

THE BROOKLYN INSTITUTE
OF ARTS AND SCIENCES
July 1911, to July 1912

**THE BROOKLYN INSTITUTE
OF ARTS AND SCIENCES**

1911-1912

THE
Twenty-fourth Year Book
OF
**THE BROOKLYN INSTITUTE
OF ARTS AND SCIENCES**

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CHARTERED IN 1824; RECHARTERED IN 1843 AND 1862
THE PRESENT CHARTER GRANTED IN 1890**

1911-1912

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**THE NAMES OF THE OFFICERS, COPIES OF THE CON-
STITUTION AND BY-LAWS, A BRIEF HISTORY OF
THE INSTITUTE, AN ACCOUNT OF THE
WORK OF 1911-1912, AND COPIES OF
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TO THE CORPORATION**

"For the People by the People"

**BROOKLYN:
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THE BIOLOGICAL LABORATORY

(Located at Cold Spring Harbor, L. I.)

TWENTY-THIRD SEASON.

JULY AND AUGUST, 1912.

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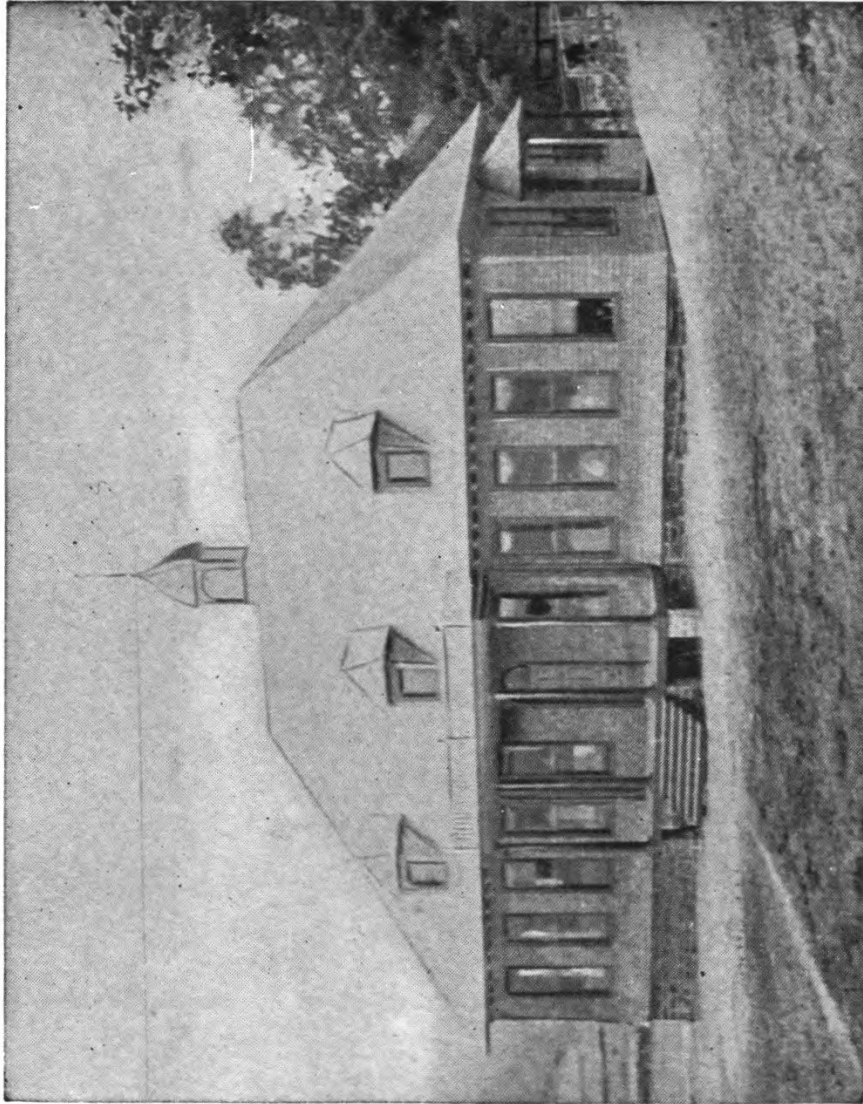
HENRY SHERRING PRATT, Ph.D., Haverford College. *In charge of Comparative Anatomy.*

