

BULLETIN OF SWARTHMORE COLLEGE

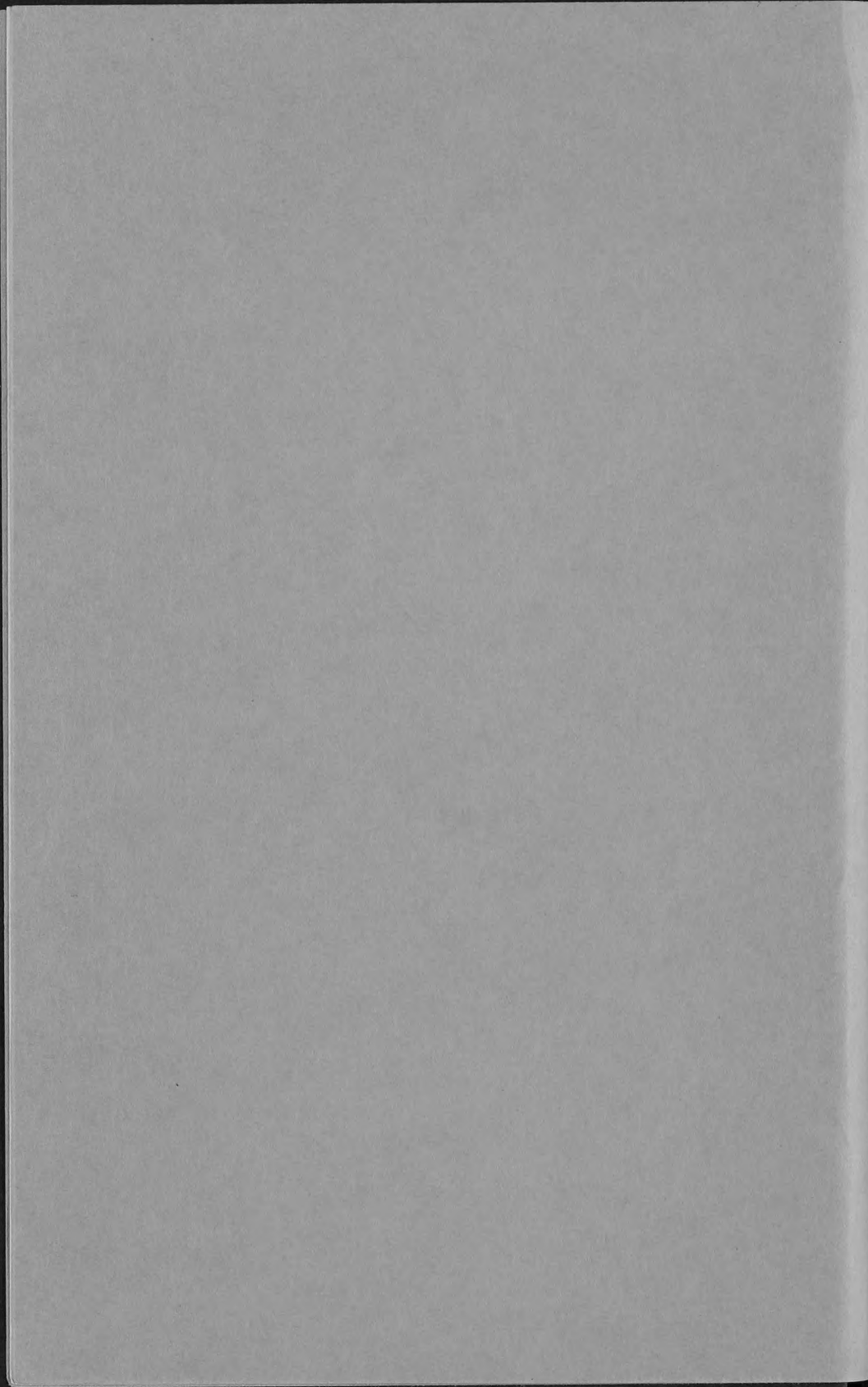
CATALOGUE
OF
SWARTHMORE
COLLEGE
1937-1938



SWARTHMORE, PA.

Volume XXXV, No. 2

Tenth Month, 1937



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SWARTHMORE, PENNSYLVANIA

Volume XXXV

Number 2

Tenth Month, 1937

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Swarthmore
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 1937/40
 CALENDAR FOR 1937

SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
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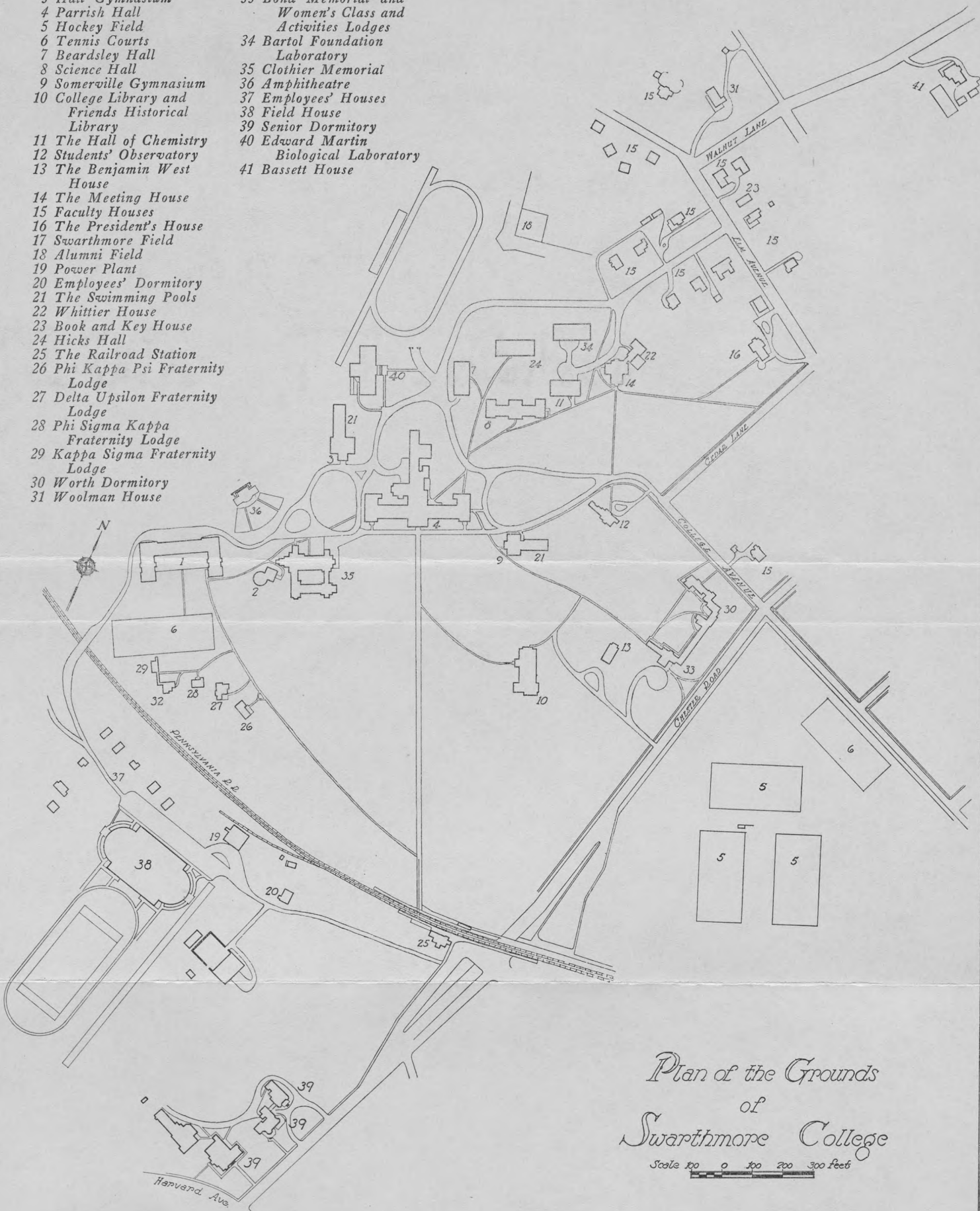
CALENDAR FOR 1938

JANUARY	FEBRUARY	MARCH	APRIL
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CALENDAR FOR 1939

JANUARY	FEBRUARY	MARCH
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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
- 36 Amphitheatre
- 37 Employees' Houses
- 38 Field House
- 39 Senior Dormitory
- 40 Edward Martin Biological Laboratory
- 41 Bassett House



*Plan of the Grounds
of
Swarthmore College*

Scale 100 0 100 200 300 feet



COLLEGE CALENDAR

1937

- Ninth Month 24, 25, 26, 27.. Freshman Placement Days
Ninth Month 28.....Registration and enrolment in Classes, 2:00 to
4:00 P. M.
Ninth Month 29.....Classes begin at 8:00 A. M.
Ninth Month 29.....Opening of Honors Work
Tenth Month 5.....Meeting of the Board of Managers
Eleventh Month 25.....Holiday: Thanksgiving
Twelfth Month 7.....Annual Meeting of the Corporation
Twelfth Month 18.....Christmas Recess begins at noon

1938

- First Month 5.....Christmas Recess ends at 8:00 A. M.
First Month 18.....First Semester ends for Honors Seminars
First Month 25.....Second Semester begins for Honors Seminars
First Month 27.....Registration and Enrolment in Classes for the
Second Semester, 10:30 A. M. to noon
First Month 27.....Mid-Year Examinations begin at 2:00 P. M.
Second Month 3.....Mid-Year Examinations end
Second Month 7.....Second Semester begins at 8:00 A. M.
Third Month 26.....Spring Recess begins at noon
Fourth Month 5.....Spring Recess ends at 8:00 A. M.
Fourth Month 9.....Somerville Day
Fifth Month 7.....Honors Seminars for Seniors end
Fifth Month 14.....Courses for Seniors end
Fifth Month 16.....Honors Written Examinations begin
Fifth Month 23.....Senior Comprehensive Examinations begin
Fifth Month 25.....Final Examinations begin
Fifth Month 26.....Honors Oral Examinations begin
Fifth Month 28.....Honors Examinations end
Sixth Month 1.....Final Examinations end
Sixth Month 3.....Class Day
Sixth Month 4.....Alumni Day
Sixth Month 5.....Baccalaureate Day
Sixth Month 6.....Commencement Day
Ninth Month 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 24.....Holiday: Thanksgiving
Twelfth Month 6.....Annual Meeting of the Corporation
Twelfth Month 17.....Christmas Recess begins at noon

1939

- First Month 4.....Christmas Recess ends at 8:00 A. M.
First Month 17.....First Semester ends for Honors Seminars
First Month 24.....Second Semester begins for Honors Seminars
First Month 26.....Registration and Enrolment in Classes for the
Second Semester, 10:30 A. M. to noon
First Month 26.....Mid-Year Examinations begin at 2:00 P. M.
Second Month 2.....Mid-Year Examinations end
Second Month 6.....Second Semester begins at 8:00 A. M.

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B.C.E. and C.E., Ohio State University.
- HAROLD M. MARCH, *Assistant Professor of French*.....West House
B.A., Princeton University; Ph.D., Yale University.
- MERCEDES C. IRIBAS, *Instructor in Spanish*...8 Runnymede Ave., Lansdowne
M.A., University of Pennsylvania.
- GEORGE A. BOURDELAIS, *Instructor in Engineering*.....Wallingford Hills
- FREDRIC S. KLEES, *Instructor in English*.....Wharton Hall
B.A., Bowdoin College.
- ETHEL STILZ, *Instructor in Fine Arts*.....Parrish Hall
Ph.B., University of Chicago; M.A., Columbia University.
- MAY E. PARRY, *Instructor in Physical Education for Women*.....
541 Pelham Road, Mt. Airy
B.A., Swarthmore College; B.S., Temple University.
- AVERY F. BLAKE, *Instructor in Physical Education for Men*
101 Sylvan Ave., Rutledge
- ORREN MOHLER, *Instructor in Astronomy*.....511 Walnut Lane
B.A., Michigan Normal College; M.A. and Ph.D., University of Michigan.
- RUTH McCLUNG JONES, *Instructor in Botany and Zoölogy*.....
Bobbin Mill Road, Media
B.A., Swarthmore College.
- MAURICE MANDELBAUM, *Instructor in Philosophy*.....513 Elm Ave.
B.A. and M.A., Dartmouth College; Ph.D., Yale University.
- JOHN S. HALL, *Instructor in Astronomy*.....Wallingford
B.A., Amherst College; Ph.D., Yale University.
- EDWIN B. NEWMAN, *Instructor in Psychology*.....Wharton Hall
B.A. and M.A., University of Kansas; Ph.D., Harvard University.
- JOHN D. MCCRUMM, *Instructor in Electrical Engineering*....Wharton Hall
B.S. and M.S., University of Colorado.
- E. J. FAULKNER, *Instructor in Physical Education for Men*..Dickinson Ave.
- FRANCES REINHOLD, *Instructor in Political Science*.....132 Rutgers Ave.
B.A., Swarthmore College; M.A. and Ph.D., University of Penn-
sylvania.
- MARJORIE F. LAWSON, *Instructor in German*.....403 Walnut Lane
B.A., Smith College; Dr.phil., University of Bonn.
- C. BROOKE WORTH, *Instructor in Zoölogy*.....602 Elm Ave.
B.A., Swarthmore College; M.D., University of Pennsylvania.
- *FRANK PIERSON, *Instructor in Economics*.....308 N. Chester Road
B.A., Swarthmore College.
- RICHARD B. BRANDT, *Instructor in Philosophy*.....302 N. Chester Road
B.A., Denison University; B.A., University of Cambridge; Ph.D.,
Yale University.
- JOSEPH DAVID COPPOCK, *Instructor in Economics*.....409 Elm Ave.
B.A., Swarthmore College; M.A., Columbia University.

