BIOLOGICAL BULLETIN

THE MARINE BIOLOGICAL LABORATORY.

Twenty-sixth Report, for the Year 1923, Thirty-sixth Year.

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I. TRUSTEES (AS OF AUGUST 14, 1923).

EX OFFICIO.

FRANK R. LILLIE, Director, The University of Chicago.

GILMAN A. DREW, Assistant Director, Marine Biological Laboratory.

WILLIAM H. DUNBAR, Treasurer, 161 Devonshire Street, Boston, Mass.1

GARY N. CALKINS, Clerk of the Corporation and Secretary of the Board of Trustees Columbia University.

EMERITUS.

CORNELIA M. CLAPP, Mount Holyoke College.

1 Mr. Dunbar resigned as Treasurer, January 7, 1924, and Mr. Lawrason Riggs, Jr., 25 Broad St., New York City, was elected by the Trustees in his stead.
TO SERVE UNTIL 1927.

H. C. Bumpus, Brown University.
W. C. Curtis, University of Missouri.
Jacques Loeb,1 The Rockefeller Institute for Medical Research.
George T. Moore, Missouri Botanical Garden, St. Louis.
W. J. V. Osterhout, Harvard University.
J. R. Schramm, Cornell University and National Research Council.
L. L. Woodruff, Yale University.

TO SERVE UNTIL 1926.

E. G. Conklin, Princeton University.
Otto C. Glaser, Amherst College.
Ross G. Harrison, Yale University.
H. S. Jennings, Johns Hopkins University.
F. P. Knowlton, Syracuse University.
M. M. Metcalf, Oberlin, Ohio.
William Patten, Dartmouth College.
W. B. Scott, Princeton University.

TO SERVE UNTIL 1925.

C. R. Crane, New York City, President of the Corporation.
I. F. Lewis, University of Virginia.
R. S. Lillie, Nela Research Laboratories.
E. P. Lyon, University of Minnesota.
C. E. McClung, University of Pennsylvania.
T. H. Morgan, Columbia University.
D. H. Tennent, Bryn Mawr College.
E. B. Wilson, Columbia University.

TO SERVE UNTIL 1924.

H. H. Donaldson, Wistar Institute of Anatomy and Biology.
W. E. Garrey, Tulane University.
Caswell Grave, Washington University.
M. J. Greenman, Wistar Institute of Anatomy and Biology.
A. P. Mathews, The University of Cincinnati.
G. H. Parker, Harvard University.
C. R. Stockard, Cornell University Medical College.

Executive Committee of the Board of Trustees.

Frank R. Lillie, Ex. off. Chairman.
Gilman A. Drew, Ex. off.

1 Deceased.
E. G. CONKLIN, to serve until 1926.
W. E. GARREY, to serve until 1925, Secretary.
H. H. DONALDSON, to serve until 1924.

The Library Committee.
C. E. McClung, Chairman, University of Pennsylvania.
M. H. Jacobs, University of Pennsylvania.
E. E. Just, Howard University.
M. M. Metcalfe, Oberlin, Ohio.
J. R. Schramm, Cornell University and National Research Council.

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 Commonwealth 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.

1. 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
IV. THE REPORT OF THE TREASURER.

Harvey L. Chase & Company,
84 State Street, Boston.

February 5, 1924.

WILLIAM H. DUNBAR, ESQ.,
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, 1923, and report thereon in the accompanying exhibits and schedules:

Exhibit A—Balance-Sheet as of December 21, 1923.
Exhibit B—Income-and-Expense for the Year ended December 31, 1923.
Schedule I—Investments (Book Values).
Schedule II—Cash Receipts and Disbursements on Account of Funds.
Schedule III—Land, Buildings, and Equipment.
Schedule IV—Supply Department Income-and-Expense Account for the Year ended December 31, 1923.

Only a part of the audit is included in this report. The complete audit is on file at the Laboratory, and may be examined by any member.
Schedule V—Analysis of Plant Costs and Fire Insurance in Force.

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,
(Sgd.) HARVEY L. CHASE & COMPANY,
Certified Public Accountants.

MARINE BIOLOGICAL LABORATORY BALANCE SHEET,
DECEMBER 31, 1923.

<table>
<thead>
<tr>
<th>Assets</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash:</td>
<td></td>
</tr>
<tr>
<td>In bank</td>
<td>$1,332.49</td>
</tr>
<tr>
<td>Petty Cash Fund</td>
<td>200.00</td>
</tr>
<tr>
<td></td>
<td>$1,532.49</td>
</tr>
<tr>
<td>Accounts receivable</td>
<td>16,239.42</td>
</tr>
<tr>
<td>Inventories</td>
<td></td>
</tr>
<tr>
<td>Supply department</td>
<td>22,459.15</td>
</tr>
<tr>
<td>Biological Bulletin</td>
<td>3,528.37</td>
</tr>
<tr>
<td></td>
<td>25,987.52</td>
</tr>
<tr>
<td>Investments</td>
<td></td>
</tr>
<tr>
<td>Securities (Schedule I)</td>
<td>12,151.12</td>
</tr>
<tr>
<td>Less Loan</td>
<td>1,100.00</td>
</tr>
<tr>
<td></td>
<td>11,051.12</td>
</tr>
<tr>
<td>Cash (Schedule II)</td>
<td>1,176.84</td>
</tr>
<tr>
<td></td>
<td>12,227.96</td>
</tr>
<tr>
<td>Stock in General Biological Supply House, Inc.</td>
<td>12,700.00</td>
</tr>
<tr>
<td>Gansett property account</td>
<td>11,531.27</td>
</tr>
<tr>
<td>Less mortgage</td>
<td>8,182.01</td>
</tr>
<tr>
<td></td>
<td>3,349.26</td>
</tr>
<tr>
<td>Educational Plant</td>
<td></td>
</tr>
<tr>
<td>Land</td>
<td>101,006.14</td>
</tr>
<tr>
<td>Buildings</td>
<td>226,452.28</td>
</tr>
<tr>
<td>Equipment</td>
<td>103,144.80</td>
</tr>
<tr>
<td></td>
<td>430,603.22</td>
</tr>
<tr>
<td>Less reserve for depreciation</td>
<td>60,160.36</td>
</tr>
<tr>
<td></td>
<td>370,442.86</td>
</tr>
<tr>
<td>Prepaid insurance</td>
<td>2,774.27</td>
</tr>
<tr>
<td>Items in suspense</td>
<td>250.91</td>
</tr>
<tr>
<td></td>
<td>$445,504.69</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liabilities</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounts payable</td>
<td>$966.74</td>
</tr>
<tr>
<td>Notes payable</td>
<td>5,000.00</td>
</tr>
<tr>
<td>Trust funds</td>
<td>12,227.90</td>
</tr>
</tbody>
</table>
Balancing account:
Balance, January 1, 1923 ................ $410,671.88  
Add:
Special Donation received from C. R. Crane  
for final payment on purchase of Fish Estate (Kidder House) .................. 15,000.00  
Balance of Income for Year (Exhibit B) ...... 1,638.11  

$427,309.99

$445,504.69

<table>
<thead>
<tr>
<th>Marine Biological Laboratory, Income and Expenses for Year Ended Dec. 31, 1923.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenses</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Administrative expenses ......</td>
</tr>
<tr>
<td>Bar Neck Property expense ......</td>
</tr>
<tr>
<td>Biological Bulletin and annual dues ..........</td>
</tr>
<tr>
<td>Biological Bulletin adjustment of expenses for 1922 ...</td>
</tr>
<tr>
<td>Carpenter department ..........</td>
</tr>
<tr>
<td>Chemical department ..........</td>
</tr>
<tr>
<td>Evening lectures ..........</td>
</tr>
<tr>
<td>Dormitories ................</td>
</tr>
<tr>
<td>Instruction ............</td>
</tr>
<tr>
<td>Interest on notes payable ....</td>
</tr>
<tr>
<td>Janitor’s house expenses ....</td>
</tr>
<tr>
<td>Library department ........</td>
</tr>
<tr>
<td>Maintenance, buildings and grounds ........</td>
</tr>
<tr>
<td>Mess ..................</td>
</tr>
<tr>
<td>New laboratory ........</td>
</tr>
<tr>
<td>Newman cottage ........</td>
</tr>
<tr>
<td>Pumping station ........</td>
</tr>
<tr>
<td>Research department ..........</td>
</tr>
<tr>
<td>Supply department (see Schedule IV) ..........</td>
</tr>
<tr>
<td>Sundry expense and income ..</td>
</tr>
<tr>
<td>Truck ..........</td>
</tr>
<tr>
<td>Total current expenses ..........</td>
</tr>
<tr>
<td>Total current income ..........</td>
</tr>
<tr>
<td>Excess of expenses ..........</td>
</tr>
<tr>
<td>Reserve for depreciation ....</td>
</tr>
<tr>
<td>Bad accounts written off ....</td>
</tr>
<tr>
<td>Total ..........</td>
</tr>
<tr>
<td>Donations for expenses, Friendship Fund, Inc. .....</td>
</tr>
<tr>
<td>Balance to Exhibit A ..........</td>
</tr>
</tbody>
</table>

THE REPORT OF THE TREASURER.
### Reserve Fund

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash on hand</td>
<td>$782.93</td>
</tr>
<tr>
<td>*$3,000.00 American Telephone &amp; Telegraph Company, 4's</td>
<td>2,921.25</td>
</tr>
<tr>
<td>500.00 Western Telephone &amp; Telegraph Company, 5's</td>
<td>496.88</td>
</tr>
<tr>
<td>* 6 shares American Smelting &amp; Refining Company, Preferred</td>
<td>732.00</td>
</tr>
<tr>
<td>8 shares General Electric Company</td>
<td>907.25</td>
</tr>
<tr>
<td>8 shares General Electric Company Special (par $10.00) received as a stock</td>
<td></td>
</tr>
<tr>
<td>dividend</td>
<td></td>
</tr>
<tr>
<td>14 shares United Shoe Machinery Corporation, Preferred</td>
<td>393.75</td>
</tr>
<tr>
<td>5 shares Massachusetts Gas Companies, Preferred</td>
<td>444.63</td>
</tr>
<tr>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Total Items marked * are held as collateral on loan of</td>
<td>$5,578.69</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Library Fund

