not help feeling the advantage of a combined authorship, the senior author being primarily a student of vertebrate, and the junior author of invertebrate, life. This has insured a fairly balanced discussion of the phases of animal life in the two great divisions.

While, as stated above, this book is upon the life of the animal world rather than upon the anatomy, it is to be remarked that wherever the life processes are illuminated by the structure or development, these are freely introduced according to the guiding principle laid down by the authors: "Function and structure are always associated in nature and should always be associated in our study of nature."

It is gratifying to read such a book as this from cover to cover and find it free from vagaries. The authors, from personal knowledge and from the rich stores of the knowledge of others, have selected with great skill the facts illustrating each chapter, and have impressed these facts by excellent pictures, many of which are of their own production. In the discussion of the various topics, beyond the mere statement of facts, one constantly feels the certain hand of a master, a hand trained by personal knowledge and reflection and not dependent on the opinion of others. The book is very free from infelicities of expression and also from what seem to the reviewer doubtful statements. If two of the few observed might be mentioned, it is with the hope that future editions will modify the statements concerning the plate of embryos taken from Haeckel (p. 86), and also the statement on p. 107, that bones are not really living, etc. Taken in their setting these and a few other doubtful statements are true in spirit, but not quite in the letter. They can easily be made to conform with the vast majority of illustrations and be true both in spirit and in letter.

As a conclusion of this review a quotation from the chapter on geographical distribution will give an idea of the spirit and method of the authors:

"In California numerous anomalies [in distribution] have been noted, as the occurrence of Tahoe trout in Feather River, and in the Blue Lakes of Amador, which are on the other side of the main crest of the Sierra Nevada from Lake Tahoe, and the occurrence of the Whitney golden trout in Lone Pine Creek. In each case naturalists have found the man who actually carried the species across the divide. If this matter had been investigated a generation later, these cases would have been unexplainable anomalies in geographical distribution. Real causes are almost always simple when they are once known" (p. 288).

S. H. G.

GENERAL.

M. Octave Doin, Paris, has begun the publication of an elaborate 'Bibliothèque internationale de psychologie experimentale.' The subject-matter of psychology has been divided among fifty volumes, each of which is being prepared by a different author. France is, of course, fully represented, though the absence of certain names might be unexpected to those unacquainted with the personal conditions. Italy and Russia are well represented and there is one volume from England, 'Metaphysics,' by Mr. G. F. Stout, of Oxford; and two from America, 'Judgment and Knowledge,' by Professor J. Mark Baldwin, of Princeton University,' and 'Movement,' by Dr. R. S. Woodworth, of University and Bellevue Hospital Medical College. It is somewhat curious that the name of no German should appear on the list. The volumes, which will be on the average 300 to 400 pages in length, will be sold at the uniform price of 4 fr. Together they will form one of the most important encyclopedias that has been published in any science.

The Syndics of the Cambridge University Press have undertaken the publication of the first part of the 'Index Animalium' to the preparation of which Mr. C. Davies Sherborn has devoted so many years. The object of the Index is to provide zoologists with a complete list of all generic and specific names given by authors to animals both recent and fossil since January 1, 1758, the date of the 10th edition of Linnæus' 'Systema Naturæ.' With each name will be given an exact date and a reference intelligible to the layman as well as to the specialist. The British Association appointed a special committee to watch over the incep-

tion and progress of the work, the preparation of which was undertaken in 1890. Financial support has been given by the British Association, the Royal Society and the Zoological Society, while the authorities of the British Museum have afforded continual assistance. The work will be to the student of animal life what the 'Index Kewensis' is to the botanist, and indeed far more, as the last-named work refers only to Phanerogams, whereas the 'Index Animalium' will include all groups of animals and both recent and fossil forms. The portion of the work already completed and in the press covers the period from 1758–1800 and consists of 61,600 entries.

THE Society of German Engineers, in Berlin, has undertaken the preparation of an international technical dictionary to be published in English, French and German.

SCIENTIFIC JOURNALS AND ARTICLES.

The Journal of the Boston Society of Medical Sciences completes its fifth volume with the double number for May 23 and June 4, the index to the volume being issued with this number. From a small 16mo the *Journal* has grown to a volume of over 500 pages, although it shows at the same time the modern tendency towards specialization by containing more bacteriological and pathological papers than formerly. There is, however, much of general interest as well as important contributions to our knowledge of anatomy and physiology.

The Plant World for June contains 'Botanizing in Bermuda,' by Marshall A. Howe; 'Suggestions for the Study of the Hawthorns,' by W. W. Ashe, which notes that in place of ten species formerly recognized we know that at least 120 species occur on the Atlantic coast; 'Cuban Uses of the Royal Palm,' by William Palmer, and 'Botanizing in and around a Lake,' by E. L. Morris, besides briefer articles, notes and reviews. The supplement devoted to 'The Families of Flowering Plants,' by C. L. Pollard,' treats of the Mimosaceæ, Cæsalpiniaceæ, and the Papilionaceæ. The number is well illustrated.

SOCIETIES AND ACADEMIES.

ONONDAGA ACADEMY OF SCIENCE.

AT the June meeting Mr. Chas. G. Rogers presented a series of observations made during March, April and May, on the dates of arrival of birds on their spring migration, the blue-bird being first seen on March 15, and the robin appearing three days later.

Mr. Geo. D. Lynch read a paper on 'Hawks,' in which he described the food, and the nesting and defensive habits of Cooper's hawk, the sparrow hawk and the red-shouldered hawk, illustrating his remarks with specimens of skins and eggs of each of the three species.

Principal John D. Wilson read a paper embracing his observations on a family of bluebirds. He constructed a box in the shape of a prism about six inches square and fifteen inches deep, two opposite sides stopping about two inches short of the top, thus forming two entrances, protected from rain by a projecting roof. A narrow shelf was placed just beneath each entrance. Sparrows seemed unable to utilize the box for nesting purposes and so left it alone. They gathered about, however, when the young birds began to appear at the entrances, but were soon driven away by the parent birds. After the young were hatched they seemed to be fed solely by the mother, who invariably entered and left the nest by the opening on the south side. The male entered either opening indifferently, never brought food, and usually brought out excreta from the nest. Mr. Lynch spoke of similar observations on a robin's nest. The young birds were fed entirely on caterpillars, while the parent birds ate freely of cherries, monopolizing one tree, and even brushing their wings against the head of any person attempting to climb the tree.

Mr. Horace W. Britcher spoke briefly of the habits of some of the forms of life inhabiting a small springtime pond in which a form of the fairy shrimp (*Branchippus gellidus* Hay ?) occurs. The pond is usually dry from July to November. Larval *Branchippus* appear in February, and eggs are deposited during late April and early May, the water becoming so warm by the middle of May that the *Branchippus* are rapidly killed. A year ago eggs were collected and an attempt