HERBERT EUGENE WALTER, Ph.D., Brown University. *In charge of Field Zoölogy.*

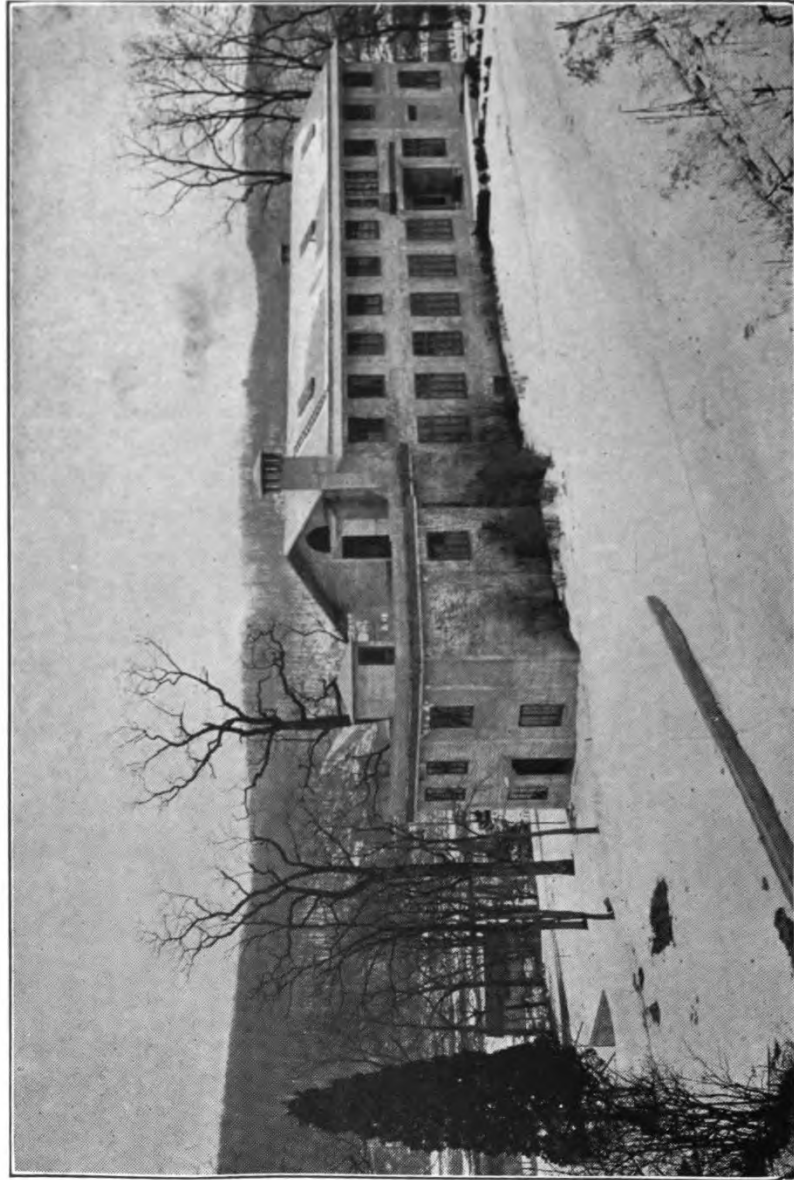
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HARRY HAMILTON LAUGHLIN, B.S., Eugenics Record Office. *In charge of Training Course for Field Workers in Eugenics.*



THE JOHN D. JONES LABORATORY BUILDING, COLD SPRING HARBOR, 72X36 FEET.



BLACKFORD HALL IN WINTER, GENERAL DINING HALL AND WOMEN'S DORMITORY

HANSFORD M. MACCURDY, Ph.D., Alma College. *Associate in Comparative Anatomy.*

SIDNEY I. KORNHAUSER, M.A., Harvard University. *Assistant in Field Zoölogy.*

W. E. MANEVAL, Ph.D., *Assistant in Bird Study and in Cryptogramic Botany.*

PERSONS, OTHER THAN INSTRUCTORS, ENGAGED PRIMARILY IN RESEARCH.

E. L. FULLMER, Berea, Ohio. Professor at Baldwin University.

ESTHER FUSSELL BYRNES, Ph.D. (Bryn Mawr College), 193 Jefferson Avenue, Brooklyn, N. Y. Teacher of Biology in Girls' High School. *Embryology.*

IRVING HILL BLAKE, A.M., (Brown University), Augusta, Maine. Student at Brown University. *Zoölogy.*

GERTRUDE SIMMONS BURLINGHAM, Ph.D., (Columbia University), 556 Lafayette Ave., Brooklyn, N. Y. Assistant Teacher of Biology, Eastern District High School. *Fungi of Long Island.*

FRANCES ADELA HALLOCK (Mount Holyoke College), 36 East 65th St., New York, N. Y. Teacher. *Botany.*

ANNIE PARKER HENCHMAN, 10 Francis Ave., Cambridge, Mass. *Zoölogy.*

JAMES PETER KELLY, B.S., (College of the City of New York), 2163 Gleason Ave., Bronx, New York City. Teacher in Grammar School, New York, N. Y. *Zoölogy.*

ROXANA HAYWARD VIVIAN, Ph.D., (Pennsylvania), Wellesley College, Wellesley, Mass. Assistant Professor of Mathematics at Wellesley. *Special Problems in Statistics.*

DAVID DAY WHITNEY, Ph.D., (Columbia University), Middletown, Conn. Teacher in Wesleyan University. *Zoölogy.*

SEWALL GREEN WRIGHT, M.S., (University of Illinois), 63 Dana St., Cambridge, Mass. Graduate Student at Harvard University. *Bionomics.*

STUDENTS IN THE SEVERAL COURSES.

