BIOLOGICAL BULLETIN

THE MARINE BIOLOGICAL LABORATORY

Twenty-Second Report; for the Year 1919

Thirty-Second Year

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I. TRUSTEES

EX OFFICIO

Frank R. Lillie, Director, The University of Chicago.
Gilman A. Drew, Assistant Director, Marine Biological Laboratory.
D. Blakely Hoar, Treasurer, 161 Devonshire Street, Boston, Mass.
Gary N. Calkins, Clerk of the Corporation, Columbia University.

To serve until 1923

H. C. Bumpus, Brown University.
W. A. Locy, Northwestern University.
Jacques Loeb, The Rockefeller Institute for Medical Research.
George T. Moore, Missouri Botanical Garden, St. Louis.
L. L. Nunn, Telluride, Colo.
W. J. V. Osterhout, Harvard University.
W. M. Wheeler, Bussey Institution, Harvard University.

To serve until 1922

Cornelia M. Clapp, Mount Holyoke College.
E. G. Conklin, Princeton University.
II. ACT OF INCORPORATION

No. 3170.

COMMONWEALTH OF MASSACHUSETTS

Be It Known, That whereas Alpheus Hyatt, William Sanford Stevens, William T. Sedgwick, Edward G. Gardiner, Susan Minns, Charles Sedgwick Minot, Samuel Wells, William G. Farlow, Anna D. Phillips and B. H. Van Vleck have associated themselves with the intention of forming a Corporation under the name of the Marine Biological Laboratory, for the purpose of establishing and maintaining a laboratory or station for scientific study and investigation, and a school for instruction in biology and natural history, and have complied with the provisions of the statutes of this Commonwealth in
such case made and provided, as appears from the certificate of the President, Treasurer, and Trustees of said Corporation, duly approved by the Commissioner of Corporations, and recorded in this office;

Now, therefore, I, HENRY B. PIERCE, Secretary of the Common-wealth of Massachusetts, do hereby certify that said A. Hyatt, W. S. Stevens, W. T. Sedgwick, E. G. Gardiner, S. Minns, C. S. Minot, S. Wells, W. G. Farlow, A. D. Phillips, and B. H. Van Vleck, their associates and successors, are legally organized and established as, and are hereby made, an existing Corporation, under the name of the MARINE BIOLOGICAL LABORATORY, with the powers, rights, and privileges, and subject to the limitations, duties, and restrictions, which by law appertain thereto.

Witness my official signature hereunto subscribed, and the seal of the Commonwealth of Massachusetts hereunto affixed, this twentieth day of March, in the year of our LORD ONE THOUSAND, EIGHT HUNDRED and EIGHTY-EIGHT.

HENRY B. PIERCE,
Secretary of the Commonwealth.

III. BY-LAWS OF THE CORPORATION OF THE MARINE BIOLOGICAL LABORATORY

I. The annual meeting of the members shall be held on the second Tuesday in August, at the Laboratory, in Woods Hole, Mass., at 12 o'clock noon, in each year, and at such meeting the members shall choose by ballot a Treasurer and a Clerk, who shall be, ex officio, members of the Board of Trustees, and Trustees as hereinafter provided. At the annual meeting to be held in 1897, not more than twenty-four Trustees shall be chosen, who shall be divided into four classes, to serve one, two, three, and four years, respectively, and thereafter not more than eight Trustees shall be chosen annually for the term of four years. These officers shall hold their respective offices until others are chosen and qualified in their stead. The Director and Assistant Director, who shall be chosen by the Trustees, shall also be Trustees, ex officio.

II. Special meetings of the members may be called by the Trustees, to be held in Boston or in Woods Hole at such time and place as may be designated.

III. The Clerk shall give notice of meetings of the members by publication in some daily newspaper published in Boston at least fifteen days before such meeting, and in case of a special meeting the notice shall state the purpose for which it is called.
IV. Twenty-five members shall constitute a quorum at any meeting.

V. The Trustees shall have the control and management of the affairs of the Corporation; they shall present a report of its condition at every annual meeting; they shall elect one of their number President and may choose such other officers and agents as they may think best; they may fix the compensation and define the duties of all the officers and agents; and may remove them, or any of them, except those chosen by the members, at any time; they may fill vacancies occurring in any manner in their own number or in any of the offices. They shall from time to time elect members to the Corporation upon such terms and conditions as they may think best.

VI. Meetings of the Trustees shall be called by the President, or by any two Trustees, and the Secretary shall give notice thereof by written or printed notice sent to each Trustee by mail, postpaid. Seven Trustees shall constitute a quorum for the transaction of business. The Board of Trustees shall have power to choose an Executive Committee from their own number, and to delegate to such Committee such of their own powers as they may deem expedient.

VII. The President shall annually appoint two Trustees, who shall constitute a committee on finance, to examine from time to time the books and accounts of the Treasurer, and to audit his accounts at the close of the year. No investments of the funds of the Corporation shall be made by the Treasurer except approved by the finance committee in writing.

VIII. The consent of every Trustee shall be necessary to dissolution of the Marine Biological Laboratory. In case of dissolution, the property shall be given to the Boston Society of Natural History, or some similar public institution, on such terms as may then be agreed upon.

IX. These By-Laws may be altered at any meeting of the Trustees, provided that the notice of such meeting shall state that an alteration of the By-Laws will be acted upon.

X. Any member in good standing may vote at any meeting, either in person or by proxy duly executed.
IV. THE TREASURER'S REPORT

