and Plays*, and other texts.

Prerequisite, Course 1 or equivalent.

- 2s. Second Year German for Science Students. Miss Baer, Miss Lenel, Mr. Reuning, Mr. Spiegelberg and Mr. Wallach (of the Department of Psychology).

*Full course.*

Reading of a limited number of novels, plays and lyrics throughout the year. First semester: Reading of edited science selections. Second semester: Special readings arranged individually with each student in collaboration with his science department. Review of grammar with special emphasis on developing familiarity with German syntax. B. Q. Morgan and E. T. Mohme, *German Review Grammar and Composition Book*; Eichendorff, *Aus dem Leben eines Taugenichts*, and other texts; Paul H. Curts, *Readings in Scientific and Technical German*.

Prerequisite, Course 1 or 1s or equivalent.

3. Introductory Studies in German Literature. Miss Baer and Mr. Reuning.

*Full course.*

A study of three of the most important movements in German literature, with reading of representative texts. The object of this course is to give an understanding of Germany's contribution to the literature and thought of the world.

Prerequisite, Course 2 or equivalent.

\*Half time, 1938-39.

4. Great Periods in German Literature. Miss Baer.  
*Full course. (Omitted in 1938-39.)*
5. Outstanding German Writers of the Nineteenth Century.  
*Half course. (Omitted in 1938-39.)*
6. The Romantic Movement in Germany. Miss Baer.  
*Full course. (Omitted in 1938-39.)*
7. Goethe. Miss Baer and Mr. Reuning.  
*Half course. (First semester, 1938-39.)*
8. Schiller. Miss Baer and Mr. Reuning.  
*Half course. (Second semester, 1938-39.)*
9. Eighteenth Century Literature and Thought.  
*Half course. (Omitted in 1938-39.)*
10. German Literature in the Twentieth Century.  
*Full course. (Omitted in 1938-39.)*
11. German Authors in English Translations. Miss Baer.  
*Full course.*

This course may be taken by students who do not know German. Students who have a reading knowledge of German may read the texts in the original.

12. German Conversation Classes, 1 hour each week; no credit.

These classes are recommended to every student of German, also to science students who may choose courses 1s or 2s.

13. Poetry Groups, 1 hour each week; no credit.

The objective in Courses 1 and 2 is an ability to read German of moderate difficulty, to enjoy and to appreciate German literature of an easier type, and to speak and write simple German. To attain this end it is necessary to have a thorough knowledge of grammar and a reasonably large active and passive vocabulary. These courses are also recommended to science students who have a genuine interest in German language and literature. Science students who are mainly interested in acquiring a thorough reading knowledge of German should take Courses 1s and 2s.

The more advanced courses are intended to add knowledge and appreciation of literature, and a command of the written and spoken idiom. Major and Honors students are encouraged to spend some time in Germany. Practically all courses, with the exception of 1s and 2s (and 11), are conducted entirely in German.

Special arrangements are made for students who begin with German in college to enable them to choose German as a major or minor subject in their Junior and Senior years.

## HONORS WORK

*Prerequisites.* For admission to Honors work in German, one course in college beyond Course 2 is required. Students who begin with German in college may in exceptional cases take Course 3 in their Sophomore year by special arrangement. Other preparation is not required. The German Department may, however, in individual cases, recommend special work during the summer vacations or courses in American or German summer schools.

*Topics of Final Examinations.* Honors seminars are offered preparing students for examination papers in:

1. Middle High German Literature and Philology. Mr. Reuning.

*Second semester, 1939-40.*

Introduction into the elementary facts of Indo-European and Germanic philology and phonetics. The development of the German language from the beginning to the present time with special emphasis on Middle High German. Middle High German grammar in as far as it is absolutely necessary to enable the student to read texts in the original. Brief survey of Old and Middle High German literature. Reading of texts in the original is limited to the outstanding epic and lyric literature such as Nibelungenlied, Wolfram's Parzival, the poetry of Walther von der Vogelweide, etc. Discussion of literary, historical and cultural problems in seminar papers. Familiarity of the student with medieval European history or medieval English or French literature and some knowledge of either French or Latin is desirable. This seminar is required of students who want to major in German.

2. The Age of Luther. Mr. Reuning.

*Second semester, 1938-39.*

Study of literary, historical, sociological and religious problems of the sixteenth century. Reading of outstanding authors of the period, such as Luther, Hans Sachs, Brant, Hutten, Fischart. Preparation for this seminar by taking a course or a seminar in History of the Reformation is recommended. This seminar is mainly for students majoring in German.

3. Baroque Literature. Miss Baer.

*Semester undecided.*

A study of German literature in the seventeenth century as reflected in the reforms of Opitz, the poetry of Weckherlin, Fleming, and the Volkslied, the mysticism of Angelus Silesius and Jakob Böhme, the influence of the English Players on the German theatre, and the plays of Gryphius and the second Silesian School. Mainly for students majoring in German.

4. Classical Literature. Miss Baer.

*First semester, 1939-40.*

The humanism of Lessing, Goethe and Schiller.

5. The Romantic Movement. Miss Baer.

*Second semester, 1939-40.*

"Romanticism" as a form of art and life, represented by Novalis, Wackenroder, Tieck, Arnim, Brentano, Kleist, Eichendorff, Mörike, E. T. A. Hoffmann, Heine.

## 6. Great Writers of the Nineteenth Century. Mr. Reuning.

*First semester, 1938-39.*

Study of the works of Grillparzer, Hebbel, Stifter, Ludwig, Keller, Storm, Meyer, Fontane.

## 7. German Literature of the Early Twentieth Century. Miss Baer.

*Second semester, 1938-39.*

Gerhart Hauptmann, Thomas Mann, Rainer Maria Rilke, Hugo von Hofmannsthal.

## 8. Linguistic Science (in cooperation with other departments in the Division of the Humanities). Mr. Reuning.

*First semester, 1939-40.*

Study of the most important problems of Linguistics, e.g. sound-change and the resulting changes in accent and syntax, semantic changes, relationship of languages and dialects, geographical distribution and grouping of languages, characteristics of the most important groups, the Indo-European family, etc. While the choice among the innumerable problems of linguistics largely depends on the knowledge and special interests of the student group considerable time is always devoted to English and American language problems and to the relationship between linguistics and psychology. Some knowledge of German, French, Latin, or Greek is very desirable; a reading knowledge of at least one foreign language is required. Students who know non-Indo-European languages are especially welcome. Occasionally prominent linguists are invited for discussions on their special fields. The seminar is conducted in English. (See also schedules of Honors Seminars of the Departments of English and of Psychology.)

Students who wish to write a thesis may apply to the Department for permission to substitute such a project for the fourth seminar of major work. Application should be accompanied by a statement which proves conclusively that an original contribution to literary or linguistic research may be expected.

## HISTORY

PROFESSORS: FREDERICK J. MANNING, *Chairman*  
WILLIAM ISAAC HULL

ASSOCIATE PROFESSORS: MARY ALBERTSON  
TROYER S. ANDERSON

LECTURER: RICHARD SALOMON

## GENERAL COURSES

1. The History of Europe. Miss Albertson, Mr. Anderson, Mr. Manning and Mr. Salomon.

*Full course.*

A general survey of the origins and development of European civilization from the decline of the Roman Empire to the present day. Especially designed for Freshmen but open to all classes. Prerequisite to other courses or Honors seminars in European or English history.

2. The History of England. Mr. Anderson.

*Half course, second semester.*

A survey of the history of the British people with the main emphasis on the period since 1485. Required of students planning to take Honors seminars in English history. To be taken after History 1.

3. The History of the United States. Mr. Manning.

*Half course, first semester.*

A study of the political, economic, and social history of the American people from the seventeenth century to the present time. Required of students planning to take Honors seminars in American history. Not open to Freshmen.

4. The History of Greece (Greek 5). Mr. Shero (Department of Classics).

*Half course, first semester. Offered in 1939-40 and alternate years.*

A study of Greek civilization in its most significant aspects to the time of the Hellenistic kingdoms, preceded by a brief survey of the Oriental civilizations by which the Greeks were influenced. Special attention given to the 6th and 5th centuries B.C.

5. The History of Rome (Latin 9). Miss Brewster (Department of Classics).

*Half course, first semester. Offered in 1938-39 and alternate years.*

The history of Rome from the earliest times to the accession of Marcus Aurelius. The course stresses the Roman genius for organization and administration.

6. The Italian Renaissance. Miss Albertson.

*Half course, first semester.*

Lectures, readings and reports on the history of the Italian Renaissance. To be taken after History 1.

7. The History of France. Miss Albertson.

*Half course, second semester.*

The history of France from Roman times to the present day. To be taken after History 1 unless with special permission of the instructor.

8. The History of Germany. Mr. Salomon.

*Half course, first semester.*

Lectures, readings and reports on the history of Germany. To be taken after History 1.

## 10. The History of Europe in the Nineteenth Century. Mr. Anderson.

*Half course, first semester. Offered in 1938-39 and alternate years.*

The development of Europe from the period of the French Revolution to the outbreak of the World War. To be taken after History 1.

## 11. The History of Europe Since 1900. Mr. Anderson.

*Half course, first semester. Offered in 1939-40 and alternate years.*

A study of the origins of the World War, the conflict itself, and especially the problems of Europe since 1918. To be taken after History 1.

## 12. The History of the Labor Movement. Mr. Manning.

*Half course, second semester.*

A survey of the social backgrounds, the economic, political, legislative and legal problems of British and American labor in the 19th and 20th centuries. For Juniors and Seniors.

## 13. Special Topics. Miss Albertson, Mr. Anderson, Mr. Manning.

*Half course, second semester.*

Designed especially for Seniors with the Major in History but open by special permission to others.

## HONORS WORK

The survey course in European history, the only course open to Freshmen (except by special permission from the department), is prerequisite to any other courses or seminars in European or English history. Students who expect to take a major in history, either in Honors seminars or regular courses, should elect European history in the Freshman year, American and English history in the Sophomore year. Students who expect to include history as a minor subject in Honors work should elect European history in Freshman year, and either American or English history in Sophomore year if possible. Course 2, the History of England, is required for admission to Honors seminars in English history. Course 3, the History of the United States, is required for admission to Honors seminars in American history.

Unless otherwise noted, the following seminars are ordinarily offered by the department each year. Although an endeavor will be made to offer in either semester any seminar desired by a sufficient number of students, it is important to remember that this will frequently prove impossible and that some seminars can be offered only in one semester. Students planning to enroll in history seminars ought, therefore, to consult with the department as early as possible about their choice of seminars and the semesters in which they are to be taken.

## ENGLISH HISTORY

1. Medieval England. Miss Albertson.  
The period from 1066 to 1485.
2. Tudor and Stuart England. Miss Albertson.  
The period from 1485 to 1688.
3. Modern England. Mr. Anderson or Mr. Manning.  
The period from 1688 to the present time with main stress on the 19th century.

## EUROPEAN HISTORY

4. The Renaissance. Miss Albertson.  
Topics in the history of the 15th and 16th centuries in Italy, France, Spain, the Netherlands and England, with special attention to social and economic as well as political factors.
5. The Reformation. Miss Albertson.  
Topics in the history of the 15th and 16th centuries in Germany, France, and England, with special attention to religious factors.  
(3 and 4 are offered alternately. In 1938-39 The Reformation is given by Mr. Salomon.)
6. Modern Europe. Mr. Anderson.  
The period from 1713 to 1914, with main stress on the 19th century.
7. The Origins of the World War. Mr. Anderson.  
Offered in the second semester for Seniors only. Devoted largely to a close study of the crucial days in 1914 with the purpose of introducing the student to the critical use of documents.
8. Recent Europe. Mr. Anderson.  
Europe from 1914 to the present. Preference will be given to Seniors who have taken Modern Europe or Modern England.

## AMERICAN HISTORY

9. Problems in Recent American History. Mr. Manning.  
Considerable attention is given to bibliography and the use of source materials important for any work in the social sciences or literary criticism in the American field.
10. The Supreme Court of the United States. Mr. Manning.  
For Seniors. Based on the cases and opinions, with some emphasis on common law cases and principles. The work in this seminar is not designed to anticipate or overlap the courses in constitutional law offered in the law schools.
11. History Thesis.  
Topic to be selected and approved by the end of the Junior year.

N. B.—Honors seminars in Greek and Roman history, conducted by the department of classics, are open to students taking a major in history; whenever possible the history department will cooperate with students of foreign literature working on special topics in the history of their particular country.



## REQUIREMENTS FOR WORK IN COURSE

Requirements for students who elect major or minor work in history do not turn on any particular total of courses, but rather upon the completion of such courses in history, together with related courses in the social sciences, literature, philosophy, the fine arts, etc., as, in the opinion of the department, will facilitate a well-rounded preparation for their comprehensive examinations. A reading knowledge of French and some acquaintance with the principles of economic and political theory are essential for an intelligent appreciation of history. Most graduate schools require a reading knowledge of French, German, and Latin for any advanced degree in history.

The comprehensive examination for major students at the end of their Senior year includes questions on the following topics: (1) European History, (2) English History, (3) the History of the United States, (4) Ancient History. Major students are expected to answer general questions in each of these fields and more specific questions in at least two of the fields.

## MATHEMATICS AND ASTRONOMY

PROFESSORS: ARNOLD DRESDEN, *Chairman*  
ROSS W. MARRIOTT

ASSOCIATE PROFESSORS: HEINRICH BRINKMANN  
PETER VAN DE KAMP,  
*Director of Sproul Observatory*  
JOHN H. PITMAN

ASSISTANT PROFESSOR: MICHEL KOVALENKO

INSTRUCTOR: ORREN MOHLER

RESEARCH ASSOCIATE: K. AA. STRAND

ASSISTANTS: JANET M. DEVILBISS  
MARION E. WOLFF

EXCHANGE PROFESSOR: J. R. KLINE  
(University of Pennsylvania)

### GENERAL COURSES IN MATHEMATICS

1, 2. First Year Mathematics. Mr. Brinkmann, Mr. Dresden and Mr. Marriott.

*Full course.*

The courses are designed to deal with the material previously covered by the separate courses in College Algebra, Trigonometry and Analytical Geometry (courses 1, 3 and 4 of the 1933 catalogue), and to introduce some of the concepts of the Differential Calculus. Topics belonging to each of these subjects are introduced in natural sequence so as to form a more closely knit whole.

Classes normally meet four times a week; students are expected to keep a fifth hour free from standing engagements so that it may be used occasionally for a quiz or a special exercise.

Fine, *College Algebra*; Kuhn and Weaver, *Elementary College Algebra*; Dresden, *Plane Trigonometry*; Palmer and Leigh, *Plane Trigonometry*; Osgood and Graustein, *Plane and Solid Analytic Geometry*.

3. Invitation to Mathematics. Mr. Dresden.

*Half course, second semester. (Omitted in 1938-39.)*

This course is intended for students who have a non-technical interest in mathematics. It does not take the place of the usual college courses, but aims to be an introduction to some of the important concepts of modern mathematics, to emphasize the fundamental ideas of the science rather than its technical processes, to provide a background for the study of its philosophical aspects, and to furnish a basis for an appreciation of its wider significance. Dresden, *Invitation to Mathematics*.

The class normally meets three times a week; occasionally a fourth hour will be used.

Prerequisite, a good high school course in mathematics.

5. Mathematics of Investment and Insurance. Mr. Dresden.

*Half course, second semester. (Omitted in 1938-39.)*

The theory of compound interest; annuities; sinking funds; interest rates; theory of probability; mortality tables. Completion of this course, courses Nos. 12 and 14, and an introduction to the Theory of Finite Differences should enable the student to proceed with the examinations for admission to the Actuarial Society of America. Skinner, *Mathematical Theory of Investment*.

Prerequisite, a good high school course in algebra.

11, 12. Differential and Integral Calculus. Mr. Brinkmann and Mr. Marriott.

*Full course.*

These courses carry forward the work begun in courses 1, 2 and are intended to give the student a sufficient introduction to mathematics to serve as a basis for more advanced work

in analysis and its applications. Classes normally meet four times a week; students are expected to keep a fifth hour free from standing engagements so as to make it available for occasional quizzes or special exercises.

Prerequisite, courses 1, 2.

14. Theory of Equations. Mr. Brinkmann.

*Half course, first semester.*

Operations on complex numbers. Solutions of cubic and quartic equations. General properties of polynomials. Separation and calculation of roots of numerical equations. Dickson, *First Course in the Theory of Equations*.

Together with course 15 (below), this course supplies a year's work for students who pursue mathematics as a major or minor subject in course, usually to be taken in the junior year; classes normally meet three times a week.

Prerequisite, courses 1, 2, 11, 12.

15. Solid Analytical Geometry. Mr. Brinkmann.

*Half course, second semester.*

Metric theory of planes, lines and quadric surfaces in Euclidean three-dimensional space, emphasis on the use of determinants and matrices. Dresden, *Solid Analytical Geometry and Determinants*.

Together with course 14 (above), this course supplies a year's work for students who pursue mathematics as a major or minor subject in course, usually to be taken in the junior year. Classes normally meet three times a week.

Prerequisite, courses 1, 2, 11, 12, 14.

16. Advanced Calculus. Mr. Dresden.

*Half course, first semester.*

Total and partial derivatives; theory of infinitesimals; definite integrals; approximations. The aim of the course is three-fold: to ground the student in the elementary work which has preceded it; to give an introduction to more advanced topics; and to develop skill in the application of the principles of the Calculus to Geometry and Mechanics. Osgood, *Advanced Calculus*; Osgood, *Mechanics*.

Together with course 17 (below) this course makes possible a year's work for students who pursue mathematics as a major or minor subject in course, to be taken in the junior or senior year. Classes normally meet three times a week.

Prerequisites, courses 1, 2, 11, 12.

17. Differential Equations. Mr. Dresden.

*Half course, second semester.*

A study of ordinary and partial differential equations, with their applications to geometrical, physical, and mechanical problems. Osgood, *Advanced Calculus*; Osgood, *Mechanics*.

Together with course 16 (above) this course makes possible a year's work for students who pursue mathematics as a major or minor subject in course, to be taken in the junior or senior year. Classes normally meet three times a week.

Prerequisite, courses 1, 2, 11, 12, 16.

31. Undergraduate Reading Course in Mathematics.

*Half course or full course.*

This course is to provide an opportunity for students to do special work in fields not covered by the undergraduate courses, listed above. The work consists in the preparation of papers requiring extensive and detailed examination of the literature of a problem.

Courses of graduate character are offered from time to time, in accordance with the needs of graduate and advanced undergraduate students. Normally advanced undergraduate students will do such work in honors seminars (see below). The subjects of these courses are Projective Geometry, Theory of numbers, Theory of functions of a real variable, Theory of functions of a complex variable.

## GENERAL COURSES IN ASTRONOMY

## 1, 2. Descriptive Astronomy. Mr. Pitman.

*Full course.*

A study of the fundamental facts and laws of Astronomy, and of the methods and instruments of modern astronomical research. The course is designed to give information rather than to train scientists. A study of the text-book will be supplemented by lectures illustrated by lantern slides from photographs made at various observatories. The class will learn the more conspicuous constellations and have an opportunity to see the various types of celestial objects through the telescope. Some lectures will be held in the Planetarium. The treatment is non-mathematical. Baker, *Astronomy*.

Classes normally meet three times a week.

## 3. Practical Astronomy. Mr. Pitman.

*Half course, second semester.*

Theory and use of the transit instruments; determination of time; the latitude of Swarthmore; determination of longitude. Intended for students of Astronomy and Engineering and those desiring to take the civil service examinations for positions in the United States Coast and Geodetic Survey.

Classes normally meet three times each week.

Prerequisites, Mathematics 1, 2 and Astronomy 1, 2.

## 4. Survey of Astronomy. Mr. Pitman.

*Half course, second semester.*

This course is intended primarily for students of Engineering and Science. Emphasis will be placed on methods of scientific investigation. Students will have the opportunity of using various instruments. Some lectures will be held in the Planetarium.

Classes normally meet three times each week.

## 31. Undergraduate Reading Course in Astronomy.

*Half course or full course.*

Undergraduate students may, under direction, prepare papers upon subjects requiring a rather extensive examination of the literature of a problem. Courses 32 and 51 to 55 are half courses, offered from time to time to meet the needs of graduate students and of advanced undergraduates.

## 32. Spherical Astronomy. Mr. Pitman.

## 51. Orbit Computation. Mr. Pitman.

## 53. Spectroscopy. Mr. Mohler.

## 54. Statistical Astronomy. Mr. van de Kamp.

## 55. Celestial Mechanics. Mr. Kovalenko.

## HONORS SEMINARS IN MATHEMATICS

1. Theory of Equations. This seminar is devoted to the study of algebraic equations. The topics covered are the following: Properties of polynomials, solution of cubic and quartic equations, numerical solution of equations, Sturm's theorem and related theorems, symmetric functions, resultants, application to geometrical problems.

2. Solid Analytic Geometry. In this seminar the analytic geometry of 3-dimensional space is studied, along with the algebraic tools that are necessary

for that purpose. The subjects taken up are: Determinants, matrices, systems of linear equations, lines and planes, transformation of coordinates, quadric surfaces, classification of the general equation of the second degree, special properties of quadric surfaces, such as rulings and circular sections, system of quadric surfaces.

3. Advanced Calculus. This seminar deals with the differential calculus for functions of several variables and its geometric applications, with double and triple integrals, improper integrals, line and surface integrals, the elements of vector analysis.