CHARLES HARLAN ABBOTT, Antrim, New Hampshire, Student at Brown University. *Zoölogy I.*

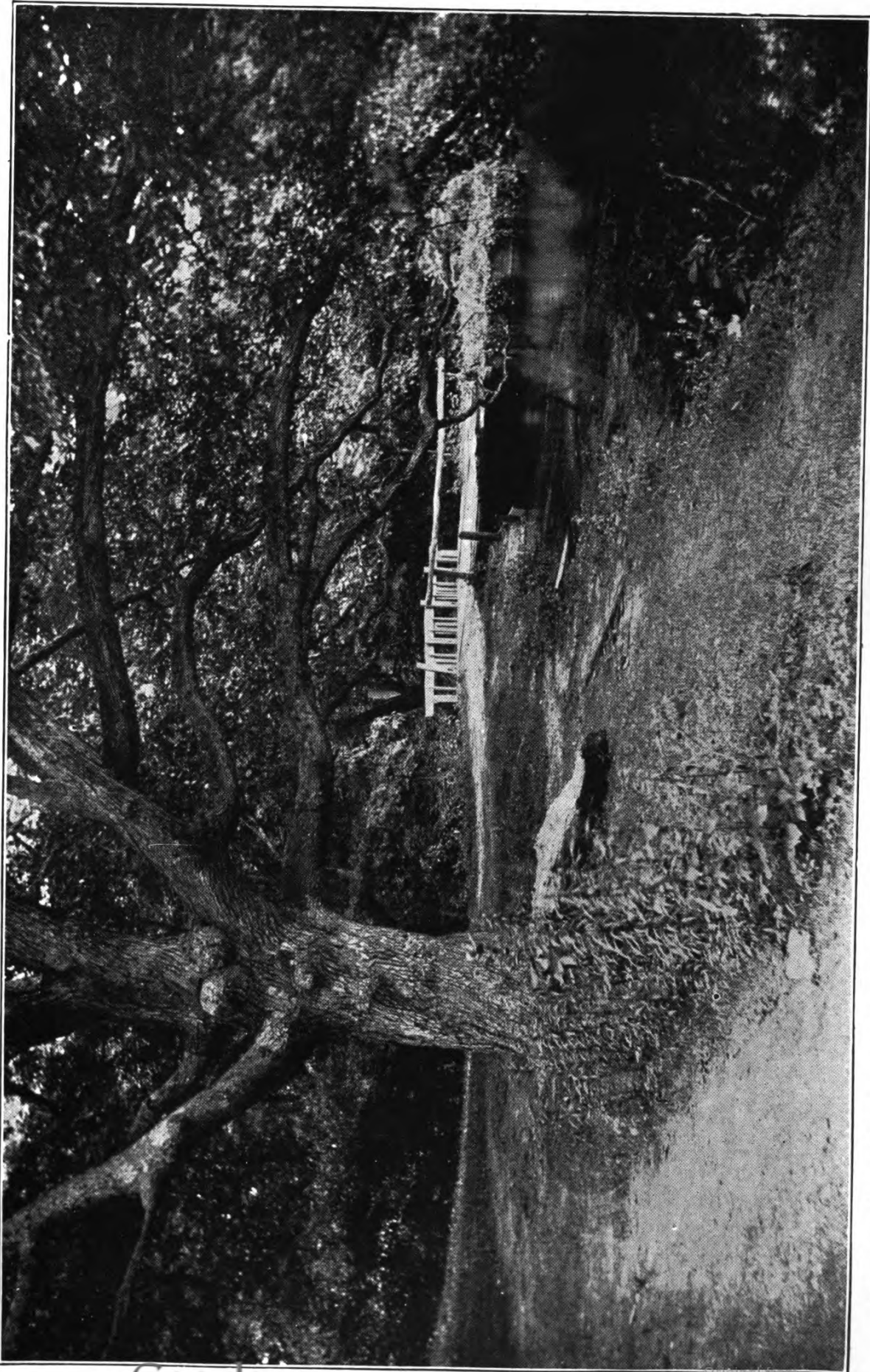
JUNE ADKINSON, A.M. (Radcliffe), 10 Fairview St., Dorchester, Mass., Student at Radcliffe. *Eugenics.*

WILLIAM BULLITT ALEXANDER, A.B. (Bryn Mawr), St. James Street, Pittsburgh, Pa. *Eugenics.*

