

THE BROOKLYN INSTITUTE
OF ARTS AND SCIENCES.

1894-95.

THE BIOLOGICAL LABORATORY.

[Located at Cold Spring Harbor, L. I.]

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THE BOARD OF INSTRUCTION.

Prof. HERBERT W. CONN, Ph.D., of Wesleyan University, *General Director of the Laboratory, and Instructor in Comparative Embryology and Bacteriology.*

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WM. M. ESTEN, Wesleyan University, *Assistant in Biology.*

LOCATION OF THE LABORATORY.

The location of the Biological Laboratory, at the head of Cold Spring Harbor, is one of the most favorable on the coast. The country around is high and rolling, with abundant forests, glens and small streams, affording most excellent collecting ground for every form of animal and vegetable life common to our climate. Just above the Laboratory is a series of three beautiful fresh water ponds, each fertile in forms of fresh water life, and through which flows the water of Cold Spring Creek. Just below the Laboratory is the long and beautiful harbor of Cold Spring, divided by a sandy neck into an inner and an outer basin. The inner basin is particularly rich in marine life, and the channel between the inner and outer basins has a most varied and vigorous growth of algae, molluscs and echinoderms. The outer basin has rocky projections, shallow flats, banks, and eel grass, sheltered pools, oyster beds, and other most favorable conditions for collection and study. The outer basin opens widely into Long Island Sound, whose shore is very varied in character for twenty miles in either direction.

LABORATORY AND APPLIANCES.

The facilities for Biological Work at the Summer Biological Laboratory of the Institute were materially increased in 1894 by the erection of a new and commodious laboratory building (36 x 72 feet), designed for the special purposes of the school. The laboratory building stands upon a wharf close by the water, and is provided with all the necessary conveniences for summer work. It contains (1) a general laboratory