4. Differential Equations. In this seminar the principal topics are the following: ordinary differential equations of the first order, linear differential equations, with particular attention to special cases of the equation of second order; some aspects of the theory of partial differential equations, of Fourier series, of the calculus of variations and of functions of a complex variable.

5. Theory of Functions of a Complex Variable. A fairly detailed study of the linear fractional transformation in the complex plane. Derivatives and integrals of analytic functions. Expansion in series. Contour integrals.

6. Foundations of Mathematics. Postulational treatment of mathematics. The problem of consistency. Relation of logic and mathematics. Some of the systematic treatments of the foundation of logic. Modern developments.

#### HONORS SEMINARS IN ASTRONOMY

Seminars in the following topics will be arranged for those desiring to take one or more papers in Astronomy.

1. Spherical Astronomy: A mathematical discussion of the reduction of visual and photographic observations of position; solution of visual and spectroscopic binary orbits.

Prerequisites, Astronomy 1, 2; Mathematics 11, 12.

2. Statistical Astronomy: Fundamental data. Stellar motions and parallaxes. Distribution of objects in space. The galactic system.

Prerequisites: Mathematics, 11, 12.

3. Theory of Orbits and Computation of Orbit of an Asteroid or Comet.

Prerequisites, Astronomy 1, 2; Mathematics 11, 12.

4. Celestial Mechanics.

Prerequisites, Astronomy 1, 2; Mathematics 11, 12.

5. Photographic Astrometry.

Prerequisites, Astronomy 1, 2; Mathematics 11, 12.

6. Spectroscopy.

Prerequisites, Mathematics 11, 12; Physics 1.

#### REQUIREMENTS FOR WORK IN COURSE

For students who intend to major in mathematics in course the normal sequence of courses is the following: Freshman year, courses 1, 2; Sophomore year, courses 11, 12; Junior year, courses 14, 15; Senior year, courses 16, 17. Those who intend to pursue astronomy as a major subject in course should have in addition courses 1, 2 in that

subject during the Freshman or Sophomore year; advanced courses selected from the list given above combined with work in mathematics constitute the further requirement.

For students who select mathematics or astronomy as their minor, the minimum of three courses should be selected from the following: Mathematics 1, 2; 11, 12; 14, 15; 16, 17; Astronomy 1, 2, 3. Completion of course 12 is the minimum requirement.

Prerequisites for admission to honors seminars in mathematics either as a major or as a minor are the completion of courses 1, 2; 11, 12; the completion of the course in General Physics; a thorough reading knowledge of French or German. For honors work in Astronomy, completion of courses 1, 2 in that subject is necessary in addition to the requirements indicated above.

#### LIBRARIES AND OBSERVATORY

The astronomical part of the departmental library is located on the first floor of the Observatory; the mathematical section on the fifth floor of Parrish Hall. The Library contains complete sets of nearly all the American mathematical and astronomical periodicals, and sets (some of which are complete, some of which are not) of the leading English, German and French periodicals. This library receives the publications of many of the leading observatories in exchange for the publication of the Sproul Observatory.

The equipment of the observatory is best suited for astrometric and photometric problems. The various eclipse expeditions from the Observatory have yielded considerable eclipse data.

The observatory staff is at present devoting time to studies in photographic astrometry with the 24-inch telescope, to photography with the 9-inch doublet, and to the study of the eclipses of the sun. Students interested in any of these problems may work with advantage in conjunction with one of the professors. Results of departmental studies are published in the Sproul Observatory publications and in various scientific journals.

The Observatory is open to visitors on the second and fourth Tuesday nights of each month, except those Tuesday nights that fall in a vacation period. Visitors thus have an opportunity of seeing, in the course of a year, many celestial objects of various types.

## MUSIC

ASSOCIATE PROFESSOR: ALFRED J. SWANN, *Chairman*1. Introduction to Music, Analysis of Musical Forms, and Historical Survey.  
Mr. Swann.*Full course.*

As indicated above, the purpose of the course is a three-fold one: to define and clarify the scope of music for the average listener, to attain to a knowledge of the rudiments of music that will enable the student to analyze such classical forms as the fugue, sonata, or rondo, and to present the material in historical order, pointing out the place of music and the rôle of individual composers in the successive epochs of the Christian era (up to the end of the nineteenth century).

## 2. The Swarthmore College Chorus. Mr. Swann.

The chorus is composed of 55-60 men and women. Entrance requirements are: a good voice, a good ear, and an ability to read music. The annual concert is held in March. The *a capella* music for the chorus is chosen from the older masters (from the later Middle Ages to Bach), with some modern settings of folk-songs and religious chants thrown in. In conjunction with the college orchestra the chorus performs large works of the classic masters, and opera. The major productions of the past ten years have been one act from Vaughan Williams' "Hugh the Drover," three scenes from Rimsky-Korsakoff's "Sadko," the B flat major mass of Haydn, and the Passion Music of Schütz. The last two have been recorded by Victor and Columbia, respectively. Members of the chorus are expected to sing freely in Latin and several modern languages. Rehearsals are held once a week with additional work before the concerts.

## 3. The Swarthmore College Orchestra. Mr. Swann.

The orchestra is composed of 30-35 men and women. Its activities are closely tied to those of the chorus, its main function being to accompany the chorus and soloists. However, at the annual concert the orchestra performs also at least one purely orchestral work, usually an overture. Rehearsals are held at specified times.

## Note on Chamber Music.

No formal instruction in the playing of chamber music is offered, but for years the undergraduates have been given the opportunity of gathering once a week at the home of Professor Arnold Dresden for the purpose of playing the best classic and romantic works of chamber music. The best players and groups are picked to perform on certain public occasions.

## PHILOSOPHY AND RELIGION

PROFESSOR: \*BRAND BLANSHARD, *Chairman*

ASSISTANT PROFESSORS: †JOHN W. NASON

MAURICE H. MANDELBAUM

INSTRUCTOR: RICHARD B. BRANDT

## GENERAL COURSES

## 1. Logic. Mr. Brandt.

*Half course, first semester.*

A study of the forms of reasoning, inductive and deductive. Special attention is given to the application of logical rules in the analysis of arguments and the detection of fallacies.

## 2. Introduction to Philosophy. Mr. Nason, Mr. Mandelbaum, Mr. Brandt.

*Half course, both semesters.*

A survey of the principal problems of philosophy and the alternative answers to them. Drake's *Invitation to Philosophy* is used this year as a basis.

## 4. Ethics. Mr. Mandelbaum, Mr. Brandt.

*Half course, second semester.*

An introduction to ethical theory, with a brief consideration of the various types of ethics and of the application of ethical principles in practice.

## 4a. Social Ethics. Mr. Nason.

*(Omitted in 1938-39.)*

An application of ethical principles to some selected major problems of the day; e.g. the race problem, the distribution of wealth, nationalism and peace, freedom of the press, problems of the family.

## 5. The Philosophy of Science. Mr. Brandt.

*Half course, second semester.*

The logic, methods, and limitations of science, its philosophical presuppositions, and an examination of some of the concepts that dominate its more important fields, e.g., the theory of relativity and of quanta, of mechanism and vitalism, and of biological evolution.

## 6a. Greek and Mediaeval Philosophy. Mr. Mandelbaum.

*Half course, first semester.*

The pre-Socratics, Plato, Aristotle, Stoics and Epicureans, Neoplatonists and Sceptics, early Christianity and the Scholastics. Readings in the sources.

## 6b. History of Modern Philosophy. Mr. Mandelbaum.

*Half course, second semester.*

A review of the principal systems of thought from Descartes on. The greater philosophers are studied through selections from their works; these readings are coordinated through a standard history of philosophy.

## 7. Aesthetics. Mr. Mandelbaum.

*Half course, first semester.*

A historical and critical study of the theory of beauty and of standards of literary and artistic criticism. Recommended for students majoring in literature or the fine arts.

\*Absent on leave.

†Part-time leave of absence.



## 8a. Contemporary Philosophy. Mr. Nason.

*Half course, second semester.*

A critical study and discussion of various outstanding philosophic positions held in the 20th century. Special emphasis is put on contemporary idealism, realism, and pragmatism.

## 12. Introduction to Religion. Mr. Blanshard, Mr. Hull, Mr. Malin, Mr. Nason, and Dean Speight.

*Half course, first semester. (Omitted in 1938-39.)*

Open to all students. A study of the forms of religious experience, of the chief philosophical ideas implied in religion, of the bearing of religion on social change, of the Quaker interpretation of religion, and of the way religion has been embodied in certain outstanding personalities.

## 12a. The Philosophy of Religion. Mr. Brandt.

*Half course, first semester.*

Open to upper classmen, and to freshmen on approval. The first part of the course is devoted to a brief survey of theories of the origin of religion, of lines of its historical development, of psychological studies of religious experience, especially mysticism, and its philosophic implications. The second part is devoted to a critical analysis of representative religious philosophies, with special attention to the idea and proofs of God, the problems of evil, freedom, and immortality.

## HONORS WORK

Philosophy is a subject that has proved particularly well adapted to study by the honors method, and advanced work in it is done chiefly through honors seminars.

*Prerequisites:* For admission to honors study in philosophy, the requirement is at least two semester courses in the field. It is strongly recommended that one of these be the Introduction to Philosophy (course 2). Students who do not take this course should consult their instructors to make sure that their combinations will be acceptable as prerequisites for honors work.

## HONORS SUBJECTS IN PHILOSOPHY:

## 1. Moral Philosophy. Mr. Nason, Mr. Brandt.

*Both semesters.*

A seminar in ethics, systematic and historical. Rashdall's *Theory of Good and Evil* (2 vols.) is covered in detail. A printed syllabus (75 pp.), containing lists of readings in the sources, references in recent literature, topics for papers, and questions for self-examination, has been prepared for this seminar.

## 2. Plato. Mr. Nason.

*First semester.\**

An examination of all the major and some of the minor Platonic dialogues in an effort to understand his contributions to ethics, politics, and metaphysics and to appreciate his importance for Western thought. Attention will be paid both to his historical setting and to his significance for contemporary problems. Recommended for students of classics and literature.

## 3. History of Modern Philosophy. Mr. Nason, Mr. Mandelbaum.

*Both semesters.*

The development of modern thought from Bacon and Descartes to Kant. If the group so desires, it may, with the approval of the instructor, exchange a study of certain of the pre-Kantian philosophers for a study of more recent philosophical movements. This seminar may appropriately be combined with work in any of the three divisions.

## 4. Contemporary Philosophy. Mr. Nason.

*First semester.\**

A more intensive treatment of the epistemological and metaphysical problems raised in the course on this subject. Bradley's *Appearance and Reality*, Dewey's *The Quest for Certainty*, and Broad's *The Mind and Its Place in Nature* will constitute the basis for essays and discussion.

## 5. Classic Problems in Philosophy. Mr. Blanshard.

*Not given in 1938-39.*

The first half of the study is devoted to the theory of knowledge; Montague's *Ways of Knowing* is used as a common basis and is supplemented by readings in contemporary philosophy. In the second half of the semester, selected problems in metaphysics are taken for discussion, including usually the mind-body problem, the issue between the mechanist and the vitalist, the nature of the self, the problem of freedom, and the relation between philosophy and religion. Limited to Seniors except for Juniors with special permission.

## 6. Aesthetics. Mr. Mandelbaum.

*Both semesters.*

A study, partly historical, partly systematic, of the philosophies of beauty and of art, including theories of tragedy and comedy, of the sublime, and of standards of criticism. Readings in the sources, ancient and modern; occasional visits to the art collections of Philadelphia. Recommended for students of literature and the fine arts.

## 7. Philosophy of Science. Mr. Brandt.

*First semester.\**

A consideration of the nature and scope of science and scientific method; and of the logical foundations of science, including the theories of induction and meaning, and the relation of epistemology to the interpretation of science. Examination of such concepts as space, time, causality, mechanism, vitalism, explanation, and other scientific concepts of importance for the student of philosophy.

## 8. Social Philosophy. Mr. Mandelbaum.

*First semester.\**

A study of the ethical basis of the state, and of rights and duties within it; of the current conflict between Fascist, Marxist, and democratic views of the state; of the ideas of equality, liberty, law, property, and justice. Recommended for students in the social sciences.

## 9. Thesis.

A thesis may be substituted by majors in the department for one of the honors subjects, upon application by the student and at the discretion of the department.

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\*The Philosophy Department is prepared to give any of the above seminars upon the request of three or more students in either or both semesters. This makes it difficult to state definitely in advance during which semester of the year any seminar will be given. Students should accordingly treat the semester listings above as customary rather than as fixed.

## PHYSICAL EDUCATION FOR MEN

ASSOCIATE PROFESSOR: MARK MACINTOSH, *Director  
of Physical Education and Athletics*

ASSISTANT PROFESSOR: ROBERT DUNN, *Assistant Director*

INSTRUCTORS: AVERY F. BLAKE

E. J. FAULKNER

ASSISTANTS: WILLIS J. STETSON

HOWARD SIPLER

JAMES MCADOO

TOWNSEND SCUDDER, III

HENRY FORD

LEW ELVERSON

PAUL STOFKO

COLLEGE PHYSICIAN FOR MEN: DR. FRANKLIN GILLESPIE

## Sports Education.

This course is required of all first- and second-year men.

The minimum requirement is one hour of sports participation on each of two days per week, with at least one team sport each week.

It is the aim of the department to offer every student an opportunity to participate in a variety of activities regularly; to broaden his social contacts with other students and receive the valuable benefits of sports, such as training in leadership, self-discipline, morale, unselfishness, and health habits; and to develop carry-over sports that he will continue to enjoy after he leaves college.

A student who has not satisfied his requirement in Physical Education, will be refused admission to the Junior class. Juniors and Seniors who have fulfilled Freshman and Sophomore requirements may elect to continue participation in the Sports Education program.

## FALL ACTIVITIES

## Opening of College to Thanksgiving Recess

Badminton

Handball

\*Cross-Country

\*Soccer

\*Football

Tennis

Golf

Touch Football

Hygiene (Required of all Freshmen.)

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\*Intercollegiate varsity and freshman schedules are played in these sports.

## WINTER ACTIVITIES

## Thanksgiving Recess to Spring Recess

Apparatus	Life Saving
Badminton	Paddle Tennis
*Basketball	Squash
Boxing	*Soccer
*Fencing	*Swimming and Diving
Golf	*Tennis
Handball	*Track
Lacrosse	Volley Ball
	Wrestling

## SPRING ACTIVITIES

## Spring Recess to May 15

*Baseball	Softball
*Golf	*Tennis
*Lacrosse	*Track

*Corrective Physical Education:* A student who is unable to follow the regular program in physical education because of a physical handicap will be given special activities to meet his needs.

*Equipment:* It is required of every student to have a complete regulation grey sweat suit, shorts, sleeveless jersey, basketball shoes and spike shoes.

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\* Intercollegiate varsity and freshman schedules are played in these sports.

## PHYSICAL EDUCATION FOR WOMEN

ASSISTANT PROFESSOR: VIRGINIA RATH, *Chairman*

INSTRUCTORS: ALICE GATES  
MAY E. PARRY

ASSISTANT: EMMA MICHAEL REYNOLDS

COLLEGE PHYSICIAN FOR WOMEN, DR. DOROTHY ASHTON

RIDING: ALICE HOBSON

## REQUIREMENTS FOR WOMEN

Three hours of Physical Education each week are required of all resident and non-resident women throughout their college course. Every student is given a physical and medical examination at the opening of each college year and is advised at that time by the college physician which activities she may enter.

Each student is allowed five (5) absences from class during the fall season, ten (10) during the winter season and five (5) during the spring season. These cover absences for every reason except those incurred while the student is in the infirmary or ill at home. Each unexcused absence in excess of the numbers mentioned above shall be penalized by one extra class hour for one season.

The program is divided into three terms: fall, opening of college to Thanksgiving recess; winter, Thanksgiving recess to spring recess; spring, spring recess to June. Besides class instruction there is inter-class and varsity competition in hockey, tennis, basketball, swimming, golf, archery, fencing and badminton.

First-year students are required to attend a course of orientation lectures, given once a week during the first semester.

Regulation costumes should be ordered before college opens. Blanks for this purpose will be sent out from the Deans' office to all incoming students.

## COURSES FOR WOMEN

1. Hockey. Miss Rath, Miss Gates, Miss Parry.

*Two periods per week. Fall term.*

Required of first- and second-year students and elective for third- and fourth-year students. Varsity hockey is required of squad members instead of class hockey.

2. Archery. Miss Rath.

*Two periods per week. Fall and Spring.*

Open to third- and fourth-year students in the fall. Open to all students in the Spring.

3. Horseback Riding. Miss Hobson.  
*Two or three periods per week. Fall, Winter and Spring.*  
Open to all students.
4. Swimming. Miss Rath, Miss Gates, Miss Parry.  
*Fall, Winter and Spring.*  
Required of all freshmen fall term. Seniors are required to pass a standard swimming test before graduation. Sophomores and Juniors may pass this test in advance.  
Beginning, intermediate and advanced classes in strokes, diving and safety measures. Red Cross Life Saving, senior and Examiners tests.  
Varsity swimming, two periods per week winter term is required of all squad members.
5. Danish Gymnastics. Miss Gates.  
*Two periods per week. Winter term.*  
Open to all students.
6. Tumbling. Miss Rath.  
*Two periods per week. Winter term.*  
Open to all students.
7. Dancing. Miss Gates.  
*Fall, Winter and Spring.*  
Classes for Beginners, Intermediate and Advanced. Two periods per week.
8. Basketball. Miss Gates, Miss Parry, Miss Rath.  
*Winter term.*  
(a) Open to all students.  
(b) Varsity basketball is required of all squad members. Two periods per week.
9. Tap Dancing. Miss Gates, Miss Rath.  
*Winter term.*  
Open to all students.  
(a) Intermediate and Advanced. Two periods per week.  
(b) Beginners. One period per week.
10. Volley Ball. Miss Parry.  
*One period per week. Winter term.*  
Open to third- and fourth-year students.
11. Individual Gymnastics. Miss Rath.  
*Two periods per week. Winter term.*  
For those students who need special exercise because of incorrect posture or minor orthopedic defects.
12. Body Mechanics. Miss Rath.  
*One period per week. Winter term.*  
Required of all first-year students.

13. Badminton. Miss Parry, Miss Rath.

*One period per week. Winter.*

14. Tennis. Miss Parry, Miss Rath, Miss Gates.

*Two periods per week. Fall and Spring.*

Open to all students.

Varsity tennis is required of all squad members in the Spring.

Individual lessons with Mr. Faulkner.

15. Fencing. Dorothy Macy, '40.

*Fall, Winter and Spring.*

16. Golf. Mrs. Reynolds.

*Two periods per week. Fall and Spring.*

Open to experienced players only, in the Fall.

Open to all students in the Spring.

Varsity golf is required of all squad members in the Spring.

17. Folk Dancing. Miss Gates.

*Two periods per week. Winter term.*

Open to all students.

## PHYSICS

PROFESSOR: WINTHROP R. WRIGHT

ASSOCIATE PROFESSOR: MILAN W. GARRETT

INSTRUCTOR: WILLIAM C. ELMORE

## GENERAL COURSES

1. General Physics. Mr. Wright, Mr. Garrett and Mr. Elmore.

*Full course.*

Three lectures and one laboratory period weekly together with such conferences as prove desirable. This course is a prerequisite for all other work in physics whether in course or in honors. It is also required for students majoring in engineering and for students expecting to study medicine.

2. Advanced General Physics. Mr. Elmore.

*Full course.*

Three conferences and one laboratory period weekly. The material for this course is drawn from the fields of mechanics, hydrodynamics, the kinetic theory, thermodynamics, and modern physics. It is recommended for physics majors and should also meet the needs of students in course who are majoring in the engineering and the science divisions.

3. Modern Physics. Mr. Wright.

*Second semester.*

These lectures in the field of modern physics present in an elementary fashion the progress in physics during the past quarter century with some indication of directions in which active growth is now going on. They center around the nature of matter, electricity, and radiation and include such experimental subjects as positive and negative ions, X-rays, radioactivity, spectra, and the photo-electric effect. They carry no credit and their primary aim is to stimulate curiosity and to provide some familiarity with authors who set forth these matters in their fullness. An elementary knowledge of general physics is presumed.

## HONORS WORK

1. Physical Optics. Mr. Wright.

*First semester.*

Based on Robertson's *Introduction to Physical Optics*. The laboratory work includes the measurement of thin and thick lenses, the intercomparison of wave lengths by prism, grating, and interference spectrographs both visually and photographically, the computation of series constants, and the measurement of various interference and diffraction patterns.

2. Electricity and Magnetism. Mr. Garrett.

*First semester.*

Based principally on Page and Adams' *Principles of Electricity*. It covers electrostatics, magnetism, electro-magnetic phenomena, electronics and some applications. It is accompanied by laboratory measurements involving direct, alternating, and electronic currents, static charges and permanent magnets. Prerequisite—Mathematics seminars in advanced calculus and differential equations.

3. Atomic Physics. Mr. Wright and Mr. Garrett.

*Second semester.*

Readings in the fields of gaseous conduction, photoelectricity, thermionic emission, X-rays, radioactivity and atomic structure with accompanying quantitative experiments. This seminar must be preceded by the one in electricity and magnetism.