MARINE BIOLOGICAL LABORATORY BALANCE SHEET, DECEMBER 31, 1919

<table>
<thead>
<tr>
<th>Assets</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Cash in bank</td>
<td>$14,077.69</td>
</tr>
<tr>
<td>Petty cash at Woods Hole</td>
<td>200.00</td>
</tr>
<tr>
<td>Notes receivable (secured)</td>
<td>1,000.00</td>
</tr>
<tr>
<td>Accounts receivable</td>
<td>10,178.23</td>
</tr>
<tr>
<td>Inventories (not available)</td>
<td>131.82</td>
</tr>
<tr>
<td>Items in suspense</td>
<td></td>
</tr>
<tr>
<td>Investments:</td>
<td></td>
</tr>
<tr>
<td>Securities (Schedule I.)</td>
<td>11,768.83</td>
</tr>
<tr>
<td>Cash (Schedule II.)</td>
<td>814.58</td>
</tr>
<tr>
<td>Stock in General Biological Supply Company, Inc.</td>
<td>10,000.00</td>
</tr>
<tr>
<td>Gansett property account</td>
<td>22,559.88</td>
</tr>
<tr>
<td>Less mortgage</td>
<td>14,629.21</td>
</tr>
<tr>
<td></td>
<td>7,930.67</td>
</tr>
<tr>
<td>Educational plant (Schedule III.):</td>
<td></td>
</tr>
<tr>
<td>Land</td>
<td>95,856.14</td>
</tr>
<tr>
<td>Buildings</td>
<td>174,713.44</td>
</tr>
<tr>
<td>Equipment</td>
<td>78,179.37</td>
</tr>
<tr>
<td></td>
<td>348,748.95</td>
</tr>
<tr>
<td>Less reserve for depreciation</td>
<td>28,543.46</td>
</tr>
<tr>
<td></td>
<td>320,205.49</td>
</tr>
<tr>
<td></td>
<td>$376,307.31</td>
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<table>
<thead>
<tr>
<th>Liabilities</th>
<th></th>
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<tbody>
<tr>
<td>Accounts payable accrued (estimated)</td>
<td>$1,300.00</td>
</tr>
<tr>
<td>Notes payable issued in part payment of shares of General Biological Supply Company, Inc.</td>
<td>$4,500.00</td>
</tr>
<tr>
<td>Less amounts paid thereon</td>
<td>2,000.00</td>
</tr>
<tr>
<td></td>
<td>2,500.00</td>
</tr>
<tr>
<td>Notes payable issued on account of purchase of investment securities</td>
<td>2,000.00</td>
</tr>
<tr>
<td>Trust funds</td>
<td>10,583.41</td>
</tr>
<tr>
<td></td>
<td>12,583.41</td>
</tr>
<tr>
<td>Balancing account:</td>
<td></td>
</tr>
<tr>
<td>Balance, January 1</td>
<td>347,558.18</td>
</tr>
<tr>
<td>Special donations</td>
<td>7,500.00</td>
</tr>
<tr>
<td>Excess of income for year (Exhibit B)</td>
<td>4,314.79</td>
</tr>
<tr>
<td>New equipment transferred from expense</td>
<td>559.93</td>
</tr>
<tr>
<td></td>
<td>359,923.90</td>
</tr>
<tr>
<td></td>
<td>$376,307.31</td>
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<tr>
<td>Expense/Income/Gain</td>
<td>Administrative expense</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------</td>
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<tr>
<td>$6,556.84</td>
<td>168.00</td>
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**MARINE BIOLOGICAL LABORATORY, INCOME AND EXPENSE FOR YEAR ENDED DECEMBER 31, 1919**
TREASURER'S REPORT.

MARINE BIOLOGICAL LABORATORY INVESTMENTS (Book Values), December 31, 1919

Reserve Fund

$3,000 American Telephone & Telegraph Company, 4's
(represented by receipts for same as collateral) $2,921.25
500 Western Telephone & Telegraph Company, 5's 496.88
6 shares American Smelting and Refining Company, Preferred (receipt on file) 732.00
8 shares General Electric Company 948.05
14 shares United Shoe Machinery Company, Preferred 393.75
5 shares Massachusetts Gas Companies, Preferred 444.63 $5,936.56

Lucetia Crocker Fund

$300 Liberty Loan Bonds, 4¼'s 300.00
1/5 of $1,000 American Telephone & Telegraph Company, 4's 194.75
18 shares Vermont & Massachusetts Railway Company 2,416.50
1 share American Telephone & Telegraph Company 125.02
3 shares General Electric Company 364.55
1 share West End Street Railway Company 83.00 3,484.12

Library Fund

$300 Liberty Loan Bonds, 4¼'s 300.00
4/5 of $1,000 American Telephone & Telegraph Company, 4's 779.00
3 shares American Telephone & Telegraph Company 375.04
1 share American Smelting and Refining Company, Preferred (receipt on file) 122.00
3 shares General Electric Company 362.10
5 shares United Shoe Machinery Company, Preferred 140.63
3 shares Massachusetts Gas Companies, Preferred 269.38 2,348.15

Total, Exhibit A $11,768.83

January 22, 1920

MR. D. BLAKELY HOAR,
161 Devonshire Street,
Boston.

Dear Sir: We have completed our audit of the accounts of the Marine Biological Laboratory for the year ended December 31, 1919, as kept both at your office in Boston and at Woods Hole, and report thereon in the accompanying exhibits and schedules:

Exhibit A—Balance-Sheet as of December 31, 1919.

B—Income-and-Expense for the Year ended December 31, 1919.
Schedule

I—Investments (Book Values).
II—Cash Receipts and Payments on Account of Investments.
III—Summary of Inventory of Land, Buildings, and Equipment.
IV—Depreciation Reserve.

We certify that, subject to the comments herewith, the balance-sheet and income-and-expense statement shown in Exhibits A and B are in accordance with the books and correct to the best of our knowledge and belief.

Very respectfully,
(Signed) HARVEY S. CHASE & COMPANY,
Certified Public Accountants.

V. THE DIRECTOR'S REPORT

January 1, 1920

To the Trustees of the Marine Biological Laboratory:

Gentlemen: I beg to present herewith a report of the thirty-second session of the Laboratory for the year 1919: The conclusion of the war found the Laboratory with its organization intact and ready to continue its work. It was anticipated that there would probably be a rather slow recovery of ground lost during the war, and we were hardly prepared for an influx of students and investigators that carried the attendance beyond the previous high water mark. The demand for working places by investigators and students was, however, so large that it was necessary to refuse a considerable number of applications. The Laboratory has in fact outgrown its accommodations in all departments.

It is felt by most members of the Laboratory that the student attendance should not be increased, and that the tendency to overcrowding must be dealt with by yet more rigorous requirements. On the research side, the situation is more serious; it is practically impossible to accommodate all well qualified investigators who apply, and the effort to do so results in undue crowding. This situation is aggravated by the fact that the old
wooden buildings, to which the great majority of the investigators must be assigned, are increasingly ill-adapted to the changing requirements of biological research. Another large, firmly constructed, fireproof building has become a necessity.

At the time of the organization of the Division of Biology and Agriculture of the National Research Council, the needs of the Marine Biological Laboratory for additional support were presented by the Director, and a committee of the Division was appointed which investigated the situation and recommended that the National Research Council lend its aid in securing funds for the erection of a new building and for extension of the library. The report was considered by the Executive Committee of the Division and passed on with its approval and endorsement to the Executive board of the Council which functions for the whole organization. The report was then thoroughly considered and heartily approved by the Executive Board.