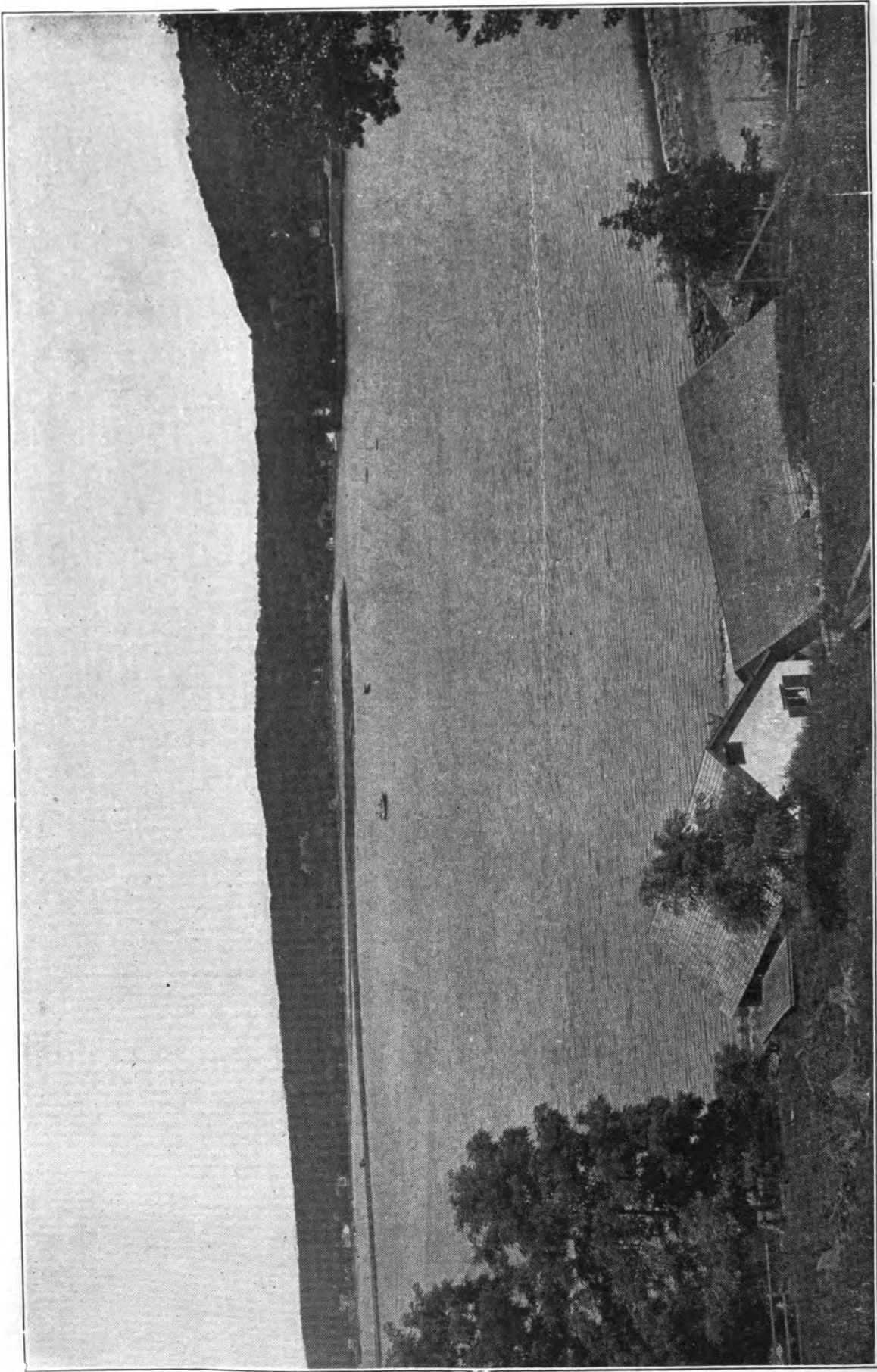
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- MABEL BISHOP, A.M. (Smith College), 368 Clinton Ave., Bridgeport, Conn. *Eugenics*.
- JOHN INSLEY BLAIR, 706 Jefferson Ave., Scranton, Pa., Student at Haverford College. *Zoölogy* 2.
- ELIZABETH BODFISH, 69 Central St., Palmer, Mass., Student at Brown University. *Zoölogy* 1.
- KATHERINE MORTON BROWN, A.B. (Vassar College), Fanwood, N. J., Student at Vassar College. *Eugenics*.
- VIRGINIA RODIER BROWN, B.A. (Oberlin College), 341 Prescott St., Toledo, Ohio, Student at Oberlin College. *Eugenics*.
- EDNA CLARE BRYNER, A.B. (Vassar College), Baxter Springs, Kansas, Teacher. *Eugenics*.
- WING YU CHOW, University of Virginia, Student at University of Virginia. *Zoölogy* 1.
- FRANK BOYD COTNER, Bloomsburg, Pa., Assistant in Biology at Bloomsburg State Normal School. *Botany* 1.
- MARGARET CROOKS, Ravenswood, West Virginia, Student at Brown University. *Botany* 1.
- MARIE THORNDIKE CURIAL, A.B. (Smith College), Anoka, Minnesota, Student. *Eugenics*.
- MILLIA CROTTY DAVENPORT, Cold Spring Harbor, L. I., Student. *Zoölogy* 2.
- EDITH GERTRUDE DONNELLY, B.S. (New Hampshire College), Durham Road, Dover, New Hampshire, Student. *Eugenics*.
- GERTRUDE ELIZABETH DOUGLAS, A.M. (Cornell University), 104 Vernon St., Gardner, Mass., Instructor at Randolph-Macon College. *Botany* 1.
- CLYDE E. EHINGER, M.D. (Chicago Homeopathic College), West Chester, Pa., Teacher at State Normal School. *Bird Study*.
- HILDA FARRAR, B.A. (University of Rochester), 10 Elmhurst St., Rochester, N. Y., Teacher. *Zoölogy* 1.
- LEORA GERTRUDE FIELD, A.B. (Oberlin College), Quincy, Mich., Student at Oberlin. *Eugenics*.
- RAYMOND TIFFT FULLER, R. F. D. No. 3, East Syracuse, N. Y., Student at Colgate University. *Zoölogy* 2.
- NINA M. GAGE, A.B. (University of Michigan), New Hudson, Mich., Teacher of Science in Normal School. *Eugenics*.