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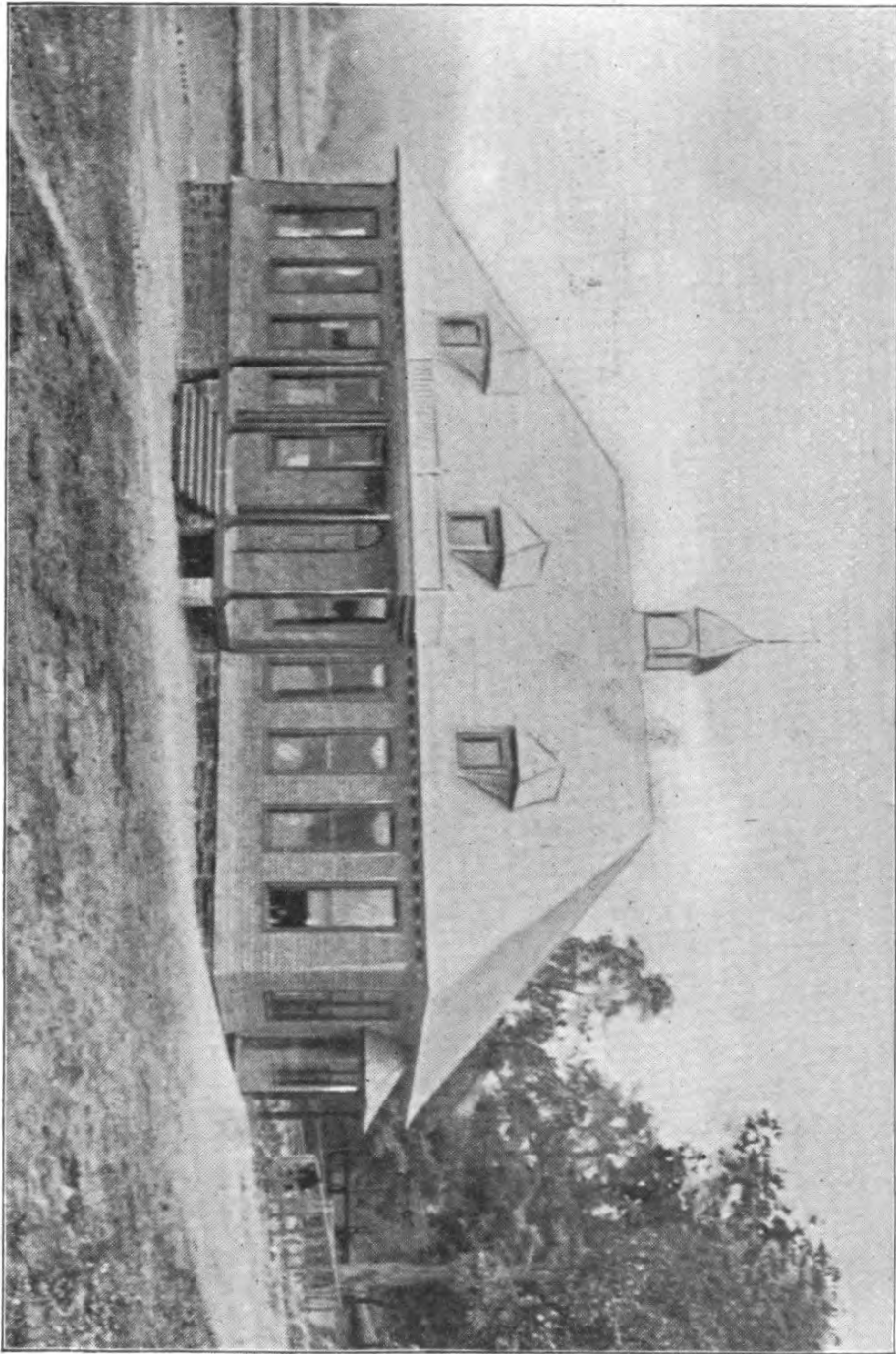
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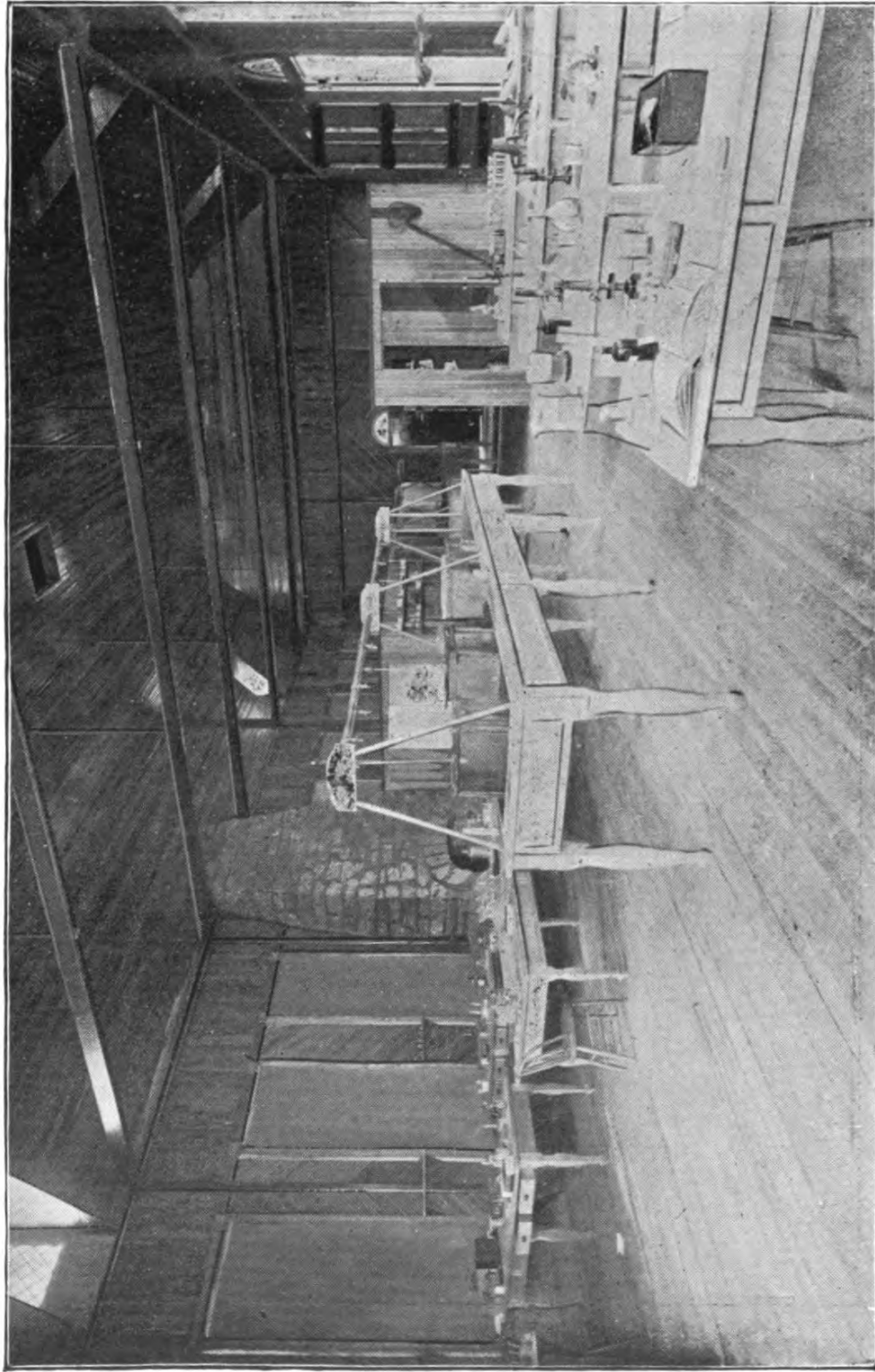
(36 x 40 feet), in which are located tables for students' work, aquaria supplied with running fresh and salt water, and conveniences for lectures and class instruction; (2) six private laboratories, which were assigned to persons who were competent to carry on independent work, and who were, as a rule, engaged in special investigation; (3) a room equipped for and devoted to work in bacteriological technique, such as making cultures, isolating species of bacteria, etc.; (4) a room equipped with apparatus for photographing purposes, including ordinary photography, microscopic photography and the making of lantern slides, and (5) a working library placed at the disposal of the members of the School. In addition the students were furnished with all the necessary apparatus, reagents, etc., for biological work at the seashore. The Laboratory owns a launch provided with apparatus for the collection of material for laboratory work, and small row boats were at the disposal of the School. Near by the main laboratory is a second building, equipped and used for lecture purposes in cases where larger numbers attend the lectures than the general laboratory room will accommodate, or in cases when it is desirable to use the lantern for illustrative purposes. Through the generous hospitality of the New York State Fish Commission portions of the Fish Commission Building were placed at the disposal of the School.