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash on hand</td>
<td>$20.13</td>
</tr>
<tr>
<td>$300.00 U. S. Liberty Loan, First 4 1/4's.</td>
<td>300.00</td>
</tr>
<tr>
<td>4/5 of $1,000.00 American Telephone &amp; Telegraph Company, 4's</td>
<td>779.00</td>
</tr>
<tr>
<td>3 shares American Telephone &amp; Telegraph Company</td>
<td>362.38</td>
</tr>
<tr>
<td>3 shares General Electric Company</td>
<td>346.80</td>
</tr>
<tr>
<td>3 shares General Electric Company Special (par $10.00) received as stock</td>
<td></td>
</tr>
<tr>
<td>dividend</td>
<td></td>
</tr>
<tr>
<td>5 shares United Shoe Machinery Corporation, Preferred</td>
<td>149.63</td>
</tr>
<tr>
<td>3 shares Massachusetts Gas Companies, Preferred</td>
<td>269.38</td>
</tr>
<tr>
<td>*1 shares American Smelting &amp; Refining Company, Preferred</td>
<td>122.00</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total, Exhibit A</td>
<td>$2,340.32</td>
</tr>
</tbody>
</table>

### Lucretia Crocker Fund

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash on hand</td>
<td>$373.78</td>
</tr>
<tr>
<td>$300.00 U. S. Liberty Loan, 1st 4 1/4's.</td>
<td>300.00</td>
</tr>
<tr>
<td>1/5 of $1,000.00 American Telephone &amp; Telegraph Company, 4's</td>
<td>194.75</td>
</tr>
<tr>
<td>18 shares Vermont &amp; Massachusetts Railroad Company</td>
<td>2,416.50</td>
</tr>
<tr>
<td>3 shares General Electric Company</td>
<td>349.55</td>
</tr>
<tr>
<td>3 shares General Electric Company Special (par $10.00) received as stock</td>
<td></td>
</tr>
<tr>
<td>dividend</td>
<td></td>
</tr>
<tr>
<td>1 share Boston Elevated Second Preferred</td>
<td>133.00</td>
</tr>
<tr>
<td>1 share American Telephone &amp; Telegraph Company</td>
<td>120.79</td>
</tr>
<tr>
<td>4 share Boston Consolidated Gas Company, Preferred</td>
<td>420.58</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total, Exhibit A</td>
<td>$4,308.95</td>
</tr>
</tbody>
</table>

Total, Exhibit A: $12,227.96
V. REPORT OF THE ASSISTANT LIBRARIAN.

The increase in the rate of growth of the Library since 1920 is encouraging considering the increasing cost of books during this time and the very slight increase of our 1923 budget over that of 1920. In these four years the number of accessions of volumes has been, in sequence, 408, 403, 473 and 562; of reprints, 387, 427, 434, and about 800 for 1923, but only 194 of these will show in our records of the year because the work of recording and cataloguing the remainder will be delayed until 1924. Moreover, the numbers of volumes accessioned in the years 1920 and 1921 were greatly increased by the binding of back sets of German serial publications that were purchased from a special fund for this purpose and not from the years' appropriations. The reprints which are a most useful part of the Library involve a great deal of work in their cataloguing and care, and their increase, which we hope will continue, has made a great jump this past year. Also there should be mentioned an accumulation of about 1000 or more of these, dating far back, that were sorted out alphabetically last year from the mass of miscellaneous printed matter that was accumulated before 1919. These will have to be accessioned as soon as adequate assistance in the Library staff make it possible.

Of the volumes acquired by the Library in 1923, 328 were recorded from binding, 126 of these being exchanges and the remainder our paid subscriptions, except 8 that were from binding the American Museum of Natural History loans; 151 of the accessioned volumes were direct from purchase, 65 by gift, and 20 from our exchanges.

There are now in the Library about 11,698 volumes and 9,587 reprints.

The Library has received during the past year current serial publications to the number of 281. We have paid our subscriptions to 93 of these; sixty four (64) subscriptions of the Biological Bulletin have been used by the Library in exchange for 87 of these currently received serials; we have received 80 as gifts; and 21 through the American Museum of Natural History loan.

The new subscriptions undertaken in 1923, on our paid list,
were: the *Journal of Anatomy*; *Annual Report of the Progress of Chemistry*; *Zeitschrift für Botanik*; and the *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie*. The new exchanges were: the *Philosophical Transactions* and the *Proceedings of the Royal Society of London, Series B*; *British Journal of Experimental Biology*; *Tydschrift der Nederlandisch Dierkundige Vereeniging*; *Bulletin and Memorias de la Real Sociedad Española de Historia natural*; *Bulletin du Museum National d'Histoire Naturelle*; and the *Tokyo Botanical Magazine*. Our major purchases in books have been Aberhalden's: "Handbuch der biologischen Arbeitsmethoden, all so far issued; Brandt and Apstein's "Nordisches Plankton," save the three numbers on the Protozoa which we already had; and the three volumes of Mellor's "Inorganic Chemistry" then issued.

The binding was extraordinarily heavy this year on account of several unbound sets that have been secured by exchange during the past two years. But we have brought our binding now to a satisfactory relation to current receipts, whereas since 1919 we had been in arrears on account of back volumes received after the delay caused by the war.

The appropriation for the use of the Library for 1923, aside from salaries, was two thousand dollars. Properly there should be added to this the value of sixty-four (64) yearly subscriptions of the *Biological Bulletin* that have been used by the Library for exchange purposes. The two thousand was apportioned as follows: current subscriptions, $750; books, $350; Binding, $750; and supplies and express, $150. Though these apportionments were not strictly adhered to, the total sum spent, as shown on our Library Account Book, is $1,999.58. The items that ran over our estimate, being subscriptions and books, both due to the very sudden advance in German prices on the change of their method of billing from Marks to Dollars.

In order to keep up our present subscriptions we shall have to increase our subscription apportionment to the sum of $1,000.00, and even this will not allow us to pay for current subscriptions for the year ahead, as we should like in those cases where we can get accurate bills for these in December. About $200.00 more would be needed in order to start January 1925 with no bills on hand.
We are making every effort to secure some of the German serials that we now subscribe for, by exchange of the Biological Bulletin. And our German dealer is coöperating with us in this, to the extent of encouraging us to approach the publishers and editors of these publications with this offer in mind. If we cannot cut down our subscription expense in this way, we shall have to receive a material increase for this item for the year 1925 in order to continue everything on our list. The need of systematically filling gaps in our sets and of securing back sets of new subscriptions that we take up from time to time, has been before us for so long and efforts made to get these by haphazard methods has proved so unsatisfactory, that we are making a special apportionment in our budget hereafter for this purpose. Another need is for a yearly sum to pay for assistance in the Library. The care of steadily increasing amount of material, received each year since 1919, should not be allowed to hamper the efforts of the Assistant Librarian to go on with the work of expansion of the Library.

In November of this year a printed circular was sent to each member of the Corporation of the Laboratory, soliciting his personal interest in the Library, and asking that he present to the Library any numbers or volumes of the Biological Bulletin that he find available. A fine gift of a complete set from volume 3, no. 4 to volume 45 complete, was presented by Dr. Rankin of Princeton and the value of this has been credited to the Library to go on our budget for back sets, a special item just referred to. From Miss Caroline Thompson's Library at Wellesley we received, among other numbers, two that will enable us to complete volumes of the Biological Bulletin that are out of print. Other numbers have been promised and we hope that the response to our appeal specifically for the Biological Bulletins, and in general for an active interest in and cooperation with the Library is not yet ended.

Priscilla B. Montgomery,
Assistant Librarian.
VI. THE DIRECTOR'S REPORT.

TO THE TRUSTEES OF THE MARINE BIOLOGICAL LABORATORY.

Gentlemen: I beg to submit herewith a report of the thirty-sixth session of the Marine Biological Laboratory for the year 1923. On account of the completion of our program for building and endowment in January, 1924, it seems desirable to include the events of that month also, so far as they relate to that project.

1. Attendance.—The attendance of students in courses was 146 and of investigators 176, making a total of 322 persons, representing 107 institutions. Applications for working places were again considerably greater than our accommodations, especially in the case of places for students in courses. Our policy of instruction has been guided for many years by the desire to contribute to the production of investigators. The results might be judged by the extent to which students in the courses of instruction have acquired the spirit of research by their work and contacts at Woods Hole. Unfortunately no quantitative measurements of such a sort can be directly made; however, we have strong reasons to believe from our own experience, as members of the Marine Biological Laboratory and professors in many colleges and universities, that many of our students acquire a better understanding of the spirit, methods and standards of research at Woods Hole, and that their ambition is stimulated. A measureable evidence of the influence of our classes is furnished by the number of former members who have published research work. An examination of this question was made by Dr. Drew, who took the list of all the members of the classes in Invertebrate Zoology, in Embryology, in Physiology and in Botany between the years 1908 and 1917, and submitted each list to ten investigators to check the names of those known to have published research work. Of the 350 members of the classes in Invertebrate Zoology during this decade, 63, or 18 percent, were checked; of the 197 in Embryology, 65, or 33 percent, were checked; of the 93 in Physiology 49, or 53 percent, were checked; of the 111 in Botany 43, or 39 percent, were checked. It may be of additional interest to note that for the years 1908–1912 (chosen to give an adequate perspective) 12 percent of those registered in Invertebrate Zoology have been
listed in "American Men of Science," 24 percent of those registered in Embryology, 20 percent of those registered in Physiology, and 26 percent of those registered in Botany. The results certainly show that a large percentage of the students taking courses have professional interests, whether acquired as a result of attending the Laboratory or not. In more recent years the demand for the courses has been steadily increasing, and while it is too early to say yet from the evidences of publication, it is nevertheless our strong impression that the professional interest has been increasing.

With the present excess of applicants for the courses, it seems possible both to stress more the intent of the courses as training for research, and also to devise better methods of selection, with this aim in view, from the applicants who present themselves. It was accordingly decided by the Executive Committee on the recommendation of the Board, to set definite numerical limits to each of the classes, and to devise a form of application for admission better suited to bring out the information necessary for selection on this principle. The new form of application is printed on pp. 36–38.