- MINNIE M. GESSFORD, B.S. (Columbia University), 2030 Huntingdon Ave., Baltimore, Md., High School Teacher. *Botany* 1.
- CHARLES GLENNVILLE GIDDINGS, Charlottesville, Va., Student at University of Virginia. *Zoölogy* 2.
- DAVID WALKER GRANT, Richmond, Va., Student at University of Virginia. *Zoölogy* 2.
- WILLIAM LOYALL GRAVATT, Charlestown, West Virginia, Student at University of Virginia. *Zoölogy* 2.
- CHARLES NICHOLAS HARPER, Riverton, West Virginia, Medical Student at University of Virginia. *Zoölogy* 2.
- LENA BONDURANT HENDERSON, B.S. (University of Tennessee), Saint Joseph, Louisiana, Teacher of Biology. *Zoölogy* 1.
- GERTRUDE ELIZABETH HODGMAN, A.B. (Vassar College), 109 Caroline St., Saratoga Springs, N. Y.
- NOLA HOUDLETTE, A.B. (Bates College), Dresden Mills, Maine, Graduate Assistant in Biology at Bates College. *Eugenics*.
- WILLIAM HERBERT HOWARD, A.B. (Haverford College), Mechanic, N. C., Student at Haverford College. *Eugenics*.
- RUTH LOUISE HOWE, B.A. (Wellesley College), Carrollton, Ky., Student at Wellesley. *Eugenics*.
- HARRISON RANDALL HUNT, B.S. (Allegheny College), 464 Park Ave., Meadville, Pa., Student. *Zoölogy* 1.
- GEORGE BAIN JENKINS, M.D. (Hospital Col. Med. Lan., Ky.), Johns Hopkins Medical School, Baltimore, Md., Teacher of Anatomy. *Eugenics*.
- ISABELLE VIRGINIA KENDIG, A.B. (Oberlin College), 10442 Prospect Ave., Chicago, Ill., Student. *Eugenics*.
- WILHELMINE ENTEMAN KEY, Ph.D. (University of Chicago), Galesburg, Ill., Professor of German and Biology. *Eugenics*.
- JULIUS LANDOWNE, M.A. (New York University), 641 East 176th St., New York City, Public School Teacher. *Zoölogy* 1.
- MARY DEARSTYNE MACKENZIE, Ph.M. (Syracuse University), 19 Bay State Road, Pittsfield, Mass., Professor at Western College. *Eugenics*.
- HOWARD GOVE MACMILLAN, Ph.B. (Brown University), Mapleville, R. I., Student at Brown University. *Botany* 1.
- ANNA VIOLA MARSHALL, A.M. (Epworth University), 809 N. Okla. Ave., Okla., Teacher. *Zoölogy* 1.
- WILHELMINA SHARROTT MARSHALL, A.B. (Mount Holyoke College), Prince Bay, New York, Student at Mount Holyoke College. *Eugenics*.