#### 4. General Physics. Mr. Wright.

This seminar is given for majors in the biological sciences. It emphasizes the fields of dynamics of solids and liquids, the kinetic theory, electricity and modern physics. The readings are supplemented by experiments. A knowledge of calculus is a distinct aid in this field.

#### Prerequisites:

The following courses or their equivalent are prerequisite to honors work in physics, whether major or minor:

General Physics 1  
Freshman Mathematics 1, 2  
Calculus 11, 12  
German 1, 2

Students majoring in physics are expected to take Advanced Physics 2 and General Chemistry 1. Major students in general read for honors, but in special circumstances they may work toward a degree in course.

## POLITICAL SCIENCE

PROFESSOR: ROBERT C. BROOKS, *Chairman*

ASSISTANT PROFESSOR: J. ROLAND PENNOCK

INSTRUCTOR: FRANCES L. REINHOLD

## GENERAL COURSES

## 1. Introduction to Political Science. Mr. Brooks and Miss Reinhold.

*Full course.*

Nature, content, and applications of political science, its relation to other social sciences, illustrated by an outline study of the framework of government and the organization, methods, and aims of leading political parties in England, France, Switzerland, Germany, Italy, and Russia. Comparisons between the political institutions of the countries named and those of the United States.

Open to all students.

## 2a. American Political Parties and Issues. Mr. Brooks.

*Half course, first semester. (Omitted in 1939-40.)*

Party activities, present-day issues, the legal status of parties in the United States, detailed study of the presidential campaigns of 1928, 1932, and 1936.

Open to all students except Freshmen.

## 2b. Public Opinion. Mr. Brooks.

*Half course, second semester.*

Public opinion, propaganda, pressure groups, particularly in the United States. Open to all students except Freshmen.

## 3. American Federal Government. Mr. Pennock.

*Half course, first semester.*

A study of the present structure, functions, and operation of American Government, with special emphasis upon the National Government, and upon recent developments in the field. Open to all students except Freshmen.

## 4. American State and Municipal Government. Miss Reinhold.

*Half course, second semester.*

Theory and practice of these spheres of local government. The Commission Plan, the City Manager Plan, Proportional Representation. Recent trends in administration—correction, charity, education, health, highways, natural resources.

## 6. Political Motives. Mr. Brooks.

*Half course, first semester.*

A detailed study of the personal development, motives and careers of several leaders, such as Theodore Roosevelt, Woodrow Wilson, Jane Addams, and Franklin D. Roosevelt; also in somewhat less detail of the careers of William H. Taft, Warren G. Harding, Calvin Coolidge, and Herbert Hoover.

Open to all students except Freshmen.

## 7. Political Problems of Today. Mr. Pennock.

*Half course, second semester.*

Reconsideration of the bases of representative government in the light of changed economic and social conditions in the modern State; examination of such alternative principles as those offered by Communism and Fascism; investigation of the possibilities of "planning" in a democracy; and an appraisal of present tendencies in political development.

Prerequisite, Course 1 or Course 3.

## 8. Special Readings in Political Science. Miss Reinhold.

*Half course, second semester.*

Intensive readings on special phases of politics—types of governments, executives, legislatures, judiciaries, administrative systems, and the like, throwing into high relief the most controversial questions in each field. Preparation for the final comprehensive examinations. Open only to Seniors with the major in Political Science.

## 9. American Constitutional Law. Mr. Pennock.

*Half course, first or second semester.*

The Constitution as developed by the Court; and the Court as seen through the cases. Stressing (a) the extent of national power, (b) constitutional limitations upon state legislation, and (c) the Supreme Court and the New Deal. Analysis of proposals to modify the Court.

Prerequisite, Course 1 or Course 3.

## 10. Public Administration. Mr. Pennock.

*Half course, first semester.*

An analysis of the principles of administrative organization in modern governments with illustrative material drawn chiefly from the national government of the United States and with particular reference to the implication of recent changes. Problems to be dealt with include: delegation of power, administrative integration, conduct of regulatory and managerial activities, personnel, administrative legislation and adjudication.

Open to Seniors and Juniors and Sophomore majors. Course 3 is normally a prerequisite.

## 11. American Political Oratory. Mr. Hunt.

*Half course, second semester. (Omitted in 1938-39.)*

An application of the doctrine of Plato's *Phaedrus* and *Gorgias* and Aristotle's *Rhetoric* and *Politics* to American political oratory. Analysis of Lincoln-Douglas debates, selected speeches of Lincoln, Bryan, Theodore Roosevelt, Woodrow Wilson, and contemporary molders of public opinion. Reports, briefs, and speeches before the class.

Open to all students.

## 12. Latin American Relations. Miss Reinhold.

*Half course, first semester.*

Political, historical, cultural, commercial relationships between the United States and Mexico, Central America, the Caribbean area, and South America. Discussions of Pan-Americanism, the Monroe Doctrine, boundary disputes, trade agreements, the Good Neighbor Policy. American diplomatic history as seen by Latin America.

## 13. International Relations. Miss Reinhold.

*Half course, second semester.*

Principles of international law. Foreign policies of Europe, the United States, the Far East and the Near East. The League of Nations, Hague Tribunal, World Court, and Pan-American Union. Not a course in current events, but rather a discussion of principles on which current events are based.

Students with a major in political science should select as much collateral work as possible in economics; also in modern history and philosophy.

## HONORS WORK

*Prerequisites:* The prerequisite for Honors work in Political Science is the full course Political Science 1, Introduction to Political Science. Students may substitute for this two of the half courses: Political Science 3, American Federal Government; Political Science 2a, American Political Parties and Issues, and Political Science 9, American Constitutional Law.

*Topics of Final Examinations:* Seminars are offered preparing students for honors examinations as follows:

1. Political Theory. Mr. Pennock.

A study of the nature of the state, of forms of government, and of the dynamics of political development, with special reference to the theories set forth by writers on these subjects from Plato to the present.

2. Political Institutions of the United States. Mr. Brooks.

*Second semester.*

General framework of American government, national, state and local, particular attention being given to Congress, the Presidency, political parties and public opinion.

3. Contemporary Democracies and Dictatorships. Mr. Brooks.

*First semester.*

A detailed study of the principal forms of government of each type, the theories on which they rest and the economic and social conditions that form their background.

4. Problems in Government and Administration. Mr. Pennock.

A detailed study of major problems of government, particularly on the administrative side, and especially as they manifest themselves in this country. Topics studied include: public budgeting and financial control, administrative legislation and adjudication, governmental reorganization, administrative areas, governmental corporations, and problems of public service personnel administration.

6. International Law and Organization. Miss Reinhold.

*First semester.*

Principles of law operative among members of the "community of nations"—state's jurisdiction over land, air, water, citizens, aliens; state's immunities and obligations; rules of land, sea, and air warfare; rights and responsibilities of neutrals. Also a study of international organizations—the League of Nations, The Hague Tribunal, the World Court, the International Labor Office, and the Pan-American Union.

7. Thesis. Mr. Brooks, Mr. Pennock and Miss Reinhold.

Approval of the instructor immediately concerned must be secured at the beginning of the student's Junior year.

## PSYCHOLOGY AND EDUCATION

ASSOCIATE PROFESSOR: \*ROBERT B. MACLEOD, *Chairman*

PROFESSOR: WOLFGANG KÖHLER

ASSISTANT PROFESSOR: EDWIN B. NEWMAN

INSTRUCTOR: KARL DUNCKER

LECTURERS: GERTRUDE GILMORE LAFORE

JAMES MULHERN

LAUREN H. SMITH

RESEARCH ASSOCIATES: HANS WALLACH

CLAUDE BUXTON

RICHARD S. CRUTCHFIELD

## GENERAL COURSES

1. Introduction to Psychology. Mr. MacLeod, Mr. Newman.

*Full course.*

A study of the structure and organization of the mental life of the normal, human, adult.  
Not open to Freshmen.

2. Experimental Psychology. Mr. Köhler, Mr. MacLeod, Mr. Newman.

*Half course, each semester.*

A laboratory course on problems in human psychology.  
Prerequisite, Course 1.

3. Comparative Psychology. Mr. Köhler.

*Half course, first semester. (Omitted in 1938-39.)*

A presentation of those facts in animal psychology, child psychology and anthropology  
which contribute to our present knowledge of general psychology.  
Prerequisite, Course 1.

4. Social Psychology. Mr. Duncker.

*Half course, first semester.*

A psychological study of relationships between individual and individual and between  
group and individual.  
Prerequisite, Course 1.

5. Systematic Psychology. Mr. Köhler.

*Half course, second semester. (Omitted in 1938-39.)*

Prerequisite, Course 1.

6. Advanced Experimental Psychology. Mr. MacLeod, Mr. Newman.

*Half course, each semester.*

Prerequisite, Courses 1 and 2.

7. Educational Psychology. Mr. Duncker.

*Half course, second semester.*

Problems of learning, intelligence and motivation; special problems related to methods  
of teaching.

Prerequisite, Course 1.

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\*Absent on leave, second semester.

## 8. Child Psychology. Mrs. Lafore.

*Half course, second semester.*

Lectures on the intellectual, social and emotional development of the pre-school child, supplemented by observation in a nursery school.

Prerequisite, Course 1.

## 9. Human Motivation. Mr. MacLeod.

*Half course. (Omitted in 1938-39.)*

Prerequisite, Course 1.

## 10. Psychological Tests and Measurements. Mrs. Lafore.

*Half course, first semester.*

## 11. Psychological Tutorial. The Staff.

*Half course, second semester.*

Supervised reading in fields that have not been adequately covered in courses. Open only to seniors majoring in psychology.

## COURSES IN EDUCATION

## 12. Historical Introduction to Education. Mr. Mulhern.

*Full course. (Offered in 1938-39.)*

A survey of the evolution of educational institutions from primitive to modern times, emphasizing the interdependence of educational institutions and economic, social, religious and political institutions at various stages of civilization.

Either semester may be taken as a half course.

## 13. Philosophy of Education. Mr. Mulhern.

*Full course. (Offered in 1939-40.)*

An inductive determination of those fundamental principles of education in a democratic society which proceed from our knowledge of the nature of man, the nature of society, and the fundamental social theories of the state; the study of the bearing of these principles on the most important problems of the present day.

## 14. Mental Hygiene. Dr. Smith.

*One hour per week throughout the year.*

Open to all students. No college credit is given for this course, but it will count for two hours' credit toward the teacher's certificate.

## REQUIREMENTS FOR WORK IN COURSE

Students intending to elect psychology as major subject are advised to take a course in philosophy and a course in biological or physical science, preferably during the Freshman year, and to acquire a reading knowledge of German. Major students in course are expected to take Introduction to Psychology, Experimental Psychology and the equivalent of two and one-half further courses in psychology. Minor students are expected to take Introduction to Psychology and the equivalent of two further full courses in psychology. Courses in education will not be credited toward a major or minor in psychology.

Education alone may not be elected as a major or minor subject,

and not more than two full courses in education will be accepted for credit toward the bachelor's degree. The Pennsylvania requirements for the certification of secondary school teachers include 21 hours of psychology and education. With the exception of 6 hours of practice teaching, which must be taken elsewhere, Swarthmore students may fulfil these requirements by taking Introduction to Psychology (1), Educational Psychology (7), and Historical Introduction to Education (12), together with three further half courses in the department chosen from the following: Mental Hygiene (14), Child Psychology (8), and Philosophy of Education (13).

### HONORS WORK

*Prerequisites:* Introduction to Psychology (1) is the normal prerequisite for all honors work. This may be waived, however, in cases of candidates who have done advanced work in zoölogy and physiology, and who propose to concentrate in the field of physiological psychology. All major students are advised to take introductory work in zoölogy or physics and in philosophy, and to acquire a reading knowledge of German.

#### Honors seminars:

1. Perception. Mr. Köhler, Mr. MacLeod.

Deals systematically and experimentally with problems in the field of perception, no attempt being made to cover the whole field in any one semester; open to all qualified honors students, but especially recommended for students of the natural sciences and of philosophy.

2. Learning. Mr. Duncker, Mr. Köhler, Mr. Newman.

The experimental study of memory and learning, both with a view to finding optimal conditions of motivation, the nature and arrangement of material, temporal relations and the like, as well as formulating hypotheses about the nature of the learning process; open to all qualified honors students.

3. Human and Animal Development. Mr. Köhler, Mr. Newman.

A comparative study of psychological processes in animals, children and primitive people, supplemented by laboratory experiments; open to all qualified honors students.

4. The Individual in Society. Mr. Duncker, Mr. Köhler, Mr. MacLeod.

The relationship between man and his society, approached from the points of view of social psychology, sociology and cultural anthropology; open to all qualified honors students, but especially designed for students of the social sciences.

5. Motivation. Mr. Duncker, Mr. MacLeod.

A systematic and experimental approach to the dynamics of behavior, based on material drawn both from the laboratory and from the clinic; open to all qualified honors students, but of particular interest to students of ethics and of the social sciences.

6. Language and Thinking. Mr. MacLeod.

The psychological bases of communication, with special reference to the origin and development of language, the nature of linguistic symbolism, the disorders of linguistic behavior, creative imagination, and rational and irrational thinking; open to all qualified honors students, but especially designed for students of literature, and recommended in conjunction with the seminar on Linguistics.

7. Psychophysiology. Mr. Newman.

An introductory study, roughly parallel to Psychology I, designed for selected students in the natural sciences who have been unable to take the regular course. With permission, this seminar may be offered as a fourth seminar in zoölogy.

8. Thesis.

May be presented as a substitute for one seminar, provided the student is doing major work in psychology with four seminars, and provided some member of the department is willing to undertake the direction of the thesis.



## ROMANCE LANGUAGES

PROFESSOR: EDITH PHILIPS, *Chairman*

ASSOCIATE PROFESSOR: LÉON WENCELIUS

ASSISTANT PROFESSORS: MARCEL BRUN

HAROLD MARCH

INSTRUCTORS: MERCEDES C. IRIBAS

JACQUES SCHERER

PART-TIME INSTRUCTOR: SYLVIA GELMI-FOREST

## FRENCH

## 1. Elementary French. Miss Philips.

*Full course.*

For students who begin French in college. Equivalent of two years' secondary school preparation.

## 2a. Reading, Grammar and Composition. Members of the department.

*Half course, each semester.*

Prerequisite, French 1 or two years' secondary school preparation and a placement test.

## 2b. Reading, Grammar and Composition. Continued. Members of the department.

*Half course, each semester.*

Prerequisite, French 2a or three years' secondary school preparation and a placement test.

## 3a. Introduction to French Literature. Members of the department.

*Half course, each semester.*

Prerequisite, French 2b or four years' secondary school preparation and a placement test. Representative texts of modern French prose writers. Conducted in French with frequent written reports in French.

## 3b. Introduction to French Literature. Members of the department.

*Half course, each semester.*

Prerequisite, French 3a. Representative texts from the French theater from the classical period through the nineteenth century.

## 4. Le Roman et le Theatre Romantique. Mr. March.

*Full course, may be divided.*

Prerequisite, French 3.

## 5. La Littérature Moderne. Mr. Scherer.

*Full course, may be divided.*

## 6. La Pensée Française au dix-huitième siècle. Mr. March.

*Full course, may be divided.*

## 7. Formation du Classicisme français; de la Pléiade à Racine. Mr. Brun.

*Full course, may be divided.*

8. Formation du Classicisme français; les prosateurs. De Calvin à Fénelon.  
Mr. Wencelius. *Full course, may be divided.*
9. La Poésie du dix-neuvième siècle. Mr. Wencelius. *Half course.*
10. Advanced Composition. Mr. Scherer. *Half course.*
11. Stylistique. Mr. Scherer. *Half course.*

## SPANISH

1. Elementary Spanish. Miss Iribas. *Full course.*  
A course aimed to give a knowledge of the essentials of Spanish grammar, the ability to read ordinary Spanish with ease, and some practice in conversation. Tests: (a) Hills and Ford, *Spanish Grammar for College*; (b) Castills, *Lecturas Introductorias*; (c) *Tales of Spanish America*.
2. Second-year Spanish. Miss Iribas. *Full course.*  
Reading, grammar and composition; reading of six modern novels and plays and conversation based on texts.
3. Introduction to Spanish Literature. Miss Iribas. *Full course.*  
Collateral reading and reports in Spanish.

## ITALIAN

1. Elementary Italian. Mrs. Gelmi-Forest. *Full course.*  
Aimed to give the student ability to read ordinary Italian and to write and speak simple Italian. Second term, readings from Dante, the *Inferno*.
2. Italian reading and composition. Mrs. Gelmi-Forest. *Full course.*  
Italian literature to the end of the 18th Century. Readings from Dante, the *Purgatorio*.
3. Introduction to Modern Italian Literature. Mrs. Gelmi-Forest. *Full course.*

All students offering French or Spanish for entrance take a placement test. The results of this test, taken into consideration with the number of years of preparation, determine the student's assignment to Course 2 or Course 3.

The department does not offer a major in Spanish or Italian.

## HONORS WORK

French may be offered as a major or minor subject in the division of the Humanities.

Prerequisites for majors: French 3, Latin 1, or its equivalent, History of Europe or History of France, History of Philosophy or Introduction to Philosophy.

Majors are expected to speak French with sufficient fluency to conduct a discussion in French with the examiner in the oral examination. Some indulgence is shown by the examiners to minors in respect to their spoken French, although all seminars are conducted in French.

Seminars are offered as follows:

1. *La Renaissance en France*. Mr. Wencelius.  
Rabelais, Calvin, Montaigne, Ronsard.
2. *Le Théâtre classique*. Mr. Scherer.  
Corneille, Racine, Molière.
3. *Les prosateurs classiques*. Mr. Brun.  
Descartes, Pascal and other prose writers considered from the point of view of literature.
4. *La Pensée française, au dix-huitième siècle*. Miss Philips.  
Montesquieu, Voltaire, Diderot, Rousseau.
5. *La Poésie lyrique au dix-neuvième siècle*. Mr. March.  
The Romantic, Parnassian and Symbolist movements. Modern tendencies.
6. *Le Roman français depuis Flaubert*. Mr. March.  
Realism, naturalism, modern tendencies.
7. *Histoire des idées politiques du 19e siècle*. Mr. Wencelius.  
Lamennais, de Maistre, Saint-Simon, Auguste Comte and others, studied in their relation to literature and to the development of French ideas.
8. *La critique moderne*. Mr. Brun.  
History of French criticism since Taine.

The seminars in French are planned with reference to the choices of the students and the convenience of the department, and the semester in which they are given varies from year to year. Majors are urged to elect four seminars which cover the four modern centuries.

## ZOOLOGY

PROFESSOR: LAURENCE IRVING, *Chairman*

ASSOCIATE PROFESSOR: ROBERT K. ENDERS

ASSISTANT PROFESSORS: FRANK R. KILLE

WALTER J. SCOTT

INSTRUCTORS: RUTH MCCLUNG JONES

C. BROOKE WORTH

RESEARCH ASSOCIATE: EDGAR C. BLACK

ASSISTANTS: VIRGINIA SAFFORD

ELISABETH M. J. FUNKHOUSER

### GENERAL COURSES

#### 1. General Zoölogy. The staff.

*Full course.*

Lectures, demonstrations, conferences and laboratory exercises covering the major aspects of zoölogy. Biological principles as illustrated by invertebrate animals are stressed during the first semester. A study of vertebrate morphology and physiology with special consideration of the general topics of embryology, evolution, genetics and ecology forms the basis of the work of the second semester. This course meets the needs of all students intending to major or minor in zoölogy, as well as for majors in psychology.

Two lectures and one laboratory period per week with occasional conferences and field trips.

#### 2. Comparative Vertebrate Anatomy. Mr. Enders.

*Half course, second semester.*

A course of lectures, laboratory conferences and dissection presented from the comparative viewpoint. Dissection of several vertebrate types including the monkey is undertaken.

Two lectures, two laboratory periods per week with occasional conferences. Prerequisite, 1.

#### 3. Elementary Physiology. Mr. Scott.

*Half course, first semester.*

A consideration of the physiology of muscle, nerve, circulation, respiration, central nervous system, special senses, and digestion; the treatment is designed to give a broad understanding of the mechanism of the vertebrate body. In the laboratory standard experiments on living tissue are performed.

Two lectures, one conference, and one laboratory period per week. Prerequisite, 1.

#### 4. Embryology. Mr. Enders.

*Half course, first semester.*

A study of the developmental processes in vertebrates. Laboratory periods are devoted to the developmental anatomy of amphioxus, frog, chick, and pig. Experimental analysis of development is introduced in the lectures and conferences.

Two lectures or conferences and two laboratory periods per week. Prerequisite, 1.

## 5. Invertebrate Zoölogy. Mr. Kille.

*Half course, first semester in alternate years. (Offered in 1938-39.)*

A study of the structure, development, and physiology of representative invertebrates exclusive of protozoa and insects. Special attention is given to the literature dealing with regeneration, analysis of development, hormone action, etc.

One laboratory period and one three-hour discussion period per week. In addition, field trips are made to marine, fresh water, and land habitats. Prerequisite, 1.

## 6. Microscopic Anatomy. Mrs. Jones.

*Half course, second semester.*

This course is concerned with the microscopic structure of vertebrates and invertebrate animals. Whenever possible the tissues are examined in the living condition. The student makes enough preparations to familiarize himself with the principal methods of modern microtechnique.

Two lectures and two laboratory periods per week. Prerequisite, 1.