The support of the National Research Council is thus definitely pledged to our projects for a new building and extension of the library, but this does not relieve us of the necessity of using our own efforts for the attainment of these immediate objects. The National Research Council does not possess funds of its own for such projects, but uses its great influence to reinforce the best projects of scientific research. With such endorsement our efforts should be rewarded more rapidly than we could otherwise expect.

The tabular view of attendance (p. 20) shows a total attendance of 262 (students 128, and investigators 134) which is twenty greater than the previous largest year (1915). This number cannot be exceeded until another laboratory is built. The receipts from students and investigators were $10,545 in 1919 as compared with $8,725 in 1916, $7,850 in 1917, and $6,530 in 1918. The number of subscribing institutions was 47 in 1919; the largest previous number was 40 in 1916; in 1918 the number was 33.

During the year the business of the Supply Department was reorganized in such a way as to charge to it all items, hitherto carried on the books as general expense items, with which it was properly accountable; and as an offset it was credited with
supplies furnished students and investigators, which had previously not been accounted for. It was thought thus to place the department on a sound business basis, so that in its future development no uneasiness might be felt by its expansion. It was found necessary also during the year to raise the general price level 40 per cent., by two successive 20 per cent. increments, over pre-war figures. The items charged to the Department are the following: General expense (including salaries and supplies), administration expense, boat expense, fish trap expense, maintenance of buildings and grounds of the department, proportional share of pumping expense, truck, rental and depreciation. The credits of the Supply Department consist of sales, and (for 1919) a credit of $3,000, the estimated value of material furnished students and investigators. The total income of the Supply Department on this basis for 1919 amounted to $36,671.08, and the total expense to $32,466.21. The previous largest year's business of the Department was $21,096.65 in 1916. Making due allowance for the $3,000 credit in 1919, not previously allowed, and also for the 40 per cent. increase in prices, operative only during the latter half of the year, it will be seen that a most gratifying increase in business was effected.

The development of this department requires additional laboratory space and better winter quarters for the personnel. Therefore with the approval of the Board of Trustees an additional frame building adjacent to the present quarters was begun in the fall of 1919. This building will provide for all the office and preparation work of the Department, and the old building will be used mainly for storage.

Another step in the extension of the Supply Department during the year was purchase of a controlling interest in the General Biological Supply House located in Chicago. This house was organized by Dr. M. M. Wells, formerly Assistant Professor of Zoölogy in the University of Chicago, and is managed entirely by University trained men who can be trusted to maintain high standards. It was hoped to accomplish several purposes by this venture; first, by making Chicago a distributing center for the West considerable savings in time of delivery and in shipping expense can be accomplished; in the second place, new lines of
supplies such as microscopic slides and lantern slides can be developed without enlarging the Woods Hole organization; the market for Woods Hole supplies should also be largely increased by the better attention to marketing that can be given by a strictly business organization.

During the year Dr. H. McE. Knowler, who had acted for many years as librarian offered his resignation. During his term of office the library has undergone its greatest development, and owing to his efforts it has been well arranged and catalogued. The Board of Trustees in accepting Dr. Knowler's resignation instructed the Secretary to express to him the appreciation which all felt of the value of his services to the Laboratory. The office of librarian was filled by the appointment of Dr. R. P. Bigelow, librarian of the Massachusetts Institute of Technology. Mrs. T. H. Montgomery, Jr. was appointed resident assistant librarian in immediate charge of the library. At the meeting of the Corporation August 12, 1919, Professor W. M. Wheeler, of the Bussey Institution, Harvard University, was elected a member of the Board of Trustees of the class of 1923 to succeed Dr. John C. Phillips

Attention is called to the very satisfactory report of the Treasurer (p. 5), and to the list of the Staff, of Investigators and Students, the Tabular View of Attendance, the Subscribing Institutions, the evening lectures, and of the Members of the Corporation which are appended as parts of the Director's report.

1. THE STAFF

1919

FRANK R. LILLIE, Director, Professor of Embryology, and Chairman of the Department of Zoölogy, The University of Chicago.
GILMAN A. DREW, Assistant Director, Marine Biological Laboratory.

ZOÖLOGY

1. INVESTIGATION

GARY N. CALKINS, Professor of Protozoölogy, Columbia University.
E. G. CONKLIN, Professor of Zoölogy, Princeton University.
GILMAN A. DREW, Assistant Director, Marine Biological Laboratory.
GEORGE LÉFEVRE, Professor of Zoölogy, The University of Missouri.
FRANK R. LILLIE, Professor of Embryology, The University of Chicago.
C. E. McCLUNG, Professor of Zoölogy, University of Pennsylvania.
T. H. MORGAN, Professor of Experimental Zoölogy, Columbia University.
E. B. WILSON, Professor of Zoölogy, Columbia University.

II. INSTRUCTION
W. C. ALLEE, Professor of Biology, Lake Forest College.
GEORGE A. BAITSELL, Instructor in Biology, Yale University.
ROBERT H. BOWEN, Graduate Student, Columbia University.
ROBERT CHAMBERS, JR., Cornell University Medical College.
ANN H. MORGAN, Professor of Zoölogy, Mount Holyoke College.
CHARLES L. PARMENTER, Research Fellow, University of Pennsylvania.
W. J. CROZIER, Assistant Professor of Zoölogy, The University of Chicago.

PROTOZOOLOGY
GARY N. CALKINS, Professor of Protozoology, Columbia University.
LOUISE H. GREGORY, Assistant Professor of Zoölogy, Barnard College.

EMBRYOLOGY
I. INVESTIGATION
(See Zoölogy)

II. INSTRUCTION
GILMAN A. DREW, Assistant Director, Marine Biological Laboratory.
CHARLES G. ROGERS, Professor of Comparative Physiology, Oberlin College.
HUBERT B. GOODRICH, Associate Professor of Zoölogy, Wesleyan University.
ELIZABETH A. SMITH, Assistant Professor, University of Wisconsin.
B. H. GRAVE, Professor of Biology, Knox College.

PHYSIOLOGY
I. INVESTIGATION
ALBERT P. MATHEWS, Professor of Biochemistry, The University of Cincinnati.
RALPH S. LILLIE, Professor of Biology, Clark University.
HAROLD C. BRADLEY, Professor of Physiological Chemistry, University of Wisconsin.
II. INSTRUCTION

RALPH S. LILLIE, Professor of Biology, Clark University.
FRANK P. KNOWLTON, Professor of Physiology, Syracuse University.
A. R. MOORE, Professor of Physiology, Rutgers College.

