

which could furnish some tie of social solidarity between students while in residence here, and bring the men into easy communication with universities when abroad, has been lacking. This want, felt by the graduates and some members of the faculty, led to the formation, May 25, 1891, of the Graduate Students' Association. Similar associations have been formed in the universities of Edinburgh, Paris, and in other European universities.

The specific purposes of the association may be gathered from the resolutions passed at the first mass-meeting, from the constitution adopted Oct. 17, and from the reports of the various committees. All of these are freely used in the preparation of the present statement.

Any graduate student may become a member of the association on signing the constitution and paying a small annual fee.

The honorary members consist of the members of the faculty, all past members of the association, and of such distinguished men at home or abroad as may be elected to honorary membership at the yearly meeting of the association.

The functions of the association are comprised in the divisions: international, national, and local or social. The committee on international relations furnish students going abroad with letters of introduction to similar associations in foreign universities, and receive students with letters from like associations of foreign universities. National functions are carried out by a committee who strive to promote intercourse with colleges and universities in the United States and present the advantages of this university to students who contemplate graduate work. This committee has charge of university extension in Baltimore. The social committee receive new students, acquaint them with university methods and give other desired information. They are the medium for co-operation between the faculty and students. They secure any advantages in trade, and adopt such means as may be feasible to promote sociability among the students.

These and other constitutional provisions have been carried out during the present half-year as follows:—

A students' committee, consisting of one from each department, elected by the graduate students of the several departments, was chosen.

The student representatives of the respective departments are: astronomy, Brantz M. Roszel; chemistry, J. E. Gilpin; geology, Francis P. King; biology, R. G. Harrison; physics, George O. Squier; mathematics, E. P. Manning; English, F. J. Mather; history, J. A. James; German, Albert B. Faust; Greek, John H. T. Main; Latin, Sidney G. Stacey; Sanskrit, William W. Baden; romance languages, Julius Blume; Semitic languages, J. D. Prince; pathology, S. Flexner. This general committee, in pursuance of powers granted, elected the association officers and appointed sub-committees for the present year.

The following officers and sub-committees were elected: honorary president, Professor H. B. Adams; president, John H. T. Main; vice-president, W. I. Hull; secretary, R. G. Harrison; treasurer, T. S. Baker; committee on international relations, J. E. Blume, David Kinley, and F. J. Mather; committee on national relations, J. A. James, G. W. Smith, and W. H. Kilpatrick; committee on social relations, R. P. Bigelow, A. B. Faust, S. G. Stacey, U. S. Grant, and J. Blume.

The work accomplished by the committees, although a mere beginning, serves to show that the association has a valuable place in university life. Communication has been entered into with associations of foreign universities. Lectures and courses of lectures have been given by graduate students in the interest of churches and of city associations.

Dr. Walter B. Scaife, a former Hopkins student, by the invitation of Professor Adams, is to give for the benefit of the association an illustrated lecture on "Florence and the Florentines." This lecture is to be given in Levering Hall and followed by an assembly in the parlors. This meeting will be the first of a series of social gatherings to take place during the year.

Through these means it is believed that departmental isolation will be overcome; that men may, through this association, enter into a broader student life, and that the university at large will be convinced of the need for wider social relations than are found in the laboratory or seminary.

JOHNS HOPKINS MARINE LABORATORY.

THE following report of the 1891 session of the Marine Zoological Laboratory has just been made to the president of the Johns Hopkins University.

Early in May, 1891, some of the members of our party went to Jamaica, which had been selected as our field of work for the season, while others joined us later on.

Our party was as follows: W. K. Brooks, director; E. A. Andrews, associate in biology; R. P. Bigelow, graduate student in biology; J. P. Campbell, professor of biology, Athens, Georgia; G. W. Field, graduate student in biology; J. C. Gifford, special student in pathology; R. G. Harrison, H. M. Knower, and M. M. Metcalf, graduate students in biology; T. H. Morgan, Adam T. Bruce fellow; G. C. Price, graduate student in biology; John Stuart, teacher of science, Hope School, Jamaica; Charles Taylor, Kingston, Jamaica; B. W. Barton, lecturer in botany; Basil Solters, teacher, Baltimore. The two last named devoted themselves to botanical exploration and study in the interior of the island, and they did not visit the laboratory at the seashore.

After a preliminary exploration of different seaports, we selected Port Henderson as our station. This is a seaside resort in Kingston Harbor, opposite Port Royal, and about nine miles by water from Kingston. Here we found two partially furnished houses suitable for a laboratory and lodgings, and we rented and occupied them for about fourteen weeks, from May 26 to Sept. 1.