## 7. Mammalian Physiology. Mr. Scott.

*Half course, second semester, in alternate years. (Offered in 1939-40.)*

A laboratory course of experiments illustrating the more important features of the circulatory, respiratory and nervous systems.

Two lectures, one conference, and one laboratory period per week. Prerequisites, 1, 2, 3.

## 8. Special Course. The staff.

For advanced students. Open only to those who have secured the consent of the department.

## HONORS WORK

Students who plan to enter Honors work as majors in zoölogy should complete during their first two years: one and one-half courses in zoölogy (1, 2), one course in chemistry (1), one course in mathematics (1, 2), one course in physics (1), two courses in German (1, 2) or their equivalent.

For admission to minor Honors work Zoölogy 1 is a prerequisite. In addition seminars in Physiology require one course in physics and two courses in chemistry.

Additional preparation in chemistry is desirable (2, 6). Further work in mathematics is recommended for those who have ability in the subject (11, 12). The additional courses in chemistry and mathematics are necessary for taking seminars in those departments.

Honors students usually select four seminars in zoölogy and four seminars divided between two other subjects within the Division. Genetics or Psychology for Pre-medical Students may be offered in place of one seminar in zoölogy.

Work at summer biological stations may be substituted for certain seminars and will allow more choice in the College.

### Honors seminars offered:

Comparative Anatomy. Mr. Enders.

*Second semester.*

Comparative anatomy of the Chordates. The types used for dissection vary to meet the needs of each group.

Embryology. Mr. Kille.

*Second semester.*

The nature of the germ cells, experimental analysis of development and reproduction, and the developmental anatomy of vertebrates with laboratory emphasis on the chick and the pig.

Microscopic Anatomy. Mrs. Jones.

*First semester.*

A study of the minute structure of animals by the examination of living cells and tissues, and by the analysis of prepared slides, most of these slides are prepared by the student who thus acquires a working knowledge of microscopical technique.

Neurology. Mr. Scott.

*First semester.*

A preliminary consideration of the evolution of the nervous system is followed by a detailed study of the anatomy of the human brain with special emphasis upon the internal structure and its physiological implications. Frequent reference is made to corresponding features of the brains of lower vertebrates.

Physiology I. Mr. Irving.

*First semester.*

General and comparative physiology, considering the action of muscles and nerves, the penetration and distribution of dissolved substances through the animal and the composition of animals.

Physiology II. Mr. Irving.

*Second semester.*

Respiration, considering the utilization of oxygen and the production of carbon dioxide, their transport and exchange with the atmosphere.

### REQUIREMENTS FOR WORK IN COURSE

Students in general course must complete during their four years the following: Two courses in chemistry, one course in mathematics, one course in physics, two courses in German (or their equivalent), four courses in zoölogy. Genetics (Botany Department) or botany may be offered as one advanced zoölogy course. With permission of the department a second course in physics, a second course in mathematics or a third course in chemistry may be substituted for the fourth course in zoölogy providing such a course is not being offered as part of the minor requirement.

The departmental requirements of two courses in chemistry and one in physics constitute a minor for zoölogy majors.

The attention of the student preparing for the medical profession is directed to the admission requirements of the medical school which he plans to attend.

## STUDENTS, 1938-39.

## UNDERGRADUATE STUDENTS

Name	Major Subject	Address
ACKERMAN, EUGENE, '41	<i>Physics,</i>	285 Garfield Place, Brooklyn, N. Y.
ACKERMAN, RUTH HARRIET, '39	<i>Fine Arts,</i>	404 Yale Ave., Morton, Pa.
ADAMS, ARTHUR KINNEY, '42	<i>Chemistry,</i>	Falls Church, Va.
ADAMS, HAROLD ARMSTRONG, '40	<i>Engineering,</i>	5355 Webster St., Philadelphia, Pa.
ADAMSON, WILLIAM COLBERT, '40	<i>Zoölogy,</i>	810 W. 21st St., Wilmington, Del.
ALBERTSON, RAYMOND CADWALLADER, '39	<i>Pol. Science,</i>	Hitchcock Lane, Westbury, N. Y.
ALBURGER, DAVID E., '42		350 Meadow Lane, Merion, Pa.
ALEXANDER, ELLIOT RITCHIE, JR., '41	<i>Chemistry,</i>	702 E. Marks St., Orlando, Fla.
ALEXANDER, JOSEPHINE LOUISE, '39	<i>English,</i>	1834 Kenyon St., N. W., Washington, D. C.
ALFORD, NEWELL GILDER, JR., '40	<i>English,</i>	314 S. Homewood Ave., Pittsburgh, Pa.
ANDRUS, JUNE ELIZABETH, '41	<i>English,</i>	150 Jackson Ave., Bradford, Pa.
ANGELL, RICHARD BRADSHAW, '40	<i>Economics,</i>	Northgate Apartments, Scarsdale, N. Y.
APPLETON, FRANK WIRT, JR., '41	<i>Engineering,</i>	30 Rockridge Rd., Mt. Vernon, N. Y.
ASINOF, ELIOT TAGER, '40	<i>History,</i>	20 Auerbach Lane, Cedarhurst, N. Y.
AUSTIN, HENRY EXUM, '40	<i>Zoölogy,</i>	224 Park Ave., Swarthmore, Pa.
AUSTIN, ROBERT YORK, '40	<i>Economics,</i>	1313 Park Ave., Rochester, N. Y.
BAAR, DORIS RUPRECHT, '40	<i>Chemistry,</i>	642 Cherry St., Winnetka, Ill.
BAKER, MARGARET E., '39	<i>Pol. Science,</i>	319 S. 44th St., Philadelphia, Pa.
BALL, ROLAND C., JR., '39	<i>English,</i>	105 S. 15th St., Richmond, Ind.
BALLOU, MARY BARBARA, '41	<i>Psychology,</i>	Demarest, N. J.
BARBANO, DORIS ESTELLE, '42	<i>English,</i>	229 Edgewood Terrace, So. Orange, N. J.
BARBOUR, ELEANOR KATHARINE, '40	<i>Psychology,</i>	110 S. Fairmount Ave., Pittsburgh, Pa.
BARKER, BEATRICE PERIN, '42	<i>Mathematics,</i>	417 W. 117th St., New York, N. Y.
BARTO, ROBERT EDWIN, '41	<i>Zoölogy,</i>	Elizabethville, Pa.
BARTON, ELEANOR BROWNING, '40	<i>Fine Arts,</i>	3610 Massachusetts Ave., Washington, D. C.
BAYS, MARJORIE, '39	<i>English,</i>	2330 Ewing Ave., Evanston, Ill.
BAZETT, HAZEL, '41	<i>English,</i>	629 Haydock Lane, Haverford, Pa.
BEATTY, ROYCE EDWARDS, '42	<i>Engineering,</i>	701 Saxer Ave., Springfield, Pa.
BECK, CHARLES WENDELL, '42	<i>Engineering,</i>	65 Lake Drive, Mountain Lakes, N. J.
BECKJORD, BARBARA ANNE, '41		505 N. Maple Ave., Greenwich, Conn.
BELL, CHARLES ROBERT, '39	<i>Psychology,</i>	419 Yale Ave., Swarthmore, Pa.
BENDER, JOSEPH CHRYSAL, '39	<i>Zoölogy,</i>	9 DeForest Ave., Summit, N. J.
BENNETT, ALDEN STANLEY, '40	<i>Economics,</i>	33 Fairmount Street, Portland, Me.
BENNETT, ISABEL BRADSHAW, '42	<i>History,</i>	397 Ridge Ave., Kingston, Pa.
BEURY, FRANK GOULD, '42	<i>Pol. Science,</i>	120 Taplow Road, Baltimore, Md.
BIGELOW, JOHN LOWRIE, '39	<i>History,</i>	179 N. Laurel St., Hazleton, Pa.
BINGER, BARBARA ANNE, '40	<i>English,</i>	Broadway, Tarrytown, N. Y.
BIRDSALL, CATHERINE SHERWOOD, '40	<i>Zoölogy,</i>	904 Vernon Ave., Glencoe, Ill.
BLACKMAN, JAMES HORTON, '39	<i>Economics,</i>	320 N. Skinker St., St. Louis, Mo.
BLANKENHORN, MARTHA JANE, '41	<i>Zoölogy,</i>	6 Rural Lane, Cincinnati, Ohio.

- BOAM, WILLIAM E., '39
- BOGGS, MILDRED VIRGINIA, '42
- BOILEAU, MARY ORBISON, '42
- BOLGIANO, CHARLOTTE MARIE, '41
- BOND, GEORGE CLINE, '42
- BOOHER, EDWARD BAIR, '40
- BOSE, LEWIS CROWDER, '39
- BOSS, EVA ELIZABETH, '39
- BOVING, BENT GIEDE, '41
- BOWER, EDWARD SEYMOUR, '42
- BOWERS, MARY CATHERINE, '39
- BOWKER, MILES WESLEY, '40
- BOWMAN, LOIS BARBARA, '42
- BOYER, VINCENT SAULL, '39
- BRADEN, CHARLES GOETZMAN, '40
- BRADFIELD, JENNIE DIXON, '42
- BRAGDON, LILLIAN ELIZABETH, '42
- BRAUER, WERNER, '40
- BRAUN, KLAUS, '39
- BREARLEY, MARGERY CORNELL, '41
- BRENNAN, NATALIE, '42
- BROOMELL, MARY LOIS, '40
- BROUN, HEYWOOD HALE, '40
- BROWN, CORNELIA WOOTTON, '40
- BROWN, FRANCES MARY, '41
- BROWN, JEAN CAMERON, '42
- BROWN, JOHN ROBERT, '39
- BROWN, PALMER, '41
- BROWN, RUTH, '42
- BROWN, VIRGINIA SPOTTSWOOD, '42
- BUCHANAN, PAUL HYDE, JR., '39
- BUCKMAN, FRANKLIN PRESTON, '41
- BUDD, ISAAC WALTER, '39
- BURGER, VIRGINIA, '39
- CAHALL, ROBERT JENNINGS, '41
- CALDWELL, CHARLES ADAMS, '39
- CALDWELL, MARY JANE, '40
- CALLAHAN, HELEN MARGARET, '42
- CAMP, WILLIAM PERRINE, '40
- CAMPBELL, EDWIN GREENE, '42
- CAMPBELL, LAURA PHILINDA, '40
- CANEDY, CHARLES LIVERMORE, '41
- CAPEHART, MARY TOWNSEND, '42
- CAPRON, WILLIAM MOSHER, '42
- Pol. Science,*
- Economics,*
- Pol. Science,*
- Economics,*
- English,*
- Zoölogy,*
- Psychology,*
- Engineering,*
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- Engineering,*
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- Mathematics,*
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- Pol. Science,*
- Mathematics,*
- Pol. Science,*
- English,*
- Economics,*
- English,*
- Pol. Science,*
- Economics,*
- Pol. Science,*
- Mathematics,*
- Pol. Science,*
- English,*
- Zoölogy,*
- French,*
- English,*
- Philosophy,*
- French,*
- Economics,*
- Economics,*
- 5 Joh. Verhulstlaan, Bussum, The Netherlands.
- Woodstock, N. Y.
- 5 Henley Road, Overbrook Hills, Pa.
- 408 Baltimore Ave., Towson, Md.
- 27 College Ave., Montclair, N. J.
- 411 N. Main St., Greensburg, Pa.
- 2625 N. New Jersey St., Indianapolis, Ind.
- 54 Riverside Drive, New York, N. Y.
- 221 Rock Creek Church Road, N. W., Washington, D. C.
- 3603 Quesada St., Washington, D. C.
- 16708 Kenyon Road, Shaker Heights, Ohio.
- 209 Hillcrest Ave., Morristown, N. J.
- 6432 Kimbark Ave., Chicago, Ill.
- 6320 Lawnton Ave., Philadelphia, Pa.
- 354 N. El Molino Ave., Pasadena, Calif.
- 1855 Meridian Ave., Miami Beach, Fla.
- 985 Kipling Road, Elizabeth, N. J.
- 687 W. 204th St., New York, N. Y.
- 19 Dotzheimerstr. Wiesbaden, Germany.
- 57 Princeton Ave., Princeton, N. J.
- 70 E. 270th St., Euclid, Ohio.
- 1338 Park Ridge Place, Cincinnati, Ohio.
- R. D. 1, Stamford, Conn.
- 148 Dickerman Road, Newton Highlands, Mass.
- 335 King's Highway, Swedesboro, N. J.
- 34 Union Ave., Mount Vernon, N. Y.
- 207 Yale Ave., Swarthmore, Pa.
- 617 Milburn St., Evanston, Ill.
- 150 Melrose St., Providence, R. I.
- 148 Dickerman Road, Newton Highlands, Mass.
- 5001 N. Meridian St., Indianapolis, Ind.
- George School, Pa.
- 1407 Baird Ave., Camden, N. J.
- 2971 Brighton Road, Shaker Heights, Ohio.
- Gambier, Ohio.
- 909 Westdale Ave., Swarthmore, Pa.
- Walden Woods, Cos Cob, Conn.
- 10 Summit Road, Media, Pa.
- 11 Edge Hill Road, Abington, Pa.
- 887 N. Beechwood St., Philadelphia, Pa.
- 761 Scotland Road, Orange, N. J.
- 7110 Oxford Road, Baltimore, Md.
- 285 Argonne Ave., Long Beach, Calif.
- 41 Bradford Ave., Upper Montclair, N. J.



- CARPENTER, CHARLES EVERLYN, JR., '42  
 CARPENTER, JANET LOUISE, '42  
 CARR, RICHARD ASHTON, '42  
 CARR, SUSAN LOU, '42  
 CARUTHERS, EDWARD GRAHAM, '39  
 CAVERT, MARY RUTH, '41  
 CAVIN, FRANCIS EDWARD, '41  
 CHASE, MARGARET, '39  
 CHASINS, EDWARD ARTHUR, '41  
 CHEESEMAN, MARGARET RUTH, '39  
 CHEYNEY, JULIA, '42  
 CLARK, EUGENE, '39  
 CLARK, JEAN, '41  
 CLARKE, JOSEPHINE THACHER, '41  
 CLEAVER, HOLSTEIN DEHAVEN, JR., '41  
 CLEAVINGER, MARTHA BEARCE, '41  
 CLEVINGER, LLEWELLYN MORRIS, 2ND, '40  
 CLINCHY, EVERETT ROSS, JR., '41  
 CLYMER, HOWARD YOUNG, '42  
 COFFIN, LOUIS FUSSELL, JR., '39  
 COFFMAN, RAY HAROLD, '40  
 COLLIER, GRETCHEN, '39  
 COLLINS, WHITNEY, '39  
 COOK, ELIZABETH ELMENDAY, '42  
 COOK, FERN MARJORIE, '39  
 COOPER, DAVID BYRON, '41  
 COPE, STANTON ELIJAH, '42  
 CORKE, LOIS ELIZABETH, '41  
 CORNFELD, HELEN ETHEL, '42  
 CORYA, PATRICIA, '42  
 COSINUKE, JOHN ALEXANDER, '41  
 COURANT, ERNST DAVID, '40  
 COWDEN, DAVID S., '42  
 COWIE, DEAN BRUCE, '39  
 COX, ALFRED DAVIES, JR., '40  
 CRAIG, LAWRENCE CAREY, '39  
 CREIGHTON, ROBERT HERVY JERMAIN, '39  
 CRESSON, SAMUEL LUKENS, '39  
 CROSBY, HELEN PRATT, '40  
 CROTHERS, CHARLES HENRY, '40  
 CROWELL, DOROTHY WALWORTH, '42  
 CROWLEY, JOHN CRANE, '41  
 CUNNINGHAM, SUZANNE, '40  
 CUPITT, DOROTHY JUNE, '40  
 CURTIS, JEANNE HATHAWAY, '42  
 CUSTER, THOMAS GOODWIN, '40
- Engineering,*  
*Mathematics,*  
*English,*  
*Economics,*  
*Economics,*  
*Pol. Science,*  
*Zoology,*  
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*Physics,*  
*Engineering,*  
*Zoology,*  
*Chemistry,*  
*Zoology,*  
*Psychology,*  
*Botany,*  
*Economics,*  
*English,*  
*English,*  
*Chemistry,*
- 3517 Hamilton St., Philadelphia, Pa.  
 3108 Green St., Harrisburg, Pa.  
 304 Taplow Road, Baltimore, Md.  
 67 S. 14th St., Richmond, Ind.  
 Ashland Ave., Secane, Pa.  
 1 Glen Washington Rd., Bronxville, N. Y.  
 1628 21st St., N. W., Washington, D. C.  
 85 Brookside Road, New Britain, Conn.  
 315 W. 68th St., New York, N. Y.  
 225 N. McKean St., Butler, Pa.  
 Serpentine Lane, Wyncote, Pa.  
 1602 Ashland Ave., Evanston, Ill.  
 54 Prescott Ave., Bronxville, N. Y.  
 314 W. 76th St., New York, N. Y.  
 150 Inglewood Drive, Mt. Lebanon, Pa.  
 39 Claremont Ave., New York, N. Y.  
 Wallingford, Pa.  
 46 Prospect St., Madison, N. J.  
 Morton, Pa.  
 820 C St., Sparrows Point, Md.  
 5805 Blackstone Ave., Chicago, Ill.  
 121 Beckwith Terrace, Rochester, N. Y.  
 50 Summit Drive, Yonkers, N. Y.  
 242 Culver Road, Rochester, N. Y.  
 Youngwood, Pa.  
 4871 Jefferson St., Bellaire, Ohio.  
 R. F. D. 2, Winchester, Ind.  
 267 Clark St., Westfield, N. J.  
 2109 N. 33rd St., Philadelphia, Pa.  
 54 Walbrook Road, Scarsdale, N. Y.  
 2601 W. 7th St., Chester, Pa.  
 142 Calton Road, New Rochelle, N. Y.  
 58 Spirea Drive, Dayton, Ohio.  
 218 N. Narberth Ave., Narberth, Pa.  
 1607 Keystone Ave., Upper Darby, Pa.  
 460 Riverside Drive, New York, N. Y.  
 515 Elm Ave., Swarthmore, Pa.  
 527 Riverview Road, Swarthmore, Pa.  
 1650 Harvard St., Washington, D. C.  
 146 Collingwood Ave., Detroit, Mich.  
 Douglas Road, Chappaqua, N. Y.  
 152 Colton Ave., Redwood City, Calif.  
 45 Park Road, Maplewood, N. J.  
 205 Sylvania Place, Westfield, N. J.  
 8 Franklin Place, Summit, N. J.  
 Avon Old Farms, Avon, Conn.