*Appointed for the first semester.

- ALICE A. GATES, *Instructor in Physical Education for Women*.....
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- *JACQUES SCHERER, *Instructor in French*.....1, bis rue Chanet, Paris xvi
Lic. ès L., Agrégé de l'Université.
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- MARGUERITE WENCELIUS, *Part-time Instructor in French*....133 Ogden Ave.
Bach. ès L., University of Strasbourg; M.A., Wells College.
- NORRIS JONES, *Part-time Instructor in Scientific Drawing*.....
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Diplomas from Universities of Milan and Paris; M.A., University
of Pennsylvania.
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- ROY W. DELAPLAINE, *Assistant in Astronomy*.....106 Cornell Ave.
B.A., Swarthmore College.
- WILLIS J. STETSON, *Assistant in Physical Education for Men*..Melrose Park
B.A., Swarthmore College.
- BEATRICE BEACH MACLEOD, *Assistant in English*.....8B Whittier Place
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- EMMA MICHAEL REYNOLDS, *Assistant in Physical Education for Women*....
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B.A., Swarthmore College.
- HENRY C. FORD, *Assistant in Physical Education for Men*.....
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B.A., Swarthmore College.
- CLIFFORD F. DUNCAN, *Assistant in Physical Education for Men*.....
4506 Locust St., Philadelphia
B.S., University of Pennsylvania.
- LEW ELVERSON, *Assistant in Physical Education for Men*.....
University of Pennsylvania
B.S., University of Pennsylvania.
- DANIEL E. DEAN, *Assistant in Physical Education for Men*.....
1318 Fidelity-Philadelphia Building; Paoli
B.S., University of Pennsylvania.
- EDWARD SHENTON, *Assistant in Fine Arts*.....Bonticu Farms, Paoli
- VIRGINIA SAFFORD, *Assistant in Biology*.....409 College Ave.
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- LOUIS N. ROBINSON, *Lecturer in Economics*.....411 College Ave.
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- JOSEPHINE TRUSLOW ADAMS, *Lecturer in Fine Arts*....615 N. Chester Road
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*Appointed for the second semester.

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 B.A., National University of Ireland; M.A. and Ph.D., University of
 Pennsylvania.
- LAUREN H. SMITH, *Lecturer in Psychology*....111 N. 49th St., Philadelphia
 B.A. and M.D., University of Iowa.
- WILLIAM E. SCOTT, *Visiting Consultant, representing the Progressive Educa-
 tion Association*.....Hamilton Court, Philadelphia
 B.A., Reed College.
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- *J. W. HOOT, *Lecturer in Economics*.....136 Summit Ave., Bywood
 M.A., University of Wisconsin; Ph.D., University of Pennsylvania.
- W. POPE BARNEY, *Lecturer in Fine Arts*.....Wychwood, Moylan
 B.S., Georgia Institute of Technology; B.S. and M.S., University of
 Pennsylvania.
- RICHARD SALOMON, *Lecturer in History*.....306 S. Chester Road
 Dr.phil., University of Berlin.
- DOROTHY L. ASHTON, *Physician for Women and Lecturer in Hygiene*.....
 502 Cedar Lane
 B.A., Bryn Mawr College; M.D., University of Pennsylvania; F.A.C.S.
- FRANKLIN S. GILLESPIE, *Physician for Men and Lecturer in Hygiene*.....
 Harvard Ave. and Chester Road
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 Dr.phil., University of Berlin.
- I. KRECHEVSKY, *Research Associate in Psychology*.....517 Walnut Lane
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- EDGAR CLARK BLACK, *Research Associate in Biology*.....313 Harvard Ave.
 B.A., McMaster University; M.A., University of British Columbia.
- L. B. DUGAL, *Research Associate in Biology*.....613 Ogden Ave.
 B.A., M.A., M.S., Laval University.

*Appointed for the second semester.

DIVISIONS AND DEPARTMENTS

I Division of the Humanities—ROBERT E. SPILLER, *Chairman*.

- Classics, ETHEL H. BREWSTER, *Chairman*.
- English, HAROLD C. GODDARD, *Chairman*.
- Fine Arts, ETHEL STILZ, *Acting Chairman*.
- German, KARL REUNING, *Chairman*.
- History, FREDERICK J. MANNING, *Chairman*.
- Philosophy and Religion, BRAND BLANSHARD, *Chairman*.
- Psychology and Education, ROBERT B. MACLEOD, *Chairman*.
- Romance Languages, EDITH PHILIPS, *Chairman*.

II Division of the Social Sciences—ROBERT C. BROOKS, *Chairman*.

- Economics, HERBERT F. FRASER, *Chairman*.
- History, FREDERICK J. MANNING, *Chairman*.
- Philosophy and Religion, BRAND BLANSHARD, *Chairman*.
- Political Science, ROBERT C. BROOKS, *Chairman*.
- Psychology and Education, ROBERT MACLEOD, *Chairman*.

III Division of Mathematics
and the Natural Sciences —H. JERMAIN CREIGHTON, *Chairman*.

- Botany, SAMUEL C. PALMER, *Chairman*.
- Chemistry, H. JERMAIN CREIGHTON, *Chairman*.
- Mathematics and Astronomy, ARNOLD DRESDEN, *Chairman*.
- Physics, WINTHROP R. WRIGHT, *Chairman*.
- Psychology, ROBERT B. MACLEOD, *Chairman*.
- Zoölogy, LAURENCE IRVING, *Chairman*.

IV Division of Engineering—SCOTT B. LILLY, *Chairman*.

- Civil Engineering, SCOTT B. LILLY, *Chairman*.
- Electrical Engineering, HOWARD M. JENKINS, *Chairman*.
- Mechanical Engineering, CHARLES THATCHER, *Chairman*.
- Chemistry, H. JERMAIN CREIGHTON, *Chairman*.
- Mathematics, ARNOLD DRESDEN, *Chairman*.
- Physics, WINTHROP R. WRIGHT, *Chairman*.

ADMINISTRATIVE OFFICERS AND ASSISTANTS

FRANK AYDELOTTE, *President.*

B.A., Indiana University; M.A., Harvard University; B.Litt., Oxford University; D.Litt., University of Pittsburgh, Oberlin; L.H.D., University of Pennsylvania; LL.D., Allegheny College, Yale University, Indiana University; D.C.L., Oxford University.

FRANCES B. BLANSHARD, *Dean of Women.*

B.A., Smith College; M.A., Columbia University.

HAROLD EDWIN BALME SPEIGHT, *Dean of Men.*

M.A., University of Aberdeen and Dartmouth College.

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B.A., Swarthmore College.
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B.A., Connecticut College for Women.
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- BLANCHE DEVEREUX, R. N., *Nurse in the Men's Infirmary.*
- FREDRIC S. KLEES, *Resident in Wharton Hall.*
B.A., Bowdoin College.
- WILLIS J. STETSON, *Resident in Wharton Hall.*
B.A., Swarthmore College.
- JOHN ABRAMS, *Resident in Wharton Hall.*
B.A., Swarthmore College.
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- JOHN D. MCCRUMM, *Resident in Wharton Hall*
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 LOUIS N. ROBINSON.....411 College Avenue, Swarthmore
 JANE P. RUSHMORE.....Riverton, N. J.

STANDING COMMITTEES OF THE FACULTY

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 Philips, E. Wright.

ALUMNI

Palmer, *Chairman*; Jenkins, Lukens, Pitman, Roberts, Simpson, Thomas.

ARTS AND CRAFTS

Spiller, *Chairman*; Hunt, Jenkins, B. MacLeod, Manning, Stilz,
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ATHLETICS

Palmer, *Chairman*; Anderson, B. Blanshard, Dunn, MacIntosh, Charles
 C. Miller, Pittenger, Simpson, Thatcher.

COLLECTION ATTENDANCE

Speight, *Chairman*; Booth, Hull, Wright, McCrumm.

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Wright, *Chairman*; Baer, Lilly, Pittenger, Roberts, Simpson, Stilz.

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INSTRUCTION

Aydelotte, *Chairman*; Anderson, F. Blanshard, R. C. Brooks, Creighton,
 Lilly, Philips, Speight, Spiller.

PRESCRIBED AND EXTRA WORK

Creighton, *Chairman*; Baer, F. Blanshard, Enders, Lilly, Pennock, Speight.

STUDENT AFFAIRS

Speight, *Chairman*; F. Blanshard, Hunt, R. MacLeod, Nason.

TEACHERS' APPOINTMENT

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

TRAVEL ALLOWANCE

Wright, *Chairman*; Brewster, Cox, Goddard.

SECRETARY OF THE FACULTY.....Wilcox

SWARTHMORE COLLEGE

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 five 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 House, 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 of the Board of Managers, 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, is in process of reconstruction. 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 is to be 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, alumnæ, 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 women students.

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

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.

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.

VESPERS

A vesper service is held every Sunday at a quarter to seven in the Clothier Memorial. The program consists of music contributed by outside musicians and members of the student body.

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 and other similar organizations 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 active members. The organization holds open meetings devoted to music, art, and drama. The final meeting in April, known as Somerville Day, is a gathering of alumnæ and active members.

The Swarthmore College Orchestra and Mixed Chorus present musical and dramatic 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.

Similar groups meet regularly for work in the graphic and plastic arts.

In cooperation with the staff of *The Portfolio*, student literary magazine, a group meets weekly for the reading and discussion of original work.

The College dramatic program has two phases. One of these is the presentation of two 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.

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

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, direct organized discussion and debate. In addition to the intercollegiate debates, usually held on the campus, student speakers appear before various clubs and discussion groups in Philadelphia and nearby.

Contests conducted by the Debate Board to stimulate interest in public speaking are as follows:

The Delta Upsilon Prize Speaking Contest, for a prize of \$25, the interest on a sum given for this purpose by Owen Moon, Jr., 1894;

The Ella Frances Bunting Extemporaneous Speaking Contests for two prizes of \$25, one open to men and one to women, provided by the gift of E. M. Bunting of New York;

The Sophomore-Freshman Debate, open to all members of the two classes;

A scholarship, awarded to the Junior or Senior who shows the greatest ability in the discussion of public affairs, provided by the William Plumer Potter Fund for the Encouragement of Public Speaking. (For the conditions of award, see p. 31.)

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.

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

Three periodicals are published by the students with the assistance of the faculty: The *Swarthmore Phoenix*, a weekly newspaper; *The Portfolio*, a literary magazine; the *Halcyon*, a year-book edited by the Junior Class.

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 1937-38 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; Curator, Alfred M. Brooks.

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 approxi-

mately 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 5,000 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 contain-

ing 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

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 1938-39 must be received by the committee before March 1, 1938.

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 next award will be made for 1938-39.

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 mem-

bers 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 \$3,026, 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 char-

acter 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 1937 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 9, 1938, 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 110 candidates from 19 states and the District of Columbia. Candidates were interviewed in various parts of the country by representatives of the committee of selection, including Swarthmore Alumni and former Rhodes Scholars. The Committee was composed of President Aydelotte, Mr. Claude C. Smith, member of the Board of Managers; Dean Harold E. B. Speight, Dr. Detlev W. Bronk, '20, of the University of Pennsylvania; Dr. Charles C. Tillinghast, Principal of Horace Mann School for Boys, New York City; Professor Robert MacLeod, of the Department of Psychology, and Mr. Nicholas O. Pittenger, Comptroller of the College.

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 competitive 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 39-41).
- (2) Secure the endorsement of the Principal of her preparatory school.

This year for the first time candidates will be asked to take the Scholastic Aptitude Test and two achievement tests, to be given by the College Entrance Examination Board on April 9, 1938, 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

*Exception: A candidate who took the Scholastic Aptitude Test in June, 1937, is not asked to take additional examinations.

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.

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, 1938. The awards will be announced about May 15, 1938.

This year there were 150 candidates for the White Open Scholarships for Women, representing 19 states, the District of Columbia, Canada, Cuba and China. The Committee of Award was composed of President Frank Aydelotte, Dean Frances Blanshard, Dean Harold E. B. Speight, Lucy Biddle Lewis, of the Board of Managers, and three Alumnæ: Hannah Clothier Hull, 1891, Alice Smedley Palmer, 1889, and Anna Michener, 1916.