PHILOSOPHICAL ASPECTS OF BIOLOGY AND ALLIED SCIENCES
LECTURES

EDWARD G. SPAULDING, Professor of Philosophy, Princeton University.

BOTANY

I. INVESTIGATION

EDWARD M. EAST, Professor of Experimental Plant Morphology, Harvard University.
ROBERT A. HARPER, Professor of Botany, Columbia University.
E. NEWTON HARVEY, Professor of Physiology, Princeton University.
WINTHROP J. V. OSTERHOUT, Professor of Botany, Harvard University.

II. INSTRUCTION

IVEY F. LEWIS, Professor of Biology, University of Virginia.
WILLIAM D. HOYT, Associate Professor of Biology, Washington and Lee University.
WM. RANDOLPH TAYLOR, Instructor in Botany, University of Pennsylvania.

LIBRARY

H. McE. KNOWER, Professor of Anatomy, University of Cincinnati.
PRISCILLA B. MONTGOMERY, Assistant Librarian.

CHEMICAL SUPPLIES

OLIVER S. STRONG, Assistant Professor of Neurology, College of Physicians and Surgeons, New York City, Chemist.

SUPPLY DEPARTMENT

G. M. GRAY, Curator.
JOHN J. VEEDER, Captain.
E. M. LEWIS, Engineer.
A. W. LEATHERS, Collector.
A. M. HILTON, Collector.
J. McINNIS, Collector.
F. G. GUSTAFSON, Collector in Botany.
EDNA E. WELLS, Clerk.

F. M. MACNAUGHT, Business Manager.
HERBERT A. HILTON, Superintendent of Buildings and Grounds.
2. STUDENTS AND INVESTIGATORS—1919

INDEPENDENT INVESTIGATORS—ZOOLOGY

ACKERT, JAMES E., Professor of Zoology, Kansas State Agricultural College.
ADDISON, WILLIAM H. F., Professor of Normal Histology and Embryology, University of Pennsylvania.
ALLEE, WARDER C., Professor of Biology, Lake Forest College.
ALLEN, EZRA, University of Pennsylvania.
ALLEN, EZRA, University of Pennsylvania.
ALTENBURG, EDGAR, Instructor in Biology, Rice Institute.
BAITSELL, GEORGE A., Assistant Professor of Biology, Yale University.
BECKWITH, CORA J., Associate Professor of Zoology, Vassar College.
BRIDGES, CALVIN B., Research Assistant, Columbia University.
CALKINS, GARY N., Professor of Protozoology, Columbia University.
CHAMBERS, ROBERT, Assistant Professor of Anatomy, Cornell University Medical College.
CHARLTON, HARRY H., Acting Director of Anatomical Dept., Fordham University.
CLAPP, CORNELIA M., Emeritus Professor of Zoology, Mount Holyoke College.
CLARK, ELIOT R., Professor of Anatomy, University of Missouri.
CONKLIN, EDWIN G., Professor of Biology, Princeton University.
COPELAND, MANTON, Professor of Biology, Bowdoin College.
CROZIER, WILLIAM J., Assistant Professor of Zoology, University of Chicago.
CURTIS, MAYNIE R., Associate in Cancer Research, Columbia University.
CURTIS, W. C., Professor of Zoology, University of Missouri.
DANCHAKOFF, VERA, Assistant Professor of Anatomy, College of Physicians and Surgeons.
DAWSON, JAMES A., Yale University.
DONALDSON, HENRY H., Professor of Neurology, Wistar Institute.
DONALDSON, JOHN C., Instructor in Anatomy, University of Cincinnati Medical School.
DREW, GILMAN A., Assistant Director, Marine Biological Laboratory, Woods Hole.
GLASER, OTTO C., Professor of Biology, Amherst College.
GLASER, RUDOLF W., Bussey Institution.
GOODRICH, HUBERT B., Associate Professor of Zoology, Wesleyan University.
GRAVE, BENJAMIN H., Professor of Biology, Knox College.
GRAVE, CASWELL, Professor of Zoology, Washington University.
GREGORY, LOUISE H., Assistant Professor of Zoology, Barnard College.
HEILBRUNN, LEWIS V., Brooklyn, N. Y.
HOLT, CAROLINE M., Assistant Professor of Biology, Simmons College.
HYMAN, LIBBIE H., Research Assistant, University of Chicago.
KINDRED, JAMES E., Instructor in Biology, Western Reserve University.
KNOWER, HENRY McE., Professor of Anatomy, University of Cincinnati.
LEFÈVRE, GEORGE, Professor of Zoology, University of Missouri.
LEWIS, WARREN H., Research Associate, Carnegie Institution of Washington.
LEWIS, MRS. WARREN H., Baltimore, Md.
LILLIE, FRANK R., Chairman, Department of Zoology, University of Chicago.
LOEB, LEO, Professor of Comparative Pathology, Washington University.
DIRECTOR'S REPORT.

MALONE, EDWARD F., Professor of Histology, University of Cincinnati.
MAST, SAMUEL O., Professor of Zoology, Johns Hopkins University.
MAYOR, JAMES W., Professor of Zoology, Union College.
MCCLUNG, CLARENCE E., Chairman Division of Biology and Agriculture, National Research Council.
METCALF, MAYNARD M., Oberlin College.
MORGAN, ANN H., Professor of Zoology, Mount Holyoke College.
MORGAN, THOMAS H., Professor of Experimental Zoology, Columbia University.
MORRILL, CHARLES V., Instructor in Anatomy, Cornell Medical College.
MULLER, HERRMANN J., Instructor, Columbia University.
NABOURS, ROBERT K., Professor of Zoology, Kansas Agricultural College.
PARMENTER, CHARLES L., Instructor, University of Pennsylvania.
PATTEN, WILLIAM, Professor of Biology, Dartmouth College.
PINNEY, MARY E., Professor of Biology, Lake Erie College.
PLOUGH, HAROLD H., Associate Professor of Biology, Amherst College.
RICHARDS, A., Professor of Zoology, Wabash College.
ROGERS, CHARLES G., Professor of Comparative Physiology, Oberlin College.
SCHRADER, FRANZ, Columbia University.
SMITH, ELIZABETH A., Assistant Professor, University of Wisconsin.
SPAULDING, EDWARD G., Professor of Philosophy, Princeton University.
SPEIDEL, CARL C., Professor, St. Lawrence University.
STOCKARD, CHARLES R., Professor of Anatomy, Cornell University Medical College.
STURTEVANT, ALFRED H., Research Assistant, Columbia University.
WEINSTEIN, ALEXANDER, Investigator, Carnegie Institution.
WHEDON, ARTHUR D., Instructor in Zoology, University of Pennsylvania.
WHITING, PHINEAS W., Professor of Biology, Franklin and Marshall College.
WIEMAN, HARRY L., Professor of Zoology, University of Cincinnati.
WILSON, EDWARD B., Professor of Zoology, Columbia University.