- DARLINGTON, CHARLES LEROY, '42  
 DAVIDSON, DEWITT SANGER, '39  
 DAVIES, MARGARET ANNE, '42  
 DAVIS, ANNE SHAW, '41  
 DAVIS, JEAN KNOX, '39  
 DEAN, CHARLOTTE, '39  
 DECKER, LOIS PATRICIA, '42  
 DEGUTIS, ANTHONY JOSEPH, '41  
 DELAPLAINE, JOHN WATSON, '41  
 DERECKTOR, ROBERT EDWARD, '42  
 DEWALD, PAUL ADOLPH, '42  
 DEWEESE, BARBARA ANNE, '41  
 DIETZ, ROWLAND ERNEST, '42  
 DIETZ, WILLIAM HARRY, '42  
 DIMPFL, RICHARD ALBERT, '39  
 DOBBINS, EDWARD L. D., '39  
 DODGE, DIANA, '42  
 DONNELLY, FREDERICK STOCKHAM, '41  
 DORISS, WILLIAM HOWARD, '39  
 DOUGLASS, ANN ELIZABETH, '39  
 DOUGLASS, WALTER LONDON, JR., '42  
 DRIVER, ANN HILDRED, '41  
 DRURY, RICHARD BOONE, '41  
 DUNLAP, RALPH IRVIN, JR., '40  
 DUNNING, MARY ELIZABETH, '40  
 DURKEE, ISABEL SIDES, '41  
 DUTTON, JOHN C., '39
- EARLL, ELIZABETH EUSTACE, '41  
 EAST, FAE ETHELDRA, '40  
 EASTWICK, MARTHA McILVAIN, '40  
 EBERLE, CHARLES ALBERT, JR., '40  
 EBERLE, G. RICHARD, '41  
 EDMUNDS, CHARLES WALLIS, '39  
 EDWARDS, MARIAN IONE, '40  
 ELIAS, BARBARA, '42  
 ELIAS, JOSEPHINE, '40  
 ELLIS, MARY DOAN, '40  
 EMERSON, NANCY, '41  
 ENGLISH, DORIS LOUISE, '40  
 ENION, RICHARD ALLEN, '41  
 ENTENBERG, BARBARA JEAN, '39  
 EPSTEIN, SAMUEL ATKINS, '39  
 ERDMAN, FRANCIS HICKOK, '41  
 ERICHSEN, HANS SKABO, '39  
 ERNST, DOROTHY JESSIE, '42  
 EVANS, ELEANOR GREER, '40  
 EVANS, THOMAS PASSMORE, '42  
 EWING, JOY FRANCES, '42
- Chemistry,*  
*English,*  
*Classics,*  
*English,*  
*English,*  
*French,*
- Engineering,*  
*Engineering,*  
*Engineering,*
- English,*  
*Pol. Science,*
- Philosophy,*  
*Economics,*  
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*Psychology,*  
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- French,*  
*History,*
- English,*  
*Engineering,*  
*Psychology,*  
*Pol. Science,*  
*Engineering,*  
*History,*
- Psychology,*  
*Engineering,*
- 422 Chambers Ave., Camden, N. J.  
 375 W. End Ave., New York, N. Y.  
 Maxwell Field, Montgomery, Alabama  
 555 Highland Drive, Indianapolis, Ind.  
 2215 Delamere Drive, Cleveland, Ohio.  
 236-20 Warwick Ave., Douglaston, N. Y.  
 748 Vallamont Drive, Williamsport, Pa.  
 818 Morton Ave., Chester, Pa.  
 106 Cornell Ave., Swarthmore, Pa.  
 4 Sycamore Ave., White Plains, N. Y.  
 77 W. End Ave., New York, N. Y.  
 1727 Pepper Ave., Lincoln, Nebraska.  
 2943 Fairfield Ave., Cincinnati, Ohio.  
 2805 Monroe St., Wilmington, Del.  
 138 Penhurst St., Rochester, N. Y.  
 104 Garrison Ave., Battle Creek, Mich.  
 355 Riverside Drive, New York, N. Y.
- 219 Tunbridge Road, Baltimore, Md.  
 15 Maher Ave., Greenwich, Conn.  
 144 Hempstead St., New London, Conn.  
 144 Hempstead St., New London, Conn.  
 7929 Park Ave., Elkins Park, Pa.  
 5025 Wisconsin Ave., Washington, D. C.  
 1338 Mound Ave., Jacksonville, Ill.  
 Westtown, Pa.  
 236 E. Commerce St., Bridgeton, N. J.  
 2242 Pioneer Road, Evanston, Ill.
- 5045 Reno Road, N. W., Washington, D. C.  
 4338 Forest Lane, Washington, D. C.  
 2310 Kenoak Road, Baltimore, Md.  
 105 E. Durham St., Philadelphia, Pa.  
 105 E. Durham St., Philadelphia, Pa.  
 1619 Cambridge Road, Ann Arbor, Mich.  
 Coraopolis Heights, Coraopolis, Pa.  
 448 Central Park West, New York, N. Y.  
 Oregon Road, Armonk, N. Y.  
 West Grove, Pa.  
 25 Everett Ave., Providence, R. I.  
 96 Park Ave., Wortendyke, N. J.  
 8 Parkway Ave., Chester, Pa.  
 370 Central Park West, New York, N. Y.  
 62 Ellington St., Longmeadow, Mass.  
 417 W. Cheltenham Ave., Philadelphia, Pa.  
 131 Kent Street, Brooklyn, N. Y.  
 102 71st St., Brooklyn, N. Y.  
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 265 Wyoming Ave., Maplewood, N. J.  
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 2448 Southway Drive, Columbus, Ohio.  
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 OTTENBERG, JAMES SIMON, '39
- PAINE, RICHMOND SHEPARD, '41  
 PAINTER, MARY SMALLRIDGE, '42  
 PAQUET, WILHELMINE, '38
- PARKER, DONALD GRAVES, '41  
 PARKER, MARY ANN, '41  
 PARSONS, JACQUELINE MARY, '40  
 PASCAL, JOAN, '39  
 PATTERSON, WILLIAM DOERR, '39  
 PAXSON, MARY H., '40  
 PEASE, RICHARD BURNETT, '41  
 PEASLEE, DOROTHY WADDINGTON, '42  
 PELLE, ROBERT BEATTY, '39  
 PEIRCE, ELIZABETH GILE, '42  
 PELZ, DONALD CAMPBELL, '42  
 PEMBERTON, JOHN DEJARNETTE, JR., '40  
 PENNRICH, CARL HENRY, '42  
 PERLZWEIG, JUDITH MARGARET, '41  
 PETTY, JESSIE ELOISE, '39  
 PIERCE, RUTH HELEN, '40
- Chemistry,*  
*Zoölogy,*  
*Fine Arts,*  
*Psychology,*  
*Psychology,*  
*Psychology,*  
*Engineering,*  
*Pol. Science,*
- Pol. Science,*  
*French,*  
*Zoölogy,*  
*History,*  
*Mathematics,*  
*Chemistry,*
- History,*  
*Economics,*
- German,*  
*French,*  
*Psychology,*  
*Pol. Science,*
- Zoölogy,*  
*Chemistry,*  
*Fine Arts,*
- English,*  
*English,*  
*Psychology,*  
*Engineering,*  
*English,*  
*Physics,*  
*History,*  
*Engineering,*
- Pol. Science,*  
*Engineering,*  
*Greek,*  
*English,*  
*Zoölogy,*
- 142 Vassar St., Rochester, N. Y.  
 1725 LaMont St., Washington, D. C.  
 615 James St., Syracuse, N. Y.  
 130 Stelle Ave., Plainfield, N. J.  
 R. F. D. 3, Wilmington, Del.  
 Langley, Va.  
 Herford Place, Lansdowne, Pa.  
 803 Liberty Place, Clarion, Pa.
- 211 E. 35th St., New York, N. Y.  
 17 Oak Knoll Gardens, Pasadena, Calif.  
 3419 Stettinius Ave., Cincinnati, Ohio.  
 408 Broadview Road, Upper Darby, Pa.  
 175 W. 72nd St., New York, N. Y.  
 Portford Road, Lake Ronkonkoma, N. Y.  
 218 Ellis Ave., Wheaton, Ill.  
 102 N. 8th St., Allentown, Pa.  
 88 Morris Ave., Buffalo, N. Y.  
 2114 Abbottsford Ave., Duluth, Minn.
- 953 LaClair St., Pittsburgh, Pa.  
 Beverly Road, Burlington, N. J.  
 2804 E. 132nd St., Cleveland, Ohio.  
 128 Rex Ave., Philadelphia, Pa.  
 Garden Cottage, Beaconsfield, England.  
 722 Clarendon Road, Narberth, Pa.  
 4154 Lark St., San Diego, Calif.  
 161 W. 86th St., New York, N. Y.
- 6401 Beechwood Drive, Chevy Chase, Md.  
 4817 Fremont Ave., S. Minneapolis, Minn.  
 17 Schaumainkai, Frankfurt am Main, Germany.
- 1156 N. Broadway, Yonkers, N. Y.  
 1218 Campbell Ave., S. W., Roanoke, Va.  
 Flora Dale, Pa.  
 Coleytown Road, Westport, Conn.  
 1333 Hunting Park Ave., Philadelphia, Pa.  
 524 Hamilton St., Norristown, Pa.  
 1719 Becker St., Schenectady, N. Y.  
 Mantoloking, N. J.  
 29 Euclid St., Forest Hills, N. Y.  
 148 Everit St., New Haven, Conn.  
 18 Mount Joy Ave., Scarsdale, N. Y.
- 930 8th St., S. W., Rochester, Minn.  
 2 rue Kindermans, Brussels, Belgium.  
 Duke Hospital, Durham, N. C.  
 Royal Yorke Apartment, Pittsburgh, Pa.  
 125 Columbus Drive, Tenafly, N. J.



- PIKE, ANNE HOLLINGSWORTH, '42  
 PIRNIE, MORGAN, '41  
 PLATT, BETSY, '40  
 POOLE, ROBERT W., '40  
 PORTER, HELEN, '39  
 POST, ARTHUR WILLIS, '40  
 POTTS, JAMES WEBB, '41  
 POWERS, SAMUEL RALPH, JR., '41  
 PRIBRAM, OTTO, '40
- PRICE, CELIA ROGERS, '39  
 PRICE, ETHEL VANRODEN, '40  
 PRICE, WILLIAM H., '39  
 PULVERMAN, MARY WALTER, '41  
 PURDY, ADALYN FRANCES, '40
- QUADOW, JACQUELINE MARIE, '42
- RAKESTRAW, DOROTHY KINKADE, '41  
 RAMSDALL, PAULINE ALDEN, '39  
 RAMSEY, ELIZABETH ANN, '42
- RAMSEY, HAROLD ARTHUR, '41  
 RANDALL, MARGARET ELIZABETH, '42  
 RAYMOND, SAMUEL M., JR., '41  
 RAYNER, PEARCE TYLER, '41  
 REDHEFFER, JOE ALEXANDER, '40  
 REED, FRED THORNTON, '41  
 REED, JOHN DAVID, '41  
 REID, JOHN WALLING, '40  
 REID, MARJORIE RAMSAY, '41  
 REID, SIBLEY, '41  
 RELER, WILLIAM HARRIS, '40  
 REUNING, ERNST GÜNTHER, '40  
 REUSS, EDWARD HILARY, '42  
 RHEAMS, CHARLES JOHN B., '42  
 RICE, CHARLES STIX, '40  
 RICE, MARY AYDELOTTE, '42  
 RICHARDS, FREDERICK HOWARD, '42  
 RICHARDSON, JANE STRODE, '41  
 RICHARDSON, RUTH ANNE, '41  
 RICKEY, ALICE, '39  
 RICKMAN, LUCY, '42  
 RITTENHOUSE, JANE ADELAIDE, '40  
 RITTER, WILLIAM DAVID, '41  
 ROBB, JANICE ELIZABETH, '42  
 ROBBINS, LEWIS MORRELL, '40  
 ROBERTS, JOHN WATTS, '39  
 ROBERTS, RUTH BUCK, '41  
 ROBESON, MARGARET ANN, '42
- Pol. Science,*  
*Zoölogy,*  
*Economics,*  
*French,*  
*Engineering,*  
*Zoölogy,*  
*Zoölogy,*
- French,*  
*English,*  
*History,*
- French,*
- Chemistry,*  
*Zoölogy,*  
*French,*
- Engineering,*
- Chemistry,*  
*Economics,*  
*Engineering,*  
*Chemistry,*
- English,*  
*English,*  
*Engineering,*  
*Economics,*  
*Mathematics,*  
*Economics,*  
*Chemistry,*  
*Pol. Science,*  
*History,*  
*Zoölogy,*  
*Philosophy,*  
*Botany,*  
*Botany,*
- French,*  
*Chemistry,*
- Economics,*  
*Engineering,*
- Woodward Ave., Moylan, Pa.  
 67 Dunmoreland St., Springfield, Mass.  
 45 Maywood Drive, Danville, Ill.  
 713 W. 32nd St., Wilmington, Del.  
 1225 E. 25th St., Tulsa, Okla.  
 250 Park Ave., Westbury, N. Y.  
 R. D. 2, Conshohocken, Pa.  
 106 Morningside Drive, New York, N. Y.  
 Prague XII, Kopernikova 63,  
 Czechoslovakia.  
 New Hope, Pa.  
 3946 Lancaster Ave., Philadelphia, Pa.  
 726 W. Beach Blvd., Pass Christian, Miss.  
 21 Hedge Place, Kingston, Pa.  
 96 Sherman St., Hartford, Conn.
- 740 Cornelia Ave., Chicago, Ill.
- 1064 Maplediff Drive, Lakewood, Ohio.  
 51 Hudson Ave., Englewood, N. J.  
 620 E. Willow Grove Ave., Philadelphia,  
 Pa.  
 Big Stone Gap, Va.  
 Hudson View Gardens, New York, N. Y.  
 405 Michigan Ave., Swarthmore, Pa.  
 3502 30th St., N. W., Washington, D. C.  
 257 E. Delaware Ave., Chicago, Ill.  
 12 Lafayette Road, Carney's Point, N. J.  
 Norwich, Conn.  
 622 Woodcrest Ave., Ardmore, Pa.  
 Waverly Branch, Baltimore, Md.  
 Mahwah, N. J.  
 76 S. 14th St., Richmond, Ind.  
 47 Amherst Ave., Swarthmore, Pa.  
 261 Sycamore Ave., Merion, Pa.  
 503 Valley View Road, Merion, Pa.  
 6447 Cecil Ave., St. Louis, Mo.  
 Black Mountain, N. C.  
 R. F. D. 4, West Chester, Pa.  
 311 Lafayette Ave., Swarthmore, Pa.  
 Trevoe Road, Philadelphia, Pa.  
 Country Life Acres, Clayton, Mo.  
 11 Kent Terrace, N. W. 1, London, Eng.  
 6 College Lane, Haverford, Pa.  
 116 Lewis Ave., East Lansdowne, Pa.  
 2415 20th St., N. W., Washington, D. C.  
 Riverton Road, Riverton, N. J.  
 Princess Anne, Md.  
 Rankin Ave., Basking Ridge, N. J.  
 Beach Haven, Pa.

- ROBINSON, ALICE EVANS, '41  
 ROBINSON, JOHN MARK, '40  
 ROBINSON, REBECCA MARY, '41  
 ROBSON, ALBERT NORVIN, '40  
 ROCKWOOD, ROBERT BRUCE, '39  
 ROELOFS, MARY MOORE, '40  
 ROGERS, FRANCES ELIZABETH, '40  
 ROGERS, WILLIAM HORACE, '41  
 ROSENBLUM, ALEX, JR., '41  
 ROSS, MICHAEL, '40  
 ROUS, MARION DEKAY, '39  
 ROWAND, ROBERT ELLWOOD, '42  
 ROY, JOSEPH ALBERT, '40  
 RUSK, MARGARET ANN, '40  
 RYAN, MARY WEBB, '39  
 RYDHOLM, MARION EDITH, '40
- Economics,*  
*History,*  
*History,*  
*Philosophy,*  
*English,*  
*Chemistry,*  
*Zoölogy,*  
*Economics,*  
*English,*  
*Engineering,*  
*Engineering,*  
*English,*  
*English,*  
*German,*
- SACHS, ISADORE MILTON, '40  
 SALOMON, GEORGE GERHARD, '40  
 SANDERSON, JOHN PHILLIP, JR., '40  
 SATTERTHWAITE, HENRY FLETCHER, '42  
 SAUTTER, CARL CHRISTIAN, JR., '42  
 SCHECHTER, ANNE CLAIRE, '40  
 SCHEUER, JAMES HAAS, '42  
 SCHOCK, PATRICIA WARD, '39  
 SCOTT, ANNE BOCKIUS, '39  
 SCOTT, WALTER JAMES, JR., '41  
 SELLIGMAN, LUCY, '42  
 SETLOW, RICHARD BURTON, '41  
 SEWARD, MARGOT, '42  
 SHALLCROSS, META, '41  
 SHARPLES, THOMAS DAVY, '40
- Economics,*  
*Classics,*  
*Pol. Science,*
- Chemistry,*  
*Psychology,*  
*Pol. Science,*  
*Economics,*  
*English,*  
*Physics,*
- Physics,*  
*Psychology,*  
*English,*  
*Engineering,*
- SHAW, BARBARA, '39  
 SHAW, ROBERT J., '42  
 SHERO, FRANCES LIVIA, '41  
 SHERO, GERTRUDE CAROLINE, '39  
 SHERO, LUCY ADRIENNE, '41  
 SHILCOCK, JAMES THOMAS, '40
- Zoölogy,*  
*Engineering,*
- Economics,*  
*Economics,*
- SHOEMAKER, MARGARET JACK, '42  
 SHOHL, JANE, '39  
 SHOTWELL, DORIS ROBERSON, '39  
 SILLARS, ROBERTSON, '39  
 SILLS, MARY LOUISE, '42  
 SIMMER, KEITH, '39  
 SIMSON, JEROME, '41
- Psychology,*  
*French,*  
*English,*
- Economics,*  
*Zoölogy,*
- 885 8th Ave., S., St. Petersburg, Fla.  
 411 College Ave., Swarthmore, Pa.  
 730 Ogden Ave., Swarthmore, Pa.  
 Yorktown Heights, N. Y.  
 Kurnool District, Kurnool, South India.  
 Glendale, Ohio.  
 928 Haverford Road, Bryn Mawr, Pa.  
 58 Park Place, Geneva, N. Y.  
 265 Gypsy Lane, Youngstown, Ohio.  
 2310 Pine St., Philadelphia, Pa.  
 125 E. 72nd St., New York, N. Y.  
 732 Yale Ave., Swarthmore, Pa.  
 93 Holly Street, New Bedford, Mass.  
 445 Riverside Drive, New York, N. Y.  
 133 Oakleigh Road, Newton, Mass.  
 2706 Wadsworth Road, Shaker Heights, Ohio.
- 1314 Terrill St., Chester, Pa.  
 203 College Ave., Swarthmore, Pa.  
 58 Westland Ave., Rochester, N. Y.
- 4 Green Ave., Lawrenceville, N. J.  
 129 Maplewood Ave., Philadelphia, Pa.  
 562 6th St., Habana, Cuba.  
 115 Central Park West, New York, N. Y.  
 344 Iroquois Place, Beaver, Pa.  
 Colony Farm, West Chester, Pa.  
 104 Park Ave., Swarthmore, Pa.  
 1416 Willow Ave. 11B, Louisville, Ky.  
 1420 Grand Concourse, New York, N. Y.  
 262 Kingsley Ave., Palo Alto, Calif.  
 Odessa, Del.  
 220 Orange Grove Ave., S. Pasadena, Calif.  
 7 Albemarle Place, Yonkers, N. Y.  
 5 Whittier Place, Swarthmore, Pa.  
 651 N. Chester Road, Swarthmore, Pa.  
 651 N. Chester Road, Swarthmore, Pa.  
 651 N. Chester Road, Swarthmore, Pa.  
 Cloverly and Cheltena Aves., Jenkintown Pa.  
 510 Riverview Road, Swarthmore, Pa.  
 Wolfeboro, N. H.  
 1 School Plaza, Franklin, N. J.  
 122 Elmer Ave., Schenectady, N. Y.  
 Bronxville, N. Y.  
 750 N. Green St., Ottumwa, Iowa.  
 3576 Bedford Ave., Brooklyn, N. Y.

- SINNOTT, MILDRED SHAW, '42  
 SITES, VIRGINIA LAWSON, '40  
 SKALLERUP, WALTER THORWALD, JR., '42  
 SLACK, JEAN CARTER, '39  
 SLATER, MORTON LINCOLN, '41  
 SMITH, DONALD DAVID, '39  
 SMITH, F. GORDON, '40  
 SMITH, GENE ROBERTS, '42  
 SMITH, MORGAN GARSED, '40  
 SMITH, NATHAN LEWIS, JR., '39  
 SMITH, RICHARD OWEN, '41  
 SMITH, ROBB VANSITLERT, '41  
 SMITH, ROGERS JOURDAN, '42  
 SMITH, WILLIAM WIMER, '40  
 SNYDER, ARTHUR F. F., '40  
 SNYDER, PAUL H. H., '40  
 SOLIS-COHEN, MARY, '39  
 SONNEBORN, JOHN GEORGE, JR., '41  
 SOUDER, ELVIN RITTENHOUSE, '39  
 SPEERS, ADAM DAVID MCK., '41  
 SPENCER, EVELYN ELIZABETH, '41  
 SPENCER, HELEN MARGARET, '42  
 SPENCER, ROBERT WHITE, '42  
 SPRAGUE, B. SHELDON, '42  
 STARBARD, VERA DAVIS, '41  
 STARR, DAVID HOWELL, '39  
 STEARNS, BARBARA, '39  
 STEEL, HELEN RAWSON, '39  
 STEELMAN, HERBERT STANLEY, JR., '41  
 STEER, JOHN WILMER, '41  
 STEEVES, MARY, '42  
 STEIN, PHILIP LOUIS, '39  
 STERN, RICHARD STEPHEN, '42  
 STERNE, BARBARA, '41  
 STETSON, JOHN BATTERSON, '42  
 STEUBER, FREDERICK WALTER, '41  
 STEVENS, PHYLLIS, '40  
 STEVENSON, J. SHAW, '42  
 STIX, DONALD, '41  
 STONE, ANNE EXTON, '39  
 STONE, ELISE EMMA, '39  
 STRONG, FREDERICK CARL, 3RD, '39  
 STURDEVANT, MARY ELLEN, '40  
 SUTTON, ANN CRAIG, '39  
 SWARTHE, PAULA MATSNER, '39
- Economics,*  
*English,*  
*Mathematics,*  
*English,*  
*History,*  
*Engineering,*  
*Chemistry,*  
*Zoölogy,*  
*Zoölogy,*  
*Economics,*  
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*English,*  
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*Pol. Science*  
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*Economics,*  
*Chemistry,*  
*Pol. Science,*  
*Engineering,*  
*French,*  
*English,*  
*Chemistry,*  
*English,*  
*English,*  
*Economics,*
- 445 Riverside Drive, New York, N. Y.  
 233 Grove Road, South Orange, N. J.  
 6567 N. Woodstock St., Philadelphia, Pa.  
 40 Kent Road, Upper Darby, Pa.  
 1487 President St., Brooklyn, N. Y.  
 1097 East 19th St., Brooklyn, N. Y.  
 916 17th Ave., N., Nashville, Tenn.  
 Baltimore Pike, Swarthmore, Pa.  
 Avondale Road, Wallingford, Pa.  
 4500 Carleview Road, Baltimore, Md.  
 Baltimore Pike, Swarthmore, Pa.  
 314 Augusta Ave., DeKalb, Ill.  
 34 W. 33rd St., Indianapolis, Ind.  
 517 Harrison St., Ridley Park, Pa.  
 401 Swarthmore Ave., Swarthmore, Pa.  
 401 Swarthmore Ave., Swarthmore, Pa.  
 709 Rambler Road, Elkins Park, Pa.  
 5019 Penn St., Philadelphia, Pa.  
 36 W. Walnut St., Souderton, Pa.  
 1708 N. Pennsylvania St., Indianapolis, Ind.  
 21 Keigo-hondori, 1-chome, Fukuoka, Japan.  
 638 East Town St., Columbus, Ohio.  
 Providence Road, Wallingford, Pa.  
 401 Swarthmore Ave., Swarthmore, Pa.  
 80 Oak St., Ridgewood, N. J.  
 3301 5th Ave., Beaver Falls, Pa.  
 254 Arlington Ave., Brooklyn, N. Y.  
 4422 Lowell St., N. W., Washington, D. C.  
 106 Holmecrest Road, Jenkintown, Pa.  
 140 S. Lansdowne Ave., Lansdowne, Pa.  
 Lucas Point, Old Greenwich, Conn.  
 1525 Cory Drive, Dayton, Ohio  
 Media, Pa.  
 Wilton, Conn.  
 1002 Prospect Ave., Melrose Park, Pa.  
 405 Morton Ave., Ridley Park, Pa.  
 415 West 46 Terrace, Kansas City, Mo.  
 1935 S. Cecil St., Philadelphia, Pa.  
 Underhill Road, Scarsdale, N. Y.  
 431 Berkley Road, Haverford, Pa.  
 152 Kilburn Road, Garden City, N. Y.  
 147 Pleasant St., Windsor, Conn.  
 R. F. D. 5, Logansport, Ind.  
 Apartado 1715, Habana, Cuba.  
 418 Central Park West, New York, N. Y.