The establishment of a party in a new home at a remote point in a strange country is a task which, in the mid-summer climate of the tropics, is most severe and exhausting. Of this, I was entirely relieved by Dr. Morgan and Mr. Bigelow, who themselves attended to all the preliminary work with great efficiency, and I take this opportunity to thank them for their willing help, which contributed in no small degree to the success of our expedition.

Our summer was devoted, in great part, to the collection and preservation of material for embryological work at home, and, as the members of the party are still employed in preparing and studying it, the results are not yet far enough advanced for reporting. There are a few noteworthy points of interest, however. Among them are the following:—

Soon after we settled at Port Henderson, Mr. Field found near our laboratory, in an enclosed lagoon of dense salt water, a very remarkable rhizostomatous medusa belonging to the genus *Cassiopea*. No special of this genus, as limited by Haeckel, has heretofore been found anywhere in the Atlantic. It is a South Pacific form, and the known species are from this region or from the Indian Ocean and the Red Sea. A species of a closely related genus, *Polyclonia frondosa*, was found by L. Agassiz on the coast of Florida, and was referred by him to the genus *Cassiopea*, although it is not a true *Cassiopea*. *Polyclonia frondosa* is found in Jamaica also, and we obtained specimens in Port Royal Harbor. It is also found in the Bahamas, and Professor H. V. Wilson has given to me the notes and drawings which he made from specimens which he obtained at Green Turtle Key.

The medusa which we found at Port Henderson is not a *Polyclonia*, but a true *Cassiopea*, and the only one as yet found in the Atlantic. As it is very abundant and conspicuous, its escape from the notice of naturalists for such a long time is remarkable, for it is so well known to the negro fishermen of Jamaica that they have a name for it—the Guinea corn blubber. As it is one of the most common and characteristic marine animals of these waters, I have proposed to call it, after the Indian name of the island, *Cassiopea Xamacha*. While it is able to swim slowly by the pulsations of its bell, it is usually found fixed upon the smooth chalky bottom by the flat sucker-like surface of its exumbrella, and in some places the bottom was so completely covered with them that their circular discs were actually touching each other, while the interspaces were filled in by smaller specimens.

Our knowledge of the life history of the rhizostomatous medusæ is very incomplete, and is based entirely upon the study of the Mediterranean *Colytorhiza tuberculata*, a species which belongs to a more specialized division of the group than *Cassiopea*, although it was formerly called *Cassiopea Borbonica*. Many fundamental points in the development of the rhizostomes, and, in

fact, of the Discomedusæ in general, are still in dispute, and at my suggestion Mr. Bigelow undertook to trace the life history of our Cassiopea, a line of research for which the studies which he has pursued for nearly three years under my direction, on the structure of Discomedusæ, rendered him well qualified. He found the larvæ of Cassiopea on marine plants among the adults, and as these lived in captivity and set free peculiar planula-like buds, which also lived and grew in small aquaria in the house, he was able to obtain a fairly complete series of young stages. The most interesting results of his study of the living larvæ are the discovery of this peculiar method of budding, and the settlement of the question as to the origin and homology of the sense organs of adult Discomedusæ, which he has proved to be the modified basal portions of certain tentacles of the attached larvæ. This is supplementary to, and in amplification of, Mr. Bigelow's former work on the development of the sense organs in other groups of medusæ. While at Port Henderson he watched the larvæ undergo their metamorphosis, and he made drawings from life of the important stages. He is now completing his work by the study of serial sections of the larvæ, and of the organs of the adult. This work, which is now well under way, gives promise of results of very great interest, and I regard it as a very noteworthy piece of work, as it will be, when completed and published with ample illustrations, a permanent and valuable addition to our knowledge of the medusæ.

As I had hoped to find Chiton with eggs, Mr. Metcalf went to Jamaica prepared to study its development. We found several species of Chiton in great abundance on the rocks at Port Henderson, close to our laboratory. Within a few hours after his arrival he obtained the eggs, and soon had a series of larvæ, at all stages of development, living in the house in small aquaria. He devoted the season to the study of the living larvæ, and to the preservation of material for sections. He is now continuing the work at our laboratory in Baltimore, and he has constructed a series of enlarged models from his sections, to exhibit the process of segmentation of the egg of Chiton.

We found ourselves well placed at Port Henderson for studying the Termites, or so-called white ants, and Mr. Knowler, who had at my suggestion prepared himself for this work before leaving Baltimore, spent his summer in observing their habits, and in collecting the eggs and larvæ, as well as the adults of the different castes. He preserved a fine collection of these specimens, for embryological and anatomical work, and he is now engaged in the prosecution of this portion of his research.

Mr. Field continued at Port Henderson the study of the embryology of Echinoderms, upon which he has been engaged for two years past, and he added to his collection the eggs and larvæ of a number of forms of which he previously had no representation.