THE PURPOSES OF THE LABORATORY.

The objects of the Laboratory are (1) to furnish a place for general biological instruction, and (2) to offer opportunity for investigation to advanced students.



THE BIOLOGICAL LABORATORY, COLD SPRING HARBOR.—MAIN BUILDING, 72 x 36 FEET.



INTERIOR VIEW OF MAIN LABORATORY BUILDING.
Showing Laboratory Tables and Aquaria.

The first object to which the energies of the School are devoted is to develop a first-class school of biological instruction for students who feel the need of practical study at the seashore and of assistance in their work. For this reason the school at Cold Spring Harbor is especially adapted, first, to college students who have not had extended laboratory work in Biology, or who, having had biological work, desire to supplement this work with the practical study of marine forms in their native condition, and desire to do this under the guidance of instructors; second, to teachers or other students who are desirous of obtaining a practical familiarity with Botany or Zoölogy, to assist them in the work of instruction, or in gaining a practical knowledge of general Biology; third, to medical students whose medical course is so crowded as to make it impossible to include in it any thorough study of biological principles and truths outside of those having direct application to medicine. To such students a general course in Biology proves very valuable, and the work in Bacteriology is of especial advantage; and finally, the school offers facilities for investigation by furnishing private rooms and collecting apparatus to any who are desirous of carrying on research.

COURSES OF INSTRUCTION.

1. *Comparative Embryology*.—A course of daily lectures, accompanied by a laboratory study of the types described. This course is designed for advanced students who have a knowledge of Zoölogy and desire an introduction into the principles of embryology. The course includes an outline of the embryology of the

chief types of invertebrates, and is a proper introduction to advanced work of research. Prof. CONN.