- SWARTLEY, CYNTHIA MOYER, '42  
 SWIFT, ARTHUR LESSNER, 3RD, '39  
 SWIFT, HEWSON HOYT, '42  
 SYLVESTER, EMILIE CONSUELO, '42
- Economics,*  
*Zoölogy,*  
*Psychology,*
- 916 E. Rittenhouse St., Philadelphia, Pa.  
 99 Claremont Ave., New York, N. Y.  
 99 Claremont Ave., New York, N. Y.  
 1427 E. Washington Lane, Philadelphia, Pa.
- TAIT, PHYLLIS ANN, '42  
 TAPLEY, GORDON PAUL, '42  
 TAPPAN, ELISE GAIL, '41  
 TARR, MARTHA MADELEINE, '42  
 TATMAN, ALINA ELIZABETH, '39  
 TAYLOR, ROBERT BURNS, JR., '41  
 TEBBETTS, MARGARET IMELDA, '40  
 TEMPLE, EDWARD BRINTON, II, '40  
 THATCHER, ALBERT GARRETT, '41  
 THATCHER, BARBARA ANN, '42  
 THATCHER, EDWARD POWER, '39  
 THOMAS, GRACE-MARY, '39  
 THOMAS, JOHN CUNNINGHAM, '39  
 THOMSON, DONALD GARDNER, '40  
 THORN, STEWART, '39  
 TIMMIS, WILLIAM WALTER, JR., '41  
 TITELMAN, JAY RICHARD, '42  
 TODD, ALDEN, '39  
 TODD, MARJORIE CLARA, '41  
 TOMLINSON, HELEN MARGARET, '41  
 TOMPKINS, HOWARD EDWARD, '42  
 TOMPKINS, REXFORD EMERSON, '40  
 TRAUTMAN, WILLIAM DEAN, '42
- Engineering,*
- English,*  
*Chemistry,*  
*Mathematics,*  
*Latin,*  
*Engineering,*  
*French,*  
*Botany,*  
*English,*  
*Chemistry,*  
*Pol. Science*  
*Economics,*  
*Engineering,*
- 5415 Overbrook Ave., Philadelphia, Pa.  
 Plymouth Meeting, Pa.  
 301 Northfield Place, Baltimore, Md.  
 1 College Road, Princeton, N. J.  
 240 W. Montgomery Ave., Haverford, Pa.  
 627 Noble St., Norristown, Pa.  
 137 Collins Rd., Waban, Mass.  
 1005 Cattell St., Easton, Pa.  
 613 Ogden Ave., Swarthmore, Pa.  
 R. F. D. 1, Somerville, N. J.  
 613 Ogden Ave., Swarthmore, Pa.  
 112 West Main St., Lock Haven, Pa.  
 46 Richards Road, Port Washington, N. Y.  
 450 William St., East Orange, N. J.  
 3205 McKinley St., Washington, D. C.  
 Pleasantville, N. Y.  
 3510 Oneida Ave., Altoona, Pa.  
 1385 Langdrum Lane, Chevy Chase, Md.  
 6941 Perrysville Ave., Ben Avon, Pa.  
 114 Yale Ave., Swarthmore, Pa.  
 97 74th St., Brooklyn, N. Y.  
 1684 West 14th St., Erie, Pa.  
 3327 Dellwood Road, Cleveland Heights, Ohio.
- TRIMBLE, MARGARET, '39  
 TURNER, DOROTHY ELIZABETH, '41  
 TURNER, DOROTHY JEAN, '41
- Psychology,*  
*Psychology,*  
*French,*
- 808 S. E. Riverside Drive, Evansville, Ind.  
 1137 Phoenix Ave., Schenectady, N. Y.  
 2600 Payne St., Evanston, Ill.
- UNDERDOWN, MARJORY, '39  
 UNDERHILL, SARAH GILPIN, '39  
 UNDERWOOD, CAROLINE DOWDELL, '41
- French,*  
*English,*
- Ithan & Thornbrook Roads, Rosemont, Pa.  
 2608 N. 5th St., Harrisburg, Pa.  
 Linden Lanes, Wallingford, Pa.
- VALENTINE, BRUCE ROBERTS, '39
- Zoölogy,*
- 8345 Lefferts Boulevard, Kew Gardens, N. Y.
- VAN DEMARK, ROBERT LEWIS, '42  
 VAN KLEECK, MARTHA LOUISE, '42
- Engineering,*  
*English,*
- 1900 South Ave., Rochester, N. Y.  
 2930 Northern Boulevard, Manhasset, N. Y.
- VAN NAME, FREDERICK WARREN, '42  
 VAWTER, WILLIAM ARTHUR, '42  
 VERLIE, EMIL JOSEPH, '41  
 VOGT, JANE ELIZABETH, '42
- Physics,*  
*Chemistry,*
- 78 Summit Ave., Bronxville, N. Y.  
 Benton Harbor, Mich.  
 1421 State St., Alton, Ill.  
 18 Stratford Place, Binghamton, N. Y.
- WAKSMAN, BYRON HALSTED, '40  
 WALKER, ELIZABETH PENDRELL, '40  
 WALKER, ROBERT BELL, '39
- Zoölogy,*  
*History,*  
*Engineering,*
- 35 Walter Ave., New Brunswick, N. J.  
 St. John's University, Shanghai, China.  
 Westtown, Pa.

- WALTER, ROBERT IRVING, '41  
 WARBURTON, SAMUEL WOODWARD, '40  
 WARRINGTON, JOHN BURWELL, JR., '39  
 WATSON, GRETCHEN LOUISE, '39  
 WATTERS, LOUISE, '40  
 WATTS, GORDON SPENCER, '39  
 WEBER, RICHARD RICH, '41  
 WEBSTER, DOROTHY LANCASTER, '40  
 WEINTRAUB, MARY C., '42  
 WELTMER, DONALD KESSLER, '40  
 WESCOTT, HOPE HAMMOND, '41  
 WEST, MARY LOOCKERMAN, '41  
 WHEELER, DOROTHY JANE, '41  
 WHITE, BENJAMIN WARD, '42  
 WHITE, GARY, '39
- WHITE, WILLIAM FRANCIS, '41  
 WHITFORD, ANN ELIZABETH, '42  
 WHITFORD, MARY LYDIA, '39  
 WHITNEY, ANNE MARIE, '42  
 WIGHT, MIRIAM HOLLISTER, '40  
 WILBUR, RUTH ELIZABETH, '41  
 WILLIAMS, ELLEN LEWIS, '41  
 WILSON, JAMES MORRISON, JR., '39  
 WILSON, JANET DOROTHY, '39  
 WINDLE, ANNE MOORE, '42  
 WITTER, BARBARA LOIS, '40  
 WOEHLING, JEAN LOUISE, '40  
 WOLF, ETHEL, '41  
 WOLF, ROBERT, '39  
 WOLF, RUTH, '42  
 WOLFE, LAWRENCE CLARK, '40  
 WOLFE, LINDSAY HARPER, '42  
 WOLFF, ALINE LOUISE, '42  
 WOOD, PHILIP EMERSON, '41
- WOODCOCK, JOAN LOUISE, '40  
 WOOLLCOTT, JOAN, '39  
 WORTH, EDWARD HALLOWELL, JR., '39  
 WRIGHT, GEORGE A., '41  
 WRIGHT, JOHN FISHER, '39  
 WYMAN, MARGARET, '40
- YARD, FLORENCE HICKCOX, '39  
 YEARSLEY, ELEANOR, '40  
 YERKES, VIRGINIA MOON, '42
- Chemistry,* 239 4th Ave., Pittsburgh, Pa.  
*Engineering,* 433 Pine Crest Road, Springfield, Pa.  
*Engineering,* 602 Upland Ave., Noble, Pa.  
*English,* 79 Monterey Ave., Detroit, Mich.  
*English,* 2 E. Market St., Bethlehem, Pa.  
*English,* 742 E. John St., Appleton, Wis.  
*English,* 178 Wilmont Road, Scarsdale, N. Y.  
*English,* 126 Parker St., Newton Center, Mass.  
*English,* 113 N. Raleigh Ave., Atlantic City, N. J.  
*Economics,* 314 Vassar Avenue, Swarthmore, Pa.  
*English,* 710 Potomac Ave., Buffalo, N. Y.  
*English,* 3 Davis Road, Port Washington, N. Y.  
*Zoölogy,* 4455 Tibbett Ave., New York, N. Y.  
 4629 Hunt Ave., Chevy Chase, Md.  
 3733 Kamawha St., N. W., Washington, D. C.  
*Chemistry,* Claysville, Pa.  
*Pol. Science,* 441 Ocean Ave., Brooklyn, N. Y.  
 441 Ocean Ave., Brooklyn, N. Y.  
 8 Westminster Rd., West Hempstead, N. Y.  
*French,* South Street, Dalton, Mass.  
*Chemistry,* 1300 Ethel Ave., Lakewood, Ohio.  
*English,* 649 N. Chester Road, Swarthmore, Pa.  
*English,* 1405 Goddard Ave., Louisville, Ky.  
*French,* 309 Wellington Rd., Jenkintown, Pa.  
*History,* Dellwyn, West Chester, Pa.  
*Fine Arts,* 24 Kingsley Road, Rochester, N. Y.  
 R. F. D. 2, Norristown, Pa.  
 47 Sunshine Road, Upper Darby, Pa.  
 47 Sunshine Road, Upper Darby, Pa.  
 47 Sunshine Road, Upper Darby, Pa.  
 410 Walnut Road, Ben Avon, Pa.  
 410 Walnut Road, Ben Avon, Pa.  
 167 Beach 144th Street, Neponsit, N. Y.  
 200 Old Broadway, Hastings-on-Hudson, N. Y.  
 64 Barrow St., New York, N. Y.  
 Eden Terrace, Catonsville, Md.  
 Claymont, Del.  
 26 E. Stiles Ave., Collingswood, N. J.  
 4 Whittier Place, Swarthmore, Pa.  
 3612 Newark St., Washington, D. C.
- Psychology,* 630 Sheridan Road, Chicago, Ill.  
*History,* 577 Lincoln Highway, Coatesville, Pa.  
*Pol. Science,* 985 Vine St., Winnetka, Ill.  
*Fine Arts,*

ZIMMERMAN, GEORGE LANDIS, '41	<i>Chemistry,</i>	207 State St., Harrisburg, Pa.
ZIMMERMAN, MARY JANE, '42		2 Surrey Road, Melrose Park, Pa.
ZINNER, JAMES SHANDOR, '39	<i>English,</i>	723 Greenwood Ave., Glencoe, Ill.
ZIPFEL, ROBERT NEIT, '42		Oradell Manor, Dobbs Ferry, N. Y.

## GEOGRAPHICAL DISTRIBUTION OF STUDENTS

1938-39

Pennsylvania .....	226
New York .....	135
New Jersey .....	64
Ohio .....	36
Illinois .....	27
Connecticut .....	21
District of Columbia .....	21
Maryland .....	21
Indiana .....	18
Massachusetts .....	14
Delaware .....	11
California .....	10
Missouri .....	7
Virginia .....	6
Florida .....	5
Michigan .....	5
Minnesota .....	5
Germany .....	4
North Carolina .....	4
Wisconsin .....	4
China .....	3
Rhode Island .....	3
Cuba .....	2
England .....	2
Japan .....	2
Kentucky .....	2
Mississippi .....	2
Texas .....	2
Virgin Islands .....	2
Alabama .....	1
Arizona .....	1
Belgium .....	1
Czechoslovakia .....	1
Iowa .....	1
Maine .....	1
Nebraska .....	1
Netherlands .....	1
New Hampshire .....	1
Oklahoma .....	1
South India .....	1
Tennessee .....	1
Utah .....	1
Vermont .....	1
TOTAL .....	678

## HOLDERS OF THE HANNAH A. LEEDOM FELLOWSHIP

1913-14.

ARTHUR PERCIVAL TANBERG, B.A., 1910; M.A., 1913; Ph.D., Columbia University, 1915. Director, E. I. duPont de Nemours & Co., Experimental Station, Wilmington, Del.

1914-15.

ARCHER TAYLOR, B.A., 1909; M.A., University of Pennsylvania, 1910; Ph.D., Harvard University, 1915. Professor of German Literature, University of Chicago.

1915-16.

HAROLD S. ROBERTS, B.A., 1912; M.A., Princeton University, 1915; Student at the University of Wisconsin, 1915-17. Teacher of French and Spanish, St. Paul's School, Garden City, N. Y.

1916-17.

HANNAH B. (STEELE) PETTIT, B.A., 1909; M.A., 1912; Ph.D., University of Chicago, 1919. Astronomer.

1917-18.

JAMES MONAGHAN, JR., B.A., 1913; M.A., University of Pennsylvania, 1918.

1918-19.

CHARLOTTE (BREWSTER) JORDAN, B.L., 1882; M.L., 1886; studied in Madrid. Translator and writer.

1919-20.

PAUL M. CUNCANNON, B.A., 1915; M.A., Princeton University, 1920; Ph.D., *Ibid.*, 1925. Assistant Professor of Political Science, University of Michigan.

1920-21.

WILLIAM CHRISTIE MACLEOD, B.A., 1914; Ph.D., University of Pennsylvania, 1924. Assistant Professor of Finance, Wharton School, University of Pennsylvania.

1921-22.

LEON M. PEARSON, B.A., 1920; M.A., Harvard University, 1922. Teacher, Oral English, Haverford School, Haverford, Pa., 1924-1934. Journalist.

1922-23.

W. RALPH GAWTHROP, B.A., 1918; M.S., University of Pennsylvania, 1924. Patent Lawyer, du Pont Ammonia Co.

1923-24.

WILLARD S. ELSBREE, B.A., 1922; M.A., Columbia University, 1924; Ph.D., *Ibid.*, 1928. Assistant Professor of Education, Teachers' College, Columbia University. Studied abroad, 1930-31.

1924-25.

WALTER ABELL, B.A., 1920; M.A., 1924. Studied in France. Professor of Art, Acadia University, Wolfville, Nova Scotia, Canada.



1926-27.

MARGARET (PITKIN) BAINBRIDGE, B.A., 1925; Ph.D., University of Chicago, 1928. Assistant Professor of Romance Languages, Swarthmore College, 1928-33.

1927-28.

AUDREY SHAW (BOND) ALEISTORE, B.A., 1926; M.A., University of Chicago, 1928. Assistant, Department of Romance Languages, Northwestern University.

1928-29.

SAMUEL ROBERT M. REYNOLDS, B.A., 1927; M.A., 1928; Ph.D., University of Pennsylvania, 1931; Fellow, National Research Council, 1931-32, Carnegie Institution, Baltimore, Md. Instructor in Physiology, Medical School, Western Reserve University, 1932-33. Assistant Professor of Physiology, Long Island College of Medicine, 1933-. Guggenheim Fellow, 1937-38.

1929-30.

EDWARD SELLERS, B.A., 1928. Studied at Brown University, 1929-30. Actuarial Clerk, Guardian Life Insurance Co.

1930-31.

ELIZABETH (HORMANN) STRODACH, B.A., 1927; M.A., University of Pennsylvania, February, 1930.

1931-32.

HELEN STAFFORD, B.A., 1930; M.A., Bryn Mawr, 1931; Ph.D., *Ibid.*, 1935; Holder of Bryn Mawr European Fellowship, 1932-33; Teacher at the Ethel Walker School, Simsbury, Connecticut.

1932-33.

ROGERS MCVAUGH, B.A., 1931; Ph.D., University of Pennsylvania, 1935. Instructor in Botany, University of Georgia.

HYMAN DIAMOND, B.A., 1931. (Special Fellowship awarded only for 1932-33.) Ph.D., Princeton University, 1935.

1933-34.

FRANK ELMER FISCHER, B.A., 1933; M.A., Princeton University, 1935.

1934-35.

RAYMOND M. IMMERWAHR, B.A., 1934; M.A., Northwestern University, 1935. (Held by Alternate, Anna Janney DeArmond, B.A., 1932; M.A., Columbia University, 1934. Studied at Bryn Mawr College, 1934-35. Teaching, Women's College, Newark, N. J.)

1935-36.

MARTHA WILLARD, B.A., 1935; M.A., Columbia University, 1936.

1936-37.

DOROTHY KOCH, B.A., 1935. Studied at Yale University.

1937-38.

KATHERINE LEVER, B.A., 1936. Studying at Bryn Mawr College.

1938-39.

RICHARD JAMES STORR, B.A., 1937. Studying at Johns Hopkins University.

## HOLDERS OF THE JOSHUA LIPPINCOTT FELLOWSHIP

1893-94.

THOMAS ATKINSON JENKINS, B.A., 1887; Ph.B., University of Pennsylvania, 1888; Ph.D., Johns Hopkins University, 1894; Litt.D., Swarthmore College, 1922; Professor of the History of the French Language, University of Chicago. Retired. Deceased.

BENJAMIN FRANKLIN BATTIN, A.B., 1892; studied in Berlin; Ph.D., Jena, 1900. Deceased.

1894-95.

DAVID BARKER RUSHMORE, B.S., 1894; M.E., Cornell University, 1895; C.E., Swarthmore, 1897; Sc.D., 1923. Member of Board of Managers, Swarthmore College. Consulting Engineer.

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, 1905. Lawyer. Retired.

1898-99.

ELLWOOD COMLY PARRY, B.L., 1897; studied in Berlin; M.L., Swarthmore, 1900; Ph.D., University of Pennsylvania, 1903. Professor of German and French, 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. Deceased.

1902-03.

BIRD THOMAS BALDWIN, B.S., 1900; A.M., Harvard University, 1903; Ph.D., *Ibid.*, 1905. Deceased.

1903-04.

ALBERT COOK MYERS, B.L., 1898; M.L., 1901; Litt.D., Franklin and Marshall College, 1932; studied at the Universities of Wisconsin and Harvard. Historical Writer.

1904-05.

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

1905-06.

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

1906-07.

LOUIS NEWTON ROBINSON, B.A., 1905; Ph.D., Cornell University, 1911; studied at the Universities of Halle and Berlin, 1906-07; Fellow in Cornell University, 1907-08. Director, with Russell Sage Foundation, 1922-25. Chairman, Pennsylvania Commission on Penal Affairs. Member of Board of Trustees, Eastern State Penitentiary.

1907-08.

SAMUEL COPELAND PALMER, B.A., 1895; M.A., 1907; M.A., Harvard University, 1909; Ph.D., *Ibid.*, 1912. Studied abroad 1927-28. Professor of Botany, Swarthmore College.

1908-09.

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

1909-10.

MARY TALBOT (JANNEY) COXE, B.A., 1906; studied at the University of Berlin.

1910-11.

SAMUEL COPELAND PALMER, B.A., 1895; M.A., 1907; M.A., Harvard University, 1909; Ph.D., *Ibid.*, 1912. Studied abroad 1927-28. Professor of Botany, Swarthmore College.

1911-12.

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

1912-13.

IOLA KAY EASTBURN, B.L., 1897; M.A., University of Pennsylvania, 1907; Ph.D., *Ibid.*, 1913; Professor of German, Brenau College, Gainesville, Ga., 1925-33. Head of Modern Language Department, Stetson University, DeLand, Fla., 1935-.

1913-14.

EDWIN ANGELL COTTRELL, B.A., 1907; M.A., Harvard University, 1913. Executive Head of Department of Political Science and Chairman of School of Social Sciences, Leland Stanford Junior University.

1914-15.

FREDERICK MYERLE SIMONS, JR., B.A., 1909; M.A., 1912; studied at the University of Chicago. Deceased.

1915-16.

FRANK H. GRIFFIN, B.S., 1910; M.A., Columbia University, 1916. Manager and Director, The Viscose Company, Marcus Hook, Pa.

## 1916-17.

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

## 1917-18.

CHARLES J. DARLINGTON, B.A., 1915; M.A., 1916. Chief Supervisor of Semi-Works Operative Organic Chemistry Dept., E. I. du Pont de Nemours & Company.