- ELIZABETH LIEPER MARTIN, M.D. (University of Pittsburgh), 329 So. Dallas Ave., Pittsburgh, Pa., Physician and Instructor of Physiology at Carnegie Technical Schools. *Zoölogy* 2.
- MATHILDE LOUISE MAYER, 40 Hilton St., East Orange, N. J., Student. *Zoölogy* 1.
- DORYS HALL McCONNELL, The Ridge, Suffern, N. Y., College Student. *Botany* 1.
- EDNA BERTHA McCONNELL, A.B. (Smith College), The Ridge, Suffern, N. Y. *Botany* 1.
- IDA MAY MELLE, 30 St. Johns Place, Brooklyn, N. Y., Librarian and File Clerk. *Eugenics*.
- KATHERINE HYLAN MOAKLEY, A.B. (Smith College), 11 Norwood Ave., Northampton, Mass., Student. *Zoölogy* 1.
- MARY CHADBOURNE MORSE, A.B. (Bates College), Waterford, Maine, Student at Bates College. *Eugenics*.
- ALICE MAYNARD FIELD NEWKIRK, A.B. (University of Cincinnati), Bryn Mawr, Pa., Graduate Student at Bryn Mawr College. *Eugenics*.
- ALICE AYR NOYES, A.B. (Mount Holyoke College), 378 Washington St., Haverhill, Mass., Graduate Scholar in Entomology at Cornell University. *Botany* 1.
- JESSIE MARCIA OSTRANDER, A.B. (University of Michigan), 936 Oakland Drive, Kalamazoo, Mich., Teacher. *Zoölogy* 1.
- MARY LEARNED PALMER, A.B. (Smith College), Winterton, Sullivan County, N. Y., Graduate Work at Columbia University. *Zoölogy* 2.
- IRVING CLEMENT PERKINS, B.S. (New Hampshire College), Kennebunk, Maine., Student. *Eugenics*.
- LUCY CHAPIN RICH, A.B. (Vassar College), 1 Lincoln St., Springfield, Mass., Student at Vassar College. *Eugenics*.
- EMILY FRANCES ROBBINS, 203 East 27th St., New York, N. Y., Executive Sec'y, Com. of 100 on National Health. *Eugenics*.
- VIRGINIA POLLARD ROBINSON, M.A. (Bryn Mawr College), Bedford Reformatory for Women, Bedford Hills, N. Y., Field Worker in Bedford Laboratory. *Eugenics*.
- MARSHALL HINGSTON SHELDON, 30 Park Place, Pawtucket, R. I., Student. *Botany* 1.
- FRANCES GIVENS SMITH, A.B. (Cornell University), 729 Warren St., Hudson, N. Y., Agent for Dependent Children, State Charities Aid Ass'n. *Eugenics*.
- WILLIAM SMITH, Castle Shannon, Pa., Student at University of Pittsburgh. *Botany* 1.



VIEW OF ROAD OVER THE DAM AT THE SECOND LAKE, TO ILLUSTRATE TYPICAL FOREST AND FRESH WATER CONDITIONS.
GREAT OAK IN FOREGROUND.



VIEW OF THE INNER HARBOR FROM THE DINING HALL

- ANNA ELIZABETH STEFFEN, A.B. (Oberlin College), Vermilion, Ohio., Student. *Eugenics*.
- RUTH JENNINGS STOCKING, A.B. (Goucher College), Burton, Geauga Co., Ohio., Student at Bryn Mawr College. *Eugenics*.
- JESSIE JULIA TAFT, Ph.B. (University of Chicago), 1108 26th St., Des Moines, Iowa., Graduate at University of Chicago. *Eugenics*.
- MINNIE WHITE TAYLOR, 22 Arch St., Providence, R. I., Student at Brown University. *Botany* 1.
- ISABEL HAWKINS TUTHILL, Rocky Point, Suffolk Co., N. Y., Student. *Zoölogy* 1.
- CHARLES AUGUSTUS WADDELL, A.B. (Paine College, Augusta, Ga.), 1261 Hatch St., Augusta, Ga., Teacher. *Zoölogy* 2.
- RUTH WANGER, A.B. (Vassar College), Morristown, Pa., Student at Vassar. *Eugenics*.
- MINNIE ELIZABETH WATSON, A.B. (Olivet College), Oyster Bay, L. I., High School Teacher. *Botany* 1.
- ANNA MARGARET WENDT, A.B. (Oberlin College), Livingston Manor, New Brunswick, N. J., Student. *Eugenics*.
- HERBERT RALPH WERNER, Ph.B. (Franklin and Marshall College), Dringsburg, Pa., Student. *Zoölogy* 1.

COURSES OF INSTRUCTION

All courses, except where stated to the contrary, occupy six to seven hours per day. Lectures in all Courses at 8.15 A. M.

ZOÖLOGY

- 1—"High School," under Dr. WALTER, Dr. DAVENPORT and Dr. KORNHAUSER, with assistance from others.
- 1a—Bird Study, under Mrs. WALTER, with Dr. MANEVAL and assistance from others.
- 2—"Comparative Anatomy," under Dr. PRATT and Dr. MACCURDY.
- 3—"General Embryology and Microscopical Technique," (omitted 1912).
- 4—"Animal Binomics and Evolution," under Dr. DAVENPORT.

BOTANY

- 1—"Cryptogamic Botany," under Dr. YORK and Dr. MANEVAL.
- 2—"Ecology," (omitted 1912).

EUGENICS

Training Course for Field Workers in Eugenics,
under Dr. DAVENPORT and Mr. LAUGHLIN.