2. *Elementary Zoölogy*.—This course is primarily a teachers' course. It consists of daily lectures upon the chief types of animals, and laboratory work upon the types studied. It is intended for teachers who desire such training in Zoölogy to enable them properly to conduct zoölogical courses in the schools, for elementary students who wish an introduction into the study of Biology, and for all students who desire to supplement previous class work in Zoölogy with a study of the animals themselves. No preliminary training is required. Prof. FERNALD.

3. *Cryptogamic Botany*.—A course of daily lectures, with laboratory work. This course includes a study of the chief types of cryptogams, and introduces the students by practical study to the important groups of flowerless plants. Designed for teachers or students who desire a thorough practical knowledge of botany. Prof. JOHNSON.

4. *Phænogamic Botany*.—Instruction will be given in the morphology and analysis of flowering plants to such as desire instruction in elementary botany as a preparation to teaching. Prof. JOHNSON.

5.—*Bacteriology*.—This course includes a series of fifteen lectures upon the history of Bacteriology, and is accompanied by laboratory work upon bacteriological methods, such as culture making, isolation and characterization of species, staining, study of water bacteria, etc. Designed for medical students and others who wish a general knowledge of this important subject. Prof. CONN.

Each of these courses begins on July 8th and continues for six weeks. In each course emphasis is laid upon laboratory work rather than that of the class room.

In addition to these regular courses, special instruction will be given in microscopic methods, section cutting, mounting, etc., and also in methods of photography.

Original Research.—The laboratory has several private rooms designed for persons engaged in original research. All possible facilities for such work are provided. Collecting apparatus, aquaria, both for fresh and salt water, microscopic apparatus, reagents, etc., are provided by the laboratory. Cold Spring Harbor is excellently well adapted for research of certain kinds, especially for studies upon brackish water types.

Opportunities for collecting material for class work are excellent. All members have free use of the collecting apparatus; but teachers desirous of collecting class material are expected to furnish their own alcohol, since the laboratory is unable to furnish alcohol except at duty paid prices.

Evening Lectures.—A course of popular evening lectures will be given to the members of the laboratory and the friends of the school. These lectures will be by the members of the Board of Instruction and by a number of visitors from various educational institutions. All lectures are designed for a popular audience, and are illustrated by lantern views. The number in attendance on the lectures was on the average eighty-five.

FACILITIES FOR ORIGINAL RESEARCH.

The Laboratory Building contains a number of Private Laboratories that are occupied each season by those engaged in original research. Each Private Laboratory is furnished with an excellent table, lighted abundantly, and with plenty of shelving. Fresh and salt water aquaria are also placed at the exclusive disposal of each one who is engaged in research. The Private Laboratory Fee is \$25.00 a month, or \$50.00 for the season.

The erection of the new dormitory for women during the spring made it necessary to provide a considerable amount of additional furniture for students' rooms. About \$500 was expended on this account.

Subscriptions for the support of the Laboratory during the season of 1895 were made as follows: Mr. EUGENE G. BLACKFORD, \$100; Gen. JOHN B. WOODWARD, \$100; Mrs. JULIA M. DE FOREST, \$100; Dr. OLIVER L. JONES, \$100; Miss JULIA B. DE FOREST, \$25; Dr. H. MESSENGER AYRES, \$25; Hon. ADDISON BROWN, \$10.

The American Association for the Advancement of Science contributed to the Laboratory \$100 to be expended in paying for the use of private Laboratories for the summer. The two Laboratories assigned to the American Association were occupied respectively by Mr. GILMAN DREW, of Johns Hopkins University, Baltimore, and Mr. M. A. CARLTON, of the U. S. Department of Agriculture, Washington.

Messrs. DREW and CARLTON were appointed by the American Association to carry on original research at

the Laboratory during the summer. Mr. CARLTON'S work was upon "Marine Algae and the Uredineae," and Mr. DREW'S upon the "Fresh Water Bryozoa." The results of the researches of Messrs. DREW and CARLTON have been reported to the American Association and will be published.

PERSONS ENGAGED IN ORIGINAL RESEARCH.