17. The SWARTHMORE ALUMNÆ SCHOLARSHIP, established by the Philadelphia and New York Alumnæ 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 1938 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 dis-

cretion of the College." The value of this scholarship is approximately \$67.50 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 at the end of their Junior year in secondary school. If they are not able to take it then, they may arrange to do so 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, eleven and one-half units.</i>
Plane Geometry	1 unit	
English	(4 years) 3 units	
†Foreign Language	5 units	
History	1 unit	
Advanced Algebra	½ unit	} <i>Elective subjects, three 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.

† Three units of one language and two of another, one of which must be Latin or German or Greek.

Exceptions:

1. Four units, two of one language and two of another, may be accepted if the applicant intends to enter on a course of study which will call for a language not yet studied and if his record in subjects other than languages is very good.

2. 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. 39, 41 below.) 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. 32, 33) to take the Scholarship examinations given by the College Board. (See p. 43.) The nature of these examinations is such as to require no special preparation.

COLLEGE ENTRANCE EXAMINATION BOARD

Examinations of June 18-25, 1938

The College Entrance Examination Board will hold examinations in June, 1938, at more than three hundred points in this country, and abroad. A list of these places will be published about March 1, 1938. 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, 1938.

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, 1938, 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 30, 1938
In the United States west of the Mississippi River or in Canada	May 23, 1938
Outside of the United States and Canada, except in Asia	May 9, 1938
In China or elsewhere in the Orient.....	April 25, 1938

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. If the Scholastic Aptitude Test is taken in connection with other examinations, no additional fee is required; if taken alone, the fee is \$10.

A week in advance of the Scholastic Aptitude Test each candidate who is to take the test should receive a booklet containing, with explanations and instructions, a specimen test the blank spaces of which are 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.

SCHOLARSHIP EXAMINATIONS AND EARLY EXAMINATIONS FOR ADMISSION TO BE HELD ON APRIL 9, 1938

The College Entrance Examination Board will hold examinations at approximately 150 places in the United States on April 9, 1938, 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 is ready for distribution.

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 19, 1938. 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 19, 1938, 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 19, 1938, 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 on or before April 2, 1938, a booklet containing a specimen test, the blank spaces of which are 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 and to the degree of Bachelor of Science, and (2) Honors Work leading to these 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. 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 sports education as set forth in the statement of that department (see pp. 98, 99) and for attendance at the Collection exercises of the College (see p. 22).

Beginning in September, 1934, Swarthmore College abandoned the hour credit system and undertook to measure the student's progress in terms of courses, each of which represents one-fourth of his time for one year.

WORK OF THE FIRST TWO YEARS

The work of the first two years is identical in outline for all students, although the subjects of study vary. (Exceptions in the Division of Engineering are noted on p. 70.) Each student takes normally during each of these two years four full courses or their equivalent. Courses are scheduled usually for three class meetings per week, each meeting of one hour's duration. Seminar and laboratory periods of longer duration may be substituted for one or more of these meetings. Courses which are scheduled for one semester are counted as half courses.

*For grouping of departments see page 15.

The subjects of study during the first two years include: (a) the minimum language requirements, as outlined below; (b) one year's work in each of three Divisions: Humanities, Social Sciences, Natural Sciences; (c) prerequisites for major and minor work in the Division of the student's choice; and (d) electives, approved by the course adviser.

The minimum language requirements are as follows:

1. *English*: Each student is expected at entrance to college to be able to use the English language with accuracy and clarity. Any deficiency must be removed by special work before the beginning of the Sophomore year.

2. *Foreign languages*: Each student will pursue in college one foreign language (French, German, Greek, Latin, or Spanish) to a point equivalent to the completion of Course III or two languages to a point equivalent to the completion of Course II. Admission to Courses II and III will be determined by placement tests given on entrance to college. The standard for admission to Course II is such as might reasonably be expected from a student who has had two years' preparation in the language; the standard for admission to Course III is such as might reasonably be expected from a student who has had four years' preparation. Majors in English may satisfy the requirements with French, German, Latin, or Greek (see p. 82). German is required for majors in mathematics and the natural sciences, Greek, for majors in Latin; Latin, for majors in French. Students who are thus required to begin a new language in college will arrange if possible to do the elementary work prerequisite to admission to Course II outside their regular college work.

WORK OF THE LAST TWO YEARS

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.

GENERAL COURSES

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. 51), 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 four divisions* and is under the supervision of committees of the departments which compose those divisions. Small groups of students meet their instructors for weekly conferences; in scientific subjects they may spend much additional time in

*See Page 15.

the laboratory. The work is so planned that a student takes not more than two subjects in any one semester. He devotes half the time of his two years of honors work to the subject of his major interest and divides the other half between two related subjects within his division, unless special exceptions are permitted under the rules of his division or are approved by the Instruction Committee of the Faculty.

Honors students are excused from ordinary examinations and class requirements and their work is not graded from semester to semester. Instead, they are expected to spend their time in mastering a definitely outlined field of knowledge, and at the end of their senior year to 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 division shall examine the papers as a substitute for the com-

†Honors Examiners, May, 1937.

DIVISION OF THE SOCIAL SCIENCES

Economics:

PROFESSOR KARL ANDERSON, Bryn Mawr College
DR. THOMAS C. BLAISDELL, JR., Social Security Board, Washington, D. C.
PROFESSOR ARTHUR R. BURNS, Columbia University
PROFESSOR FRANK W. FETTER, Haverford College

History:

PROFESSOR KENT GREENFIELD, Johns Hopkins University
DR. PAUL LEWINSON, National Archives, Washington, D. C.
PROFESSOR CONYERS READ, University of Pennsylvania
PROFESSOR ROGER H. WELLS, Bryn Mawr College

Philosophy:

PROFESSOR STERLING P. LAMPRECHT, Amherst College
PROFESSOR MILTON C. NAHM, Bryn Mawr College
PROFESSOR PHILIP E. WHEELWRIGHT, Dartmouth College

Political Science:

PROFESSOR PHILLIPS BRADLEY, Amherst College
PROFESSOR WILLIAM Y. ELLIOTT, Harvard University

Psychology:

PROFESSOR DONALD K. ADAMS, Duke University
DR. SHAMMAI FELDMAN, Cornell University

DIVISION OF THE HUMANITIES

English:

PROFESSOR WILLIAM C. DEVANE, Cornell University
PROFESSOR HOWARD MUMFORD JONES, Harvard University
PROFESSOR CLARA MARBURG KIRK, Stelton, N. J.

French:

PROFESSOR LOUIS CONS, Harvard University

German:

PROFESSOR JOHN C. BLANKENAGEL, Wesleyan University

History:

PROFESSOR KENT GREENFIELD, Johns Hopkins University
DR. PAUL LEWINSON, National Archives, Washington, D. C.
PROFESSOR CONYERS READ, University of Pennsylvania
PROFESSOR ROGER H. WELLS, Bryn Mawr College

Philosophy:

PROFESSOR STERLING P. LAMPRECHT, Amherst College
PROFESSOR MILTON C. NAHM, Bryn Mawr College
PROFESSOR PHILIP E. WHEELWRIGHT, Dartmouth College

Psychology:

PROFESSOR DONALD K. ADAMS, Duke University
DR. SHAMMAI FELDMAN, Cornell University

prehensive examination required for a degree in course, and shall determine 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. Half of the student's time must be devoted to his major subject, the remainder being equally 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

Botany:

PROFESSOR PHINEAS W. WHITING, University of Pennsylvania

Chemistry:

PROFESSOR VICTOR K. LAMER, Columbia University

PROFESSOR FRANK C. WHITMORE, Pennsylvania State College

Mathematics and Astronomy:

PROFESSOR HASKELL B. CURRY, Pennsylvania State College

PROFESSOR C. G. LATIMER, University of Kentucky

PROFESSOR CHARLES P. OLIVIER, University of Pennsylvania

Physics:

PROFESSOR GAYLORD P. HARNWELL, Princeton University

Zoology:

PROFESSOR SAMUEL A. MATTHEWS, University of Pennsylvania

PROFESSOR ARTHUR K. PARPART, Princeton University

PROFESSOR BENJAMIN H. WILLIER, University of Rochester

DIVISION OF ENGINEERING

Civil Engineering:

PROFESSOR GEORGE E. LARGE, Ohio State University

Electrical Engineering:

OVID W. ESHBACH, American Telephone and Telegraph Company

Mechanical Engineering:

PROFESSOR A. G. CHRISTIE, Johns Hopkins University

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. 69-79.)

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 four times a year upon the work of students in Courses. At mid-semesters the reports 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. 48.)

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.

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, probation 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 campus 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 45-47; 69.

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*

INSTRUCTORS: RUTH MCCLUNG JONES

NORRIS JONES

GENERAL COURSES

1. General Botany. Mr. Palmer.

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. Palmer and Mrs. Jones.

Half course, first semester.

A course with laboratory work designed to give the pupil 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 number of species are available for comparison.

5. Plant Morphology. 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. 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.

7. 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).

8. Advanced Scientific Drawing. Mr. Jones.

Full course.

Special problems in biological illustrating. Prerequisite Botany 6.

9. Cryptogamic Botany. Mr. Palmer.

Half course, first semester.

A course with laboratory work designed to give the student an insight into the lower forms of plant life.

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.

Half course.

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

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

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.

Topics of Final Examinations. 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.

CHEMISTRY

PROFESSORS: H. JERMAIN CREIGHTON, *Chairman*
EDWARD H. COX

ASSISTANT PROFESSORS: DUNCAN G. FOSTER
WALTER B. KEIGHTON, JR.

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 1937-38.

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: Getman and Daniels, *Outlines of Theoretical Chemistry*; Findlay, *Practical 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. Cox.

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 I.

6a. Organic Chemistry. Mr. Cox.

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.

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.

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.

First 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.

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

GREEK

GENERAL COURSES

1. Elementary Greek. Mr. Shero.

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

This course and course 2 are provided for those who have not had an opportunity to study Greek in the preparatory school.

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 1937-38.)

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 1937-38.)

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.

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.

This course and Latin 9 (The History of Rome) provide a year's work in Ancient History.

6. Greek Drama in English. 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.

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).

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. Designed for students who have had three or more years of preparatory Latin and are not prepared to enter Latin 3. This course may be taken for a single semester.

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. 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 1937-38.)

6. Latin Philosophical Writings. Miss Brewster.

Half course, second semester. (Omitted in 1937-38.)

7. Latin Language and Prose Composition. Mr. Shero.

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 1937-38.)

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, second 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.

This course and Greek 5 (The History of Greece) provide a year's work in Ancient History.

10. European Backgrounds. Miss Brewster.

Half course, first semester.

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, first semester. (Omitted in 1937-38.)

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.

The department will recommend as teachers of Latin only those who have completed at least Courses 3, 4 and 7, or, in the case of Honors students, those who have completed Courses 3 and 7.

HONORS WORK

Prerequisites. The following regular courses are required for admission to Honors work—for a major in Classics or Latin: Greek Courses 1 and 2, Latin Course 3; for a major in Greek: Greek Courses 1 and 2, Latin Course 3; for a minor in Greek or Latin: Greek Courses 1 and 2, or Latin Course 3 respectively.

Students are advised to take also The History of Europe and Introduction to Philosophy.

Topics of Final Examination. Honors seminars are offered preparing students for examination papers as follows:

Required for a major in Classics:

1. History of Ancient Greek and Roman Civilization, a survey concentrating upon political institutions, art, and religion.
2. Intensive Study of a Special Period of Greek or Roman History (e.g. Solon to the end of the Peloponnesian War, the Gracchi to Nero).
3. Greek Philosophy. (See p. 95.)
4. Greek or Latin Prose Composition and Sight Reading.
5. Prose Authors: Greek (Thucydides, Plato, the Attic orators), or Latin, with emphasis upon Cicero and the historians.
6. Poets: Greek, with emphasis upon Epic and Tragedy; Latin, with emphasis upon Epic (including Lucretius) and Satire.

By special arrangement, students may substitute one of the following topics:

7. An additional group of selected authors, Greek or Latin.
8. Greek and Roman Archaeology.
9. Greek and Roman Literary Theory.
10. Greek and Roman Political Thought.
11. A thesis on a subject in one of the fields listed above.

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

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

ECONOMICS

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

*ASSISTANT PROFESSOR: PATRICK MURPHY MALIN

INSTRUCTORS: JOSEPH D. COPPOCK
FRANK C. PIERSON

LECTURER: J. WELDON HOOT

GENERAL COURSES

1. Introduction to Economics. Messrs. Wilcox, Fraser, Coppock and Hoot.
Full course.

A descriptive account of the institutional basis of economic activity, the organization of industry, the processes of production, exchange, distribution and consumption. A study of the theory of prices. An analysis of special problems such as agriculture, money and banking, the tariff, trade unionism, and the public control of business. Prerequisite to all other courses in Economics except Economics 2.

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 rigorous economic study. It is an introduction to the logic and methods of quantitative investigation in the field of 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.

Should be taken by all Economics majors, in course or honors, during the Freshman or Sophomore year.

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 Institutions. Mr. Fraser.

Full course. (Offered in alternate years. 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 alternate years. Offered in 1937-38.)

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.

*Absent on leave.

6. Public Finance. Mr. Fraser.

Half course, second semester. (Offered in alternate years. Offered in 1937-38.)