The number of subscribing and coöperating institutions increased from 61 in 1922 to 71 in 1923. Of the total amount of $11,600 received from these institutions $5,425 was subscribed for students' tables and $6,175 for research accommodations. Hitherto these institutions have enjoyed priority rights of admission for their students up to a certain number from each. This has involved certain difficulties of administration, with reference especially to admission of students from other institutions. It was accordingly decided by the Executive Committee to do away with right of priority for students' places, and to accept applicants solely on their merits; this action is without prejudice to the rights of such institutions in their research accommodations. We hope and believe that the necessity of this decision, which has been gradually approached by successive limitations of priority rights to students' places, will be recognized by the institutions concerned. The Marine Biological Laboratory belongs to all American institutions in which the spirit of investigation is living, and equal opportunity for admission of students should be open to all.
2. Library.—The resignation of the Librarian, Dr. R. P. Bigelow, was presented during the year and accepted with regret by the Trustees, who expressed to him their appreciation and that of the Laboratory for his efficient and valuable services. Dr. Bigelow brought to the aid of the Laboratory in his capacity of Librarian a rich fund of experience acquired as Librarian of the Massachusetts Institute of Technology. The organization of our library owes much to his experience. On recommendation of the Library Committee it was voted to request the Assistant Librarian to conduct the affairs of the library in consultation with the Library Committee pending the appointment of a Librarian.

Mrs. Montgomery’s very interesting report as assistant librarian on the growth of the library in 1923 is printed on page 9. The recommendations of that report can certainly be carried out with the increased space to be provided in the new building and the increased income proposed to be devoted to library purposes. It should be our aim under the new conditions to undertake the large task of building up the best possible working library for biological research as rapidly as can be done. This can be accomplished only if the Library Committee receives the active coöperation of the members of the Laboratory. Special funds should be secured and set aside to enable the library administration to take advantage of all unusual opportunities for purchase of rare sets. The library is a department in which every one can be of assistance, for every addition helps, and a great library can be built up only bit by bit.

3. The Report of the Treasurer (See pp. 5-8).—The earned income of the Laboratory during the past five years has been as follows: 1919, $80,307.57; 1920, $89,943.04; 1921, $98,292.38; 1922, $108,686.37; 1923, $114,972.93. The current expenses during the same periods were: 1919, $88,452.64; 1920, $103,097.64; 1921, $109,970.40; 1922, $113,466.83; 1923, $123,624.31. During the same years the annual contributions of $20,000 a year from the Friendship Fund have balanced the account and left a surplus for necessary expansions. The rapid increase of expenses, amounting to about 40 percent, in five years would be alarming if it were not compensated by an equally rapid increase in earnings, approximately 43 percent, in the same
THE DIRECTOR'S REPORT.

period. The figures show how much the Laboratory stands in constant need of the coöperation of all of its members in avoiding unnecessary requisitions for expenditures, and in securing support from their institutions. Another way in which members of the Laboratory can aid is by patronizing the Supply Department and the General Biological Supply House for their laboratory supplies as much as possible.

During the current year the Laboratory was able to pay off half of its current indebtedness, or $5000. The amount came partly from earnings and partly from the General Biological Supply House in which the Laboratory is a majority stockholder; this corporation has now become firmly established and was able to pay up all of its back dividends.

The Treasurer of the Laboratory for over twenty-three years, Mr. D. Blakely Hoar died on March 8, 1923. An appreciation of his services is given elsewhere in this report, but the Director may be permitted in this place to give his personal testimony to the high-minded, courteous, efficient and friendly way in which Mr. Hoar for so many years served the Laboratory; the responsibility was always carried with constant and genuine devotion to our interests. After the death of Mr. Hoar, Mr. William H. Dunbar, senior partner of the firm with which Mr. Hoar has been so long connected, consented to accept the office of Treasurer pending the completion of our campaign for building and endowment funds. This generous action was of the greatest service to the Laboratory in a real emergency, and cannot be appraised too highly. On the completion of the campaign, Mr. Dunbar resigned, and Mr. Lawrason Riggs, Jr., of New York City was elected Treasurer by the Board of Trustees at their special meeting January 7, 1924. Mr. Riggs' knowledge of affairs and his long acquaintance with the Laboratory and many of its members qualify him in a preëminent way to administer the increased responsibilities of the Treasurer's office. The Laboratory is deeply indebted to him for his consent to serve.

4. The Gansett Property.—The sale of lots in the Gansett tract proceeded rapidly in 1923. By the end of the year the amounts due on sales were sufficient to pay off the remaining mortgage indebtedness amounting to $8,182.01, and to complete the grading of the roads. There remained then unsold eleven lots,
two reserved for laboratory purposes and two undivided parcels. In accordance with a vote of the Executive Committee, it was decided to withdraw the remainder from sale until the summer of 1924 pending the determination of a new policy, which should ensure the interest of the Laboratory in its perpetual control of at least a portion of the tract.

5. Agassiz Memorial.—In accordance with plans announced last year exercises were held at the Marine Biological Laboratory on August 13 to commemorate the fiftieth anniversary of the founding of the Anderson School of Natural History on the Island of Penikese in 1873 by Louis Agassiz. This was the last considerable event of his life for he died in December of the same year, sixty-six years of age. The Penikese School was continued in the summer of 1874 by his son, Alexander Agassiz, and members of Louis Agassiz’ staff. The Laboratory existed only two years; it was under the direction of the master naturalist only one year, yet Marcou, Agassiz’ biographer, calls the founding of the Penikese Laboratory the most extraordinary episode in Agassiz’ life; and David Starr Jordan, one of Agassiz’ associates in 1873, writes in his autobiography “The Days of a Man.” “While Penikese is deserted, the impulse which came from Agassiz’ work there still lives and is deeply felt in every field of American Science. For with all due appreciation of the rich streams which in later years have flowed from many quarters, it is still true that the school with most extended influence on scientific teaching in America was held in an old barn on a little off-shore island. It lasted only a few months, and it had virtually but one teacher. When he died it vanished.”

This event was accordingly celebrated by a largely attended meeting, at which a bronze tablet was presented in duplicate, the original to be set in a boulder on the hill on Penikese overlooking the site of the former Laboratory and the sea beyond, the replica to be set in an appropriate place in the Woods Hole Laboratory. For permission to set the Penikese tablet we are indebted to the Senate and House of Representatives of the State of Massachusetts which passed an enabling bill, and to Governor Cox who interested himself in its passage and signed it. The tablet at Woods Hole will recall to successive generations of naturalists young and old the services of the Great
Naturalist it commemorates, and will be an incentive to visit the site of his last undertaking.

The tablet bears the following inscription:

In Commemoration

of the

ANDERSON SCHOOL OF NATURAL HISTORY

Established Fifty Years Ago on the

Island of Penikese

by

JEAN LOUIS RODOLPHE AGASSIZ

Born 1807 Died 1873

The Marine Biological Laboratory

the Direct Descendant of the

Penikese School Erects this Tablet

1923

A few days after the meeting a party of naturalists went to Penikese with a mason, and the tablet was set on the highest boulder of the island. The replica has been set opposite the memorial tablet of Professor Whitman in the entrance to the Crane Building.

It was hoped that three members of the staff of the Penikese Laboratory would be present to speak at the exercises: Doctor E. S. Morse, Doctor Burt G. Wilder, and Doctor David Starr Jordan; but of these only Doctor Morse was able to attend. Doctor Wilder sent his greetings, and Doctor Jordan sent an address prepared for the meeting which was read by Dr. Drew.\(^1\)

The Director presided and made the opening remarks; Professor Morse spoke of his experiences on Penikese and his recollections of Agassiz; Dr. Cornelia M. Clapp gave an account of the second session of the Penikese Laboratory which she attended and furnished a roster of the attendance of the first session which had never been published. Dr. H. C. Bumpus spoke of the intermediate history of the Island, and Professor E. G. Conklin traced the origin of the Marine Biological Laboratory from the same fertile source.

\(^1\) Since published in the *Scientific Monthly.*
6. Building and Endowment Funds: Since the report for 1919 the Director's report has referred each year to the need of new buildings and endowment to provide for the development and expansion of our work. Efforts were begun in 1919 to secure the funds, estimated at $1,000,000 needed for these purposes. In the report for 1922 the Director reported the contribution of $500,000 from the Rockefeller Foundation and $100,000 from the Carnegie Corporation towards this project, both gifts being conditioned on the raising of the estimated sum required. In December, 1923, Mr. John D. Rockefeller, Jr., contributed $400,000 through Mr. Raymond B. Fosdick, thus assuring the other contributions. On the completion of this sum the Friendship Fund, established by Mr. Crane, endowed its annual contribution of $20,000 a year by turning over to a trust company for the benefit of the Marine Biological Laboratory bonds of the par value of $405,000 yielding $20,020 a year. The Laboratory thus receives $1,405,000 for its future development, of which $500,000 is subscribed for building and $905,000 for endowment. These gifts were all paid in to the Treasurer in January, 1924.

A further contribution to the cost of the building was made by the Architect, Charles A. Coolidge, by his generous offer to reduce by one per cent. the customary charges of his firm for architects' services. This gift, amounting to over $6,000 culminates, for the present, a long series of services by Mr. Coolidge to the Laboratory, as Trustee from 1901 to 1921, as Architect of the Crane Building, and as expert adviser constantly in all our plans for enlargement before they assumed practical form.

The fortunate outcome has been due not alone to the devoted cooperation of our own membership, constituting in itself a strong body of favorable expert opinion, but also to a larger body of scientific public opinion, and especially to the support of the National Research Council. Back of all this, and furnishing the foundation, lies the continuous and unwearying support, financial and moral, furnished since 1902 by the President of the Board of Trustees, at first personally, and later, as concerns financial support, through the Friendship Fund endowed by him. One of the greatest of our satisfactions must be the justifying of Mr. Crane's confidence in the future of our Institution.
At a special meeting of the Board of Trustees held on January 7, 1924, a Committee of three members was appointed to draw up official acknowledgments expressing appreciation of the Trustees to the donors of the funds and to the National Research Council. The Trustees also authorized the construction of the new building at Woods Hole in general accord with the plans submitted by Dr. Drew to the meeting and within the limits of the gifts and pledges made for the purpose, and appointed the Director, Assistant Director and Treasurer as a Building Committee to supervise the construction. The Director and Treasurer were moreover especially authorized to sign the contracts relating to the building. Provision was also made for Trusteeship of funds given for endowment.