BEGINNING INVESTIGATORS—ZOOLOGY

ADAMS, A. ELIZABETH, Associate Professor of Zoology, Mount Holyoke College.
ANDERSON, E. G., Instructor, Cornell University.
BOWEN, ROBERT H., Graduate Student, Columbia University.
BROCKETT, DOLORES, Technical Assistant, University of Chicago.
BROWN, ALBERT M., Columbia University.
DANIELS, HELEN, Assistant, Columbia University.
GOODRICH, CLARA C., Middletown, Conn.
HUETTNER, ALFRED F., Assistant in Zoology, Columbia University.
KNEELAND, VIRGINIA, Student, College of Physicians and Surgeons.
LANCEFIELD, DONALD E., Assistant in Zoology, Carnegie Institution.
MASON, ELEANOR D., Assistant, Carnegie Institution, Cold Spring Harbor.
MATSUM, KENKICHI, Imperial College of Agriculture, Japan.
NONIDEZ, JOSE F., Research Associate, Carnegie Institution.
PATTEN, MARY W., Assistant, Yale University.
PEARCE, CHARLOTTE C., Blauvelt, N. Y.
PHILLIPS, RUTH L., Professor of Biology, Western College for Women.
REED, PHOEBE C., Assistant, Carnegie Institution.
RICHTER, MAURICE N., Student, Columbia University.
SAFIR, SHELLEY R., Teacher, Stuyvesant High School, New York City.
SHAFER, ELMER L., Procter Fellow in Biology, Princeton University.
WALLACE, EDITH M., Research Assistant, Columbia University.
WILLIER, BENJAMIN H., University of Chicago.

INDEPENDENT INVESTIGATORS—PHYSIOLOGY
BALDWIN, FRANCIS M., Assistant Professor, Iowa State College.
BRADLEY, HAROLD C., Professor of Physiological Chemistry, University of Wisconsin.
CLOWES, G. H. A., Director and Consulting Chemist, Research Laboratory, Eli Lilly & Co.
EDEWRS, DAYTON J., Lecturer in Physiology, Cornell University Medical College.
ELLIS, FREDERICK W., Monson, Mass.
FORBES, ALEXANDER, Instructor in Physiology, Harvard Medical School.
GARREY, WALTER E., Professor of Physiology, Tulane University.
HARVEY, E. NEWTON, Professor of Physiology, Princeton University.
HECHT, SELIG, Assistant Professor, Creighton University.
HYDE, Ida H., Professor of Physiology, University of Kansas.
IRWIN, MARIAN, Radcliffe College.
JUST, E. E., Professor of Physiology, Howard University.
KNOWLTON, F. P., Professor of Physiology, Syracuse University.
LILLIE, RALPH S., Professor of Biology, Clark University.
LOEB, JACQUES, Head of Division of Experimental Biology, Rockefeller Institute.
LYON, ELIAS P., Professor of Physiology, University of Minnesota.
MATHEWS, ALBERT P., Professor of Biochemistry, University of Cincinnati.
MAXWELL, S. S., Associate Professor of Physiology, University of California.
MOORE, A. R., Professor of Physiology, Rutgers College.
PRATT, FREDERICK H., Honorary Fellow in Biology, Clark University.
REDFIELD, ALFRED C., Assistant Professor, University of Toronto.
SPAETH, REYNOLD A., Associate in Physiology, Johns Hopkins University.
WARREN, HOWARD C., Professor of Psychology, Princeton University.
WOODWARD, ALVALYN E., Instructor, Simmons College.

BEGINNING INVESTIGATORS—PHYSIOLOGY
BRAY, A. W. L., Assistant Professor of Biology, Montana University.
BRIGHT, ELIZABETH M., Research Assistant, Harvard Medical School.
CATELL, MCKEEN, Teaching Fellow, Harvard Medical School.
FEIBERG, JOSEPH A., Medical College, University of Cincinnati.
GREISHEIMER, ESTHER M., Instructor, University of Minnesota.
KEITH, LUCILE G., Research Chemist, Eli Lilly & Co.
OBRESHKOVE, VASIL, Student, Harvard University.
OLMSTED, JAMES, Assistant in Zoology, Harvard University.
POND, SAMUEL E., Fellow, Clark University.
SAMPSON, MYRA M., Assistant Professor, Smith College.
STARR, ISAAC, JR., University of Pennsylvania.
STONE, AMY E., Radcliffe College.

INDEPENDENT INVESTIGATORS—BOTANY
BROOKS, SUMMER C., Research Fellow, Harvard Medical School.
FENN, WALLACE O., Harvard Medical School.
DIRECTOR'S REPORT.

HARPER, ROBERT A., Professor of Botany, Columbia University.
HAZEN, TRACY E., Assistant Professor of Botany, Columbia University.
HOYT, WILLIAM D., Associate Professor of Biology, Washington and Lee Univ.
LEWIS, IVEY F., Professor of Biology, University of Virginia.
OSTERHOUT, WINTHROP J. V., Professor of Botany, Harvard University.

BEGINNING INVESTIGATORS—BOTANY

Brooks, Mrs. S. C., Boston, Mass.
Gluck, Marguerite L., Columbia University.
Holland, Dorothy F., Summit, N. J.
Taylor, William R., Instructor in Botany, University of Pennsylvania.

