

is probably often imported in grain, without establishing itself permanently in the country; and among subjects of minor importance, cockroaches, earwigs, and the like, may be noted the importation of dead locusts in some numbers in fodder from the Argentine Republic. There is evidence that their consumption has caused injury to horses, perhaps through mechanical irritation. Needless to say, Miss Ormerod does not encourage the idea that the introduction of live locusts, which in small numbers is almost an annual occurrence, is likely to cause an invasion.

It must, we imagine, be a source of regret to the author that the example she sets does not lead to a more thorough study of our insect pests. In many cases, the good that can be done by a referee, restricted as to opportunities for field observation, and depending largely on the capacity and good-will of correspondents, soon reaches a limit, which requires to be extended by broader methods of inquiry on the lines which have been so well developed in the United States. And it is satisfactory to note that the economic treatment of that very troublesome pest, the Currant Gallmite, discussed in a special appendix, is now being made the subject of extended research at the Woburn Experimental Fruit Farm.

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OUR BOOK SHELF.

Elements of Comparative Zoology. By J. S. Kingsley, S.D., Professor of Zoology in Tufts College. Pp. 344, small 8vo.; with 148 illustrations. (New York: H. Holt and Co., 1897.)

THE reputation of the author of this little book justifies the expectation of novelty, and in this we are not disappointed. The work, which has a local flavour, is based upon a conviction expressed in the preface, that while "laboratory guides are somewhat numerous . . . general outlines of zoology adapted to beginners are few," and that "nature studies are truly educational only when the student is trained to correlate and classify facts." Imparting a knowledge of the zoological alphabet by the now universally adopted Huxleyian method, the author proceeds to supplement that by a sort of reading lesson, in the form of a very brief outline of some of the chief structural limitations and ordinal characters of each group of which a typical species has been previously more fully examined, leading thus up to class distinction and the definition of phyla. In this manner the gnathostomatous vertebrata are first taken in hand in ascending order, and next the invertebrata in descending; and after a short chapter on each of the great animal sub-kingdoms, the work concludes with others on the metazoa, protozoa, comparative physiology, morphology, and on the animal kingdom. The practical mode of elementary instruction in biology by the type-system was never intended to go unsupplemented; and while the plan here adopted is one which must have been elsewhere in vogue, as the natural result of the growth of the system, to the author is due the credit of having first developed it in print. His chief novelty lies in the substitution of an interrogatory for the time-honoured didactic mode of treatment of the practical portion of the subject, with the introduction of a series of "Comparisons" in the form of questions which make for correlation of ideas. A very ingenious departure! but we would rather await the verdict of time upon it than pronounce outright. Fair consideration is given to habit, distribution, and other topics where desirable; and the book, though thin, is on the

whole trustworthy and fairly up to date, its weakest part being the physiological, the few short pages devoted to which are hackneyed and behind the times. A goodly amount of sound advice is scattered throughout the introduction and the text. The illustrations are very unequal, Fig. 63 being a positive burlesque on nature, Fig. 25 antiquated and useless, and Fig. 69 erroneous, by lack of knowledge of the large series of observations finding their focus in Boas's discovery of a prepulmonary aortic arch in the frog's tadpole. As leading error may be cited the allegation concerning the function of the marsupial bones, and as ill-advised the adoption of the Hæckelian classification of birds. In formulating so common-place a system as the dental of the dogs, the author has gone astray; and special interest attaches to the remark that he, an American, should write of the Ruminantia Cavicornia that their "horns are never shed," and give, in illustration of this assertion, a picture of the American Prongbuck, notorious as the only exception to that rule! We would recommend the consideration to the zoological brotherhood.

The Tutorial Chemistry. Part ii. *Metals.* By G. H. Bailey. Pp. 300. (London: W. B. Clive, 1897.)

THE present volume is intended to supply the student with his second year's course of study, the first year having presumably been spent over the "non-metals." The first section, occupying about one-third of the book; deals with chemical physics, the remainder being taken up with the systematic description of the commoner metals. There are three appendices, dealing with crystallography, spectrum analysis, and some suggested experiments. The section on chemical physics commences with a description of the methods available for the determination of atomic weights, this being followed by a discussion of the relations existing between the numbers thus found and the physical properties of the elements. Chapters iv. and v. deal with dissociation, specific volume, and the optical properties of liquids. The chapter on solution is the largest in the section; but the treatment of this important branch of the subject is not so satisfactory as that of the other portions dealing with physical chemistry. Thus, while a considerable amount of space is devoted to the hypothesis of Grotthus, which the student will afterwards have to unlearn, the work of Hittorf is not mentioned, although the latter forms the keystone of the modern theory of solution.

In spite of the great compression necessary, only 150 pages being allotted to a description of some fifty elements, the latter portion of the book gives a clear and concise account of the preparation and properties of the metals, each group being preceded by a summary of the reactions common to its constituents.

The classification of Mendeléeff is adopted throughout; and since the clear exposition of the periodic law requires the inclusion of certain of the "rare" metals, such elements as gallium, indium, thallium and uranium are described in their proper places along with commoner elements, instead of being relegated to a kind of museum of curiosities in the form of an appendix—a practice unfortunately usual with the smaller text-books.

The Kingdom of the Yellow Robe: being Sketches of the Domestic and Religious Rites and Ceremonies of the Siamese. By Ernest Young; with illustrations by E. A. Norbury. Demy 8vo. Pp. xiv + 399. (Westminster: Archibald Constable and Co., 1898.)

THE author has had the advantage of several years' residence in Siam, during which time he learned the language, and his educational duties enabled him to observe the working of the native mind. He writes with an evident sympathy for the common people; and in his sketches of the every-day life of the capital, he has caught not a little of the humour which is one of its chief characteristics. He discourses pleasantly on