BIOLOGICAL CLUB

This Club has been formed for the presentation of the results of researches and for the reviewing of recent biological literature. Recently addresses have been given by the following visiting naturalists: Prof. M. A. BIGELOW, Teachers College, New York; Prof. C. L. BRISTOL, New York University; Prof. H. W. CONN, Wesleyan University; Prof. ULRIC DAHLGREN, Princeton University; Prof. A. DAVISON, Lafayette College; Prof. BASHFORD DEAN, Columbia University; Mr. JAMES EMERTON, Boston; Dr. H. H. FIELD, Concilium Bibliographicum, Zurich; Prof. C. F. HODGE, Clark University; Prof. GRAHAM LUSK, New York University Medical School; Dr. A. G. MAYER, Carnegie Institution of Washington; Prof. JAMES NEEDHAM, Cornell University; Prof. G. H. PARKER, Harvard University; Prof. REIGHARD, University of Michigan; Prof. EDWARD L. THORNDIKE, Columbia University; Mr. GEORGE C. WHIPPLE, Brooklyn; President R. S. WOODWARD, Carnegie Institution of Washington.

PUBLICATIONS

The following books and papers, based in whole or in part on work done, or material collected, at Cold Spring Harbor, exclusive of the work of the Station for Experimental Evolution, have been published during recent years:

LEWIS, I. F.—The Life History of *Griffithsia Bornetiana*. *Ann. of Botany*, vol. 23, pp. 639-690. Oct., 1909.

STREETER, STELLA G.—The Influence of Gravity on the Direction of Growth of *Amanita*. *Bot. Gazette*, 48, 414-426. Dec., 1909.

SHULL, A. F.—Studies in the Life Cycle of *Hydatina senta*. I. Artificial control of the transition from the parthenogenetic to the sexual method of reproduction. *Jour. Exper. Zool.*, VIII, 311-354. June, 1910.

MORRILL, CHARLES.—The Chromosomes in the Oögenesis, fertilization and cleavage of Coreid Hemiptera. *Biol. Bull.*, XIX, pp. 79-122, plates 1, 2. July, 1910.

SCHAEFFER, ASA A.—A simple and Economical Aquarium Aerator. *Science*, N. S., XXXI, pp. 955-957. June, 1910.

GRAFF, L.—Acoela, Rhabdocœla and Alloœcœla des Ostens der Vereinigten Staaten von Amerika. *Zeitschr. f. wiss. Zool.* XCIX, pp. 322-428, 6 pls. 1911.

SCHAEFFER, ASA A.—Habit formation in frogs. *Jour. Animal Behavior*. I, 309-335. October, 1911.

JOHNSON, DUNCAN S. and YORK, HARLAN H.—Relation of Plants to Tide Levels. *Johns Hopkins University Circular*, February, 1912, 6 pages.

BROWN, W. H. and SHARP, L. W.—Embryo Sac of *Epipactis*. *Botanical Gazette*, LII, No. 6. December, 1911.

BUCKINGHAM, EDITH W.—Division of Labor among Ants. *Proceedings of American Academy of Arts and Sciences*, XLVI, No. 18. March, 1911.

EQUIPMENT

The laboratory is now in possession of several buildings:

1. A large laboratory accommodating about sixty students and fitted with aquaria, running salt and fresh water, private rooms, library, etc.
2. A laboratory building intended exclusively for investigators, containing 13 private rooms, situated about 300 metres from the main plot of ground, and completely equipped.
3. A lecture hall, used for class lectures, public lectures, and club meetings. It is furnished with an electric lantern. In the basement of this building is a dark room for photographing purposes, equipped with running water.
4. Four dormitories with a total capacity of 75 persons. The rooms in the dormitories are adequately furnished and are supplied with linen and

towels. A fire-proof dormitory for women with a general dining-hall, finely equipped, has been recently built—a gift to the Laboratory from Mrs. Eugene G. Blackford, as a memorial to Mr. Blackford, the first president of the Board of Managers of the Laboratory. It is connected with a sewerage system of the Waring type.

The Laboratory is equipped with a 35-foot, 12 horse-power motor boat, capable of making about 8 miles an hour, which runs on almost daily trips through the harbor and sound for purposes of dredging and conveying parties to distant collecting grounds or study areas. In addition there are small boats, the necessary collecting apparatus, and a storeroom where instruments, stationery, optical apparatus, etc., may be purchased at a price slightly above cost. A limited number of microscopes may be rented at the Laboratory, but each person is urged to bring a dissecting microscope and a compound microscope, if possible.

There is a library of both zoölogical and botanical works, particularly including text-books, systematic works, and several hundred books and pamphlets on animal and plant morphology and physiology. The extensive biological library (4,000 volumes) of the adjoining Station for Experimental Evolution is also available for use. There is a card catalogue record of over 1,000 species of animals and plants found near the Laboratory.