## 1918-19.

JOHN E. ORCHARD, B.A., 1916; M.A., Harvard University, 1920; Ph.D., *Ibid.*, 1923. Professor, Economic Geography, School of Business, Columbia University.

## 1919-20.

PAUL FLEMING GEMMILL, B.A., 1917; Ph.D., University of Pennsylvania, 1925. Professor of Economics, University of Pennsylvania.

## 1920-21.

JOSEPH EVANS SANDS, B.A., 1917; M.D., University of Pennsylvania, 1921. Physician.

## 1921-22.

DETLEV WULF BRONK, B.A., 1920; Sc.D., 1937; M.S., University of Michigan, 1922; Ph.D., *Ibid.*, 1925. Johnson Professor of Biophysics and Director of the Johnson Foundation for Medical Physics, University of Pennsylvania, School of Medicine. Professor of Neurology, University of Pennsylvania; Graduate School of Medicine.

## 1922-23.

DAVID MATHIAS DENNISON, B.A., 1921; M.A., University of Michigan, 1922; Ph.D., *Ibid.*, 1924. International Education Board Fellow, Copenhagen, Denmark, 1924-27. Associate Professor of Physics, University of Michigan.

## 1923-24.

WILLIAM MORSE BLAISDELL, B.A., 1921; M.A., University of Pennsylvania, 1926; Ph.D., University of Pennsylvania, 1932. Studied in Paris. Instructor in Economics, Swarthmore College, 1928-29. Research Fellow of the Institute of Economics of the Brookings Institution, Washington, D. C., 1929-31. Professor of Business Administration, Temple University. Senior Analyst with Securities and Exchange Commission, Washington, D. C.

## 1924-25.

KATHARINE DENWORTH, B.A., 1914; M.A., Columbia University, 1921; Ph.D., *Ibid.*, 1927. President, Bradford Junior College, Bradford, Mass.

## 1925-26.

GEORGE PASSMORE HAYES, B.A., 1918; M.A., Harvard University, 1920; Ph.D., *Ibid.*, 1927. Head of Department of English, Agnes Scott College, Decatur, Ga.

## 1926-27.

MARVIN YARD BURR, B.A., 1925; M.A., Columbia University, 1927; Ph.D., *Ibid.*, 1930. Deceased.

1927-28.

DOROTHY FLORENCE (TROY) YOUNG, B.A., 1926; M.A., Columbia University, 1928. Instructor in English, Swarthmore College, 1928-29.

1928-29.

DOROTHEA A. (KERN) DEVEREUX, B.A., 1927; M.A., 1928. Studied at the University of Chicago.

1929-30.

ELIZABETH (HORMANN) STRODACH, B.A., 1927; M.A., University of Pennsylvania, February, 1930.

1930-31.

THOMAS M. BROWN, B.A., 1929; M.D., Johns Hopkins Medical School, 1933. Physician. Research, Rockefeller Hospital.

WINONA (VON AMMON) MACCALMONT, B.A., 1929; M.S., University of Pennsylvania, 1930. Associate in Physiology and Instructor in Pharmacology, Woman's Medical College of Pennsylvania.

1931-32.

MARGARET GURNEY, B.A., 1930; M.A., Brown University, 1931; Ph.D., *Ibid.*, 1934.

1932-33.

JAMES A. MICHENER, B.A., 1929; studied at the University of Aberdeen, 1931-33. Teaching in Experimental School, State College of Education, Greeley, Colo.

1933-34.

HELEN STAFFORD, B.A., 1930; B.A., Bryn Mawr College, 1931; Ph.D., *Ibid.*, 1935. Holder of Bryn Mawr European Fellowship, 1932-33; Teacher at the Ethel Walker School, Simsbury, Connecticut.

1934-35.

RUTH (COOK) STILSON, B.A., 1933; M.A., Radcliffe College, 1934; studying at Radcliffe College.

WILLIAM EATON, B.A., 1932. (Special Fellowship awarded only for 1934-35.) Ph.D., Yale University, 1935. Physicist, Eastman Kodak Company.

1935-36.

WILL T. JONES, B.A., 1931; B.Litt., Oxford University, 1933. Studying at Princeton University.

1936-37.

HAROLD B. STEINBERG, B.A., 1936. Studied at Yale Law School.

1937-38.

KEITH CHALMERS, B.A., 1937. Studying at Yale University.

1938-39.

IRVING SCHWARTZ, B.A., 1937. Student, Harvard University.

## HOLDERS OF THE JOHN LOCKWOOD MEMORIAL FELLOWSHIP

### 1910-11.

EDWIN CARLETON MACDOWELL, B.A., 1909; M.S., Harvard University, 1911; Sc.D., *Ibid.*, 1912. Investigator in Biology, Cold Spring Harbor.

### 1911-12.

HENRY FERRIS PRICE, B.A., 1906; University of Pennsylvania, 1913; Ph.D., *Ibid.*, 1915. Professor of Mathematics, Pacific University, Forest Grove, Oregon.

### 1912-13.

WALTER FRANK RITTMAN, B.A., 1908; M.A., 1909; M.E., 1911; Ch.E., 1917; Ph.D., Columbia University, 1914. Consulting Chemical Engineer, U. S. Department of Agriculture. Professor of Engineering, Carnegie Institute of Technology. Consulting Engineer.

### 1913-14.

HELEN PRICE, B.A., 1907; Ph.D., University of Pennsylvania, 1915. Head of Latin and Greek Department, Meredith College, Raleigh, N. C.

### 1914-15.

HELEN HEED, B.A., 1905; M.A., Radcliffe College, 1915. Studied at Oxford University, 1925-26. Head of Department of English, High School, Pleasantville, N. Y.

### 1915-16.

FRANCES DARLINGTON, B.A., 1896; M.A., University of Pennsylvania, 1916. Teacher.

### 1916-17.

RACHEL KNIGHT, B.L., 1898; M.A., 1909; Ph.D., University of Iowa, 1919. Deceased.

### 1917-18.

RALPH LINTON, B.A., 1915; A.M., University of Pennsylvania, 1916; Ph.D., Harvard University, 1925. Professor of Anthropology, Columbia University.

### 1918-19.

WALTER HARRISON MOHR, B.A., 1914; M.A., University of Pennsylvania, 1921; Ph.D., *Ibid.*, February, 1931. Teacher of History, George School.

### 1919-20.

ESTHER E. BALDWIN, B.A., 1909; M.A., Columbia University, 1913. Teacher of French and English, South Philadelphia High School.

### 1920-21.

GEORGE PASSMORE HAYES, B.A., 1918; M.A., Harvard University, 1920; Ph.D., *Ibid.*, 1927. Acting Professor of English, Robert College, Constantinople, 1921-25. Professor of English, Agnes Scott College, Decatur, Ga. Head of Department.

1921-22.

FRANK WHITSON FETTER, B.A., 1920; M.A., Princeton University, 1922; A.M., Harvard University, 1924; Ph.D., Princeton University, 1926. Assistant Professor of Economics, Princeton University, 1927-1934; Associate Professor of Economics, Haverford College; Guggenheim Fellow, 1937-38.

1922-23.

MARGARET (POWELL) AITKEN, B.A., 1919; M.A., 1921.

1923-24.

WALTER HALSEY ABELL, B.A., 1920; M.A., 1924; Professor of Art, Acadia University, Wolfville, Nova Scotia, Canada.

1924-25.

EDGAR Z. PALMER, B.A., 1919; Ph.D., University of Wisconsin, 1928. Associate Professor in Economics, College of Commerce, University of Kentucky.

1925-26.

EMMA T. R. (WILLIAMS) VYSSOTSKY, B.A., 1916; Ph.D., Radcliffe College 1929. Studied at University of Chicago, 1925-26. Studied at Harvard University Observatory, 1927-29. Research Fellow, Leander-McCormick Observatory. Instructor in Astronomy, University of Virginia.

1926-27.

MARGARET LYLE (WALTON) MAYALL, B.A., 1925; M.A., Radcliffe College, 1928. Astronomer, Harvard Observatory.

1927-28.

ALICE P. GARWOOD, B.A., 1913. "Certificate of Play Production," Department of Drama, School of Fine Arts, Yale University, 1928. Dramatic Director.

1928-29.

JAMES ROLAND PENNOCK, B.A., 1927; M.A., Harvard University, 1928; Ph.D., Harvard University, 1932. Assistant Professor in Political Science, Swarthmore College.

1929-30.

WALTER B. KEIGHTON, JR., B.A., 1923; Ph.D., Princeton University, 1933. Assistant Professor, Department of Chemistry, Swarthmore College.

1930-31.

C. LAWRENCE HAINES, B.S., 1928. Studied at Johns Hopkins University, 1930-1933; Research Fellow, University of Colorado.

1931-32.

KATHARINE SMEDLEY, B.A., 1930; M.A., University of North Carolina, 1932. Assistant Dean, George School.

1932-33.

RICHARD ABELL, A.B., 1926; M.A., University of Pennsylvania, 1930; Ph.D., *Ibid.*, 1934. Instructor in Anatomy, School of Medicine, University of Pennsylvania.

1933-34.

THOMAS SEAL CHAMBERS, B.A., 1931; M.A., Harvard University, 1933. Junior Prize Fellow, Harvard University, since 1933.  
(Held by Alternate, LEWIS FUSSELL, JR., B.S., 1931; M.S., Massachusetts Institute of Technology, 1932; Sc.D., *Ibid.*, 1938.)

1934-35.

RICHARD E. PASSMORE, B.A., 1933; studied at Columbia University.

1935-36.

CHARLES COALE PRICE, III, B.A., 1934; Ph.D., Harvard University, 1936. Research Assistant in Chemistry at the University of Illinois.

1936-37.

MILDRED MAXFIELD, B.A., 1931. Studied at Radcliffe. Instructor of French, Milwaukee-Downer College.

1937-38.

WILLIAM SCOTT, B.A., 1937. Studying at the University of Michigan.

1938-39.

GEORGE COOPER, B.A., 1938. Studying at University of London.

### HOLDERS OF THE LUCRETIA MOTT FELLOWSHIP

1895-96.

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

1896-97.

MARY STONE MCDOWELL, B.A., 1896; studied at Oxford University; M.A., Columbia University, 1903. Teacher, Lincoln High School, Brooklyn, N. Y.

1897-98.

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

1898-99.

EDNA HARRIET RICHARDS, B.L., 1898; studied in Berlin; A.M., Columbia University, 1904. Fellow and Instructor, University of Wisconsin, 1921-22. Teacher of German in High School, Youngstown, Ohio.

1899-1900.

MARY ELIZABETH SEAMAN, B.A., 1899; studied at Newnham College, Cambridge; A.M., Adelphia College, 1905. Deceased.

1900-01.

ANNA GILLINGHAM, B.A., 1900; B.A., Radcliffe College, 1901; M.A., Columbia University, 1910. Psychologist, Punahon School, Honolulu, T. H.



1901-02.

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

1902-03.

MARGARET HOOD (TAYLOR) (SIMMONS) TAYLOR, B.L., 1902; studied at Berlin University.

1903-04.

ANNIE ROSS, A.B., 1903; Ph.M., University of Chicago, 1904. Chairman of Modern Language Department, High School, Flushing, L. I., N. Y.

1904-05.

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

1905-06.

ELIZABETH HALL, B.A., 1905; M.A., Columbia University, 1906. Teacher of English, Media High School.

1906-07.

BERTHA CAROLINE PEIRCE, B.A., 1906; M.A., Cornell University, 1907; Head of Department of Latin and Greek, Beaver College, Jenkintown, Pa.

1907-08.

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

1908-09.

ELIZABETH SIKES (JAMES) NORTON, B.A., 1908; studied at the University of Berlin; A.M., University of Pennsylvania, 1912; Ph.D., *Ibid.*, 1914.

1909-10.

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

1910-11.

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

1911-12.

ANNA HEYDT, B.A., 1911; M.A., Radcliffe College, 1912. Teacher of Latin and French, State Teachers' College, Kutztown, Pa.

1912-13.

CAROLINE HALLOWELL (SMEDLEY) COLBURN, B.A., 1912; M.A., 1918; studied at the University of California.

1913-14.

ESTHER (MIDLER) SIMBERG, B.A., 1913; M.A., Columbia University, 1929; studied at the University of Berlin. Social Worker.

1914-15.

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

1915-16.

REBA MAHAN (CAMP) HODGE, B.A., 1915; M.A., Radcliffe College, 1916.

1916-17.

ANNA M. MICHENER, B.A., 1916; M.A., Columbia University, 1917; Ph.D. *Ibid.*, 1921; Economic Research.

1917-18.

HILDA A. (LANG) DENWORTH, B.A., 1917; studied at the University of Wisconsin; A.M., University of Pennsylvania, 1921.

1918-19.

EDITH W. (MENDENHALL) HAYES, B.A., 1918; M.A., Columbia University, 1919.

1919-20.

GLADYS AMANDA REICHARD, B.A., 1919; M.A., Columbia University, 1920; Ph.D., Columbia University, 1925; Research Fellow in Anthropology, University of California, 1922-23; Holder of John Simon Guggenheim Fellowship for 1926-27; studied in Hamburg. Assistant Professor Anthropology, Barnard College, Columbia University.

1920-21.

HENRIETTA ALBERT SMITH, B.A., 1920. (Resigned.)

1921-22.

ALINE MATHIESON (WOODROW) ROBERTSON, B.A., 1921; studied at the University of Glasgow.

1922-23.

HENRIETTA IDA (KELLER) HOWELL, B.A., 1922; M.A., Radcliffe College, 1923.

1923-24.

GERTRUDE MALZ, B.A., 1923; M.A., University of Wisconsin, 1924; Ph.D., *Ibid.*, 1928; studied at American School of Classical Studies, Athens, 1929-30. Instructor in Greek and Latin, Sweet Briar College, Sweet Briar, Va.

1924-25.

GERTRUDE PAULA (KNAPP) RAWSON, B.A., 1924; studied at Somerville College, Oxford. Studied at University of Chicago, 1935-36.

1925-26.

MARGARET (PITKIN) BAINBRIDGE, B.A., 1925; Ph.D., University of Chicago, 1928. Assistant Professor of Romance Languages, Swarthmore College, 1928-33.

1926-27.

ALICE CAROLYN (PAXSON) BRAINERD, B.A., 1926; M.A., Radcliffe College, 1928.

1927-28.

CECILE (BROCHEREUX) JARVIS, B.A., 1927; M.A., University of Pennsylvania, 1928. Teaching French, Haverford School.

1928-29.

GERTRUDE (SANDERS) FRIEDMAN, B.A., 1928; Ph.D., University of Pennsylvania, 1932.

1929-30.

MARGARET (WORTH) CROWTHER, B.A., 1929; Law Student, Yale University, 1929-30.

1930-31.

ELEANOR FLEXNER, B.A., 1930; studied at Somerville College, Oxford.

1931-32.

BEATRICE F. (BEACH) MACLEOD, B.A., 1931; M.A., Yale Dramatic School, 1934. Director of Dramatics, Swarthmore College.

1932-33.

FRANCES REINHOLD, B.A., 1932; M.A., University of Pennsylvania, 1936; Ph.D., *Ibid.*, 1937. Assistant in Political Science, Swarthmore College. (Held by joint alternates:

EDNA N. PUSEY, B.A., 1932; M.A., University of Pennsylvania, 1933. Teacher of French and Social Studies, Avondale, Pa.

ELEANOR Y. PUSEY, B.A., 1932; M.A., University of Pennsylvania, 1933. Teacher of French, Haddonfield, N. J.)

1933-34.

RUTH ERNESTINE (COOK) STILSON, B.A., 1933; M.A., Radcliffe College, 1934; studying at Radcliffe College.

1934-35.

VIRGINIA HALL SUTTON, B.A., 1934; studied at the University of Chicago.

1935-36.

ELIZABETH LANE, M.A., 1935; studied at Columbia University.

1936-37.

KATHERINE LEVER, B.A., 1936. Studied at Bryn Mawr College.

1937-38.

MINA WATERMAN, B.A., 1937. Studying at the University of Chicago.

1938-39.

MARY KATHERINE HEALD, B.A., 1938. Studying at University of Michigan.

## SIGMA XI FELLOWSHIP

1934-35.

HELEN LOUISE WEST, B.A., 1932; M.A., Mt. Holyoke College, 1934; Ph.D., University of California, 1936. Holder of Teaching Fellowship in Chemistry at the University of California, 1935-36. Head of Departments of Chemistry and Physics, San Francisco College for Women, 1936-37. Instructor in Chemistry, New Jersey College for Women.

1936-37.

STEPHEN MACNEILLE, B.A., 1933; Ph.D., 1937, Massachusetts Institute of Technology.

## HOLDERS OF THE MARTHA E. TYSON FELLOWSHIP

1914-15.

HELEN PRICE, B.A., 1907; Ph.D., University of Pennsylvania, 1915. Head of Latin and Greek Department, Meredith College, Raleigh, N. C.

1915-16.

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

1916-17.

KATHERINE PROCTER (GREEN) VINCENT, B.A., 1907; M.A., Columbia University, 1917. Teacher of Latin in Newton High School, New York, N. Y.

1917-18.

CHARLOTTE (BREWSTER) JORDAN, B.L., 1882; M.L., 1886; studied in Madrid. Translator and writer.

1918-19.

EDNA ANNA TYSON, B.A., 1909; M.A., Columbia University, 1919. Teacher of English in High School, Newark, N. J.

1919-20.

DOROTHEA (GILLETTE) MURRAY, B.A., 1914; M.A., Columbia University, 1920.

1920-21.

BEULAH (DARLINGTON) PRATT, B.A., 1890; M.A., Teachers' College, Columbia University, 1922.

1921-22.

RHODA A. LIPPINCOTT, B.A., 1917; M.A., Columbia University, 1922. Teacher of French, Morristown, N. J., High School.

1922-23.

GRACE COCHRAN, B.A., 1917; Ph.D., University of Iowa, 1930. Student, Certificat d' Aptitude d' enseigner le français à l'étranger, Sorbonne, France, 1922. Assistant Professor of Romance Languages, State University of Iowa, Iowa City, Iowa.

1923-24.

MILDRED E. (WILLARD) FRY, B.A., 1920; M.A., University of Pennsylvania, 1924.

1924-25.

CAROLINE E. MYRICK, B.A., 1914; M.A., Radcliffe College, 1916.

1925-26.

HELEN E. (HOWARTH) LEWIS, B.A., 1920; M.A., Smith College, 1926. Research Associate, Harvard University Observatory. Research, Physics Laboratory, American Optical Co.

1926-27.

DOROTHY (PLACK) PUCTA, B.A., 1911; M.A., University of Pennsylvania, 1927.

1927-28.

EMMA T. R. (WILLIAMS) VYSSOTSKY, B.A., 1916; Ph.D., Radcliffe College, 1929. Student, Harvard University Observatory, 1927-29. Research Fellow, Leander-McCormick Observatory. Instructor in Astronomy, University of Virginia.

1928-29.

EDNA JEAN (PROSSER) WEBSTER, B.A., 1926; M.A., University of Wisconsin, 1929.

1929-30.

GERTRUDE MALZ, B.A., 1923; M.A., University of Wisconsin, 1924; Ph.D., *Ibid.*, 1928. Studied at the American School of Classical Studies, Athens, 1929-30. Instructor in Greek and Latin, Sweet Briar College, Sweet Briar, Va.

1930-31.

MARY ELIZABETH SHINN, B.A., 1924; M.A., Swarthmore College, 1931. Teaching Latin in the Swedesboro High School.

1931-32.

GERTRUDE (GILMORE) LAFORE, B.A., 1928; M.A., Columbia University, 1932. Teaching at Bennington College, 1932-34. Lecturer in Education, Swarthmore College, 1936—.

1933-34.

JOSEPHINE ELLIOTTE WILSON, B.A., 1915; M.A., Teachers' College, Columbia University, 1934. Instructor of English, State Teachers' College, West Chester, Pa.

1935-36.

DOROTHY E. C. DITTER, B.A., 1930; studied at the University of Pennsylvania, 1935-37. Assistant, Department of History, University of Pennsylvania.

1937-38.

MARY FAIRBANKS, B.A., 1934; studying at Columbia University.