Mr. Morgan spent a great deal of his time in gathering and studying material bearing on the problem of metamerization in animals, and in this connection he collected the adults and embryos of Chiton, Ophiurans, etc. He also obtained at several places in the interior of the island a number of eggs from a species of tree frog, which has no tadpole stage, but hatches from the egg as a little frog. Some of these were kept in the laboratory in wet moss until they hatched, while others were preserved at successive embryonic stages. He was so fortunate as to obtain a very complete series of stages, and inasmuch as its development has never been studied, there is every reason to hope that most valuable results will be obtained by the thorough study of this material.

Some ten years ago I found at Beaufort an interesting Crustacean, Lucifer, whose metamorphosis is most remarkable and instructive. I obtained a few eggs, and reared the newly hatched larvæ, and traced the metamorphosis with exhaustive minuteness from the time of hatching to maturity; and my results, with ample illustrations, were presented to the Royal Society of London by Professor Huxley, and were published in the Philosophical Transactions. This work, which was among the first fruits of our marine laboratory, is now embodied in all the standard text-books.

I was not able, at Beaufort, to obtain enough eggs of Lucifer to study the embryology, although the few which I did find showed that this part of its life history is fully as important as the metamorphosis. I have been upon the watch ever since for a chance

to obtain a supply of eggs, in order to supplement my first memoir on the metamorphosis by a second on the embryology; but while I have occasionally found Lucifer with eggs, out at sea. I have had no opportunity to study it, as the preparation of the material presents such difficulties that it cannot be carried on at sea. The adult animals are so small that they are almost invisible, and the eggs, which are microscopic, are so loosely attached and so delicate, that they are lost in the act of capturing the adults. I was greatly pleased to find Lucifer in abundance, and by going out in a boat and collecting the adults with great care, and taking them carefully home, I was so fortunate as to find some thirty or forty with eggs, and these I kept in aquaria long enough to obtain a tolerably complete series of stages in the embryonic development. I am now engaged in the study of this material, and I hope to have an account of the embryology of Lucifer completed within a year. My success in obtaining these eggs is an ample return for the expedition to Jamaica.

These are some of the subjects upon which we hope to contribute original scientific knowledge, as the result of our summer in Jamaica; but, besides its value to science, the expedition had very great educational value to all of us. We saw for ourselves an endless variety of most interesting and instructive natural objects, which we had previously known only from books or preserved specimens, and every hour was filled with most delightful experiences of the greatest value to naturalists and teachers of natural science. I am sure that all the members of our party will be glad to join me in expressing our high appreciation of the great advantage which we have enjoyed in the opportunity to spend a summer in laboratory work at the seaside in Jamaica.

After our return to Baltimore, a series of public lectures, illustrated by specimens and photographs, was given by members of the party, under the auspices of the Naturalists' Field Club of the University.

The lectures were as follows: The Aspects of Nature in Jamaica, by W. K. Brooks; the Zoology of Jamaica, by E. A. Andrews; the Natural History of Termites, by H. M. Knowler; the Botany of Jamaica, by B. W. Barton; and the People of Jamaica, by Basil Sollers.

W. K. BROOKS.

AMONG THE PUBLISHERS.

THE "Browning Cyclopædia," which has been in preparation by Dr. Edward Berdoe, author of "Browning's Message to His Time," will be published very shortly by Macmillan & Co. It is probably the most generally useful of all the aids to the study of Browning as yet attempted.

— Ignatius Donnelly's new book will be entitled "The Cipher in the Plays and on the Tombstone." It is to place the truth of the belief in a cipher beyond controversy.

— Mrs. Laurence Gomme is engaged upon a book of children's games, and also upon a volume dealing with the various local feasts and ceremonial cakes, both of which subjects were rather prominent at the recent Folk-Lore Congress.

— T. Y. Crowell & Co. have just issued the fifth and concluding volume of Sybel's work on "The Founding of the German Empire by William I." The volume contains, besides the text, thirty pages of index and ten pages of chronological data.

— "Homilies of Science" is the title of a volume, by Dr. Paul Carus, from the Open Court Publishing Company, consisting of a collection of short editorial articles discussing religious, moral, and social questions from the standpoint of what might briefly be characterized as the religion of science.

— The office of *The Publishers' Weekly* will publish at once a useful hand-book for the bookseller and librarian, entitled "A Bookseller's Library, and How to Use It," by A. Growoll. The volume contains annotated lists of the principal American, English, German, and French book-trade catalogues, trade and literary journals, leading library and auction catalogues, catalogues of dealers in second-hand books with mention of their specialties, etc. These lists are accompanied by concise and practical hints as to how they may best be used, and the volume thus forms a desirable manual, particularly for the young bookseller.