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 alternate years. Offered in 1937-38.)

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 alternate years. 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. Pierson.

Half course, first or second semester. (Offered irregularly. Offered in first semester, 1937-38.)

A study of employer-employee relations, personnel policy, unionism, labor legislation and the function of the state in labor disputes.

10. Economic Processes and Policies. Mr. Malin.

Half course, first or second semester. (Offered irregularly.)

A study of natural resources, capital equipment and population, and their employment in economic activity. Analysis of conditions governing the utilization of productive capacity. Examination of conditions governing economic change.

HONORS WORK

1. Money and Banking. Mr. Pierson.

Each semester.

The subject matter is identical with that of the course in Money and Banking (Economics 3). The method consists of 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. International Economics and Public Finance. Mr. Fraser.

First semester.

The subject matter is identical with that of Courses 5 and 6, 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.

3. Economic Theory and Business Institutions. Mr. Fraser.

Second semester.

The organization and financing of the business enterprise. Marketing problems and price policies. The theory of value, price and distribution. The application of economic theory to the problems of business administration. Directed reading, seminar discussion and written reports.

4. Public Control of Business. Mr. Wilcox.

First semester.

Government regulation of corporate financial practices, investment banking, the security exchanges, railroads and public utilities. Federal anti-trust policy, the National Recovery Administration and the Agricultural Adjustment Administration. Each student is required to engage in independent research and report to the seminar twice during the semester.

5. 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.

6. 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 two years, all engineering students follow the schedule of courses outlined below. At the end of that time, 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. 70; 73-76; 78, 79.)

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

*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 or four and one-quarter 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—Senior Year

Of the eight courses normally taken during the Junior and Senior years, four are required of all engineering students. These are:

- (a) Mechanics of Fluids, consisting of
 - 22—Fluid Mechanics
 - 40—Thermodynamics
- (b) Mechanics of Solids, consisting of
 - 20—Analytic Mechanics
 - 21—Strength of Materials
- (c) Electrical Engineering 30-A or
Electrical Machinery 30-B
- (d) Choice of
 - Civil Engineering 23
 - Electrical Engineering 31, 32, 33
 - Mechanical Engineering 42, 43, 44, 45

The four remaining courses 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 50, *et seq.*, and for details see statements of the Departments of Civil, Electrical and Mechanical Engineering, pages 74, 76, 79.

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 mechanical 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 69). 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.

*This course with No. 11 is known as Methods of Economic Analysis, Economics No. 2.

21. Strength of Materials. Mr. Lilly.

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, Mr. Thatcher.

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. 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 1936-37 the students spent approximately one-quarter of their time on each of the following subjects: railroad and highway surveying; stresses in simple structures; design of simple structures in steel and wood; reinforced concrete construction. These subjects were studied in series.

Open to students who have taken Engineering 21 and 22.

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.

29. Thesis. Mr. Lilly, Mr. Carpenter.

Half course, second semester.

MAJOR IN CIVIL ENGINEERING

The curriculum for the first two years for a student who plans to major in civil engineering is given on page 70. The courses which must be taken in the junior year are:

- 20. Analytic Mechanics
- 21. Strength of Materials
- 40. Thermodynamics
- 22. Fluid Mechanics
- 30A. Electrical Machinery or
- 30B. Electrical Engineering
- Advanced Calculus and Differential Equations or Elective.

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

23. Civil Engineering Option
41. Heat Power Engineering
24. Engineering Economy

Since Heat Power Engineering and Engineering Economy are half courses, one-half 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 course called Civil Engineering Option, 23, is broad in its scope. 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. It is felt that a man who is to receive his degree with a major in civil engineering should be familiar with the fundamentals of Railway and Highway Surveying, and with the design of structures in wood, steel and concrete. To confine the number of subjects to four and meet the condition outlined has required the development of a new method of presenting this material. This is done by teaching the aforementioned phases of civil engineering in series. The success of the plan is dependent upon small classes composed of men who are well trained in mechanics and mathematics. This method eliminates repetition which occurs when the subject-matter of the curriculum is presented by different men in separate courses. The student may spend one-half of his time in his senior year on Civil Engineering Option, 23.

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 developments in that field so that he may realize that engineering science is a living, growing profession, and that he can 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. The general plan is that from the subjects listed below, or 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.

31. Transients. Mr. Jenkins and/or Mr. McCrumm.

32. Vacuum Tubes. Mr. Jenkins and/or Mr. T. H. Johnson.

33. Alternating Current Machinery. Mr. McCrumm.

34. Transmission and Distribution. Mr. McCrumm.

35. Communication. 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

It is expected that a student majoring in electrical engineering will have joined Group "A" (see page 69) 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 69, 70. 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 one subject not offered in the scientific division must be taken in each of the four college years. The choice is optional, the only requirement being that the four 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
- 35. Communication

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. Thom.

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. Thatcher.

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.

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 two years as outlined on page 70 under the Division of Engineering, will take, in their junior year:

- 20. Analytic Mechanics
- 21. Strength of Materials
- 40. Thermodynamics
- 22. Hydraulics
- 30A. Electrical Machinery
- Advanced Calculus and Differential Equations or Elective

This program is equivalent to four full courses.

In their senior year the following courses are required:

- 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 will take in their last two years the following courses:

- 20. Analytic Mechanics
- 21. Strength of Materials
- 40. Thermodynamics
- 22. Hydraulics
- 30B. Electrical Engineering
- 41. Heat Power

In addition to the above, 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 junior year 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
 ROBERT E. SPILLER

ASSISTANT PROFESSORS: TOWNSEND SCUDDER, 3RD*
 ELIZABETH COX WRIGHT

INSTRUCTOR: FREDRIC S. KLEES

ASSISTANT: BEATRICE BEACH MACLEOD

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.*
 (Omitted in 1937-38.)

The Romantic Movement. Mrs. Wright. *Half Course, each semester.*

Victorian Literature. Mr. Hunt and Mr. Spiller. *Half Course, each semester.*

American Literature. Mr. Hunt and Mr. Spiller. *Half Course, each semester.*
 Contemporary Literature. Mr. Hicks. *Half Course, each semester.*

2. Chaucer. Mr. Goddard and Mr. Klees.

Half course.

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. Mrs. Wright.

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.

7. The English Drama. Mr. Klees.

Full course.

8. English Prose. Mr. Klees.

Full course.

9. Modern Literature. Mr. Goddard.

Full course.

A study of modern comparative literature.

10. World Literature. Mr. Goddard.

Full course. (Omitted in 1937-38.)

11. American Literature. Mr. Spiller.

Full course.

In 1937-38: first semester, American Fiction; second semester, American Poetry.

* Absent on leave.

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*. Those who plan to include American literature in their Honors work should prepare themselves in that field.

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.

Topics of Final Examination:

1. Chaucer, Shakespeare, Milton and the Seventeenth Century.
2. Poetry, Literary Criticism, the Drama, the Novel.
3. Modern Literature, American Literature, Social Criticism, Problems of Literary Study.

Candidates for honors with a major in English will write at least one paper from the first group of topics and at least one from the second. Shakespeare shall be chosen from the first group if not previously elected in course.

Candidates for honors with a minor in English may write on any two or three of the above topics upon the recommendation of their major department. Major courses in the Department are arranged to parallel honors seminars in the topics, and honors students are urged to attend the series of lectures which are given in connection with most of these courses.

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.

THESIS

A thesis may be substituted for the fourth paper in either the honors or comprehensive examination on application of the student and at the discretion of the Department.

DEPARTMENTAL LANGUAGE REQUIREMENTS

The language requirements may be fulfilled by French; French and German; or French or German and 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
W. POPE BARNEY

GENERAL COURSES

1. History of Architecture. Mr. Barney.

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

Prerequisite. Courses 1 and 2 are required.*Topics of Final Examination.* Honors seminars are offered preparing students for final examinations in:

1. French Gothic Architecture. Mr. Barney.
2. Mediaeval English Architecture from the Conqueror to the Death of Henry V. Mr. Barney.

GERMAN LANGUAGE AND LITERATURE

ASSISTANT PROFESSORS: KARL REUNING, *Chairman*

* LYDIA BEAR

INSTRUCTOR: MARJORIE LAWSON

1. Elementary German. Miss Baer, Miss Lawson and Mr. Reuning.
Full course.
Training in grammar, composition, conversation, and expressive reading. Evans & Röseler, *College German*, and several elementary texts.
2. German Prose and Poetry, Grammar and Composition. Miss Lawson and Mr. Reuning.
Full course.
Reading of recent short stories, of representative modern plays, of lyrics and ballads, and other suitable material. Review of grammar, practice in composition, conversation, and expressive reading. Chiles, *German Composition and Conversation*; Eichendorff, *Aus dem Leben eines Taugenichts*; Schnitzler, *Stories and Plays*, and other texts.
Prerequisite, Course 1 or equivalent.
3. Introductory Studies in German Literature. Miss Lawson.
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.
4. Great Periods in German Literature. Miss Baer, ———.
Full course.
5. Outstanding German Writers of the Nineteenth Century.
Half course. (Omitted in 1937-38.)
6. The Romantic Movement in Germany.
Full course. (Omitted in 1937-38.)
7. Goethe.
Half course. (Omitted in 1937-38.)
8. Schiller.
Half course. (Omitted in 1937-38.)
9. The Period of the Reformation.
Half course. (Omitted in 1937-38.)

The objective in Courses 1 and 2 is an ability to read German of moderate difficulty. To attain this end it is necessary to have a thorough knowledge of grammar and to be able to speak and write simple German. 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

*Absent on leave, second semester.

some time in Germany. Practically all courses are conducted in German.

HONORS WORK

Prerequisites. For admission to Honors work in German, one course in college beyond Course 2 is required.

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

1. Middle High German Literature and Philology.
2. The Age of Luther.
3. Baroque Literature.
4. Classical Literature.
5. The Romantic Movement.
6. Great German Writers of the Nineteenth Century.
7. Linguistics (in cooperation with other Departments in the Division of the Humanities).

HISTORY

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

ASSOCIATE PROFESSORS: MARY ALBERTSON
 TROYER S. ANDERSON

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 in European or English history, and to any Honors work in history.

2. The History of England. Mr. Anderson and Mr. Manning.

Half course, second semester.

Lectures, reading, and reports on the history of the British people, with the main emphasis on the period since 1450. After History 1.

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

Half course, first semester.

Lectures, reading, and reports on the political, economic and social history of the American people, from the seventeenth century to the present time.

Not open to Freshmen.

Courses 2 and 3 are given at the same hour in their respective semesters so that Sophomores who wish to do so may take both courses in the same year without schedule conflicts. The lectures in these courses are open to all who may be interested, whether or not the courses are taken for credit.

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

Half course, first semester.

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

Half course, second 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.

6. The Italian Renaissance. Miss Albertson.

Half course.

Lectures, reading, and reports on the history of the Italian Renaissance. After History 1.

7. The History of France. Miss Albertson.

Half course.

Lectures, reading, and reports on the history of France from Roman times to the present day. After History 1, or with the instructor's consent.

*Absent on leave, second semester.

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

Half course.

Lectures, reading, and reports on the development of Europe since the period of the French Revolution. After History 1.

11. The History of Europe since 1900. Mr. Anderson.

Half course.

Lectures, reading, and reports on the origins, history, and results of the World War. After History 1. Should be taken by students who plan to work in the Honors seminar offered on the Origins of the World War.

12. Special Topics. Miss Albertson, Mr. Anderson, Mr. Manning.

Half course, especially for Seniors.

HONORS WORK

Topics of Final Examinations. Work is offered preparing students for examination papers as follows:

Seminars open to all who have completed prerequisite requirements:

1. Mediaeval England.
2. Tudor and Stuart England.
3. The Italian Renaissance.
4. The Period of the Reformation in Europe.
(3 and 4 are offered in alternate years)
5. Modern England. The period from 1688 to the present time with main stress on the 19th Century.
6. Modern Europe. The period from 1713-1914, with main stress on the 19th Century.
7. The History of the United States, mainly since the Civil War. Preferably for Juniors. In the seminar considerable attention is given to training in bibliography and the use of source materials important for any work in the Social Sciences or literary criticism in the American field.

Advanced Seminars, limited in number:

1. The Origins of the World War. For Seniors. Based mainly on the published original documents.
2. The Supreme Court of the United States. 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.
3. History Thesis; the topic to be selected in Junior year if possible.

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

In the second semester, 1937-38, Mr. Salomon will offer a seminar on Mediaeval Europe. Training in the use of source-materials will be emphasized.

REQUIREMENTS FOR MAJOR AND MINOR

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 theory are essential for an intelligent appreciation of history. Most graduate schools require a reading knowledge of French, German, and Latin for any graduate 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) British 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.

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

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

INSTRUCTORS: ORREN MOHLER
JOHN S. HALL

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.

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 1937-38.)

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. Dresden.

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. Dresden.

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. Brinkmann.

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. Brinkmann.

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. Hall.

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.

5. Astronomy of Navigation. Mr. Hall.

This course is designed to give students an opportunity to solve the more important astronomical problems confronting the sailor, aviator or explorer.