## HOLDERS OF THE IVY MEDAL\*

1898. ANNA BELLE EISENHOWER, B.A., 1899; A.B., Radcliffe College, 1900; A.M., *Ibid.*, 1907.
1899. MARY G. LEIPER, B.L., 1899. Deceased.
1900. MARY S. HAVILAND, B.L., 1900; B.A., Radcliffe College, 1901. Deceased.
1901. GEORGE A. SEAMAN, B.A., 1901. Deceased.
1902. ELLIOTT RICHARDSON, B.S., 1902; C.E., 1905.
1903. SAMUEL T. STEWART, B.A., 1903.
1904. HALLIDAY R. JACKSON, B.A., 1904; M.A., University of Pennsylvania, 1933.
1905. LOUIS N. ROBINSON, B.A., 1905; Ph.D., Cornell University, 1911.
1906. T. H. DUDLEY PERKINS, B.A., 1906. Deceased.
1907. AMOS J. PEASLEE, B.A., 1907; LL.B., Columbia University, 1911.
1908. HERMAN PRITCHARD, B.S., 1908; M.A., 1911.
1909. WALTER F. RITTMAN, B.A., 1908; M.A., 1909; M.E., 1911; Ch.E., 1917; Ph.D., Columbia University, 1914.
1910. JOHN E. JOHNSON, B.S., 1910.
1911. JOSEPH H. WILLITS, B.A., 1911; M.A., 1912; LL.D., 1937; Ph.D., University of Pennsylvania, 1916.
1912. HERMAN ELLIOTT WELLS, B.S., 1912.
1913. HENRY LEE MESSNER, B.A., 1913.
1914. ALBERT ROY OGDEN, B.A., 1914. Deceased.
1915. THOMAS BAYARD MCCABE, B.A., 1915.
1916. HUGH FREDERICK DENWORTH, B.A., 1916; M.A., University of Pennsylvania, 1918.
1917. WILLIAM WEST TOMLINSON, B.A., 1917.
1918. FREDERICK STOCKHAM DONNELLY, B.A., 1918. Deceased.
1919. CHARLES MANLY HOWELL, B.A., 1919.
1920. DETLEV WULF BRONK, A.B., 1920; Sc.D., 1937; M.S., University of Michigan, 1922; Ph.D., *Ibid.*, 1926.
1921. ALAN C. VALENTINE, B.A., 1921; LL.D., 1937; M.A., University of Pennsylvania, 1922. Rhodes Scholar, B.A. (Honors), Oxford University, 1925. M.A., Oxford, 1929.
1922. RICHARD WILLIAM SLOCUM, B.A., 1922; LL.B., Harvard University, 1925.
1923. ARTHUR JOY RAWSON, B.A., 1923; M.E., 1930.
1924. RICHMOND PEARSON MILLER, B.A., 1924.
1925. MARVIN YARD BURR, B.A., 1925; M.A., Columbia University, 1927; Ph.D., *Ibid.*, 1930. Deceased.
1926. RICHARD MELVILLE PERDEW, B.A., 1926.
1927. JAMES ROLAND PENNOCK, B.A., 1927; M.A., Harvard University, 1928; Ph.D., 1932.
1928. DOUGLASS WINNETT ORR, B.A., 1928; M.B. and M.S., Northwestern University Medical School, 1934.
1929. THOMAS MCPHERSON BROWN, B.A., 1929; M.D., 1933, Johns Hopkins Medical School.

\*The terms of the award of this medal are found on p. 39.

1930. RICHARD MORGAN KAIN, B.A., 1930; A.M., University of Chicago, 1931; Ph.D., 1934.  
 1931. SAMUEL MAHON, B.A., 1931.  
 1932. EDWIN SCOTT LUTTON, B.A., 1932; Ph.D., Yale University, 1935.  
 1933. FRANKLIN PORTER, B.A., 1933.  
 1934. FRANK C. PIERSON, B.A., 1934.  
 1935. VAN DUSEN KENNEDY, B.A., 1935.  
 1936. JAMES FRANKLIN McCORMACK, B.A., 1936.  
 1937. DORWIN CARTWRIGHT, B.A., 1937.  
 1938. KERMIT GORDON, B.A., 1938.

### HOLDERS OF THE OAK LEAF MEDAL\*

1922. BARBARA (MANLEY) PHILIPS, B.A., 1922.  
 1923. ISABELLE SHAW (FUSSELL) EWING, B.A., 1923.  
 1924. GERTRUDE PAULA (KNAPP) RAWSON, B.A., 1924.  
 1925. INEZ VICTORIA (COULTER) RUSSELL, B.A., 1925.  
 1926. LYDIA WILLIAMS (ROBERTS) DUNHAM, B.A., 1926.  
 1927. KATHERINE JOSEPHINE (SNYDER) SASSÉ, B.A., 1927.  
 1928. MARGARET (SOMERVILLE) MCINERNEY, B.A., 1928.  
 1929. HELEN CAROLINE (ROBISON) BISHOP, B.A., 1929.  
 1930. ELIZABETH (YARD) ARMSON, B.A., 1930.  
 1931. CAROLINE ALBERTA (JACKSON) RUSHMORE, B.A., 1931.  
 1932. FLORENCE ELIZABETH (WILLIAMS) POTTS, B.A., 1932.  
 1933. BABETTE (SCHILLER) SPIEGAL, B.A., 1933.  
 1934. RUTH ELEANOR (KEWLEY) DONAHOWER, B.A., 1934.  
 1935. ELIZABETH MARY BLAIR, B.A., 1935.  
 1936. LORRAINE PATTERSON, B.A., 1936.  
 1937. ISABEL HOLLY ROSS, B.A., 1937.  
 1938. VIRGINIA HADLEY VAWTER, B.A., 1938.

### HOLDERS OF THE McCABE ENGINEERING AWARD†

1936. ROBERT S. SCHAIRER, B.S., 1936.  
 1937. BENJAMIN COOPER, B.S., 1937.  
 1938. GEOFFREY KELLER, B.S., 1938.

\*The terms of the award of this medal are found on p. 40.

†The terms of this award are found on p. 40.

DEGREES CONFERRED IN JUNE, 1938  
BACHELOR OF ARTS IN THE HONORS COURSE

*In the Division of the Humanities*

MARGARET PETER ASHELMAN ( <i>High Honors</i> )	EDITH AMELIE RUNGE ( <i>Highest Honors</i> )
MARGARET BILL ( <i>Honors</i> )	KATHARINE WHITNEY SCHERMAN ( <i>Honors</i> )
JEAN ANNE EVANS ( <i>High Honors</i> )	HELEN LOUISE SCHMIDT ( <i>High Honors</i> )
VARTAN HARTUNIAN ( <i>Highest Honors</i> )	EDWIN BURROWS SMITH ( <i>High Honors</i> )
ROBERT BLOCK HEINEMAN ( <i>High Honors</i> )	ANNE ALEXANDER TRACY ( <i>Honors</i> )
MARY IVINS ( <i>High Honors</i> )	VIRGINIA HADLEY VAWTER ( <i>Honors</i> )
BETTY JEAN MADDEN ( <i>Honors</i> )	DEBORAH OSBURN WING ( <i>High Honors</i> )
JANE LOUISE MEYER ( <i>Honors</i> )	LOIS LAURA WRIGHT ( <i>Honors</i> )
MARGARET GLOVER MOORE ( <i>High Honors</i> )	
WILLIAM LAUBACH NUTE, JR. ( <i>Highest Honors</i> )	

*In the Division of the Social Sciences*

GEORGE DORSEY BRADEN ( <i>Highest Honors</i> )	ELIZABETH MATZ ( <i>Honors</i> )
GEORGE BRINTON COOPER ( <i>Highest Honors</i> )	ELIZABETH WEBB MIMS ( <i>High Honors</i> )
KERMIT GORDON ( <i>Highest Honors</i> )	CHRIST JOHN PETROW ( <i>Honors</i> )
MARY KATHERINE HEALD ( <i>High Honors</i> )	RUSSELL MILLS SHEPHERD ( <i>Honors</i> )
MARY ELLEN HERRICK ( <i>Honors</i> )	GUERIN TODD, JR. ( <i>Honors</i> )
LAURENCE DAVIS LAFORE ( <i>Highest Honors</i> )	MARJORIE WILKES VANDEUSEN ( <i>High Honors</i> )
MICHAEL MARSH ( <i>High Honors</i> )	MARGARET HELEN VOSKUIL ( <i>Honors</i> )
	CAROLA ZIGROSSER ( <i>Honors</i> )

*In the Division of Mathematics and the Natural Sciences*

JOHN ELSON BAER ( <i>Honors</i> )	NATHAN SCHELLENBERG KLINE ( <i>Honors</i> )
ALAN EDWARD BLOCH ( <i>Honors</i> )	MARY KATHARINE MCDERMOTT ( <i>High Honors</i> )
WILLIAM ROBERT CARROLL ( <i>Honors</i> )	JOHN MARSHALL, JR. ( <i>High Honors</i> )
HARRIET MERRILL DANA ( <i>Honors</i> )	PETER OESPER ( <i>Highest Honors</i> )
MARY ELIZABETH DUMM ( <i>High Honors</i> )	WARWICK SAKAMI ( <i>Honors</i> )
THOMAS HENRY ELLIOTT ( <i>High Honors</i> )	DAVID TODD ( <i>High Honors</i> )
ELISABETH MARY JANETTE FUNKHOUSER ( <i>High Honors</i> )	ANN TRIMBLE ( <i>High Honors</i> )
CHARLES DANIEL HENDLEY ( <i>Honors</i> )	
WILLIAM JASPER HOWELL ( <i>High Honors</i> )	

BACHELOR OF SCIENCE IN THE HONORS COURSE

*In the Division of Engineering*

WILLIAM THAYER HARRISON ( <i>Honors</i> )	GEOFFREY KELLER ( <i>Highest Honors</i> )
HARRY FAIRFAX REID, JR. ( <i>Honors</i> )	



## BACHELOR OF ARTS IN THE GENERAL COURSE

*With the Major in Botany*MIRIAM RUTH FEELY  
ERIC LESLIE SIMMONSJEAN THOMPSON WELTMER  
JUDITH ABBOTT WILLITS*With the Major in Chemistry*JOHN HOLT BRECKENRIDGE  
DAVID BROWNJOHN ROBERT CARLSON, JR.  
DAVID WEBB CHANEY  
HOFFMAN STONE*With the Major in Economics*ALICE EUGENIA CARRIGAN  
JANET MILDRED GINGRICH  
HELLMUTH LUDWIG KIRCHSCHLAGER  
EUGENE MICHAEL LANG  
HERBERT WOODRUFF LITTLE  
MARGARET HAMILTON MARVIN  
CARROLL BARNARD PRICE, JR.FLORENCE JANE REUTER  
BURTON RICHARDS  
JEAN SAURWEIN  
EMANUEL EDWARD SCOLL  
WILLIAM FRANCIS SMITH  
MARTIN BACON WALTHALL  
RICHARD BOWMAN WRAY*With the Major in English*JAMES HODGE BEARDSLEY  
VIRGINIA BEW BOND  
ELIZABETH STEWART BROSIUS  
BARBARA ANNE CHAPMAN  
JANE DAVIS  
SARAH JANE DEARDORFF  
CHARLES FREDERIC EAMES  
DORIS ELEANOR EPPINGER  
EVAN WAYNE FRAZER  
ELISE CECILE HAGEDORN  
GEORGE HAINES, IV  
MARGARET JANE HEISLER  
CLARE HELLMAN  
LETITIA NATHALIE IRVINEELEANOR WOODBRIDGE JOYCE  
HENRY STANLEY LANGE  
ANN WILLETS LAPHAM  
FREDERICK AUGUSTUS LEVERING, III  
ELLICE McDONALD, JR.  
MARGARET MARTIN MENEUEZ  
MARY JANE MILLER  
EVELYN ESTHER MOHL  
GEORGETTE KEATH MOYER  
JEAN PORTER  
CONSTANCE SYMMES RUSSELL  
ELLEN BURNS SCHOCK  
ELIZABETH REISLER STUBBS  
NORAH MARGARET TIMMIS  
ANNE BAKER WARREN*With the Major in Fine Arts*ELIZABETH FUNSTON BIGGERSTAFF  
MARIAN READER SNYDER

GEORGIA ELAINE HAYNIE

*With the Major in French*

VIRGINIA ALICE NEWKIRK

KATHARINE PROCTOR

*With the Major in German*

GERTRUDE SOPHIA WEAVER

CAROLYN MARGARET YERKES

*With the Major in History*MIRIAM M. RAVI BOOTH  
MARGARET VIRGINIA DAVENPORTGRACE MARY KOCH  
DOROTHY PHELPS SUTTON

*With the Major in Mathematics*

ROSE ELISABETH STREET

*With the Major in Philosophy*

ALFRED FRANK ASH

*With the Major in Physics*

CYRUS FOSS WOOD

*With the Major in Political Science*

HARRIET ELIZABETH BITTLE  
 JOHN HUNN BROWN  
 AUGUSTUS FRANK BUDDINGTON  
 RACHEL HECKERT GREENAWALT  
 ELIZABETH SCHWENK HAY

ELIZABETH ROBERTS HENSZEY  
 CAROLYN MEREDITH HOGELAND  
 PETER DALZELL KASPAR  
 JOHN HENDERSON LASHLY  
 ALLEN GOODMAN SNYDER, JR.

*With the Major in Psychology*

FAITH HAMBLY BARSALOW  
 BORIS BLAI, JR.  
 EMILY CAROLINE BREARLEY  
 CATHERINE COOK  
 ANNE COOPER  
 NANCY JANE COOPER  
 ELEANOR HEWITT FERGUSON  
 ALICE ELIZABETH FERNSLER

ELSA GAEDE  
 JANE HAMILTON  
 JEAN ANNABELL TOMPKINS  
 ELIZABETH DISSOSWAY WATSON  
 ELIZABETH LINVILL WAY  
 CHARLOTTE JAN WEAVER  
 BARBARA WETZEL  
 JOSEPH WINSTON

*With the Major in Zoölogy*

MARGARET ELIZABETH DEKNATEL  
 MARTHA ALLEN DUDLEY  
 HERTHA EMMA EISENMENGER

DAVID ADOLPH GOLDSMITH  
 JOHN KING LOVE, JR.  
 ANNE VIRGINIA RAEBECK

HELENE MARIANNE RANK

## BACHELOR OF SCIENCE IN THE GENERAL COURSE

*With the Major in Civil Engineering*

RICHARD STEWART BRUNHOUSE

*With the Major in Electrical Engineering*

HENRY EVERETT BROOKS KURTZ      JAMES ARTHUR MALCOLM, JR.  
 EDWIN EVANS MOORE

*With the Major in General Engineering*

CARL COFFIN COLKET

*With the Major in Mechanical Engineering*

GEORGE CHIDESTER CARSON      GEORGE WHITELY VALENTINE

## MASTER OF SCIENCE

ROBERT DEMOYER, B.S., Lehigh University, 1929

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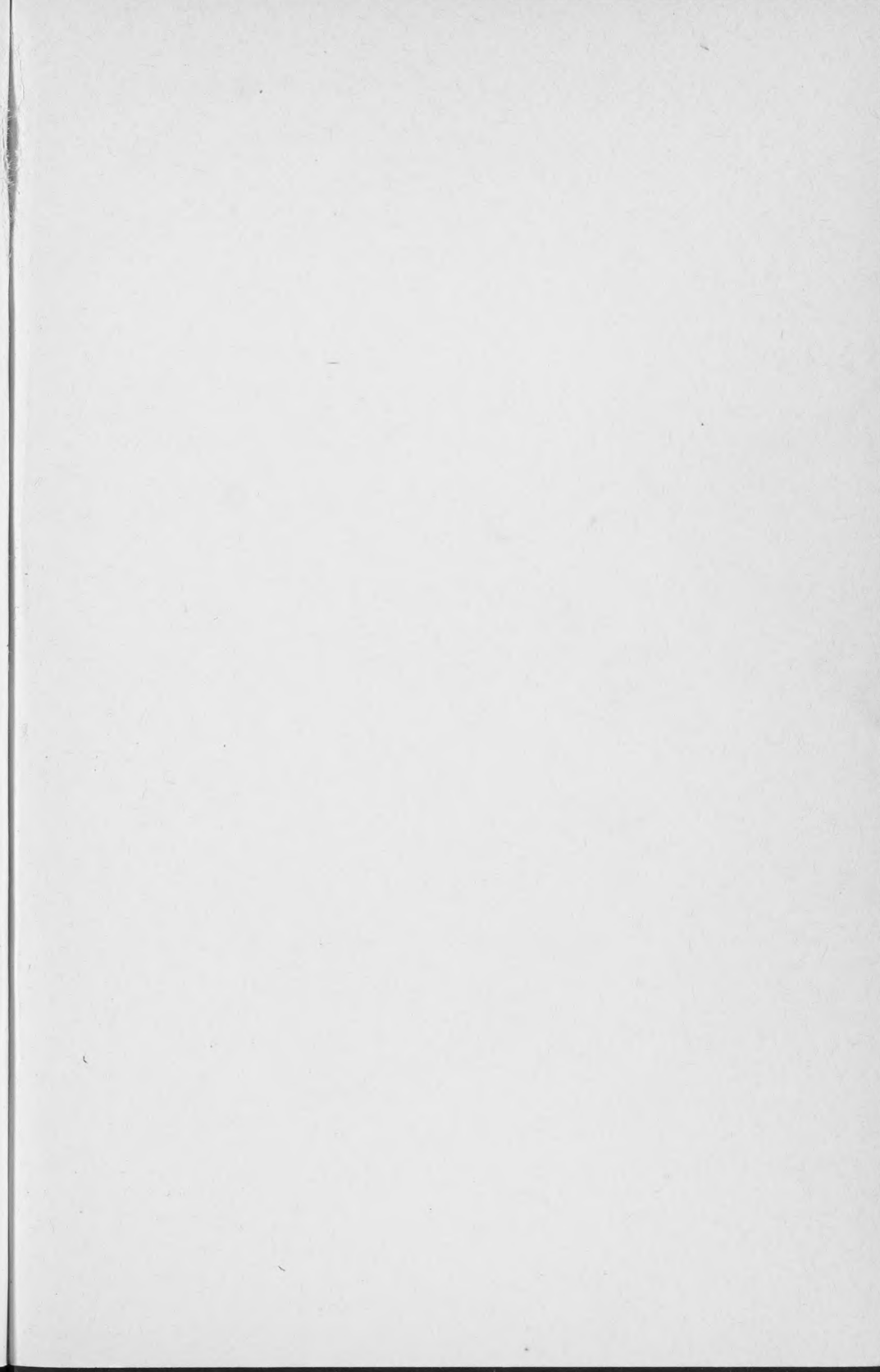
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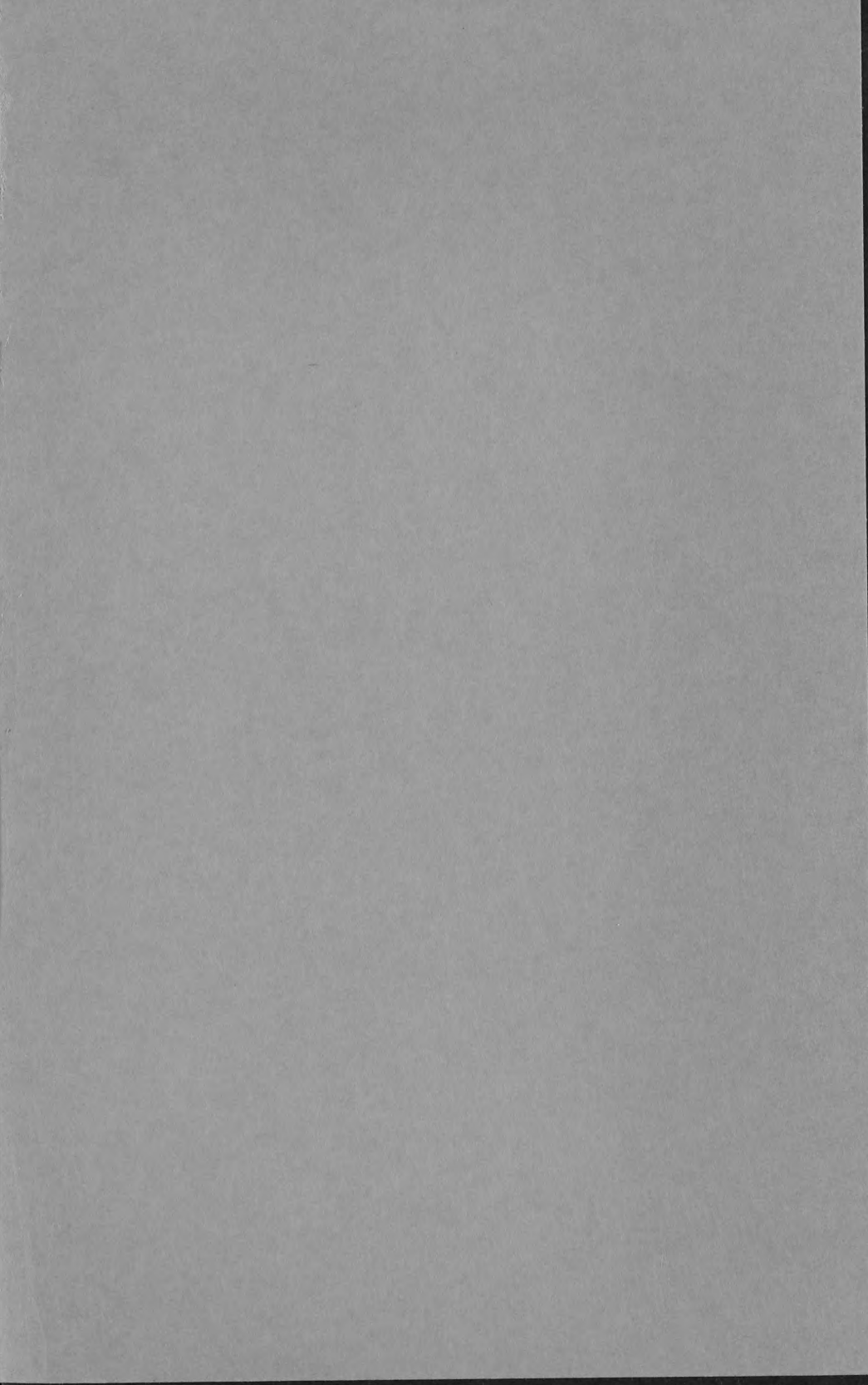
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