In the Director's Report for 1921 the question of endowment is referred to. It is there stated that we were not asking for a large endowment, but only for enough so that the operation of the new addition should not be unduly burdensome. It should be realized by all of our members that the income from the new endowment is not sufficient to release us from those customary sources of support that are won by our own coöperation and endeavors; indeed the administration of the new laboratory and the enlarged library may easily put upon us the need for greater efforts than we have made before. The endowment merely provides a more assured financial foundation upon which to build. It is an argument for increase of efforts, not for decrease—an incentive to stronger morale in our membership, not an excuse for its weakening.

The new building and endowment came to us without any conditions attached. The Director, however, with the concurrence of the Board of Trustees, requested the donors to place the endowment funds in trust. The reasons for this request are given in the Director's Report for 1921 as follows: "The membership of our Corporation and Board of Trustees is composed almost entirely of scientific men; such a body is not usually considered well qualified to deal with matters of investment connected with relatively large endowments. On the other hand, to create another body, as an integral part of the Laboratory, that would have control of finances, would inevitably weaken the control of the scientific men over the policies of the Labora-
tory in general. Our Board of Trustees for these reasons adopted the policy that any endowment that should be created in connection with the present undertaking should be held in trust for the Laboratory by an outside body, which should pay in the income to the Laboratory for operating expenses."

The Trust Deed is printed in full on pp. 23-28 of this report. The only article that appears to require comment is No. 3, establishing a Committee of Review and defining its powers. The logic of a Trust Deed seems to require provision for disposition of the funds in case of death of the party, or dissolution of the corporation, for whose benefit the deed was created. In the case of our Laboratory protection of the purposes for which we secured the funds also seemed to be demanded. The Committee of Review is established to protect the interests both of the present members of the Laboratory and also of the donors of the fund in these purposes, and in addition to ensure that the income shall be used in perpetuity for biological research. It will be noted that two thirds of the nine members of the Committee of Review are required to be Biologists nominated by Professors of Biology in the institutions named, and that it requires a two-thirds vote of the Committee twice repeated at an interval of five years to divert the funds. Members of the Laboratory are eligible to membership on the Committee of Review. The Committee is not a standing Committee; it comes into existence and disappears automatically every ten years. To divert the funds, they have to testify in writing, stating their reasons therefor, that the Laboratory is not performing valuable services in Biological Research. The Laboratory is not limited in its activities in any way; the future administration of the Laboratory is pledged to maintain research, but may also engage in any other activities authorized by the Act of Incorporation.

It should also be stated that Mr. John D. Rockefeller, Jr.'s contribution of $400,000 for endowment, and the contribution of $100,000 by the Carnegie Corporation for the same purpose, have been deposited with the same Trust Company under the same Deed of Trust in accordance with Article 13 of the Deed.

Reference was made in the Director's Report for 1921 also to the plans of the new building. We publish herewith (p. 29 ff.)
simplified drawings of the ground plans for the information of our members; in a later report it is hoped that Dr. Drew will include an adequate description of the new building and its appliances.

7. Changes in the Membership of the Board of Trustees.—At the meeting of the Corporation August 14, 1923, three new members of the Board of Trustees were included in the elections to the class of 1927: Professor Winterton C. Curtis of the University of Missouri, Professor J. R. Schramm of Cornell University, and the National Research Council, and Professor L. L. Woodruff of Yale University, all previously active for years in affairs of the Marine Biological Laboratory.

The deaths of the Treasurer of the Laboratory and of the Secretary of the Board of Trustees, both for many years members of the Board and conspicuous for their services to the Laboratory, were commemorated in the following memorials presented to the Corporation and to the Board:

Resolution on the death of D. Blakely Hoar, Treasurer of the Marine Biological Laboratory, presented by Professor G. H. Parker.

D. Blakely Hoar, Treasurer of the Marine Biological Laboratory, died in Boston, March 8, 1923. Mr. Hoar first came into the office of Treasurer in October, 1899, and served the Laboratory in this capacity for almost twenty-four years. He began his duties during a very trying period in which the Laboratory was reorganized, and under circumstances that must have been for him often little short of embarrassing. But he was not a man to be put down by such conditions, and from the beginning to the end of his term of service, he gave to the affairs of the Laboratory untiring interest and unswerving support. In the days of small things he exerted every effort to conserve our resources, and to make clear to many of us, who from our scientific bias may have thought otherwise, the wisdom of his course. He often expressed himself with earnest passion, yet always with a saving sense of humor and a generous patience. In him the Laboratory loses a devoted and a loyal servant, and many of its members a valued friend.

Resolution on the death of George Lefevre, Secretary of the Board of Trustees, presented by Professor M. M. Metcalf.
George Lefevre first came to Woods Hole as a Johns Hopkins University student in 1892, having a table in the Fish Commission laboratory, and he was there four summers. In 1897 he became directly connected with the Marine Biological Laboratory as an instructor in the Zoology course. He served in this position for two years. Since 1905 he was continuously upon the staff for direction of zoological research; he was fourteen years a Trustee and was Secretary of the Board for ten years. Few of the present or former members of the Woods Hole group have served the Laboratory for a longer period. Five of Dr. Lefevre's publications are based wholly or in part upon investigations conducted here. Nearly every summer some of his pupils at the University of Missouri or some of the members of their zoological staff were at our Laboratory, and for six years the University of Missouri contributed to the financial support of the Laboratory, all doubtless through Dr. Lefevre's influence.

But this bare statement of formal connections with the institution gives no adequate idea of the faithfulness of the service rendered, or of the influence of his fine personality and of his accurate work as an investigator. He was an outstanding figure in our Woods Hole group, his unfailing considerateness and courtesy, both as scientist and as friend, together with his genial sense of humor, contributing a large share to that wholesome atmosphere which has been one of the chief assets of this Laboratory, so free from personal jealousies. George Lefevre was a sound zoologist who did much good technical scientific work; he was a keen critic, discriminating in suggestion; he was an inspiring teacher; he was an administrator of rare tact, good judgment and efficiency and our Woods Hole Laboratory, as well as his own University, had the benefit of his wise counsel. But while recognizing to the full his strength as a scientist and as a leader and the thoroughness and devotion of his service to this institution, our chief remembrance of him will be as a sensitive gentleman, a tactful counsellor and a warm-hearted friend. The keen sense of our own loss in his death prompts us to express to his colleagues at the University of Missouri and especially to the members of his family our deep sympathy.

There are included as parts of this report, 1. The Deed of Trust covering funds for endowment, 2. Plans of the new build-

1. THE DEED OF TRUST COVERING FUNDS FOR ENDOWMENT.

FRIENDSHIP FUND, INC., AND CENTRAL UNION TRUST COMPANY OF NEW YORK.

AGREEMENT.

Dated New York, January 22, 1924.

Agreement made the 22d day of January, 1924, between Friendship Fund, Inc., a corporation organized and existing under the Membership Corporation Law of the State of New York, and having its principal office at 70 Fifth Avenue, in the City, County and State of New York, (hereinafter known as the "Grantor"), and Central Union Trust Company of New York, a corporation organized and existing under the Laws of the State of New York, (hereinafter sometimes called the "Trustee"), having its principal office at 80 Broadway, in the City, County and State of New York:

Witnesseth:

That in consideration of the premises and of the agreements hereinafter contained, the Grantor does hereby assign, transfer and set over unto the said Central Union Trust Company of New York, as Trustee, and to its successor and successors in trust, securities of the par value of Four hundred and five thousand Dollars ($405,000), and of the approximate market value as of December 31, 1923, of Three hundred ninety four thousand and twenty-one Dollars ($394,021), which said securities are listed upon a schedule hereto annexed and marked list of securities, IN TRUST NEVER THE LESS, upon the uses and trusts following, that is to say:

1. To hold, manage, invest and reinvest the same, to collect the income, interests, issues and profits therefrom and after paying all proper and necessary expenses including compensation of the Trustee to pay over the net income as collected in monthly instalments to the Marine Biological Laboratory, (sometimes hereinafter called the "Beneficiary"), a corporation organized and existing under the Laws of the State of Massachusetts, and having at the present time its
laboratory at Woods Hole, in the Town of Falmouth, State of Massachusetts. All such payments shall be made to the Treasurer of the Beneficiary or such other officer or person on its behalf, as the said Beneficiary may from time to time designate.

2. The investment and reinvestment of the fund shall be made by the Trustee in consultation with the Treasurer of the Beneficiary. The Trustee shall be at liberty to retain any of the securities received by it hereunder, and it may in its discretion sell all or any part of the same, but in making reinvestments of such fund it shall be limited to securities permitted to Trustees by the Laws of any of the States of the United States.

3. A Committee of Review is hereby constituted. Such Committee to consist of nine (9) members in all and to include an official representative of each of the following: The National Academy of Sciences, the National Research Council, and the American Association for the Advancement of Science, and six (6) professors in the field of biology named respectively by a majority vote of the professors of the departments in the field of biology of the following universities, to wit: Harvard University, Columbia University, University of Chicago, Princeton University, Yale University, and University of Pennsylvania.

Membership on the Board of Trustees of the Marine Biological Laboratory or other connection with the Beneficiary shall not disqualify a person from acting upon said Committee of Review.

In the event that any of the nine institutions mentioned shall be unwilling or unable to appoint a representative, such vacancy shall be filled by an appointment made in the same manner as above provided by the departments in the field of biology of the following universities, in order named: University of Michigan, Johns Hopkins University and Leland Stanford University, and in the event of any of these universities being unwilling or unable to fill such vacancy, or of there being any further vacancies in said Committee, then such vacancy or vacancies may be filled by appointment of professors in the field of biology named by the majority vote of the members of the Committee of Review already appointed.

It shall be the duty of the Trustee to call once every ten years (10) upon this Committee of Review, to make a study of the work at the Marine Biological Laboratory, and if two-thirds of the entire Committee shall agree that the Marine Biological Laboratory is not performing valuable services in biological research and shall file a written memorandum with the Trustee stating such conclusion and their reasons therefor, a copy of which memorandum shall be sent to the
Beneficiary forthwith, and if after a period of five years two-thirds of the entire Committee of Review as then constituted shall again report in writing to the Trustee that the Marine Biological Laboratory is not performing valuable services in biological research, then the fund both principal and interest may be used for such other purposes within the general field of biological research as shall be indicated by this Committee of Review, on an affirmative vote of not less than two-thirds of the entire membership of said Committee.