The use of the sextant, compass, charts and chronometer. Dead reckoning, pilotage and nautical astronomy. Sumner line of position. Use of Bowditch, Dreisonstoks and Ageton's Tables in conjunction with the nautical almanac.

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.

52. Photometry. Mr. Hall.

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, 11, 12.

5. Photometry.

Prerequisites, Mathematics 1, 2; Physics 1.

6. Spectroscopy.

Prerequisites, Mathematics 11, 12; Physics 1.

REQUIREMENTS FOR MAJOR AND MINOR

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 reading knowledge of French and 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 and photoelectric photometry 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 analyse 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, and, in addition, the chorus sings at one of the Sunday Vespers. 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," and the entire B flat major mass of Haydn, which has also been recorded. 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. The entrance requirement is the ability to play an orchestral instrument. The orchestra's activities are closely tied to those of the chorus: its main function is 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 on these occasions are picked to perform at three or four Students' Vespers.

PHILOSOPHY AND RELIGION

PROFESSOR: BRAND BLANSHARD, *Chairman*

*ASSISTANT PROFESSOR: JOHN W. NASON

INSTRUCTORS: MAURICE H. MANDELBAUM
RICHARD B. BRANDT

GENERAL COURSES

1. Logic. Mr. Blanshard.

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. Messrs. Blanshard, Nason, Mandelbaum, 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. Blanshard, 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 1937-38.)

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.

6 (a). 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.

6 (b). History of Modern Philosophy. Mr. Mandelbaum.

Half course, second semester.

A review of the principal systems of thought from Descartes to the present time. The greater philosophers are studied through selections from their works; these readings are coördinated 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.

*Part-time leave of absence.

8a. Contemporary Philosophy. Mr. Nason.

Half course, second semester. (Omitted in 1937-38.)

Study and discussion of certain outstanding recent works in philosophy. When last given the course was devoted to the writings of James, Bergson, Russell, and McTaggart.

12. Introduction to Religion. Messrs. Blanshard, Hull, Malin, Nason and Speight.

Half course, first semester. (Omitted in 1937-38.)

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 others on approval. The main types of religious experience; the relation of faith to knowledge, and of religion to science; the idea of God and its justification; the problems of evil, freedom, and immortality in their religious aspects; the interpretation of religious experience.

HONORS WORK

Prerequisites: For admission to honors study in philosophy, the requirement is at least two semester courses in the field.

Honors Subjects in Philosophy:

1. MORAL PHILOSOPHY: 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. GREEK PHILOSOPHY: Begins with the dawn of western philosophy in the Milesian nature-philosophers, ends with a brief study of the Stoics and Epicureans. The larger part of the time is devoted to a reading of Plato and Aristotle. Included in this reading are all the major dialogues of Plato and selections from the *Ethics*, the *Metaphysics*, and the logical writings of Aristotle. Recommended for students of literature.
3. HISTORY OF MODERN PHILOSOPHY: 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. CLASSIC PROBLEMS OF PHILOSOPHY: 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.

5. **LOGIC AND SCIENTIFIC METHOD:** The subject is pursued from the point of view, and from the level of difficulty, presented by Joseph's *Introduction to Logic*. Students are expected to master the manipulations of the traditional formal logic and to supplement Joseph's discussion of theory by readings in Mill, Bradley, Jevons and other logicians.
6. **AESTHETICS:** A study, partly historical, partly systematic, of the philosophies of beauty, 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.
7. **SOCIAL PHILOSOPHY:** Recommended for students in the social sciences. 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.

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.

PHYSICAL EDUCATION FOR MEN

ASSOCIATE PROFESSOR: MARK MACINTOSH, *Director*ASSISTANT PROFESSOR: ROBERT DUNN, *Assistant Director*

INSTRUCTORS: AVERY F. BLAKE

E. J. FAULKNER

ASSISTANTS: WILLIS J. STETSON

DANIEL DEAN

SAM ECKERT

CLIFFORD DUNCAN

HENRY FORD

LEW ELVERSON

GILBERT TOMLINSON

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 activity 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; to develop carry-over activities 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 participating in the Sports Education program.

FALL ACTIVITIES

Opening of College to Thanksgiving Recess

Badminton	Lacrosse
*Cross-Country	*Soccer
*Football	Speedball
Golf	Tennis
Handball	Touch Football

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

WINTER ACTIVITIES

Thanksgiving Recess to Spring Recess

Apparatus	Lacrosse
Badminton	Life Saving
*Basketball	Paddle Tennis
Boxing	Soccer
Fencing	*Swimming and Diving
Golf	*Tennis
Handball	Touch Football
Hygiene	*Track
(Required of all Freshmen.)	Volley Ball
	Wrestling

SPRING ACTIVITIES

Spring Recess to May 15

*Baseball	Softball
*Golf	Speedball
*Lacrosse	*Tennis
	*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.

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

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.

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

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 and archery.

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. Mr. Bowen.

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.

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

GENERAL COURSES

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

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. Garrett.

Half course, first semester.

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.

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.

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.

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

Readings in the fields of gaseous conduction, photoelectricity, thermionic emission, X-rays, radioactivity and atomic structure with accompanying quantitative experiments.

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.

MAJOR AND MINOR REQUIREMENTS

Students majoring in physics will ordinarily be expected to read for honors but in special cases the degree may be taken in course. In either event the following courses are to be completed by the end of the second year: two courses in mathematics, one in chemistry, one in physics, and the second course in German. The half course in advanced general physics is recommended.

One full course in physics and two in mathematics are prerequisite to honors work in physics when taken as a minor. The mathematics requirements may be somewhat reduced for students who carry only the seminar in general physics.

POLITICAL SCIENCE

PROFESSOR: ROBERT C. BROOKS, *Chairman*

ASSISTANT PROFESSOR: J. ROLAND PENNOCK

INSTRUCTOR: FRANCES L. REINHOLD

CARNEGIE VISITING PROFESSOR: HUBERTUS ZU LOEWENSTEIN

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 1937-38.)

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. Municipal Government and Administration in the United States. Miss Reinhold.

Half course, first semester.

A detailed study of municipal organization and functions in the United States, particular attention being given to the cities of New York, Philadelphia, Chicago, Milwaukee, and Cincinnati. Reform proposals—the commission plan, the city manager plan, short ballot, proportional representation, bureaus of municipal research.

Prerequisite, Course 1.

5. State Government and Administration in the United States. Miss Reinhold.

Half course, second semester.

A detailed study of practical problems and proposed solutions in the field of comparative state government. Special emphasis on Pennsylvania, New York, Illinois, Wisconsin, and California. Recent trends in administration—correction, charity, education, health, highways, natural resources.

Prerequisite, Course 1.

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 some what 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, with a view to 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.

Full course.

This course may also be taken as a half course, either 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, (c) constitutional restrictions upon administrative government, (d) the Supreme Court and the New Deal. Analysis of proposals to modify the Court

Prerequisite, Course 1 or Course 3.

10. Public Administration.

Half course, first semester. (Omitted in 1937-38.)

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.

11. American Political Oratory. Mr. Hunt.

Half course, second semester.

An application of the doctrine of Plato's *Phædrus* 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.

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 course prerequisite for Honors work in Political Science is Introduction to Political Science. Students may substitute for this the two half courses in American Federal Government and American Political Parties and Issues, or the full course in American Constitutional Law.

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

1. Political Theory.
2. Political Institutions of the United States.
3. Contemporary Democracies and Dictatorships.
4. Problems in Government and Administration.
5. American Party System.
6. International Law and Organization.
7. Thesis.

PSYCHOLOGY AND EDUCATION

ASSOCIATE PROFESSOR: ROBERT B. MACLEOD, *Chairman*

PROFESSOR: WOLFGANG KÖHLER

INSTRUCTOR: EDWIN B. NEWMAN

LECTURERS: GERTRUDE GILMORE LAFORE

JAMES MULHERN

LAUREN H. SMITH

RESEARCH ASSOCIATES: HANS WALLACH

I. KRECHEVSKY

*DONALD K. ADAMS

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. MacLeod, Mr. Newman.

Half course, each semester.

A laboratory course on problems in human psychology.

Prerequisite, Course 1. Prospective honors students may take it during the second semester of the sophomore year.

3. Comparative Psychology. Mr. Köhler.

Half course, first semester.

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. Newman.

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.

Prerequisite, Course 1.

6. Advanced Experimental Psychology. Mr. MacLeod, Mr. Newman.

Half course, each semester.

Prerequisite, Courses 1 and 2.

7. Educational Psychology. Mr. Newman.

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

Problems of learning, intelligence and motivation; special problems related to methods of teaching.

Prerequisite, Course 1.

*Guggenheim Fellow, on leave of absence from Duke University.

8. Child Psychology. Mrs. Lafore.

Half course, first 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. (Offered in 1937-38.)

Prerequisite, Course 1.

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 1937-38.)

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.

MAJOR AND MINOR REQUIREMENTS

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, Educational Psychology and Historical Introduction to Education, together with three further half courses in the department chosen from the following: Mental Hygiene, Child Psychology, and Philosophy of Education.

HONORS WORK

Prerequisites: Introduction to Psychology 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.

Topics for Final Examinations: Honors seminars are offered in the following subjects:

1. Perception.
2. Learning.
3. Human and Animal Development.
4. Motivation.
5. The Individual in Society.
6. Language and Thinking.
7. Psychology for Pre-medical Students.
8. Thesis.

ROMANCE LANGUAGES

PROFESSOR: EDITH PHILIPS, *Chairman*

ASSOCIATE PROFESSOR: LÉON WENCELIUS

ASSISTANT PROFESSORS: *MARCEL BRUN
HAROLD MARCH

INSTRUCTOR: MERCEDES C. IRIBAS

PART-TIME INSTRUCTORS: MARGUERITE WENCELIUS
SYLVIA 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 Prose. 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 Drama. 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. La littérature du dix-neuvième siècle. Miss Philips.

Full course, may be divided.

Prerequisite, French 3.

5. Le Roman Français avant 1800. Mr. March.

Full course, may be divided.

6. La Pensée Française au dix-huitième siècle. Miss Philips.

Full course, may be divided.

7. Formation du Classicisme français; de la Pléiade à Racine. Mr. Brun.

Full course, may be divided.

*Absent on leave, second semester.

8. Formation du Classicisme français; les prosateurs. De Calvin à Fénelon.
Mr. Wencelius.

Full course, may be divided.

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. Madame Forest.

Full course.

Aimed to give the student ability to read ordinary Italian and to write and speak simple Italian.

2. Italian reading and composition. Madame Forest.

Full course.

- 3a. Introduction to Modern Italian Literature. Madame Forest.

Half 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.

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 equivalent, History of Europe or History of France, History of Philosophy or Introduction to Philosophy.

Seminars are offered as follows:

1. La Renaissance en France. M. Wencelius.

Rabelais, Montaigne, Ronsard.

2. **Le Classicisme français.** M. Brun.
Special attention is given to the theater as the purest manifestation of the classical ideal.
3. **La Pensée française au dix-huitième siècle.** Miss Philips.
Montesquieu, Voltaire, Rousseau and the Encyclopedists.
4. **La Poésie lyrique au dix-neuvième siècle.** Mr. March.
The romantic parnassian and symbolist movements. Modern tendencies.
5. **Le Roman français depuis Flaubert.** Mr. March.
Realism, naturalism, modern tendencies.
6. **Histoire des idées politiques du 19e siècle.** M. Wencelius.
Lamennais, de Maistre, Saint-Simon, Auguste Comte and others, studied in their relation to literature and to the development of French ideas.

ZOÖLOGY

PROFESSOR: LAURENCE IRVING, *Chairman*
 ASSISTANT PROFESSORS: ROBERT K. ENDERS
 FRANK R. KILLE
 WALTER J. SCOTT
 INSTRUCTORS: RUTH MCCLUNG JONES
 C. BROOKE WORTH
 RESEARCH ASSOCIATES: EDGAR C. BLACK
 LOUIS PAUL DUGAL
 ASSISTANT: VIRGINIA SAFFORD

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 is designed to meet the needs of all students intending to major or minor in zoölogy, as well as for majors in psychology.

Two lectures and two laboratory periods per week with occasional conferences within these periods.

1a. General Zoölogy. The staff.

Full course.

This course has been developed to meet the needs of students who take Zoölogy in order to meet the requirements of a laboratory science. Much the same material is covered as in Zoölogy 1, but the emphasis is upon the cultural rather than the professional aspects of the science.

Two lectures, one conference, and one laboratory period per week.

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. Kille.

Half course, first semester in alternate years.

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, second semester in alternate years.

A study of the structure, development, and physiology of representative invertebrates. 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, first semester in alternate years.

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, offered in alternate years.

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 Courses. The staff.

For advanced students. Open only to those who have secured the consent of the department.

HONORS WORK

Prerequisites: Students who plan to take Honors work in zoölogy must complete during their first two years: one course in chemistry, one course in mathematics, one course in physics, two courses in German (or their equivalent), one and one-half courses in zoölogy. Additional work in chemistry provides a more satisfactory preparation. For admission to minor Honors work Zoölogy I is a prerequisite.