The Laboratory is situated in a center of biological activity that is maintained throughout the year. The State of New York maintains here its largest fish hatchery, where many millions of brook trout and tom cod are annually hatched. The Station for Experimental Evolution, Carnegie Institution of Washington, is located on grounds adjoining those of the Biological Laboratory, and is under the same direction. Twenty acres of land are occupied by gardens, pastures, breeding pens and houses, greenhouses and the main administration building. A scientific staff of six persons is

constantly maintained here, and these contribute, through demonstrations and occasional lectures, to the scientific activity of the Laboratory.

The Eugenics Record Office, devoted to the collection and study of data on human heredity, has been recently established on ground nearby in a tract of about eighty acres.

LIBRARY

The Library now receives regularly the publications of several divisions of the Department of Agriculture and the Reports of the New York State Museum. Through an arrangement entered into with the Institute Library, the Laboratory borrows books from that Library, and thus acquires a service of great value. Workers at the Laboratory have access also to the library of the Carnegie Institution Station.

EXPENSES AND AIDS

TUITION. The Laboratory fee, including one or more courses of instruction, the general lectures, and the use of the laboratory privileges, is \$30. Students who make use of the Laboratory microscopes will be charged \$5 extra.

BOARD will be furnished to students only for \$5.00 per week. Board may be furnished to relatives or friends accompanying students, if due notice is given; rate \$1.00 per day. Rooms in the dormitories cost \$1.50 to \$3.00 per week, according to size and situation. The larger rooms will accommodate two students. A fee of five dollars should accompany each application for the reservation of a room. Diagrams of available rooms, with prices, will be furnished on application. The whole expense to the student for the session will be from \$75 to \$95. Arrangements for married persons and their children may be made by correspondence. Sites may be rented for tents.

SCHOLARSHIPS. Besides the various scholarships offered by colleges and universities to students in their biological

departments and applicable to this Laboratory the following scholarship has been recently established :

The **TEMPLE PRIME** scholarship established by Miss Cornelia Prime, of Huntington, in memory of Temple Prime, a distinguished student of the mollusca. Amount about \$100. Application for the scholarship to be made to the Director of the Laboratory.

A limited number of students can defray the cost of board by waiting on table.

SUGGESTIONS AS TO OUTFITTING. For the benefit of novices at the seashore it is suggested that "outing clothes" are especially to be recommended, including heavy but comfortable shoes or boots, a pair of rubber-soled sneakers, clothing of resistant fabric, a complete modest bathing costume, a raincoat, and provision for cool as well as warm weather.

LOCATION

The situation of the Laboratory is unique. It is placed at the head of Cold Spring Harbor, a long and beautiful bay on the north shore of Long Island. This harbor is divided by an interesting beach of sand into an outer and inner basin. The outer basin opens widely into Long Island Sound, whose coast has a varied character for miles in either direction. At the mouth of the inner basin are flats where molluscs, echinoderms and burrowing crustacea and worms are abundant. The inner basin has a muddy bottom largely exposed at low tide and offering unusual opportunities for collecting bottom animals and plants. The plancton of the inner harbor is exceptionally abundant. Into the head of the inner basin flows Nachaquatuck Creek, in whose estuary the transition from marine to fresh water and to terrestrial organism may be clearly traced. Further up are four beautiful fresh-water lakes and streams which contain an abundance of fresh-water organisms. In the valley are found a salt marsh and above the lakes a sphag-

num bog. The shores of the harbor and of the lakes are densely wooded and exhibit the most diversified fauna and flora. On the upland, over two hundred feet above sea level, are stretches of meadows and gardens. Across the sound are rocky promontories and islets to which visits are made. Twelve miles to the southward, accessible by a trolley line running from the adjacent village of Huntington, is the open Atlantic beating on a great sandy beach, covered with sand dunes.

HOW TO REACH THE LABORATORY. The Laboratory lies in the town of Oyster Bay on the north side of Long Island about thirty miles from Manhattan Island, about fifteen miles beyond the nearest part of the boundary of Greater New York, and two miles from the village of Huntington. Persons coming from the West and South will find the Pennsylvania Railroad most convenient, since direct connection is made at its new terminal in Manhattan with trains to "Cold Spring" on the Long Island Railroad, changing cars at Jamaica. Those arriving at the Grand Central depot may go by cars to the Pennsylvania-Long Island depot at West 33d Street and Seventh Avenue, or they may take the New York subway to its terminus at Atlantic Avenue, where transfer is made to the Long Island Railroad, or they may take the ferry, reached by trolley car, at East Thirty-fourth Street. From Cold Spring a short stage ride (25c) brings one to the Laboratory at Cold Spring Harbor. During the summer months there are ten or more trains a day from the city. From the East, the boat from New London to Greenport, L. I., may be taken; thence by rail to Hicksville, and from Hicksville to Cold Spring; but persons proposing to make this trip should determine some time in advance the times of sailing of the boat. Ferries across the Sound from Bridgeport to Port Jefferson, and from Stamford, Conn., to Huntington, L. I., are usually operated daily during the summer time.