1919

STUDENTS

ZOÖLOGY

Adams, Kathrene, Student, Radcliffe College.
Allen, Agnes L., Student, Mount Holyoke College.
Avins, Emma R., Student, Oberlin College.
Barnes, Cornelia L., Student, Mount Holyoke College.
Beck, Elizabeth B., Student, University of Chicago.
Belcher, Frances E., Barnard College.
Benner, Robert W., Heidelberg University.
Bergner, Dorothy, Student, Goucher College.
Blanchard, Elnora R., Student, Simmons College.
Buffum, Clarissa G., Student, Mount Holyoke College.
Case, Muriel A., Hartford, Conn.
Dowden, Florence V., Fairmont, W. Va.
Ellis, Lawrence B., Student, Harvard University.
Ellis, Mildred, Student, Radcliffe College.
Falk, Isidore S., Assistant, Department of Public Health, Yale University.
Fleming, Mrs. George W., 1000 Park Ave., New York City, N. Y.
Gould, Alice, Student, Mount Holyoke College.
Harris, Harriet E., Lake Forest College.
Hay, Dorothy A., Student, Sophie Newcomb College.
Hill, Ruth, Brooklyn, N. Y.
Hilborn, Edith L., Student, Knox College.
Hoadley, Leigh, Student, University of Michigan.
Hoffman, Agnes, Lake Forest College.
Johnson, Helen G., Biology Teacher, Hartford High School.
Keller, Nelle, Vassar College.
Lillie, Margaret H., Student, University of Chicago.
McClung, Ruth C., Student, University of Pennsylvania.
McDonald, Helen E., Butler College.
Mangam, Elizabeth, Smith College.
MAYER, Erna H., Vassar College.
MEKKEL, Amy G., Instructor in Zoology, Cornell University.
MILLS, Ruth L., Student, Knox College.
MUNRO, Carol W., University of Wisconsin.
NICHOLAS, John S., Yale University.
Pierce, Dorothy R., Student, Mount Holyoke College.
ROCK, Marian, Student, Sophie Newcomb College.
ROTHEMEL, Julia E., Student, Mount Holyoke College.
Scribner, Agnes E., Amherst, Mass.
SHELDON, Margaret, Student, Oberlin College.
SMITH, Catharine, Smith College.
SPRINGER, Mary G., Student, Oberlin College.
ST. CLAIR, Harriet W., Student, Vassar College.
STACEY, Helen R., Simmons College.
STERNBERG, Lillian, Student, Barnard College.
Summerill, Verna B., Student, Goucher College.
TOWNSEND, Eric B., Student, Swarthmore College.
Tyler, Jocelyn, Student, Oberlin College.
WATT, Lucy J., Western College for Women.
WATTS, Margaret V., Student, Hunter College.
White, Clarissa D., Barnard College.
Wilder, Isabelle M., Student, Wheaton College.
Wondergem, Henry E., Student, University of Rochester.
WOODBRIDGE, Helen, Student, Mount Holyoke College.
Zoeller, Adelaide M., Student, Sophie Newcomb College.

PROTOZOÖLOGY

Agersborg, Helmer P. K., Instructor, Long Island College Hospital.
Bell, Mary M., Instructor, Wellesley College.
Cutright, Frank, West Virginia Wesleyan College.
Finley, Charles W., Lincoln School of Teachers College, New York.
Fisher, Mary J., Instructor in Zoology, Cornell University.
Montanus, John J., Columbia University.
Nute, Bertha E., Torrington, Conn.
Rhodes, Robert C., Professor of Biology, Emory University.
Shields, Walter J., Columbia University.
Shumway, Waldo, Assistant Professor of Biology, Dartmouth College.
Stockman, Charles C., 2d, Instructor in Public Health, Yale University.
Stunkard, H. W., Assistant Professor, University of Illinois.
Warren, Herbert S., College of the City of New York.
Whiting, Anna Y., 834 Marietta Ave., Lancaster, Pa.
Young, Donnell B., North Hanover, Mass.

EMBRYOLOGY

Anderson, Ethel L., Mount Holyoke College.
Ball, Ruth J., Student, University of Vermont.
BEEKLEY, Catharine W., 40 West 85th St., New York City.
Brown, Susan W., Graduate Assistant, University of Missouri.
Brown, Leland A., Student, Denison University.
DIRECTOR'S REPORT.

Closson, Mary B., Student, Ursinus College.
Conklin, Mary, Goucher College.
Daniels, Manning S., Student, Denison University.
Driver, Charles S., Weyers Cave, Va.
Ebeling, Karl W., Johns Hopkins University.
Elliott, Margaret, Knox College.
Folger, Harry T., Assistant, Indiana University.
Freas, Ella M., Mount Holyoke College.
Gates, Gordon E., Foxcroft, Maine.
Gilson, Arthur S., Jr., Dartmouth College.
Greene, Lois D., Student, Grinnell College.
Heizer, Helen S., Student, Radcliffe College.
Hunter, Isabelle L., Student, Simmons College.
Kimball, Mary A., Student Simmons College.
Kreidel, George A., Instructor, St. Joseph's Seminary.
Lang, Dorothy M., University of Vermont.
Lagemann, Anna E., Student, Barnard College.
Morris, Ruth M., Wellesley College.
Roehm, Hilda E., Wellesley College.
Stehle, Mabel E., Instructor in Zoology, Clemson College.
Stevens, Kenneth P., Wesleyan University.
Stewart, Walter B., Student, Princeton University.
Swett, Francis H., Laboratory Assistant, Yale University.
Tuers, Russell V., Instructor in Biology, New York University.
Uhlemeyer, Bertha, Assistant in Zoology, Washington University.
Waterman, Harriet C., Assistant, Vassar College.
Wheatley, Marjorie A., Laboratory Assistant, New York State Dept. of Health.
White, Gertrude M., Instructor, Carnegie Institute of Technology.

PHYSIOLOGY

Brunswick, David, Harvard Medical School.
Clinton, Isabella M., Woman's Medical College of Pennsylvania.
Dzushi, Hisatake, Student, Amherst College.
Eisenberger, John P., Instructor in Physiology, University of Buffalo.
Gutmann, James, Columbia University.
Gutman, Margaret B., Smith College.
Harrison, Bruce M., Assistant Professor of Zoology, Iowa State College.
Hosmer, Helen R., Cleveland, Ohio.
Howard, Frederick H., Professor of Physiology, Williams College.
Jamison, George W., Student, Franklin and Marshall College.
Maccarthy, Kathleen S., Teacher, Hunter College.
Morton, Margaret V., Student, Bryn Mawr College.
Okey, Catherine W., Instructor in Biology, Western College for Women.
Silverberg, William V., Columbia University.
Spero, Sterling D., Columbia University.
Strang, James M., Massachusetts Institute of Technology.
Sykes, George F., Professor, Oregon Agricultural College.

BOTANY

Dowell, Ruth I., Student, Smith College.
Esty, Frances F., Student, Vassar College.
3. TABULAR VIEW OF ATTENDANCE

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INSTITUTIONS REPRESENTED—

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SCHOOLS AND ACADEMIES REPRESENTED.

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4. SUBSCRIBING INSTITUTIONS—1919

Amherst College
Barnard College
Bowdoin College
Bryn Mawr College
Butler College
DIRECTOR'S REPORT.