4. The said Committee of Review may by two-thirds vote of its entire membership, remove the Trustee, and upon the removal, resignation or cessation of the Trustee to function, may appoint a successor trustee, and in default of such appointment the duty of appointing a successor trustee shall devolve upon the Supreme Court of the State of New York. The Beneficiary may call the Committee together for such action.

5. The Trustee shall send semi-annually to the Treasurer of the Beneficiary, a full statement of the investments then held by the Trustee, and of the receipts and expenditures in both income and principal accounts since the last semi-annual statement, and at the request of the Treasurer, the Trustee shall cause an audit to be made of the books and accounts of the Trustee with respect to this trust, by certified accountants of recognized standing, and a reasonable compensation for such audit if requested by the Treasurer, shall be paid by the Trustee and charged against the income as an expense of the administration of the trust.

6. The Trustee is authorized and empowered as the Trustee of an express trust to institute, conduct, defend, intervene in and compromise or terminate any and all suits, actions or proceedings at law or in equity or otherwise whenever the Trustee shall consider it necessary or proper so to do for the collection of the principal or interest on any of the securities held by it hereunder, or for the securing or protecting or defense of any rights or interests relating to or with respect to the property held in trust hereunder, or of the rights or interests of itself as Trustee, or of the Beneficiary hereunder with respect to the trust property. The Trustee shall have full discretionary power to allocate as between principal and income any expense with respect to the foregoing, and shall have full discretion to sell such portion of the trust as may be necessary to pay or recoup itself for the payments of such amount of such expense as shall have been allocated to the principal or the trust estate.

7. The Trustee is authorized and empowered as the Trustee of an express trust, to exercise all rights and powers pertaining to any
securities held by it; and as the holder of such securities the Trustee may in its discretion join in any reorganization, merger, consolidation or dissolution of any corporation whose securities it holds, whenever such action may be deemed by the Trustee in its discretion necessary or proper in the interests of the trusts; and the Trustee may accept in exchange for such securities any new securities issued in exchange therefore upon any such reorganization, merger, consolidation or dissolution.

The provisions of this article are not intended as a limitation upon the powers accruing to the Trustee hereunder as a Trustee of an express trust.

8. The Trustee shall not be required to retain or set aside any portion of the income derived from securities for the purpose of creating a sinking fund to amortize the premium upon any securities purchased or taken over above par and conversely, if securities shall be purchased or acquired at a discount, and there shall subsequently be collected or realized thereon on sale or collection an amount in excess of the original investment therein, the amount of such excess shall be treated for all purposes as principal and not income.

9. The Trustee shall be entitled to reasonable compensation for its services rendered hereunder, and as long as the Central Union Trust Company of New York shall be Trustee it is agreed that the amount of such compensation in full for all its services herein shall be the sum of Three hundred and fifty Dollars ($350), per annum. Payment on account of such amount to be deducted and withheld from time to time in the discretion of the Trustee as income is collected or received.

10. The Grantor reserves unto itself full power to enforce the provisions of this Deed or Trust, and, for that purpose, to institute, conduct, defend, intervene in, compromise or terminate, either by itself or jointly with the Beneficiary, any and all suits, actions or proceedings at law or in equity or otherwise against the Trustee or its successors under this Deed of Trust, provided that the Grantor, when acting under the provisions of this article shall be deemed to be acting on behalf of the Beneficiary; provided further, that nothing in this article shall be deemed to deprive the Beneficiary named herein, or the person or persons to whom the net income and revenue arising under this Trust are payable, of the right to enforce in behalf of the Beneficiary the provisions of this Deed of Trust, except in cases in which the Grantor shall already have taken action to enforce such provisions on behalf of the Beneficiary.

11. Except in so far as is otherwise provided by the provisions of this Deed of Trust, the Trustee named shall be deemed to possess and
enjoy the powers and rights recognized under the law of the State of New York as belonging to the Trustee of an express trust.

12. This deed may be amended by agreement in writing between the Friendship Fund, the Trustee for the time being and the Beneficiary, or if the Friendship Fund has ceased to exist by the agreement of the Trustee and the Beneficiary, with the approval of two thirds of the entire membership of the Committee of Review.

13. The Trustee is authorized to receive and hold under this Deed additional securities, cash and property, pursuant to the terms and conditions hereof. Such additional gifts may be received from any person, corporation or association. The compensation of the Trustee on such additions shall be proportionate to the compensation herein provided.

WHEREAS, FRIENDSHIP FUND, INC., did on the 22d day of January, 1924, make a Deed of Trust to the CENTRAL UNION TRUST COMPANY OF NEW YORK, as Trustee, of certain securities for the benefit of Marine Biological Laboratory, as is more fully set forth in said Deed; and

WHEREAS, paragraph 13 of said Deed provides as follows:

"13. The Trustee is hereby authorized to receive and hold under this Deed additional securities, cash and property pursuant to the terms and conditions hereof. Such additional gifts may be received from any person, corporation or association. The
compensation of the Trustee on such additions shall be proportionate to the compensation herein provided."

KNOW ALL MEN BY THESE PRESENTS:

That in consideration of the premises and in consideration of the payment to it as Trustee, on January 25th, 1924, of $400,000 from Mr. John D. Rockefeller, Jr., by check to the order of Marine Biological Laboratory, endorsed to Central Union Trust Company of New York, as Trustee, under said Deed aforementioned, and in consideration of the payment to it as Trustee, on January 26th, 1924 of $100,000 from Carnegie Corporation of New York, by check to the order of Marine Biological Laboratory, endorsed to the Central Union Trust Company of New York, as Trustee, receipt whereof is hereby acknowledged, the CENTRAL UNION TRUST COMPANY OF NEW YORK agrees with Friendship Fund, Inc., and with the other donors above mentioned, to hold said additional gifts under all of the terms and conditions of said Deed of Trust between Friendship Fund, Inc. and Central Union Trust Company of New York, dated January 22, 1924.

IN WITNESS WHEREOF, Central Union Trust Company of New York, has caused these presents to be executed by its duly authorized officers and its corporate seal to be hereunto affixed, as of the 26th day of January, 1924.

CENTRAL UNION TRUST COMPANY OF NEW YORK,
By B. A. Morton.
Vice-President. (seal)

State of New York  
County of New York  

On this 4th day of February, in the year One thousand nine hundred and twenty-four, before me, the undersigned, personally came B. A. Morton, to me known, who, being by me duly sworn, did depose and say that he resides in New York, N. Y.; that he is a Vice President of CENTRAL UNION TRUST COMPANY OF NEW YORK, the corporation described in and which executed the foregoing instrument; and that he signed his name thereto by order of the Board of Trustees of said corporation.

HAROLD A. CUNNINGHAM. (seal)
Notary Public.
2. PLANS OF THE NEW BUILDING.

The new building faces about South-west; see plan 1.

The uses of the various rooms are indicated by specific designations on the plans. The laboratories not otherwise designated are designed for the following purposes: (1) Primarily for biological research—120, 123, 140, 141, 206, 208, 209, 217, 218, 229, 235, 236, 238, 239, 240, 241, 242, 315, 318, 320, 322, 325, 326, 329, 330, 341; (2) for biochemical research—121, 122, 124, 142, 207, 219, 221, 316, 317, 321, 327, 328, 342, 343, 344, 345; (3) for biophysical research—126, 311, 312, 313, 315, 339.

The biological laboratories are equipped with running salt and fresh water, direct and alternating electric current, gas and the usual laboratory furniture. The biochemical laboratories have in addition chemical hood and desk with the usual appliances. The two general biophysical laboratories, 126 and 339, have the fittings of the biological laboratories, apparatus case and open space for setting up apparatus; the X-ray rooms are protected by lead-sheathed walls.

The roof-plan shows the intention of storing the sea-water in shallow cement tanks not visible from the ground which will replace the tall wooden tanks on the present building.
3. THE NEW FORM OF APPLICATION FOR ADMISSION TO COURSES.

MARINE BIOLOGICAL LABORATORY

APPLICATION FOR ADMISSION TO COURSE OF INSTRUCTION

The Laboratory assigns no grades in courses and sets no examinations. The Laboratory will therefore not certify to attainments in any course, but individual instructors are at liberty to do so on their own responsibility.

To the applicant:—Please supply the information called for on pages 1 and 2 and mail separately to the Laboratory; detach pages 3 and 4 and give to your chief instructor in biology with the request to fill in and mail directly to the Laboratory. Applicants occupying independent positions may omit pages 3 and 4, or secure endorsement according to their own judgment.

1. Name in full.
2. Course desired.
   N. B. Note statement of prerequisites in the Annual Announcement.
3. Date of birth. place of birth.
4. Present address.
5. Permanent address.
6. Sex of applicant.
8. Institution represented.
9. Status: year of undergraduate or graduate work, or official position.
10. College degree, with year and name of institution.
11. Graduate degree, with year and name of institution.
12. Give list of undergraduate courses taken in chemistry, physics, and biology (including botany, zoology, anatomy, physiology, etc.).
12a. Where taken? ..........................................................

13. Similar list of graduate courses ..............................

14. List of publications and research in progress. ..........

15. State clearly reasons for wishing to take the course, and its place in your professional intention ................

Signature .................................................................

To the instructor or endorser of this application:—Please note the statement at the head of applicant’s form. The purpose of the Marine Biological Laboratory in offering courses is to aid in the production and training of investigators; it is the intention, therefore, to give first consideration to persons who appear likely by their intellectual gifts and intentions to contribute to the advancement of science whether in biology in the stricter sense, or in medicine, or in any field in which professional biological qualification is an important factor. The status of the applicant, whether as undergraduate or graduate, may thus be of secondary importance, but other things being equal, preference will naturally be given to the better prepared student.
1. Name and address of applicant recommended

2. If more than one candidate is being recommended for admission to courses from your institution, state definitely the order in which you recommended acceptance.

3. State whether the fee of the candidate, if accepted, is to be paid by the institution.

4. State clearly your reasons for believing that the candidate possesses promise as an investigator.

4. THE STAFF, 1923.

FRANK R. LILLIE, Director, Professor of Embryology, and Chairman of the Department of Zoology, The University of Chicago.

GILMAN A. DREW, Assistant Director, Marine Biological Laboratory.

ZOÖLOGY

1. INVESTIGATION

GARY N. CALKINS, Professor of Protozoology, Columbia University.

