

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. Knower, 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. Knower; 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.

— The *Atlantic Monthly* for January is a very good number. The article in it that is most likely to attract intelligent readers is that on "John Stuart Mill and the London and Westminster Review." Mill was the proprietor of that *Review* from 1836 to 1840, and had as his assistant in the editorship a young Scotchman named John Robertson; and this article consists in the main of letters that Mill addressed to Robertson during those years. The letters are very interesting, not only as revealing certain aspects of Mill's character, but also as showing the care with which he strove to keep the *Review* up to a high standard, and also with what keen intelligence he criticised the articles that were offered for insertion in it. Another article that is sure to attract notice is that on "Boston," by Ralph Waldo Emerson, in which the author traces the historical connection between the character of the early settlers and the moral and intellectual influence of Boston in American life. He justly says that Boston owes her influence to her religious earnestness and her instinct of freedom, and predicts that, so long as she retains these qualities, her influence will continue. This article was written in 1861, but has never before been published. Mr. Henry James contributes some reminiscences of James Russell Lowell, and expresses the opinion that Lowell's influence was mainly due to his style, both in writing and in speech, — a remark that is to a certain extent true, though the faults of Mr. James's own style are such that he is hardly a competent critic. Besides these papers, there are some excellent book-reviews, the beginning of a novel by F. Marion Crawford, and various

other articles which we have not space to particularize. The *Atlantic's* programme for 1892 is unusually varied and promising; and the magazine is sure to have interested readers throughout the year.

— *Garden and Forest* for Christmas week contained, as its leading illustration, one of a grove of hemlocks whitened with lately-fallen snow, and in an editorial article the stateliness and grace of this northern evergreen are celebrated. There are pictures, too, of a rare orchid in bloom, and cultural directions for growers of fruit and flowers. Mrs. Robbins gives a sketch of Deering's Woods, Portland, in her New England Park series; Mr. Jack adds some notes on his horticultural tour through Europe, and M. Demontzey tells how he has tamed the torrents of the French Alps by reclothing their basins with growing forests.

— From the D. Van Nostrand Company we have received "How to Become an Engineer," by George W. Plympton (18°, 50 cents). It is a brief treatise on the theoretical and practical training necessary in fitting for the duties of the civil engineer, giving the opinions of eminent authorities on the subject, and indicating the courses of study in engineering usually followed in the technical schools. From the same company has come "The Sextant," by F. R. Brainard (18°, 50 cents), being a treatise on reflecting mathematical instruments, with practical hints, suggestions, and "wrinkles" on their errors, adjustments, and use. To the sextant, the form of reflecting instrument most commonly

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used, most of the little volume is devoted. The volume is mainly a compilation of matter on the subject, well selected and judiciously worked into shape; to which the author has added many ideas and suggestions of his own and of officers who have been associated with him in the naval service.

— The *Magazine of American History* opens its twenty-seventh volume with the New Year. The leading paper, by Hon. Arthur Harvey, the president of the Canadian Institute, is the first part of "A Critical and Common-sense View of the Enterprise of Christopher Columbus," illustrated. "The Secret Societies of Princeton University," by Thomas Hotchkiss, Jun., illustrates the old and new Whig Halls at Princeton. "A Short-lived American State," is a contribution from the Louisiana historian, Henry E. Chambers. The question, "Was America Discovered by the Chinese?" is discussed by Rev. Dr. Glover. Those who look for the editor's contribution will find it in an account of "Prince Henry the Navigator," the first to conceive the bold project of

opening a road through the unexplored ocean, who indeed was the originator of the impulse which sent Columbus subsequently to our shores. "The Scot in America," by Hon. R. S. Robertson, turns the light upon a most interesting race among the founders of America. "A Sketch of John Badollett, 1758-1887," one of Indiana's strong characters in early times, is by President Bryan of Vincennes University. "Letters on Government Making, by Patrick Henry and John Adams, in 1776;" some things about "Collis P. Huntington," by Hubert Howe Bancroft; "Canada from a European Point of View in 1761;" and other short contributions complete the number.

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