Carnegie Institution of Washington
College of Physicians and Surgeons
Columbia University
Cornell University Medical College
Creighton University
Dartmouth College
Goucher College
Harvard University
Harvard University Medical School
Hunter College (Else Serlinghaus Scholarship)
Indiana University
Johns Hopkins University
Kansas State Agricultural College
Lake Forest College
Eli Lilly & Co.
Mount Holyoke College
New York University
Oberlin College
Princeton University
Radcliffe College
Rice Institute
Rockefeller Institute for Medical Research
Simmons College
Smith College
Sophie Newcomb College
University of Chicago
University of Cincinnati
University of Illinois
University of Kansas
University of Michigan
University of Missouri
University of Pennsylvania
University of Rochester
University of Vermont
University of Wisconsin
Vassar College
Wesleyan University
Western Reserve University
Wheaton College
Wistar Institute for Anatomy and Biology
Wellesley College
Yale University
5. EVENING LECTURES, 1919

Tuesday, July 8,
Dr. Robert Chambers.............. "Physical Properties of Protoplasm as Demonstrated by Microdissection."

Friday, July 11,
Dr. R. A. Emerson.............. "The Contribution of Genetics to Studies of Endosperm Development."

Tuesday, July 15,
Dr. E. N. Harvey.............. "Bioluminescence" with Demonstrations.

Friday, July 18,
Dr. G. H. A. Clowes.............. "Mustard and Other War Gases; their Penetration, Mode of Action and Counteraction in the Body."

Tuesday, July 22,
Dr. W. T. Bovie.............. "The Action of Rays on Protoplasm."

Thursday, July 24,
Dr. E. S. Morse.............. "The Experiences of a Collector."

Friday, July 25,
Dr. C. F. W. McClure.............. "The Analysis of Experimental Edema in the Anura."

Tuesday, July 29,
Dr. Frank M. Chapman.............. "The Distribution of Bird Life in the Andes."

Friday, Aug. 1,
Dr. L. J. Henderson.............. "The Equilibrium between Oxygen and Carbonic Acid in Blood."

Tuesday, Aug. 5,
Dr. C. E. McClung.............. "Co-operation in Science, and the National Research Council."

Thursday, Aug. 7,
Mr. W. Lyman Underwood.............. "Hunting with Canoe and Camera in New Brunswick."
Friday, Aug. 8,
DR. SELIG HECHT............."The Nature of the Sensitivity of Animals to Light."

Monday, Aug. 11.
DR. CHRISTO A. DAKO........."Albanian Rights and Claims to Independence."

Tuesday, Aug. 12,
DR. R. A. HARPER............"Some Studies of Morphogenesis in Coenobic Plants."

Thursday, Aug. 14,
MISS ANNA NOVAKOVA..........."New Czecho Slovak State."
LIEUT. PECK.................."Conditions in Central Europe."

Friday, Aug. 15.
DR. R. CONSTANTIAN.........."Constantinople."

6. MEMBERS OF THE CORPORATION

Life Members

ALLIS, MR. E. P., JR., Palais Carnoles, Menton, France.
ANDREWS, MRS. GWENDOLEN FOULKE, Baltimore, Md.
BILLINGS, MR. R. C., 66 Franklin St., Boston, Mass.
CAREY, MR. ARTHUR ASTOR, Fayerweather St., Boston, Mass.
CLARKE, PROF. S. F., Williamstown, Mass.
CONKLIN, PROF. EDWIN G., Princeton University, Princeton, N. J.
DAVIS, MAJOR HENRY M., Syracuse, N. Y.
EVANS, MRS. GLENDOWER, 12 Otis Place, Boston, Mass.
FAY, MISS S. B., 88 Mt. Vernon St., Boston, Mass.
FOLSOM, MISS AMY, 88 Marlboro St., Boston, Mass.
FOOT, MISS KATHERINE, 955 Park Ave., New York City, N. Y.
GARDINER, MRS. E. G., Woods Hole, Mass.
GARDINER, MISS EUGENIA, 15 W. Cedar St., Boston, Mass.
JACKSON, MISS M. C., 88 Marlboro St., Boston, Mass.
JACKSON, MR. CHAS. C., 24 Congress St., Boston, Mass.
Kidder, Mr. C. G., 27 William St., New York City, N. Y.
Kidder, Mr. Nathaniel T., Milton, Mass.
King, Mr. Chas. A.
Lee, Mrs. Frederic S., 279 Madison Ave., New York City, N. Y.
Lowell, Mr. A. Lawrence, 17 Quincy St., Cambridge, Mass.
Marrs, Mrs. Laura Norcross, 9 Commonwealth Ave., Boston, Mass.
Mason, Miss E. F., 1 Walnut St., Boston, Mass.
Mason, Miss Ida M., 1 Walnut St., Boston, Mass.
Means, Mr. James Howard, 196 Beacon St., Boston, Mass.
Merriman, Mrs. Daniel, 73 Bay State Road, Boston, Mass.
Minns, Miss Susan, 14 Louisburg Square, Boston, Mass.
Minns, Mr. Thomas, 14 Louisburg Square, Boston, Mass.
Morgan, Mr. J. Pierpont, Jr., Wall and Broad Sts., New York City, N. Y.
Morgan, Prof. T. H., Columbia University, New York City, N. Y.
Morgan, Mrs. T. H., New York City, N. Y.
Noyes, Miss Eva J.
Nunn, Mr. Lucian L., Telluride, Colo.
Osborn, Prof. Henry F., American Museum of Natural History, New York City, N. Y.
Phillips, Dr. John C., Windy Knob, Wenham, Mass.
Porter, Dr. H. C., University of Pennsylvania, Philadelphia, Pa.
Pulsifer, Mr. W. H., Newton Center, Mass.
Rogers, Miss A. P., 5 Joy St., Boston, Mass.
Sears, Dr. Henry F., 86 Beacon St., Boston, Mass.
Shedd, Mr. E. A.
Smith, Mrs. C. C., 286 Marlboro St., Boston, Mass.
Thorndike, Dr. Edward L., Teachers College, Columbia University, New York City, N. Y.
Trelease, Prof. William, University of Illinois, Urbana, Ill.
Ware, Miss Mary L., 41 Brimmer St., Boston, Mass.
Whitney, Mr. Henry M., Brookline, Mass.
Wilcox, Miss Mary A., Wellesley College, Wellesley, Mass.
Williams, Mrs. Anna P., 505 Beacon St., Boston, Mass.
DIRECTOR’S REPORT.

25

WILSON, Dr. E. B., Columbia University, New York City, N. Y.