E. G. CONKLIN, Professor of Zoology, Princeton University.

CASWELL GRAVE, Professor of Zoology, Washington University.

H. S. JENNINGS, Professor of Zoology, Johns Hopkins University.

FRANK R. LILLIE, Professor of Embryology, the University of Chicago.

C. E. McCLUNG, Professor of Zoology, University of Pennsylvania.

S. O. MAST, Professor of Zoology, John Hopkins University.

T. H. MORGAN, Professor of Experimental Zoology, Columbia University.

G. H. PARKER, Professor of Zoology, Harvard University.

E. B. WILSON, Professor of Zoology, Columbia University.
II. INSTRUCTION

Robert H. Bowen, Assistant Professor of Zoology, Columbia University.
Edward F. Adolph, Instructor in General Physiology, University of Pittsburgh.
J. A. Dawson, Assistant Professor of Biology, Dalhousie University.
S. W. Geiser, Assistant Professor of Zoology, Washington University.
Ann H. Morgan, Professor of Zoology, Mount Holyoke College.
J. Paul Visscher, U. S. Bureau of Fisheries. (Absent on leave.)
B. H. Willier, Instructor in Zoology, The University of Chicago.
Benjamin P. Young, Assistant Professor of Zoology, Cornell University.
Donnell B. Young, Assistant Professor of Biology, Carleton College.

PROTOZOOLOGY

1. INVESTIGATION
   (See Zoology)

II. INSTRUCTION

Gary N. Calkins, Professor of Protozoology, Columbia University.
Louise H. Gregory, Assistant Professor of Zoology, Columbia University. (Absent 1923.)
Florence de L. Lowther, Instructor in Zoology, Barnard College.

EMBRYOLOGY

1. INVESTIGATION
   (See Zoology)

II. INSTRUCTION

Hubert B. Goodrich, Associate Professor of Zoology, Wesleyan University.
Benjamin H. Grave, Professor of Biology, Wabash College.
Harold H. Plough, Associate Professor of Biology, Amherst College.
Charles G. Rogers, Professor of Comparative Physiology, Oberlin College.
Elizabeth A. Smith, Assistant Professor of Zoology, University of Wisconsin.

PHYSIOLOGY

1. INVESTIGATION

Harold C. Bradley, Professor of Physiological Chemistry, University of Wisconsin.
Walter E. Garrey, Professor of Physiology, Tulane University.
Ralph S. Lillie, Biologist, Nela Research Laboratories, Department of Pure Science, Nela Park, Cleveland, Ohio.
Albert P. Mathews, Professor of Biochemistry, The University of Cincinnati.

II. INSTRUCTION

Merkel H. Jacobs, Assistant Professor of Physiology, University of Pennsylvania.
William R. Ambers, Assistant Professor of Physiology, College of Medicine, University of Tennessee.
Frank P. Knowlton, Professor of Physiology, Syracuse University.
Reynold A. Spaeth, Associate in Physiology, School of Hygiene and Public Health, Johns Hopkins University.

BOTANY

I. INVESTIGATION

S. C. Brooks, Department of Public Health, Washington, D. C.
Edward M. East, Professor of Experimental Plant Morphology, Harvard University.
Robert A. Harper, Professor of Botany, Columbia University.
E. Newton Harvey, Assistant Professor of Physiology, Princeton University.
Winthrop J. V. Osterhout, Professor of Botany, Harvard University.
Jacob R. Schramm, Professor of Botany, College of Agriculture, Cornell University.

II. INSTRUCTION

Ivey F. Lewis, Professor of Biology, University of Virginia.
William Randolph Taylor, Assistant Professor of Botany, University of Pennsylvania.
William H. Weston, Jr., Assistant Professor of Cryptogamic Botany, Harvard University.

LIBRARY

Robert P. Bigelow, Librarian and Professor of Zoology and Parasitology, Massachusetts Institute of Technology, Librarian.
Priscilla B. Montgomery (Mrs. Thomas H. Montgomery, Jr.), Assistant Librarian.

CHEMICAL SUPPLIES

Oliver S. Strong, Associate Professor of Neurology, Columbia University, New York City, Chemist.
SUPPLY DEPARTMENT

George M. Gray, Curator.  A. W. Leathers, Head of Shipping Department.
John J. Veezer, Captain.  A. M. Hilton, Collector.
E. M. Lewis, Engineer.  J. McInnis, Collector.

F. M. MacNaught, Business Manager.

5. INVESTIGATORS AND STUDENTS, 1923.

Adams, A. Elizabeth, Associate Professor of Zoology, Mount Holyoke College.
Adolph, Edward F., Instructor in Zoology, University of Pittsburgh.
Agerborg, H. P. K., Instructor in Biology, Williams College.
Bown, Robert H., Assistant Professor of Zoology, Columbia University.
Bridges, Calvin B., Research Assistant, Carnegie Institution of Washington.
Calkins, Gary N., Professor of Zoology, Columbia University.
Chambers, Robert, Professor of Microscopic Anatomy, Cornell University Medical College.
Child, C. M., Professor of Zoology, University of Chicago.
Clapp, Cornelia M., Professor Emeritus of Zoology, Mount Holyoke College.
Clark, Eliot R., Professor of Anatomy, University of Georgia.
Clark, Eleanor L., 1104 Milledge Road, Augusta, Ga.
Cole, Arch E., Assistant Professor of Zoology, Northwestern University.
Cole, William H., Professor of Biology, Lake Forest College.
Conklin, Edwin G., Professor of Biology, Princeton University.
Copeland, Manton, Professor of Biology, Bowdoin College.
Cowdry, Emund V., Associate Member, Rockefeller Institute.
Cowdry, Nathaniel H., 1142 Madison Ave., New York City.
Curtis, Winton C., Professor of Zoology, University of Missouri.
Danchakoff, Vera, Assistant Professor of Anatomy, College of Physicians and Surgeons.
Dawson, James A., Instructor in Zoology, Harvard University.
Degener, Lyda M., 5002 Penn St., Frankford, Pa.
Detwiler, Samuel R., Assistant Professor, Harvard University.
Dolley, William L., Jr., Professor of Biology, Randolph-Macon College.
Donaldson, Henry H., Professor of Neurology, Wistar Institute.
Drew, Gilman A., Assistant Director, Marine Biological Laboratory, Woods Hole, Mass.
Fischelis, Philipp, Professor of Histology and Embryology, Temple University.
Geiser, Samuel W., Assistant Professor of Zoology, Washington University.
Glaser, Otto C., Professor of Biology, Amherst College.
Goodrich, Hubert B., Professor of Biology, Wesleyan University.
Grave, Benjamin H., Professor of Zoology, Wabash College.
Grave, Caswell, Professor of Zoology, Washington University.
MARINE BIOLOGICAL LABORATORY.

GUTHRIE, MARY J., Assistant Professor, University of Missouri.
HEGNER, ROBERT W., Professor of Protozoology, School of Hygiene and Public Health, Johns Hopkins University.
HEILBRUNN, LEWIS V., Assistant Professor of Zoology, University of Michigan.
HESS, WALTER N., Professor of Biology, De Pauw University.
HIBBARD, HOPE, Associate Professor of Zoology, Elmlira College.
HINKCHIS, MARIE A., Research Assistant, Nela Research Laboratories, Cleveland, Ohio.
HITCHCOCK, DAVID L., Associate, Rockefeller Institute for Medical Research.
HOGUE, MARY J., Professor of Bacteriology, North Carolina College for Women.
HOLT, L. EMMETT, JR., Rockefeller Institute for Medical Research.
HUETTNER, ALFRED F., Instructor, Columbia University.
JENNINGS, HERBERT S., Professor of Zoology, Johns Hopkins University.
JUST, ERNEST E., Professor of Zoology, Howard University.
KINDRED, JAMES E., University of Virginia.
KNOWER, HENRY McE., Professor of Anatomy, University of Cincinnati.
KOMAI, TAKU, Assistant Professor of Zoology, Kyoto Imperial University.
LANCEFIELD, DONALD E., Assistant Professor of Zoology, Columbia University.
LEWIS, WARREN H., Research Associate, Carnegie Institution of Washington.
LILLIE, FRANK R., Chairman, Department of Zoology, University of Chicago.
LYNCH, RUTH S., Assistant in Graduate Zoology, Johns Hopkins University.
McCLUNG, CLARENCE E., Director of Zoological Laboratory, University of Pennsylvania.
MALONE, EDWARD F., Professor of Histology, University of Cincinnati.
MARTIN, EARL A., Assistant Professor, College of the City of New York.
MAST, SAMUEL O., Professor of Zoology, Johns Hopkins University.
MAVOR, JAMES W., Associate Professor of Biology, Union College.
METCALF, MAYNARD M., 128 Forest St., Oberlin, Ohio.
METZ, CHARLES W., Member of Staff, Carnegie Institution, Cold Spring Harbor.
MINER, ROY W., Curator of Lower Invertebrates, American Museum of Natural History.
MINNICH, DWIGHT E., Assistant Professor of Animal Biology, University of Minnesota.
MORGAN, THOMAS H., Professor of Experimental Zoology, Columbia University.
MORGAN, LILIAN V., 409 W. 117th St., New York City.
MORGAN, ANN H., Professor of Zoology, Mount Holyoke College.
PARKER, GEORGE H., Professor of Zoology, Harvard University.
PARMENTER, CHARLES L., Instructor, University of Pennsylvania.
Peebles, Florence, Pineville, Pa.
PHILLIPS, EVERETT F., U. S. Dept. of Agriculture, Washington, D. C.
PLOUGH, HAROLD H., Associate Professor of Biology, Amherst College.
RAND, HERBERT W., Associate Professor of Zoology, Harvard University.
ROGERS, CHARLES G., Professor of Comparative Physiology, Oberlin College.
SAMPSON, MYRA M., Assistant Professor of Zoology, Smith College.
SCHRADER, FRANZ, Bryn Mawr College.
SMITH, ELIZABETH A., Assistant Professor of Zoology, University of Wisconsin.
STOCKARD, CHARLES R., Professor of Anatomy, Cornell University Medical College.
STRONG, OLIVER S., Associate Professor of Neurology, Columbia University.
STURTEVANT, ALFRED H., Member of Staff, Carnegie Institution of Washington.
SWETT, FRANCIS H., Instructor, Johns Hopkins University Medical School.
THE DIRECTOR’S REPORT.