Prof. HERBERT W. CONN; Ph. D., Wesleyan University.
 Prof. L. N. JOHNSON, Ph.D., Michigan University.
 Prof. H. T. FERNALD, Ph.D., State College, Pa.
 W. H. C. PYNCHON, Trinity College, Hartford, Conn.
 Prof. J. H. STOLLER, Union College, Schenectady.
 WM. M. ESTEN, Wesleyan University.
 M. A. CARLTON, Department of Agriculture, Washington, D. C.
 GILMAN DREW, Johns Hopkins University, Baltimore, Md.
 J. P. DRAKE, Middletown, Conn.
 F. T. KURT, Middletown, Conn.

STUDENTS IN THE SEVERAL COURSES.

I.—STUDENTS IN COMPARATIVE EMBRYOLOGY.

J. M. RUBINO, 24 East 106th Street,	New York, Columbia College.
J. P. DRAKE,	Middletown, Conn.
J. K. VANDENBURG,	Pottstown, Penn., Hill School.
G. W. NORTON,	Middletown, Conn.
G. L. TIRRELL,	Middletown, Conn.
Miss S. L. ABBOTT,	Middletown, Conn.
Miss L. C. INGLIS,	Middletown, Conn.
A. L. PECKHAM,	Schenectady, N. Y.
Miss F. A. STEBBINS,	226 High Street, Springfield, Mass.

II.—STUDENTS IN CRYPTOGAMIC BOTANY.

J. H. RIDDECK,	Lynchburg, Va.
J. M. RUBINO,	New York.
H. C. BEARDSLEE,	Cleveland, Ohio, University School.
J. K. VANDENBURG,	Pottstown, Pa.
HERBERT H. GLOSSER,	Paoli, Pa.
G. L. TIRRELL,	Middletown, Conn.
Miss S. L. ABBOTT,	Middletown, Conn.
Miss L. C. INGLIS,	Middletown, Conn.
C. M. SHEPARD,	Athens, Ohio.
WM. M. ESTEN,	Middletown, Conn.
Miss F. A. STEBBINS,	Springfield, Mass.

III.—STUDENTS IN ELEMENTARY ZOOLOGY.

J. H. RIDDECK,	Lynchburg, Va.
Miss ALICE DINSMOOR,	Brooklyn, N. Y.
Mrs. GILMAN DREW,	Baltimore, Md.
Mr. H. C. BEARDSLEE,	Cleveland, Ohio.
Mrs. H. C. BEARDSLEE,	Cleveland, Ohio.
HERBERT H. GLOSSER,	Paoli, Pa.
Miss JEANNETTE CLAFLIN,	Toledo, Ohio.
C. M. SHEPARD,	Athens, Ohio.

IV.—STUDENTS IN BACTERIOLOGY.

Miss ALICE DINSMOOR,	Brooklyn, N. Y.
Miss A. E. FANCHER,	Binghamton, N. Y.
Miss JEANNETTE CLAFLIN,	Toledo, Ohio.
Miss S. B. TUCKER,	Durham, Conn.

TUITION, BOARDING AND ROOMS.

The laboratory fee for six or more weeks, including any one course of instruction, the general lectures and the use of laboratory privileges, is \$20.00, and for each

additional course, \$5.00. The private laboratory fee is \$25.00 per month, or \$50.00 for the season.

A new Dining Hall was built in the spring of 1895 for the accommodation of the instructors and students in a building near by the Laboratory. Excellent table board was furnished to all connected with the School at \$4.50 per week.

A new ladies' dormitory was built in the spring of 1895 for the accommodation of thirty students, and a dormitory for gentlemen was also secured in June. Both dormitories are convenient to the Laboratory, Lecture Hall and Dining Hall. Furnished rooms in the Dormitories or in the neighborhood of the Laboratory may be obtained at rates varying from \$1.50 to \$3.00 a week, according to location, size, etc. Where two occupy the same room the expense of board and room was from \$6.00 to \$6.50 per week.

THE WAWEPEX SOCIETY.

The buildings and grounds occupied by the Laboratory are the property of the WAWEPEX SOCIETY of Cold Spring Harbor, a Society founded by Mr. JOHN D. JONES, of New York; and whose purpose it is to promote the increase and diffusion of knowledge in the Natural History Sciences. Through the great liberality of the founder of the Society, the generous action of the Society itself, and the active co-operation and support of its members, the Laboratory buildings and grounds afford most advantageous conditions for biological study and research.