accorded and made use of by me for the benefit of the object in view.

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SCIENTIFIC LITERATURE.

General Principles of Zoology. By RICHARD HERTWIG. Translated by GEORGE W. FIELD. Henry Holt & Company, New York. 1896.

The most pressing need for teaching elementary zoology in American schools is a suitable text-book; one that treats the general principles in a way that clothes with flesh the skeleton of systematic zoology; one written with genius that holds the attention and inspires. It must be clear and compact. Prof. Hertwig's 'Lehrbuch der Zoologie' is such a book, and an English edition will doubtless give an impulse towards better teaching and better discipline in acquiring the foundations of animal biology. The separation of the 'General Principles' from the 'Systematic Part' as an independent volume may be regarded as an advantage, since its clear, comprehensive, though brief, generalizations and discussions make it a useful handbook for teachers, students and general readers who want to find and understand the latest position of the science.

In the introduction the author defines the purpose of zoological study, morphology, comparative anatomy, ontogeny, etc. The body of the book proceeds under two general heads — 'The History of Zoology' and 'General Morphology and Physiology.' The former covers sixty-seven pages in which are presented with surprising satisfaction and impartiality the positions of the creators of the science from the systematists and anatomists of classic antiquity to the investigators and teachers of to-day. Two-thirds of this space is justly given to the theory of descent, its history and proofs. Lamarckianism and Darwinism are succinctly interpreted and the additions and modifications suggested by advocates and opponents stated. In the general morphological part after certain definitions are given comes the history of the cell and the general principles of cytology; the latter and the chapter on general embryology are perhaps the most helpful in the book and leave little to be desired in a summary of these subjects. If one wants to know the position of zoologists on mimicry, distribution, promorphology, or the nature of species, this modest manual will afford him a reliable exposition.

The translator certainly deserves much credit for his part, scarcely an involved or muddy sentence occurs. The illustrations are familiar but well selected.

One so disposed might make a case in apparent criticism, for example, the young sponge figured on page 159, named '*Spongilla fluviatilis* (after Huxley),' some would prefer to see as *Meyenia fluviatilis* (after Lieberkühn); again on page 199: "Many *Protozoa* fuse with one another and form large bodies in which the individual animals can still be recognized." This seems to imply more than some feel like granting. *Ophrydium versatile* and *Proterospongia haeckeli*, for example, occur in large masses with hundreds of individuals imbedded in the support of cast-off or accumulated matter for protection; it seems to mean no more than the compound pedicels of other forms, or a chain of the loricæ of *Cothurnia variabilis*. But such differences may not be criticisms and certainly do not detract from the usefulness of the book.

Surely all who read this treatise will earnestly hope that the systematic part of the 'Lehrbuch' may speedily follow in the same admirable style.

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Lehrbuch der vergleichenden mikroskopischen Anatomie der Wirbelthiere. DR. MED. ALBERT OPPEL. Erster Theil; Der Magen. Jena, Gustav Fischer. 1896.

Since Leydig's 'Histologie' appeared forty years ago there has been no systematic attempt at a summary of our histological knowledge. The works on histology have confined themselves chiefly to the histology of man and the higher animals, except in cases where a lower form happened to be especially favorable for purposes of illustration. The study of histology has been so closely connected with that of medicine that this is not to be wondered at; but now, when the value of comparative study is so obvious, and when the lower animals are being studied from a purely scientific point of view, an attempt to collate and arrange the