WEINSTEIN, ALEXANDER, Research Fellow, Johns Hopkins University.

WENRICH, DAVID H., Assistant Professor of Zoology, University of Pennsylvania.

WHEDON, ARTHUR D., Head of Zoology Department, North Dakota Agricultural College.

WHITE, GERTRUDE M., Instructor, Carnegie Institute of Technology.

WISLICKI, GEORGE B., Associate Professor of Anatomy, Johns Hopkins University.

WHITING, PHINEAS W., University of Iowa.

WIMAN, HARRY L., Professor of Zoology, University of Cincinnati.

WILLIER, B. H., Instructor in Zoology, University of Chicago.

WILSON, EDMUND B., Professor of Zoology, Columbia University.

WOODRUFF, LORANDE L., Professor of Protozoology, Yale University.

WOODWARD, ALVALYN E., North Carolina College for Women.

YOUNG, BENJAMIN P., Assistant Professor of Zoology, Cornell University.

YOUNG, DONNELL B., Assistant Professor of Biology, Carleton College.

BEGINNING INVESTIGATORS—Zoology.

AUSTIN, MARY L., Columbia University.

BARRETT, ELIZABETH, Student, University of Chicago.

BEAN, RAYMOND J., Instructor in Biology, Western Reserve University.

BEERMAN, HERMAN, University of Pennsylvania.

BOLLAM, LORETTA M., Notre Dame College.

BOTSFORD, E. FRANCES, Graduate Student, Yale University.

CLARK, MARTHA L., Research Assistant, Columbia University.

COLDWELL, E. INEZ, Assistant Professor, North Carolina College for Women.

COLE, ELBERT C., Teaching Fellow, Harvard University.

DELLINGER, SAMUEL C., Professor of Zoology, University of Arkansas.

DOWDEN, FLORENCE, Research Student, Yale University.

EMMART, EMILY W., Graduate Student, Johns Hopkins University.

FRY, HENRY J., Instructor, New York University.

GOWANLOCK, JAMES N., Associate Professor of Zoology, Wabash College.

HOPKINS, AUBREY E., Harvard University.

HUNTSINGER, HARRIET C., Research Assistant, Carnegie Institution, Cold Spring Harbor.

JAMESON, M. MACGREGOR, American Museum of Natural History.

KAHN, MORTON C., Instructor in Hygiene, Cornell University Medical College.

LACKEFY, JAMES B., Assistant in Zoology, Columbia University.

LANGWORTHY, ORTHHELLO R., Instructor in Anatomy, Johns Hopkins University.

LARMON, MINA L., Research Student, Columbia University.

LAWTHE, FLORENCE DEL., Instructor in Zoology, Barnard College.

MACDOUGALL, MARY S., Assistant, Columbia University.

MAY, RAOUl M., Graduate Student, Harvard University.

MOSER, MILDRED, Research Assistant, Carnegie Institution, Cold Spring Harbor.

MYERS, EVERETT C., Assistant, Johns Hopkins University.

SPENCER, HOPE, Technician, Yale University.

SPRINGER, MARY G., Instructor in Zoology, Columbia University.

STRAUSS, MAURICE B., Student, Amherst College.


THARALDSEN, CONRAD E., Assistant Professor of Zoology, Northwestern University.

THATCHER, LLOYD E., Instructor in Zoology, University of Michigan.

THILLAYAMPALAM, E. M., Research Student, Columbia University.

WALLACE, EDITH M., Carnegie Institution of Washington.
MARINE BIOLOGICAL LABORATORY.

WARREN, D. C., Columbia University.
Whiting, MRS. PHINEAS W., Iowa City, Iowa.
Willis, JOSEPHINE, University of Pennsylvania.
Wood, FRANK E., Professor of Biology, Illinois Wesleyan University.
Woodbridge, HELEN, Instructor, University of Maine.
Yolton, LEROY W., Instructor in Biology, Carleton College.
Young, W. C., Amherst College.

INDEPENDENT INVESTIGATORS—Physiology.
Amberger, WILLIAM R., Assistant Professor, University of Pennsylvania.
Bodansky, MEYER, Adjunct Professor, University of Texas.
Cohn, EDWIN J., Assistant Professor of Physiological Chemistry, Harvard University Medical School.
Clowes, GEORGE H. A., Director of Research, Eli Lilly & Co., Indianapolis.
Edwards, DAYTON J., Associate Professor of Physiology, Cornell University Medical College.
Garrey, WALTER E., Professor of Physiology, Tulane University.
Hecht, SELIG, Research Fellow, Harvard University.
Hopkins, HOYT S., Assistant Professor of Physiology, Baylor University Medical College.
Hyde, Ida H., Lawrence, Kansas.
Irwin, Marian, Radcliffe College.
JACOBS, MERKEL H., Professor of General Physiology, University of Pennsylvania.
Knowlton, FRANK P., Professor of Physiology, Syracuse University.
Lilie, RALPH S., Biologist, Nela Research Laboratories, Cleveland, Ohio.
Loeb, Jacques, Head of Division of Experimental Biology, Rockefeller Institute for Medical Research.
Loeb, Leo, Professor of Comparative Pathology, Washington University.
Morrill, CHANCE V., Associate Professor of Anatomy, Cornell University Medical College.
Olmsted, JAMES M. D., Associate Professor of Physiology, University of Toronto.
Pond, SAMUEL E., Physiologist, Nela Research Laboratories, Cleveland, Ohio.
Rapport, David, Cornell University Medical College.
Rapport, ANNE Y., Associate in Physiology and Biochemistry, Bryn Mawr College.
Smith, Homer W., Eli Lilly & Co., Indianapolis, Ind.
Spaeth, REYNOLD A., Associate Professor of Physiology, Johns Hopkins University.
Spirodonovich, R., Instructor, Belgrade Medical University, Belgrade, Servia.

BEGINNING INVESTIGATORS—Physiology.
Blanchard, KENNETH C., Instructor in Chemistry, Massachusetts Institute of Technology.
Cattell, Ware, Assistant, Nela Research Laboratories, Cleveland, Ohio.
Gilson, ARTHUR S., Jr., Instructor in Physiology, Tulane University.
Hendry, Jessie L., Chemical Assistant, Harvard University Medical School.
Studebaker, MABEL T., Laboratory Technician, Eli Lilly & Co., Indianapolis.

INDEPENDENT INVESTIGATORS—Botany.
Blodgett, FREDERICK H., Instructor in General Science and Agriculture, State Normal School, Danbury, Conn.
Cleland, RALPH E., Assistant Professor of Biology, Goucher College.
HARPER, ROBERT A., Professor of Botany, Columbia University.
HAZEN, TRACY E., Assistant Professor of Botany, Barnard College.
INMAN, ONDESS L., Head of the Department of Biology, Antioch College.
LEWIS, IVY E., Professor of Biology, University of Virginia.
LYMAN, GEORGE R., Dean, College of Agriculture, West Virginia University.
SCHRAMM, J. R., National Research Council, Washington, D. C.
STARR, ANNA M., Associate Professor of Botany, Mount Holyoke College.
STEVENS, NEIL E., Pathologist, Department of Agriculture, Washington, D. C.
STOKEY, ALMA G., Professor of Botany, Mount Holyoke College.
TAYLOR, WILLIAM H., JR., Assistant Professor of Botany, Harvard University.

BEGINNING INVESTIGATORS—Botany.

BINKS, LAWRENCE R., Harvard University.
COOK, SHERBURNE F., Graduate Student, Harvard University.
KEMP, MARGARET, Radcliffe College.
WILCOX, MARGUERITE S., Department of Agriculture, Washington, D. C.

STUDENTS.

1923.

Zoology.

AYCOCK, ROBERT E., St. Mary's Seminary.
BAKER, HERBERT N., Instructor, Guilford College.
BENNINGTON, CECIL O., Student, Wabash College.
BLASS, ALICE M., Student, Carnegie Institute of Technology.
BOYDEN, ALAN A., Assistant in Zoology, University of Wisconsin.
BRYNGELSSON, LE NNART G., Student, Knox College.
BYERS, CHARLES F., Student, University of Michigan.
CATTELL, JACK, Student, University of Arizona.
CHASE, ELTON F., Instructor, Tufts College.
CLAPP, EUNICE E., Student, Smith College.
CLINE, JESSIE, Student, Mount Holyoke College.
CODDING, MILDRED B., Student, Wellesley College.
COREY, EDWARD L., Assistant Instructor in Biology, Western Reserve University.
CO WPERTHWAITE, MARION H., Assistant, Washington University.
CURWEN, ALICE O., Student, Smith College.
DODDS, MARY L., H. Sophie Newcomb College.
DOWLING, ALEXANDER S., Student, De Pauw University.
EICKMANN, REINTRANT W., Hunter College.
FARRELL, ELIZABETH G., Student, Notre Dame College of Maryland.
FIT ZGERALD, EILEEN M., Student, Connecticut College.
FOGG, LLOYD C., Graduate Student, Dartmouth College.
FREEMAN, HAZEL L., Illinois Wesleyan University.
FRITZELL, AGNES I., Student, Connecticut College.
GRAVES, CLARA E., Student, Goucher College.
HARPER, FRANCIS D., University of Chicago.
HEILIG, MARY D., Student, Carnegie Institute of Technology.
HILL, BENJAMIN H., Instructor in Biology, Texas Christian University.
HOOK, SABRA J., Assistant, University of Rochester.
INDORF, CATHERINE, University of Missouri.
JOHNSON, MARY H., Student, Knox College.
JOHNSON, PERCY L., Student, University of Maine.
KAY, MARY E., H. Sophie Newcomb College.
KOEFRING, VERA, Butler College.
LE COUNT, VERA, University of Cincinnati.
LEONARD, DONALD W., Assistant, Wesleyan University.
LOOMIS, CORNELIA S., Student, Barnard College.
MCMULLEN, ELEANOR C., Instructor in General Zoology, Cornell University.
MORAN, AGNES E., Student, University of Rochester.
MORGAN, WILLIAM O., Columbia University.
MORRIS, ALDEN W., Student, DePauw University.
MORTENSEN, EDITH E., Student, Carleton College.
MOSMAN, HARLAND W., Assistant in Zoology, University of Wisconsin.
MULHERN, GRACE W., Student, Notre Dame College of Maryland.
NESTER, HENRY G., Student, Butler College.
OSTERTAG, BERNARD, Student, College for Women, Western Reserve University.
PICKERING, ELEANOR C., Student, Oberlin College.
RICHARDSON, DOROTHY, Student, Mount Holyoke College.
SANDERS, ELIZABETH P., Student, Goucher College.
SEVERNS, OLIVER F., Principal, Philippine Academy.
SOBEL, MOLLIE, Student, Hunter College.
SPALDING, JANET E., Elmira College.
SPILMAN, ROBERT S., Post Surgeon and Professor of Biology, Virginia Military Institute.
TOBIAS, CLARENCE E., JR., Student, University of Pennsylvania.
WARBASSE, AGNES, Packer Collegiate Institute.
WILLIAMS, ELISABETH, Student, Mount Holyoke College.
WILLIAMS, MERRITT F., Student, Washington University.
WINKLEY, RUTH, Student, University of Michigan.