Topics for Final Examinations:

1. Microscopic Anatomy
2. Embryology
3. Physiology I
4. Physiology II
5. Invertebrate Zoölogy
6. Neurology

REQUIREMENTS FOR MAJOR AND MINOR
GENERAL COURSES

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 in place of one advanced zoölogy course.

HONORS WORK

Honors students usually select four seminars in zoölogy and four seminars divided between two other related subjects within the Division.

Genetics (Botany Department) or psychology for pre-medical students may be offered as a fourth seminar in the zoölogy sequence.

All majors are urged to acquaint themselves with the opportunities for study in summer biological stations.

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, 1937-38

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, HAROLD ARMSTRONG, '40	<i>Physics,</i>	5355 Webster St., Philadelphia, Pa.
ADAMSON, WILLIAM COLBERT, '40	<i>Zoölogy,</i>	706 Hawthorne Ave., S. Milwaukee, Wis.
ALBERTSON, RAYMOND CADWALLADER, '39	<i>Pol. Science,</i>	Hitchcock Lane, Westbury, N. Y.
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 GILDES, JR., '40	<i>Chemistry,</i>	314 S. Homewood Ave., Pittsburgh, Pa.
ANDRUS, JUNE ELIZABETH, '41		150 Jackson Ave., Bradford, Pa.
ANDRUS, RACHAEL LUCILLE, '40		150 Jackson Ave., Bradford, Pa.
ANGELL, RICHARD BRADSHAW, '40	<i>Economics,</i>	59 Walbrooke Road, Scarsdale, N. Y.
APPLETON, FRANK WIRT, JR., '41	<i>Engineering,</i>	30 Rockridge Road, Mt. Vernon, N. Y.
ASH, ALFRED FRANK, '38	<i>Philosophy,</i>	25 Claremont Ave., New York, N. Y.
ASHELMAN, MARGARET PETER, '38	<i>English,</i>	Michigan Ave., Swarthmore, Pa.
ASINOF, ELIOT TAGER, '40	<i>History,</i>	20 Auerbach Lane, Cedarhurst, N. Y.
ATKINSON, JOHN HOPKINS, '40	<i>Engineering,</i>	210 S. Washington Ave., Moorestown, N. J.
AUSTIN, HENRY EXUM, '40	<i>Zoölogy,</i>	224 Park Avenue, 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.
BAER, JOHN ELSON, '38	<i>Chemistry,</i>	120 Rose Hill Ave., Danbury, Conn.
BAKER, MARGARET ELISABETH, '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.
BARBOUR, ELEANOR KATHARINE, '40		110 S. Fairmount Ave., Pittsburgh, Pa.
BARLOW, HARRIET THOMPSON, '41	<i>Chemistry,</i>	Kennedy-Warren, Washington, D. C.
BARSALOW, FAITH HAMBLY, '38	<i>Psychology,</i>	166 Whitmarsh Ave., Worcester, Mass.
BARTH, HETTY JEAN, '41		51 Calumet Street, Rochester, N. Y.
BARTO, ROBERT EDWIN, '41	<i>Zoölogy,</i>	Elizabethville, Pa.
BARTON, ELEANOR BROWNING, '40		3610 Massachusetts Ave., Washington, D. C.
BAUMGARDNER, JOHN BREHM, JR., '40	<i>Pol. Science,</i>	50 Kenwood Road, Chambersburg, Pa.
BAYS, MARJORIE, '39	<i>English,</i>	2330 Ewing Ave., Evanston, Ill.
BAZETT, HAZEL, '41		629 Haydock Lane, Haverford, Pa.
BEARDSLEY, JAMES HODGE, '38	<i>English,</i>	12 Park Ave., Bronxville, N. Y.
BEATTY, WALCOTT H., '41	<i>Chemistry,</i>	1860 Columbia Road, Washington, D. C.
BECKJORD, BARBARA ANNE, '41		Parsonage Lane, Greenwich, Conn.
BELKNAP, DOROTHY JEAN, '40		503 East Second St., Port Clinton, Ohio
BELKNAP, MARY ELLEN, '39	<i>English,</i>	503 East Second St., Port Clinton, Ohio
BENJAMIN, DORA JEAN, '41	<i>Chemistry,</i>	105 W. 55th St., New York, N. Y.
BELL, CHARLES ROBERT, '39	<i>Psychology,</i>	419 Yale Ave., Swarthmore, Pa.
BENDER, JOSEPH CHRYSTAL, '39	<i>Zoölogy,</i>	9 DeForest Ave., Summit, N. J.

- BENNETT, ALDEN STANLEY, '40 *Economics*,
 33 Fairmount Street, Portland, Me.
- BERALDI, JANINE, '39 *History*,
 11 Rue de Commerce, Paris XV, France
 179 North Laurel St., Hazleton, Pa.
- BIGELOW, JOHN LOWRIE, '39 *Fine Arts*,
 BIGGERSTAFF, ELIZABETH FUNSTON, '38 *English*,
 444 E. Tulpehocken St., Philadelphia, Pa.
- BILL, MARGARET ANN, '38 *Zoölogy*,
 32 Occom Ridge, Hanover, N. H.
 BINGER, BARBARA ANN, '40 *Pol. Science*,
 Broadway, Tarrytown, N. Y.
 BIRDSALL, CATHERINE SHERWOOD, '40 *Pol. Science*,
 904 Vernon Ave., Glencoe, Ill.
 BITTLE, HARRIET ELIZABETH, '38 *Pol. Science*,
 102 Walnut St., Sellersville, Pa.
 BITTLE, JUNE HONSBERGER, '39 *Pol. Science*,
 Cressona, Pa.
 BLACKMAN, JAMES HORTON, '39 *Psychology*,
 1121 McCausland, St. Louis, Mo.
 BLAI, BORIS, JR., '38 *Chemistry*,
 4th and High Aves., Melrose Park, Pa.
 BLANKENHORN, MARTHA JANE, '41 *Physics*,
 6 Rural Lane, Cincinnati, Ohio
 BLOCH, ALAN EDWARD, '38 *Economics*,
 Springhill Farm, Hillsdale, N. Y.
 BOAM, WILLIAM E., '40 *English*,
 5 Yoh. Verhulstlaan, Bussum, Holland
 BOND, VIRGINIA BEW, '38 *Economics*,
 103 S. Avolyn Ave., Ventnor, N. J.
 BOOHER, EDWARD BAIR, '40 *History*,
 411 N. Main St., Greensburg, Pa.
 BOOTH, MIRIAM RAVI, '38 *Economics*,
 1 Monument Ave., Old Bennington, Vt.
 BOSE, LEWIS CROWDER, '39 *English*,
 2625 N. New Jersey St., Indianapolis, Ind.
 BOSS, EVA ELIZABETH, '39 *Zoölogy*,
 R. F. D. 4, Trenton, N. J.
 BÖVING, BENT GIEDE, '41 *Psychology*,
 221 Rock Creek Church Road, N. W.,
 Washington, D. C.
 BOWERS, MARY CATHERINE, '39 *Engineering*,
 16708 Kenyon Road, Shaker Heights, Ohio
 BOWKER, MILES WESLEY, '40 *English*,
 209 Hillcrest Ave., Morristown, N. J.
 BOYD, BETTY MAXINE, '41 *Engineering*,
 Stewart and Wycombe Aves., Lansdowne,
 Pa.
 6320 Lawnton Ave., Philadelphia, Pa.
 BOYER, VINCENT SAULL, '39 *Pol. Science*,
 702 Sherman Ave., South Bend, Ind.
 BRADEN, GEORGE DORSEY, '38 *Zoölogy*,
 324 W. 71st St., New York, N. Y.
 BRAUER, WERNER, '39 *Psychology*,
 57 Princeton Ave., Princeton, N. J.
 BREARLEY, EMILY C., '38 *Chemistry*,
 57 Princeton Ave., Princeton, N. J.
 BREARLEY, MARGERY CORNELL, '41 *Economics*,
 137 7th Ave., North, Twin Falls, Idaho
 BRECKENRIDGE, JOHN HOLT, '38 *French*,
 6233 Winthrop Ave., Chicago, Ill.
 BROOMELL, FRANK, '40 *English*,
 1338 Park Ridge Place, Cincinnati, Ohio
 BROOMELL, MARY LOIS, '40 *English*,
 22 Elmwood Ave., Crafton, Pa.
 BROSIUS, ELIZABETH STEWART, '38 *English*,
 R. F. D. 1, Stamford, Conn.
 BROWN, HEYWOOD HALE, '40 *English*,
 148 Dickerman Road, Newton Highlands,
 Mass.
 BROWN, CORNELIA WOOLTON, '40 *Mathematics*,
 36 Barrow Street, New York, N. Y.
 BROWN, DAVID, '38 *Latin*,
 335 King's Highway, Swedesboro, N. J.
 BROWN, FRANCES MARY, '41 *Pol. Science*,
 Wyoming, Del.
 BROWN, JOHN HUNN, '38 *Economics*,
 1107 E. Darby Road, Brookline, Pa.
 BROWN, JOHN ROBERT, '39 *Engineering*,
 617 Milburn St., Evanston, Ill.
 BROWN, PALMER, '41 *Pol. Science*,
 11 Mill Road, Brookline, Pa.
 BRUNHOUSE, RICHARD STEWART, '38 *Pol. Science*,
 5001 N. Meridian St., Indianapolis, Ind.
 BUCHANAN, PAUL HYDE, JR., '39 *Pol. Science*,
 1407 Baird Ave., Camden, N. J.
 BUDD, ISAAC WALTER, '40 *Pol. Science*,
 3049 E. Calhoun Blvd., Minneapolis,
 Minn.
 BUDDINGTON, AUGUSTUS FRANK, '38 *Mathematics*,
 2971 Brighton Road, Shaker Heights, Ohio
 BURGER, VIRGINIA, '39 *Mathematics*,
 6366 Columbia Ave., Philadelphia, Pa.
 BYRNE, HARRY CHARLES, '40

- CAHALL, ROBERT JENNINGS, '41
 CALDWELL, CHARLES ADAMS, '38
 CALDWELL, MARY JANE, '40
 CALDWELL, PAUL DAVIS, Special
 CALLAHAN, HELEN MARGARET, '41
 CAMP, WILLIAM PERRINE, '40
 CAMPBELL, LAURA PHILINDA, '40
 CANEDY, CHARLES LIVERMORE, '41
 CARDOZO, NANCY, '40
 CARLSON, JOHN ROBERT, '38
 CARRIGAN, ALICE EUGENIA, '38
 CARROLL, WILLIAM ROBERT, '38
 CARSON, GEORGE CHIDESTER, '38
 CARUTHERS, EDWARD GRAHAM, '39
 CAVERT, MARY RUTH, '41
- CAVIN, FRANCIS EDWARD, '41
 CHANEY, DAVID WEBB, '38
 CHAPMAN, BARBARA ANNE, '38
 CHASE, MARGARET, '39
 CHASINS, EDWARD ARTHUR, '41
 CHEESEMAN, MARGARET RUTH, '39
 CLARK, EUGENE, '39
 CLARK, JEAN, '41
 CLARKE, JOSEPHINE THACHER, '41
 CLEAVER, HOLSTEIN DEHAVEN, JR.,
 '41
 CLEVINGER, LLEWELLYN MORRIS,
 3RD, '40
 CLEAVINGER, MARTHA BEARCE, '41
 CLINCHY, EVERETT ROSS, JR., '41
 COFFIN, LOUIS FUSSELL, JR., '39
 COFFMAN, RAY HAROLD, '40
 COLKET, CARL C., '38
 COLLIER, GRETCHEN KOCH, '39
 COLLINS, WHITNEY, '39
 COOK, CATHERINE, '38
 COOK, FERN MARJORIE, '39
 COOPER, ANNE, '38
 COOPER, DAVID BYRON, '41
 COOPER, GEORGE BRINTON, '38
 COOPER, NANCY JANE, '38
 CORKE, LOIS ELIZABETH, '41
 COSINUKE, ALEXANDER JOHN, '41
 COURANT, ERNST DAVID, '40
 COX, ALFRED DAVIES, JR., '41
 CRAIG, LAWRENCE CAREY, '39
 CREIGHTON, ROBERT HENRY JERMAIN,
 '39
 CRESSON, SAMUEL LUKENS, '39
 CROSBY, HELEN PRATT, '40
- Pol. Science,*
English,
Zoölogy,
- English,*
French,
- English,*
Chemistry,
Economics,
Zoölogy,
Engineering,
Economics,
- Economics,*
Chemistry,
English,
Pol. Science,
- French,*
Economics,
- Zoölogy,*
- Engineering,*
Chemistry,
- Engineering,*
Economics,
Engineering,
Economics,
Engineering,
Psychology,
French,
Psychology,
- History,*
Psychology,
Economics,
Engineering,
Chemistry,
Engineering,
Zoölogy,
- Chemistry,*
Zoölogy,
Psychology,
- Gambier, Ohio
 909 Westdale Ave., Swarthmore, Pa.
 Walden Woods, Cos Cob, Conn.
 909 Westdale Ave., Swarthmore, Pa.
 10 Summit Road, Media, Pa.
 11 Edge Hill Road, Abington, Pa.
 761 Scotland Road, Orange, N. J.
 7110 Oxford Road, Baltimore, Md.
 340 Park Ave., New York, N. Y.
 114-80 179th St., St. Albans, N. Y.
 808 W. Broad St., Quakertown, Pa.
 310 E. 4th North St., Logan, Utah
 Swarthmore, Pa.
 Ashland Ave., Secane, Pa.
 1 Glen Washington Road, Bronxville,
 N. Y.
 1628 21st St., N. W., Washington, D. C.
 Rose Valley, Pa.
 Mahwah, N. J.
 85 Brookside Road, New Britain, Conn.
 601 W. 113th St., New York, N. Y.
 225 N. McKean St., Butler, Pa.
 1602 Ashland Ave., Evanston, Ill.
 Wiebestrasse 12, Berlin, Germany
 314 W. 76th St., New York, N. Y.
- 261 Maine Ave., Albany, N. Y.
- Providence Road, Wallingford, Pa.
 39 Claremont Ave., New York, N. Y.
 46 Prospect St., Madison, N. J.
 820 C St., Sparrows Point, Md.
 5648 Dorchester Ave., Chicago, Ill.
 44 Monroe Place, Brooklyn, N. Y.
 121 Beckwith Terrace, Rochester, N. Y.
 7 Leighton Ave., Yonkers, N. Y.
 8231 Woodbine Ave., Cincinnati, Ohio
 12 S. 7th St., Youngwood, Pa.
 Langley Field, Va.
 4871 Jefferson St., Bellaire, Ohio
 4657 Tampa St., Philadelphia, Pa.
 4871 Jefferson St., Bellaire, Ohio
 267 Clark St., Westfield, N. J.
 2601 W. 7th St., Chester, Pa.
 142 Calton Road, New Rochelle, N. Y.
 1607 Keystone Ave., Upper Darby, Pa.
 460 Riverside Drive, New York, N. Y.
- 515 Elm Ave., Swarthmore, Pa.
 527 Riverview Road, Swarthmore, Pa.
 201 W. 16th St., New York, N. Y.

