

Perhaps this will in some measure account for the fact that of the Actiniæ collected during the expedition, thirty-nine out of forty-one are described as new species, for which eighteen new genera are diagnosed, and five new families are formed. The large majority of these new forms belong, as might be expected, to the Hexactiniæ of Hertwig, but some belong to the Edwardsiæ, Zoantheæ, and Ceriantheæ; while a new tribe has been provisionally made to receive two forms (*Fenja* and *Ægir*), not at first sight clearly appertaining to the Actinaria. These forms have elongated, cylindrical, vermiform bodies, with an apparently complete body cavity; the oral disk is surrounded with tentacles, and opens into an œsophagus, which is continued into a closed intestine, which opens at the aboral end of the body. There are twelve septal chambers, complete in themselves, with twelve pore openings around the anal opening.

In *Fenja mirabilis* the body is 70 mm. in length and 15 mm. in breadth at the anterior extremity, whilst the posterior part is rather narrower; the surface of the body is smooth and shining.

In *Ægir frigidus* the animal is surrounded with a mucous investment, and the body is but 30 mm. in length; from 8 to 10 mm. in breadth at the anterior extremity, to 4 to 5 mm. in breadth at the somewhat rounded posterior extremity. While in *Fenja* the ovaries do not materially differ from the type in the Actinida, those in *Ægir* greatly approach the form generally met with in the Alcyonida.

It would seem useless to speculate as to the position these strange forms must occupy until something more is known of their structure and something of their development. Dr. Danielssen writes that, if the cœlom is to be regarded as the distinctive feature, then it is evident they cannot be placed among the Coelenterata; but he adds that perhaps too much stress has been laid on the so-called gastro-vascular apparatus as a systematic feature in this group, and that what is called the œsophagus in Actinida is possibly a rudimentary intestinal formation.

We have alluded to these two forms in some detail as being of very special interest, but an almost equal interest attaches to others which are also to be found described, but which our space forbids us to do more than thus generally refer to. In addition to the coloured plates representing the new species, there are nineteen with the various anatomical details, making this memoir one of the best illustrated of the series. It follows so closely on the memoir on the Alcyonida by the same distinguished author, that we cannot but express our admiration for the energy he displays in working out the natural history of the Norwegian coast, which is now better known than that of our own shores.

OUR BOOK SHELF.

Smithsonian Report, 1887. (Washington: Government Printing Office.)

THIS important publication is increasing year by year in value, in consequence of the pains taken to increase the quantity and quality of the records of progress in the various sciences. In the present volume it brings the records of the Institution down to June 30, 1887. We find the proceedings of the Board of Regents and of the Executive Committee,

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the Report of the Secretary on the general work of the establishment, the National Museum, and the Bureau of Ethnology. But there is very much more than this, although these matters are by no means of merely local interest. The progress of astronomy, North American geology and palæontology, vulcanology and seismology, geography and exploration, physics, chemistry, mineralogy, zoology, and anthropology, take up no less than 500 pages, and are admirably done. We should add that the record of each branch of science is accompanied by a full bibliography, which largely increases its usefulness. The miscellaneous papers this year deal chiefly with the Western mounds and Indian archæology.

Travels and Discoveries in North and Central Africa. By Henry Barth. (London: Ward, Lock, and Co., 1890.)

FORTY years ago Barth was invited to join a mission which the British Government was about to despatch to Central Africa. He accepted the invitation, and was absent from Europe nearly six years, in the course of which he travelled from Tripoli to Bórnu, and from Bórnu to Timbúktu. The account of his explorations, published in 1857 in German and English, was immediately recognized as one of the most important and fascinating of modern books of travel; and even now, after so long an interval, it has lost but little of its interest. In the present volume, which belongs to the Minerva Library, the first half of the great traveller's elaborate work is reproduced with many of the original illustrations. The books of travel by Darwin and Wallace, which have been reissued in the same series, differ considerably from that of Barth, who was not a naturalist; but, as Mr. Bettany, the editor, says, "to make up for this he is extremely rich in topographical, historical, and anthropological details." Mr. Bettany contributes to the volume a short introduction, in which he brings together some of the leading facts relating to Barth's career.

Weather Forecasting for the British Islands. By Captain Henry Toynbee, F.R.A.S., &c. (London: Edward Stanford, 1890.)

THIS is a most interesting and useful little book, and should be in the possession of all those who take any interest whatever in weather forecasting. It is written with the intention of showing what a single observer can do as regards this subject, supposing him to have a barometer, means for observing roughly the direction and force of the wind, and power to recognize cirrus clouds and the direction from which they are coming. To make the book more complete, the author has added some daily weather charts to illustrate the application of the principles and variations which occur in practice, and to show what can be learnt from them.

The Encyclopædia of Photography. By Walter E. Woodbury. (London: Iliffe and Son, 1890.)

THIS is the second part of the work we noticed before, to be completed in about twelve parts issued monthly. The ground covered is from B to Coffee Process, between which entries will be found information useful to all classes of photographers. Bromide paper, camera-bellows making, carbon process, may be mentioned as among the subjects most fully treated of. When completed, the work will contain over 1000 references, and be illustrated by about 200 explanatory sketches and diagrams by the author.

Japan and the Pacific. By Manjiro Inagaki, B.A. (Cantab.). (London: T. Fisher Unwin, 1890.)

THIS book, so far as it has any elements of interest, appeals rather to politicians than to students of science.