Embryology.

BAUMAN, BEN, Instructor, De Witt Clinton High School, New York City.
BEERS, CHARLES D., Student, Johns Hopkins University.
BOOTH, ESTHER, Elmira College.
BOWEN, EDITH S., Assistant in Biology, Brown University.
BUHLER, EUGENE O., Student, Wabash College.
CAPPS, PRISCILLA, Smith College.
DAVIS, SARAH H., Radcliffe College.
DIXON, PHYLLIS, Vassar College.
GRAY, IRVING E., Assistant, University of Wisconsin.
JOHNSON, MAYNARD S., Graduate Student, University of Illinois.
JOHNSON, WILLIS H., Student, Wabash College.
JONES, MYRNA F., Student, Doane College.
JULIN, MARY, Zurich, Switzerland.
KEEFE, ANSELM M., St. Norbert’s College.
KELLY, CLIFTON P., Student, Wabash College.
KUBICEK, HELEN M., Student, Doane College.
LEE, MILTON O., Instructor, Ohio State University.
Mandeville, Mary, Elmira College.
Marshall, Eleanor H., Women's College of University of Delaware.
Millemann, R. J., Student, Cornell University Medical College.
Montague, Ouida, Shrewsbury, Mass.
Moss, Leland C., Student, Wabash College.
Murray, Margaret R., Assistant, Washington University.
Parsons, Talcott, Student, Amherst College.
Perry, Lydia S., Assistant, Mount Holyoke College.
Pike, Arlene H., Saugus, Mass.
Turner, Winifred H., Student, Smith College.
Watt, Lucy J., Instructor, Wells College.
Whaley, James H., Jr., Cornell University Medical College.
Williams, Dorothy E., University of Wisconsin.

Physiology.

Banning, Laura, Teacher, Morris High School, Bronx, New York City.
De Marco, Carlo M., Jr., Student, University of Pennsylvania.
Edsall, John T., Harvard University.
Egloff, William C., Student, University of Chicago.
Emerson, Robert, Student, Harvard University.
Espenscheid, Gertrude K., 617 Third St., Brooklyn, N. Y.
Florence, Loree, Technician, Medical Dept., University of Georgia.
Harrison, William G., Jr., Student, University of Michigan.
Hartline, Haldan K., Student, Lafayette College.
Hitchcock, Fred A., Graduate Student, Ohio State University.
Keeler, Romola L., 264 West 95th St., New York City.
Lucas, Alfred M., Student, Wabash College.
Lucke, Baldwin, Assistant Professor of Pathology, University of Pennsylvania.
McCUTCHEON, MORTON, Instructor in Pathology, University of Pennsylvania.
Mayerson, Hymen S., Assistant in Physiology, Yale University.
Plunkett, Charles R., 1603 Newkirk Ave., Brooklyn, N. Y.
Ring, Gordon C., Assistant, Wesleyan University.
Schmitt, Francis O., Student, Washington University.
Stedman, Hazeltene L., Instructor in Physiology, Mount Holyoke College.
Stephens, Mary A., Student, Elmira College.
Turner, Abby H., Professor of Physiology, Mount Holyoke College.
Worcester, Blandina, Radcliffe College.

Attending Morning Lectures Only.
Ashby, Winifred M., The Mayo Foundation, Rochester, Minn.
Bertsch, Marguerite, 838 Riverside Drive, New York City.
Goldberg, Jacob A., 356 Second Ave., New York City.
Halsey, John T., 1232 Maison Blanche Building, New Orleans.

Protozoology.

Bond, Lester E., Associate Professor of Biology, Maryville College.
Burdick, Donald L., Instructor in Biology, New York University.
Cook, Daniel, University of Cincinnati.
Dailey, William T., Instructor, New York University.
DARBY, HUGH H., Student, Columbia University.
DIMICK, GERTRUDE P., Graduate Student, Brown University.
GREENBERG, FRANCES, Columbia University.
GRIFFIN, DONALD C., Instructor in Biology, New York University.
HAUBER, ULRICH A., St. Ambrose College.
HAUP, GEORGE W., Bucknell University.
HITCHENS, A. PARKER, Instructor in Bacteriology, Army Medical School.
KNAPKE, BEDE, St. Bernard College.
O'TOOLE, GEORGE B., Professor of Theology and Animal Biology, St. Vincent Archabbey.
RUCKES, HERBERT, Instructor, College of the City of New York.
WEBSTER, WILLIAM D., Instructor, New York University.
WENSTRUP, EDWARD J., St. Vincent Archabbey.

Botany.
ACQUARONE, PAUL, Student, Pennsylvania State College.
BROWN, ALICE E., Student, Goucher College.
BROWN, ANNETTE, Student, Sweet Briar College.
CASTLE, EDWARD S., Student, Harvard University.
CLARKE, ALICE E., Student, Goucher College.
CURRAN, LORETTA J., Teacher, Boston, Mass.
DUCKWORTH, HELEN E. A., Student, Sweet Briar College.
FOGG, JOHN M., JR., University of Pennsylvania.
GREIG, MARY, American Museum of Natural History.
HOF, ANNE C., Student, George Washington University.
MACKINTOSH, ELIZABETH L., Student, Smith College.
NUTE, BERTHA E., Science Teacher, Hastings-on-Hudson.
OVERSTREET, MRS. HARRY A., 98 Morningside Ave., New York City.
Pike, Radcliffe B., Student, Bowdoin College.
SHAW, MARGARET F., Instructor, Vassar College.
STIFFLER, ETHEL G., Student, Goucher College.
SUMWALT, MARGARET, Student, Goucher College.

---

6. TABULAR VIEW OF ATTENDANCE.

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<td>INVESTIGATORS—Total</td>
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<td>Independent:</td>
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THE DIRECTOR'S REPORT.

STUDENTS—Total....................... 128 120 120 126 146
Zoölogy............................... 55 56 53 59 59
Protozoölogy......................... 15 15 11 12 16
Embryology......................... 33 26 28 28 31
Physiology...................... 17 15 18 19 22
Botany............................... 8 8 10 8 18

Total Attendance................ 262 256 292 308 322

INSTITUTIONS REPRESENTED—Total. 88 86 95 104 107
By investigators................. 61 55 67 71 62
By students...................... 62 57 53 68 73

SCHOOLS AND ACADEMIES REPRESENTED.
By investigators............... - 1 - - -
By students..................... 4 7 - - 4

7. SUBSCRIBING AND COÖPERATING INSTITUTIONS.

A coöperating institution is one that has subscribed for the two preceding years, or that announces its intention of subscribing regularly. A subscribing institution is one that pays for one or more tables or rooms.

SCHOLARSHIP TABLES
Lucretia Crocker Scholarships for Teachers in Boston.
Scholarship of $100.00 Supported by a friend of the Laboratory since 1898.
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1923

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Barnard College Connecticut College
Bowdoin College Cornell University
Bryn Mawr College Cornell University Medical College
Butler College Dartmouth College
Carleton College De Pauw University
Carnegie Institute of Technology Doane College
Carnegie Institution of Washington, Dept. of Embryology
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Goucher College
Harvard University
Harvard University Medical School
Hunter College
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Johns Hopkins University
Johns Hopkins University Medical School
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Smith College
Sophie Newcomb College
St. Bernard College
St. Mary's Seminary
St. Norbert's College
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Sweet Briar College
Tufts College
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U. S. Veterans Bureau
University of Arkansas
University of Chicago
University of Cincinnati
University of Illinois
University of Maine
University of Michigan
University of Minnesota
University of Missouri
University of Pennsylvania
University of Rochester
University of Wisconsin
Vassar College
Wabash College
Washington University
Washington University Medical School
Wellesley College
Wesleyan University
Western Reserve University
Wistar Institute of Anatomy and Biology
Yale University

8. EVENING LECTURES, 1923.

Friday, July 6,
DR. EDWIN B. WILSON. "Notes on Statistical Methods."

Tuesday, July 10,
DR. A. F. BLAKESLEE. "Genetics of the Jimson Weed."

Friday, July 13,
DR. C. M. CHILD. "The Physiological Gradients as Factors in Development."

Monday, July 16,
DR. TRACEY E. HAZEN. "Botanizing in the Colombian Andes."

Tuesday, July 17,
DR. E. V. COWDRY. "The Physiological Significance of the Golgi Apparatus in the Cells of Animals and Plants."
Friday, July 20,
Dr. A. H. Sturtevant.......... "Mutation."

Tuesday, July 24,
Dr. Edward C. Schneider...... "The Reaction of the Human Body to Variations in Atmospheric Oxygen."

Tuesday, July 31,
Mr. William Lyman Underwood. "Journeys with a Passamaquoit Indian."

Friday, Aug. 3,
Dr. R. W. Hegner............. "Some Investigations on Entozoaic Protozoa."

Tuesday, Aug. 7,
Dr. C. C. Little............. "The Occurrence of Heritable Abnormalities in Mice and their Relation to Exposure to X-Rays."

Friday, Aug. 10,
Dr. S. R. Detwiler........... "Embryonic Surgery in Relation to Problems of Development in the Nervous System."

Tuesday, Aug. 14,
Dr. J. A. Detlefsen.......... "Habituation and Dishabitation."

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Matsui, Prof. K., Imperial College of Agriculture and Dendrology, Morioka, Japan.
Mavor, Prof. James W., Union College, Schenectady, N. Y.
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