- CROTHERS, CHARLES HENRY, '40
CROWLEY, JOHN CRANE, '41
CUNNINGHAM, SUZANNE, '40
CUPITT, DOROTHY JUNE, '40
CURTIS-BROWN, ANNE, '41
- CUSTER, THOMAS GOODWIN, '40
- DANA, HARRIET MERRILL, '38
DAVENPORT, MARGARET V., '38
DAVIDSON, DEWITT SANGER, '39
DAVIS, ANNE SHAW, '41
DAVIS, JANE, '38
DAVIS, JEAN KNOX, '39
DAVIS, ROBIN, '41
DEAN, CHARLOTTE, '39
DEARDORFF, SARAH JANE, '38
DEGUTIS, ANTHONY JOSEPH, '41
DEKNATEL, MARGARET ELIZABETH, '38
DELAPLAINE, JOHN WATSON, '41
DIMPFL, RICHARD ALBERT, '39
DINSMORE, RALPH BOONE, Special
DOBBINS, EDWARD L. D., '39
DONNELLY, FREDERICK STOCKHAM, '41
DORISS, WILLIAM HOWARD, '39
DOUGLASS, ANN ELIZABETH, '39
DRIVER, ANN MILDRED, '41
DRURY, RICHARD BOONE, '41
- DUDLEY, MARTHA ALLEN, '38
DUMM, MARY ELIZABETH, '38
DUNNING, MARY ELIZABETH, '40
DUNLAP, RALPH IRVIN, JR., '40
DURKEE, ISABEL SIDES, '41
DUTTON, JOHN C., '39
- EAMES, CHARLES FREDERIC, '38
EARLL, ELIZABETH EUSTICE, '41
EAST, FAE ETHELDRA, '40
EASTWICK, MARTHA MCLIVAIN, '40
EBERLE, CHARLES ALBERT, '40
EBERLE, GEORGE RICHARD, '41
EDMUNDS, CHARLES WALLIS, '39
EDWARDS, MARIAN IONA, '40
EISENMENGER, HERTHA EMMA, '38
ELIAS, JOSEPHINE, '40
ELLIS, MARY DOAN, '40
ELLIOTT, THOMAS HENRY, '38
EMBREE, CATHERINE DAY, '40
- Economics,*
History,
English,
English,
Chemistry,
Zoölogy,
History,
English,
English,
English,
Psychology,
Economics,
English,
Engineering,
Zoölogy,
Chemistry,
Philosophy,
Economics,
Economics,
Psychology,
Engineering,
Zoölogy,
Zoölogy,
English,
Chemistry,
Engineering,
English,
English,
History,
Engineering,
English,
Economics,
Zoölogy,
History,
Zoölogy,
English,
- 146 Collingwood Ave., Detroit, Mich.
152 Colton Ave., Redwood City, Calif.
45 Park Road, Maplewood, N. J.
205 Sylvania Place, Westfield, N. J.
27 Cheyne Walk, London S. W. 3, England
Avon Old Farms, Avon, Conn.
2031 Hill St., Ann Arbor, Mich.
131 E. DuBois Ave., Dubois, Pa.
375 West End Ave., New York, N. Y.
555 Highland Drive, Indianapolis, Ind.
229 Elm St., New Rochelle, N. Y.
2215 Delamere Drive, Cleveland, Ohio
423 W. 120th St., New York, N. Y.
236-20 Warwick Ave., Douglaston, N. Y.
743 S. George St., York, Pa.
818 Morton Ave., Chester, Pa.
234 Summit Ave., Mt. Vernon, N. Y.
106 Cornell Ave., Swarthmore, Pa.
138 Penhurst St., Rochester, N. Y.
324 Cornell Ave., Swarthmore, Pa.
104 Garrison Ave., Battle Creek, Mich.
219 Tunbridge Road, Baltimore, Md.
15 Maher Ave., Greenwich, Conn.
144 Hempstead St., New London, Conn.
7929 Park Ave., Elkins Park, Pa.
5025 Wisconsin Ave., N. W., Washington, D. C.
15 Middle Road, Hamden, Conn.
13 Sampson Ave., Madison, N. J.
Westtown, Pa.
1338 Mound Ave., Jacksonville, Ill.
236 E. Commerce St., Bridgeton, N. J.
2242 Pioneer Road, Evanston, Ill.
243 W. Broad St., Tamaqua, Pa.
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.
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1619 Cambridge Road, Ann Arbor, Mich.
R. F. D. 2, Coraopolis, Pa.
159 Lorraine Ave., Mt. Vernon, N. Y.
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915 37th Ave., Seattle, Wash.
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 101 Lansdowne Court, Lansdowne, Pa.
 324 Brookline Blvd., Upper Darby, Pa.
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 106 Euclid Ave., Willoughby, Ohio
 9 Deering St., Portland, Me.
 6419 N. 13th St., Philadelphia, Pa.
 1009 Ohio Ave., Midland, Pa.
 85 Parkside Drive, Berkeley, Calif.
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 70 Avimore Drive, New Rochelle, N. Y.
 7102 Hilltop Road, Bywood, Pa.
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 33 Perdicas Place, Trenton, N. J.
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 163 Stoneway Lane, Bala-Cynwyd, Pa.
 21 Columbus Ave., New Rochelle, N. Y.
 Yale and Harvard Aves., Swarthmore, Pa.
 21 Greenacres Ave., Scarsdale, N. Y.
 146 Maple St., Brooklyn, N. Y.
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 3700 Massachusetts Ave., N. W., Washington, D. C.
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 405 Washington Ave., Bethlehem, Pa.
 220 E. Walton St., Chicago, Ill.
 177 Porter St., Warren, Ohio
 7701 Cresheim Road, Philadelphia, Pa.
 338 Eighth Ave., LaGrange, Ill.
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- YERKES, CAROLYN MARGARET, '38 *German,* 985 Vine St., Winnetka, Ill.
- ZENTMYER, HELEN NEFF, '40 *Zoölogy,* Marbern Road, Hagerstown, Md.
- ZIGROSSER, CAROLA, '38 *Pol. Science,* 4 Liberty St., Ossining, N. Y.
- ZIMMERMAN, GEORGE LANDIS, '41 *Chemistry,* 207 State St., Harrisburg, Pa.
- ZINNER, JAMES SHANDOR, '39 *Pol. Science,* 723 Greenwood Ave., Glencoe, Ill.

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

1937-38

Pennsylvania	223
New York	140
New Jersey	62
Ohio	40
Illinois	33
District of Columbia	25
Maryland	21
Massachusetts	18
Connecticut	16
Indiana	12
Delaware	9
Wisconsin	8
Missouri	7
Michigan	7
California	5
Germany	5
Minnesota	5
Virginia	4
Cuba	3
Florida	3
Kentucky	3
Iowa	3
New Hampshire	3
Oklahoma	3
Virgin Islands	3
Vermont	3
China	2
Japan	2
Maine	2
Mississippi	2
North Carolina	2
Rhode Island	2
South India	2
Tennessee	2
Arizona	1
Colorado	1
England	1
France	1
Georgia	1
Holland	1
Idaho	1
Kansas	1
Nebraska	1
Palestine	1
Texas	1
Turkey	1
Utah	1
Washington	1
West Virginia	1
TOTAL	695

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.

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.

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; 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. Associate 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.

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.

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, University of Wisconsin.

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 Volunteer, Bartol Foundation, Swarthmore.

1931-32.

KATHARINE SMEDLEY, B.A., 1930; M.A., University of North Carolina, 1932. Secretary, office of New York Yearly Meeting, Society of Friends, 1933-36.

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; studied at Massachusetts Institute of Technology.)

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. Studying at Radcliffe.

1937-38.

WILLIAM SCOTT, B.A., 1937. Studying at the University of Michigan.

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.

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. 37.

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.

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.

HOLDERS OF THE McCABE ENGINEERING AWARD†

1936. ROBERT S. SCHAIRER, B.S., 1936.
 1937. BENJAMIN COOPER, B.S., 1937.

*The terms of the award of this medal are found on p. 37.

†The terms of this award are found on p. 37.

DEGREES CONFERRED IN JUNE, 1937
BACHELOR OF ARTS IN THE HONORS COURSE

In the Division of the Humanities

MYRTLE CORLISS (<i>High Honors</i>)	MARGARET ANNE PARTON (<i>Honors</i>)
KEITH CHALMERS (<i>High Honors</i>)	WILLIAM COURTNEY HAMILTON
MARGUERITE CLAIRE COTSWORTH (<i>High Honors</i>)	PRENTICE (<i>High Honors</i>)
BETTY FOREE DENNIS (<i>Honors</i>)	DONALD HOLDER PURCELL (<i>Honors</i>)
MARGARET LOUISE GERMANN (<i>High Honors</i>)	EDWIN PHILLIPS ROME (<i>High Honors</i>)
WESLEY RAWDON GODDARD (<i>Honors</i>)	ISABEL HOLLY ROSS (<i>Honors</i>)
MASON HAIRE (<i>Highest Honors</i>)	WILLIAM JAMES STEVENS (<i>Highest Honors</i>)
JANET OLIVE HART (<i>Honors</i>)	RICHARD JAMES STORR
FRANK ALFRED HUTSON, JR. (<i>High Honors</i>)	(<i>High Honors</i>)
JOAN CATHERINE KELLEY (<i>Honors</i>)	MINA WATERMAN (<i>Highest Honors</i>)
	FRANCIS WILLIAM WEEKS (<i>Honors</i>)

In the Division of the Social Sciences

MARGARET BOLLES BROOKS (<i>Honors</i>)	CLINTON BUDD PALMER (<i>Honors</i>)
DORWIN CARTWRIGHT (<i>Highest Honors</i>)	THOMAS HAINES DUDLEY PERKINS (<i>Honors</i>)
WILLIAM DIEBOLD, JR. (<i>Highest Honors</i>)	THOMAS BENTON PERRY (<i>Honors</i>)
MURIEL CONSTANCE ECKES (<i>Honors</i>)	ALLAN HERMAN SALM (<i>High Honors</i>)
JAMES RICHARD GARDNER (<i>High Honors</i>)	MORTON SCHAFFRAN (<i>Honors</i>)
LYLE BENNETT GILL (<i>High Honors</i>)	ABE SCHLESINGER, II (<i>Honors</i>)
HELEN FRANCES HORNBECK (<i>Honors</i>)	IRVING SAMUEL SCHWARTZ (<i>Highest Honors</i>)
JOHN JUSTUS KIRN (<i>High Honors</i>)	GEORGE WILEY SINGISER (<i>Honors</i>)
ROBERT KLABER (<i>Honors</i>)	HELEN SOLIS-COHEN (<i>High Honors</i>)
CHARLES WILLIAM LOEB (<i>High Honors</i>)	THOMAS FURMAN SPENCER (<i>High Honors</i>)
VIRGINIA LOUISE LUPTON (<i>Honors</i>)	ELIZABETH BOYD STILZ (<i>Honors</i>)
CHARLES STUART LYON (<i>High Honors</i>)	LEONARD FORDYCE SWIFT (<i>Honors</i>)
EDWARD ARTHUR MACY (<i>High Honors</i>)	EMILY WHITMAN (<i>High Honors</i>)
IRVING ARCHER MORRISSETT, JR. (<i>Honors</i>)	SIDNEY LAMONT WICKENHAYER (<i>High Honors</i>)
CAROL ROZIER MURPHY (<i>High Honors</i>)	FRED WIEST (<i>Honors</i>)
JAMES ANDERSON MURPHY (<i>High Honors</i>)	JOHN HENRY WOOD, JR. (<i>Honors</i>)

