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thoroughly accurate, is noteworthy for its simplicity and straightforwardness, and Professor Gage has shown himself a master in this form of composition. Not a little of the success of the pamphlet is due to the illustrations, which show a happy blending of informational and decorative purposes. In one respect only does the text seem open to some criticism; the occasional endowment of the toad with semi-human faculties, while adding to the interest of the composition, is perhaps not wholly consistent with nature. The account is full of suggestions for outdoor studies, and concludes with some appropriate book references for the teacher.

G. H. P.

Eyes of Annelids. — The histological structure of the eyes of the free-living marine annelids has been investigated by K. E. Schreiner.¹ In *Nereis* the retina consisted of pigmented retinal cells and non-nervous supporting cells. In all other annelids examined, *Eunice*, *Hesione*, *Lepidonotus*, *Phyllodoce*, *Asterope*, and *Alciope*, only pigmented retinal cells were observed. This difference the author believes to be of fundamental importance, and he therefore separates *Nereis*, so far as its eyes are concerned, from the other annelids. The remaining forms then make a natural series, from those with open cup-like eyes, such as are found in *Eunice*, to the closed vesicular eyes of *Alciope*.

G. H. P.

Mesoplodon on the Norway Coast. — J. A. Grieg records the capture in August, 1895, on the Norway coast, of two specimens of the whale, *Mesoplodon bidens* Sow.² Previously this species had been noted in Scandinavian waters only five times. Of one specimen, presumably a female, only the skeleton was obtained; the other, a male, received with the flesh on it, was photographed, and a cast made of it. Both specimens were mounted as skeletons for the Bergen Museum, and Grieg's paper is occupied largely with an account of their osteology. It is reported that when the first one, which was found stranded alive, was shot, it made a noise like a calf being butchered.

G. H. P.

Variation in Actinians. — J. A. Clubb has undertaken to examine large numbers of the common species of actinians found in the neighborhood of Liverpool, England, with the intention of ascertain-

¹ Schreiner, K. E. Histologische Studien über die Augen der freilebenden marinen Borstenwürmer, *Bergens Museums Aarbog*, 1897, No. 8.

² Grieg, J. A. *Mesoplodon bidens* Sow, *Bergens Museums Aarbog*, 1897, No. 5.

ing the extent to which they are open to structural variations.¹ The first species reported on is *Actinia equina*, of which 165 specimens were examined. In all these the mesenteries were hexamerous in arrangement, but in seven, or 4.24 per cent, abnormalities were noted in the siphonoglyphs. Four of these seven specimens had one siphonoglyph each; one had three, and two had two, which, however, were not opposite each other. In all cases the siphonoglyphs were accompanied with directive mesenteries, and no such mesenteries were found except associated with siphonoglyphs. This enumeration shows that *A. equina* is far more stable as a species than other actinians, such as *Metridium marginatum*, in which the abnormal individuals far outnumber the normal ones.

G. H. P.

Dorsal Organs of Arthropods.—Nussbaum and Schreiber² conclude that the various structures in the arthropods,—some median and others paired,—known as dorsal organs, are cænogenetic in character, and have as their function the reduction of the vitellocyte layer, while in a few cases it produces a secretion which in *Idotea* fixes the embryo to the chorion. In other cases the secretion may serve as a protective layer between chorion and embryo.

Zoological Notes.—We have already referred to the failure of the Senff expedition to northern Africa in its endeavor to obtain materials illustrating the embryology of the Dipnoan Protopterus. We learn, however, that the University of Cambridge has received a large series of embryos of the closely allied *Lepidosiren* from South America, which, we hope, may give us a better knowledge of this interesting group.

The United States Fish Commission has been actively engaged in the study of the tile fish, and this year finds them very abundant and extending over a larger range than was known before.

The discovery of a fourth specimen of the rare rail, *Notorius hochstetteri*, in New Zealand, is announced.

Göppert concludes, as the result of detailed studies on the laryngeal apparatus of the Amphibia,³ that the whole laryngeo-tracheal skeleton—that is the arytenoids and the cricoids, as well as the

¹ Clubb, J. A. The Mesenteries and Œsophageal Grooves of *Actinia equina* Linn. *Trans. Liverpool Biol. Soc.*, vol. xii, pp. 300–311.

² *Biol. Centralblatt*, Bd. xviii (1898), p. 736.

³ *Morph. Jahr.*, Bd. xxvi (1898), p. 282.