7. CORPORATION MEMBERSHIP LIST

AUGUST, 1919

ADDISON, Dr. W. H. F., University of Pennsylvania Medical School, Philadelphia, Pa.
ADAMS, Miss A. E., Mount Holyoke College, South Hadley, Mass.
AGERSBORG, Mr. H. P. K., Hoagland Laboratory, Long Island College Hospital, Brooklyn, N. Y.
ALLEE, Dr. W. C., Lake Forest College, Lake Forest, Ill.
ALLEN, Prof. Ezra, Ursinus College, Collegeville, Pa.
ALLYN, Miss Harriet M., Hackett Medical College, Canton, China.
ALSBERG, Dr. C. S., U. S. Dept. of Agriculture, Washington, D. C.
ALTENBURG, Dr. Edgar, Rice Institute, Houston, Texas.

BAITSELL, Dr. George A., Yale University, New Haven, Conn.
BAKER, Mrs. L. D., 123 Chiswick Road, Boston, Mass.
BAKER, Dr. E. H., American Institute of Science, Chicago, Ill.
BALDWIN, Dr. F. M., Iowa State College, Ames, Iowa.
BANCROFT, Prof. F. W., Aloha Farm, Concord, Calif.
BECKWITH, Miss Cora J., Vassar College, Poughkeepsie, N. Y.
BEHRE, Miss Elinor H., Sophie Newcomb Memorial College, New Orleans, La.
BIGELOW, Prof. M. A., Teachers College, Columbia University, New York City.
BINFORD, Prof. Raymond, Guilford College, Guilford College, N. C.
BORING, Miss Alice M., Union Medical College, Peking, China.
BOX, Miss Cora May, University of Cincinnati, Cincinnati, Ohio.
BOWEN, Dr. Robert H., Columbia University, New York City, N. Y.
BRADLEY, Prof. HAROLD C., University of Wisconsin, Madison, Wis.
BRIDGES, Dr. CALVIN B., Columbia University, New York City.
BRUMFIEL, Dr. DANIEL M., University of Iowa, Iowa City, Iowa.
BUCKINGHAM, Miss EDITH N., 342 Marlboro St., Boston, Mass.
BUDINGTON, Prof. R. A., Oberlin College, Oberlin, Ohio.
BUMPUS, Prof. H. C., 70 Carleton Road, Waban, Mass.
BYRNES, Dr. ESTHER F., 193 Jefferson Ave., Brooklyn, N. Y.

CALKINS, Prof. GARY N., Columbia University, New York City.
CALVERT, Prof. PHILIP P., University of Pennsylvania, Philadelphia, Pa.
CARLSON, Prof. A. J., University of Chicago, Chicago, Ill.
CAROTHERS, Miss ELEANOR E., University of Pennsylvania, Philadelphia, Pa.
CARVER, Prof. GAIL L., West Lake, Ga.
CARY, Dr. L. R., Princeton University, Princeton, N. J.
CASTEEL, Dr. D. B., University of Texas, Austin, Texas.
CATTELL, Prof. J. McKEEN, Garrison-on-Hudson, N. Y.
CATTELL, Mr. McKEEN, Harvard Medical School, Boston, Mass.
CHAMBERS, Dr. ROBERT, JR., Cornell University Medical College, New York City, N. Y.
CHARLTON, Mr. HARRY H., Osborn Zoological Laboratory, Yale University, New Haven, Conn.
CHESTER, Prof. WEBSTER, Colby College, Waterville, Maine.
CHIDESTER, Prof. F. E., West Virginia University, Morgantown, W. Va.
CHILD, Prof. C. M., University of Chicago, Chicago, Ill.
CLAPP, Prof. CORNELIA M., Mount Holyoke College, South Hadley, Mass.
CLARK, Prof. E. R., University of Missouri, Columbia, Mo.
CLOWES, Prof. G. H. A., Eli Lilly Co., Indianapolis, Ind.
COE, Prof. W. R., Yale University, New Haven, Conn.
COHN, Dr. EDWIN J., 1063 Madison Ave., New York City.
COLE, Dr. LEON J., College of Agriculture, Madison, Wis.
COLTON, Prof. H. S., Ardmore, Pa.
COOLOGINGE, Mr. C. A., Ames Building, Boston, Mass.
COPELAND, Prof. MANTON, Bowdoin College, Brunswick, Maine.
DIRECTOR'S REPORT.

COUTANT, MRS. MARY W., 1058A Sterling Place, Brooklyn, N. Y.
Cowdry, Dr. E. V., Union Medical College, Peking, China.
Crampton, Prof. H. E., Barnard College, Columbia University,
New York City.
Crane, MRS. C. R., Woods Hole, Mass.
Curtis, Prof. W. C., University of Missouri, Columbia, Mo.
Curtis, Dr. Maynie R., Crocker Laboratory, Columbia Uni-
versity, New York City.

Danchakoff, Mme. Vera, College of Physicians and Surgeons,
New York City.
Davis, Mr. Donald W., College of William and Mary, Williams-
burg, Va.
Davis, Prof. Bradley M., University of Michigan, Ann Arbor,
Mich.
Derick, Prof. Carrie M., McGill University, Montreal Canada.
Dexter, Dr. J. S., University of Saskatchewan, Saskatoon,
Saskatchewan.
Dodds, Prof. G. S., Medical School, University of West Virginia,
Morgantown, W. Va.
Donaldson, Prof. H. H., Wistar Institute of Anatomy and
Biology, Philadelphia, Pa.
Donaldson, Dr. John C., University of Cincinnati, Cincinnati,
Ohio.
Drew, Prof. Gilman A., Marine Biological Laboratory, Woods
Hole, Mass.
Dungay, Dr. Neil S., Carleton College, Northfield, Minn.
Dunn, Dr. Elizabeth H., Woods Hole, Mass.

Edwards, Dr. D. J., Cornell University Medical College, New
York City.
Eigenmann, Prof. C. H., University of Indiana, Bloomington,
Ind.
Ellis, Dr. F. W., Monson, Mass.

Farnum, Miss Louise W., 43 Hillhouse Ave., New Haven, Conn.
Field, Miss Hazel E., H. Sophie Newcomb Memorial College,
New Orleans, La.
FIELD, Prof. Irving, 19 Stoneland Road, Worcester, Mass.
FINLEY, Dr. Charles W., Lincoln School, New York City.
FISH, Mr. J. Burton, Boys' High School, Brooklyn, N. Y.
FISHER, Miss Mary J., Cornell University, Ithaca, N. Y.

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