In the Division of Mathematics and the Natural Sciences

CHRISTIAN BOEHMER ANFINSSEN, JR. (<i>Honors</i>)	GEORGE ELMER FORSYTHE (<i>Highest Honors</i>)
EARL PHILIP BENDITT (<i>Highest Honors</i>)	WARD SCOTT FOWLER
ISABEL REST BENKERT (<i>Honors</i>)	(<i>Highest Honors</i>)

ERNEST MATSNER GRUENBERG (<i>Honors</i>)	WILLIAM TAUSSIG SCOTT
ALBAN THOMAS HALLOWELL	(<i>Highest Honors</i>)
	(<i>High Honors</i>)
RICHARD HEAVENRICH (<i>High Honors</i>)	ERWIN FAIRFAX SHRADER
ALMA BIELE HELBING (<i>Honors</i>)	(<i>High Honors</i>)
WAYNE LOWRY LEES (<i>Honors</i>)	MANNING AMISON SMITH
	(<i>High Honors</i>)

BACHELOR OF SCIENCE IN THE HONORS COURSE

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GEORGE LUPTON BROOMELL, JR.	JAMES ALAN HARPER (<i>Honors</i>)
	(<i>High Honors</i>)
BENJAMIN COOPER (<i>High Honors</i>)	JOHN ANDREW MOFFET (<i>Honors</i>)
	(<i>High Honors</i>)
	CHARLES TAGGART (<i>High Honors</i>)
	LEONARD JOHN GBURSKI (<i>High Honors</i>)

BACHELOR OF ARTS IN THE GENERAL COURSE

With the Major in Botany

CONSTANCE ISABELLE SMITH	KATHARINE MORTON WHITE
--------------------------	------------------------

With the Major in Chemistry

SAMUEL ISAAC KALKSTEIN	FRANK PALIN SPRUANCE, JR.
------------------------	---------------------------

With the Major in Economics

JOHN SOWDEN CHILD	RUTH MARY LEWIS
JAMES HULME CLARKE	HUGH GORDON PELTON
	JOHN MUIRHEAD RICE

With the Major in English

BARBARA BICKFORD BROOKS	EDWIN BURR PETTET
MARGARET ELEANOR CUPITT	ELEANOR RUSSELL
GRACE ECKMAN	RUTH ANNA SHOEMAKER
ADELE CONWAY MILLS	KATHRYN QUINBY WALKER
BARBARA WALTON PEARSON	BARBARA ELIZABETH WEISS
JOSEPHINE HARRIET PETERS	ISABEL LOUISE WILDE
	DREW MACKENZIE YOUNG

With the Major in Fine Arts

OLVA FULLER FAUST

With the Major in French

MARION BEST	PATTY MORRIS
ELIZABETH LOUISE DOBSON	MARY DORIS PHILLIPS
MARION ELLIS	WALTER STAAKS
	MURIEL BARNETT WHITE

With the Major in History

ELIZABETH ANNE BROOKE
 JAMES ELLIS BUCKINGHAM
 MARGARET ANDREWS CLARKE

MARGARET ALICE RHOADS
 RAYMOND GUSTAVE SCHROEDER
 CAROLYN MIDDLETON WOOD

With the Major in Latin

LOUISE PAULINE HOUSEL

With the Major in Physics

ARNOLD F. CLARK

With the Major in Political Science

THOMAS MONTEITH HAMILTON BROOMALL
 FRANCES TURNER DERING
 ERNEST REINHARDT HERBSTER
 ELIZABETH WILSON JACKSON
 BARBARA LESHER

FRANCES SUSANNA REED
 MARGARET HELEN STICHLER
 FRANK GORDON STRAKA
 ANN BRADLEE VAN BRUNT
 ANN ELIZABETH WHITCRAFT

With the Major in Psychology

JANE SHIRLEY ALBEN
 JEAN ALISON CARSWELL

KATE MEYER
 ELIZABETH ROWLAND

With the Major in Zoölogy

ELEANOR EDITH EVES
 JOSEPH HENRY HAFKENSCHIEL, JR.
 RICHARD HENRY KOENEMANN

WILLIAM ALLEN LONGSHORE, JR.
 OLIVER PAYNE PEARSON
 MARTHA LOUISE SMITH

BACHELOR OF SCIENCE IN THE GENERAL COURSE

With the Major in Civil Engineering

JOHN SCOTT BALLARD

HENRY HAROLD HOADLEY

With the Major in Electrical Engineering

THOMAS MALCOLM CLEMENT

With the Major in General Engineering

HAROLD PIERPONT NEWTON, JR.

RICHARD CASSIN THATCHER, JR.

With the Major in Mechanical Engineering

JOHN NEWLIN BECK
 COLE OLIVER BURT, JR.

JOHN EVERETT HICKOK
 ABRAHAM LINCOLN PITTINGER

CIVIL ENGINEER

JOHN GILBERT ALBERTSON, A.B., Swarthmore College, 1920

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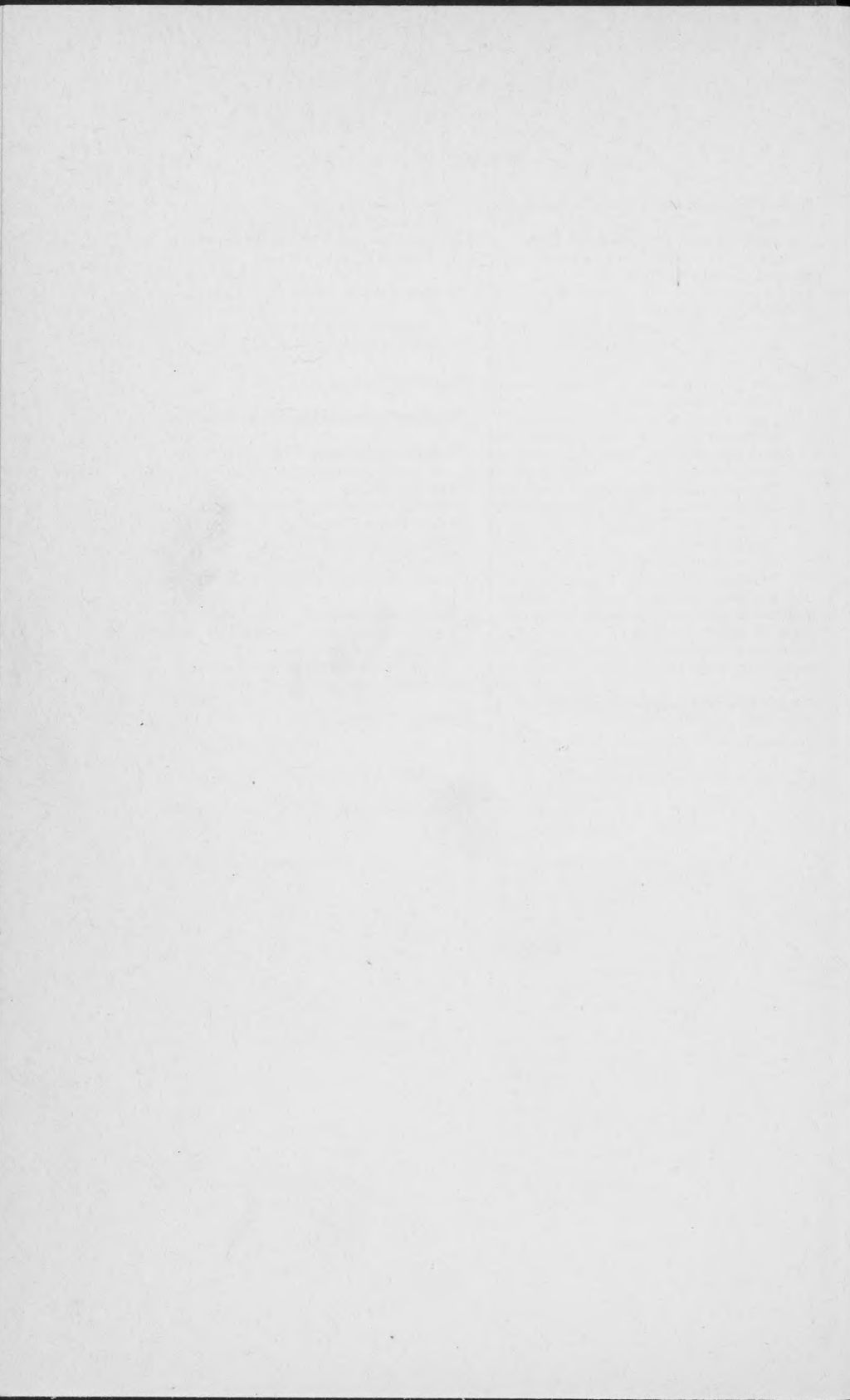
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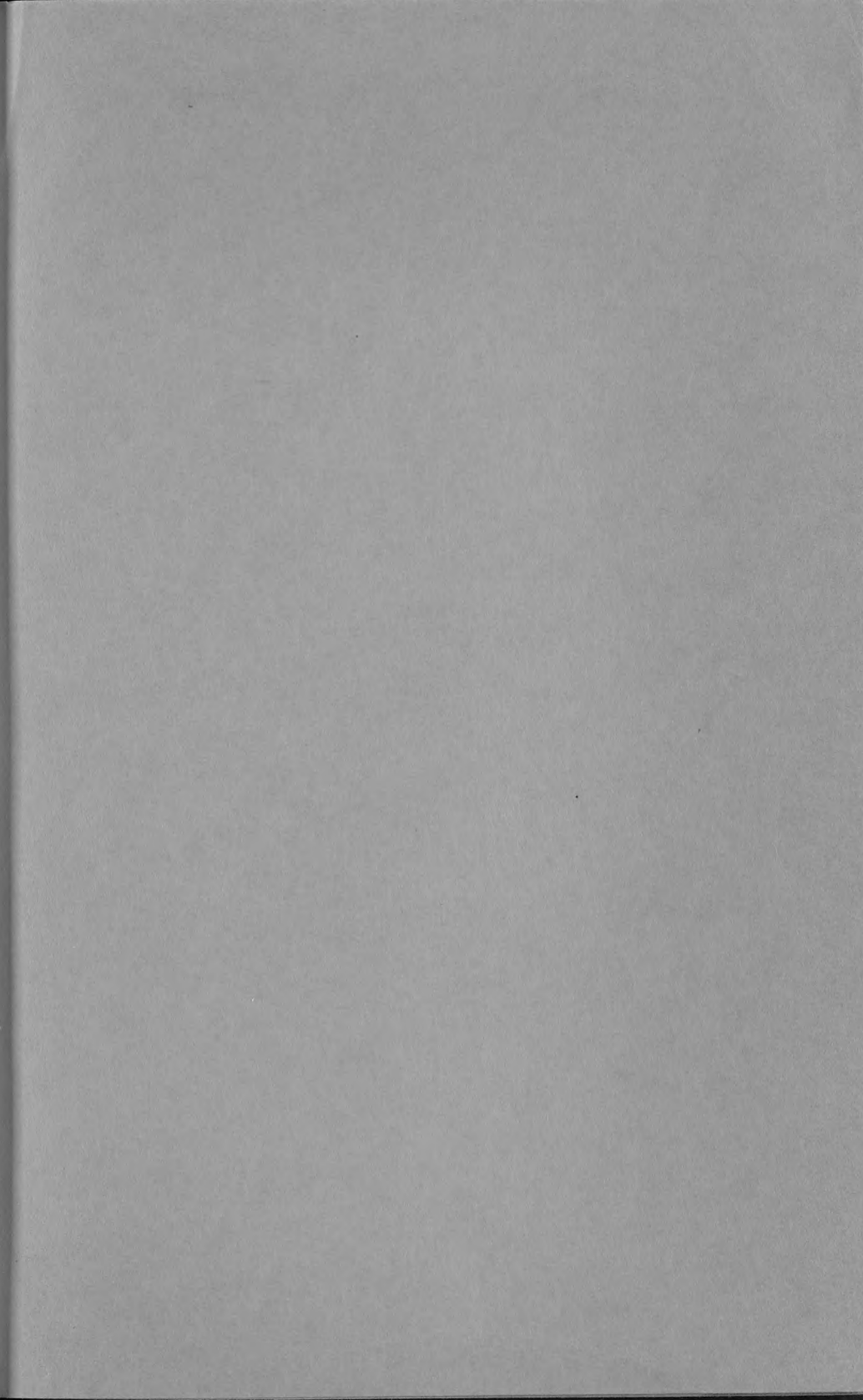
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