

have penetrated since Wolley's time; and in collecting eggs they suffered almost from *embarrass des richesses* on account of the numbers that were brought in by the natives. One of the objects of their desire was to obtain a clutch of Smew's eggs, but it was not an easy matter to identify these without some of the down from the nest. At length they succeeded in obtaining what they thought were the right eggs; and their acumen was confirmed on arrival in England by the identification of the specimens from the down.

A section of the volume is also devoted to an account of the magnificent collection of raptorial birds maintained by the late author of the first journal at his father's seat, Mottisfont Abbey, Romsey. This collection, which is stated to be one of the finest in England, is still maintained; and the account shows how it is possible to keep such splendid birds in perfect condition. Altogether, the bird-lover will find much to interest him in this charming little volume.

R. L.

*Progressive Lessons in Science.* By A. Abbott, M.A., and Arthur Key, M.A. Pp. xix + 320. (London: Blackie and Son, Ltd., 1899.)

THIS book consists of two parts—the first, by Mr. Abbott, dealing with the non-metallic elements found in animal and vegetable substances; the second, by Mr. Key, on the detection and distribution of the elements in animal, vegetable and mineral substances. The former part contains a course of experimental work in chemistry of a kind with which many text-books have made us familiar. All that need be said of it is that most of the experiments are suitable for performance in the laboratory by beginners in chemistry, and that the book will assist the progress of rational methods of science teaching. With regard to the second part, though the plan has something to commend it, the execution is open to criticism. Mr. T. G. Rooper, who generously endeavours to assist the volume by his introduction, remarks upon the idea to which we refer. "The most original feature in the book is the set of experiments which illustrate the composition of food-stuffs. Starting with a table of the chief constituents of the blood, the author proves the presence of each by the use of an ingeniously-devised test. He then traces each constituent through animal life to the vegetable life on which animal life is supported, and thence to the soil from which the plant derives it, and finally to the rock, by the disintegration of which the soil is formed." There are several grave objections to this method of procedure as it is here presented. Students are *told* the tests which have to be applied to detect different substances, hence the experiments are not in advance of the test-tube practice which is fast giving place to more intelligent practical instruction. Moreover, the object of the experiments is too complicated to be of real educational value to beginners; and, finally, very few students have the time to do so much experimental work. Originality in text-books is a very commendable characteristic, but the authors should know that practicability is an even more important factor to consider. In its present form the book may be of service to a few teachers of domestic science and hygiene, but we do not think any other useful purpose will be served by its publication.

*De la Méthode dans la Psychologie des Sentiments.* By F. Rauh. Pp. 305. (Paris: Félix Alcan, 1899.)

THIS is a valuable monograph the merit of which is unfortunately partly concealed by a singularly obscure and unattractive literary style. M. Rauh's principal object is to enter a warning against the growing tendency of psychologists to neglect the adequate description of complicated facts, and to corrupt their science in its infancy by excessive reliance upon over-simple metaphysical and psychophysical theories. Psychology, as he well points out, possesses as yet no such simple and universal generalisation as that of the conservation of energy; in

the present state of the science any single theoretical generalisation is premature; for the full description of the facts of mental life we need many points of view, each represented by a different tentative hypothesis. Thus the emotions, which form the immediate subject of the essay, may be studied as concomitants of physiological changes in the organism, as embodying a *quasi*-judgment on the part of the organism as to what is beneficial or harmful, as manifestations of the "will to live," or finally as special phenomena calling for independent description and classification. Each of these points of view throws light upon some characteristic of human emotions, and none of them can be neglected in a complete psychology of sentiment. In the course of the argument many one-sided theories, especially that of Prof. James as to the organic concomitants of emotion, receive really trenchant criticism. Like most French writers, M. Rauh is particularly happy in what may be called "psychological diagnosis"; his too rare descriptions of the various emotional "temperaments" are subtle and illuminating. On the other hand, he makes occasional slips which partly vitiate his reasoning. In his deductions from the supposed existence of special "pain-conducting" nerves, for instance, he forgets to allow for the possibility that what the nerve conducts is the special presentative element, the "racking," "stabbing," or "burning" sensation rather than the painfulness of it. Again, he scarcely lays enough stress on the fact that our emotional state at any moment depends, not on isolated sensations, but upon the total complex of our sensations at the moment. And, finally, to the present writer at least, the conception of "psychical forces," of which M. Rauh makes great use, is exceedingly obscure. It is a pity that terminology, which has led to so many confusions, even in dynamics, should be needlessly transported into psychology.

A. E. T.

*Histoire Abrégée de l'Astronomie.* Par Ernest Lebon. Pp. vii + 288. (Paris: Gauthier-Villars, 1899.)

THIS book, as its title implies, is not intended as a complete history of the progress of astronomical science from the earliest day, but is devoted to rendering a brief account of the main steps in this progress, and at the same time giving us short biographical sketches of the chief workers in this branch of science. The subject is divided into three parts. The first deals with the ancient period which ends in the middle of the sixteenth century: only eighteen pages are devoted to this portion, so that the reader can rightly conclude that only a very general sketch has been attempted. The second or modern period, extending to the middle of the nineteenth century, commences with the system of Copernicus, and ends with an account of the state of the science at the time of the death of the illustrious astronomer of the Königsberg Observatory, Friedrich-Wilhelm Bessel. The last, or contemporary, period is contained in 125 pages. M. Lebon divides this portion of the book into ten chapters, dealing in each with the progress made in separate branches of the subject. Thus we find first an account of the advance made in celestial mechanics, then the progress in observational astronomy, spectroscopy, geodesy, photography, &c. Each of these reviews is brought well up to date, and contains a good general survey of the progress made. A useful addition to the book will be found in the biographical and bibliographical dictionary which follows this last portion. Besides a small chart of the northern hemisphere, which apparently has little utility in such a book as this, the illustrations include a set of sixteen processed reproductions of portraits of celebrated astronomers. Not only should astronomical readers find this book a welcome addition to their libraries, but those interested in the welfare of this, the oldest, of sciences, will peruse these pages with advantage.