

form which will not be considered antiquated. This is far from the case in a work like the one we are now noticing. The spirit of biological thought changes as rapidly as fresh facts accumulate. The introduction of an all-embracing hypothesis, like that of evolution, shakes previously accepted theories to the foundation; long-known facts are looked at in quite a different aspect to that in which they were received before its introduction, and their relative value is differently estimated.

How then can it be expected that a zoological work, originally written when Cuvier's celebrated "Regne Animal" was the latest text-book on the subject, could be so modified by an editor, however able, as to make it at all a representative of the present state of biological knowledge? To do so the article on the "*Pachydermata*, an order of Mammiferous quadrupeds distinguished by the thickness of their skins," would have to be removed; that on each of its component genera re-written, and the word itself obliterated from the whole work. A similar operation would have to be performed on many of the larger orders; and to such an extent would this process have to be carried on, that it would soon become doubtful whether a new work instead of a fresh edition would not be the more economical as well as the more useful.

This being the case, we are not surprised when we find that nothing more is said of the affinities of the Echidna than that "it has the external coating and general appearance of the porcupine, with the mouth and peculiar generic characters of the ant-eaters;" whilst the word "monotreme" is only mentioned in the second supplement. In like manner we notice that the Dugong and Manatee are said to rank among the Cetacea; whilst the Sirenia are omitted except in the appendix. The word "Chevrotain" refers us to "Musk Deer," thus perpetuating the well-known error; and, on finding it, we are told that there is a Javanese Musk deer (*Moschus javanicus*) rather larger than a full-sized hare, at the same time that "there are other musk deer, which are very small, and to which the general term of *Chevrotains* is given; they are inhabitants of Java, Sumatra, Ceylon, and Southern India." The genus "Ammocetes" has not been removed, and is still said to be "a genus of Chondropterygious fishes, allied to the lampreys," instead of the young of the lamprey, which it has for some time been known to be.

The creatures most fully treated of are the birds, the best known of which are described with fair completeness, with extracts from the works of Mr. Gould and other observant naturalists, as to their habits and coloration. We do not know why the Poe Honey-eater (*Prothemaudera concinnata*) is described both under its English and Latin name, in the same way that it is difficult to account for the Orycteropus and the lady-bird being each represented twice by woodcuts.

Several of the original articles are lacking in important detail. Of the Ammonite and Orthoceras it is only said that they are genera of fossil shells, which leaves their affinities unnecessarily vague. So there is not much to be learnt from the observation that Nummulites are "small round fossil shells, which in various parts of the world are found in immense numbers."

Mr. Holdsworth adds an extra supplement, which contains much useful information of recent origin. It includes an account of the breeding of the hippopotamus

and of the Sumatran rhinoceros, specimens of both of which have been born in this country during the last two or three years. The Liberian, or Lesser Hippopotamus, is also described, as is the new Bird of Paradise *Drepanornis d'albertisi*, obtained from New Guinea by Signor d'Albertis, and named by Mr. Sclater. An account is also given of the nesting of the crocodile in Ceylon, and of the incubation of the python.

This second supplement also adds to the palæontological information contained in the first, by giving a description of the *Dinoceras mirabilis* of Prof. Marsh, from Colorado; of *Archæopteryx lithographica*, of the other Odontornithes, and of *Odontopteryx talipoca*.

Notwithstanding the imperfections we have pointed out, there is much information to be obtained from this work, and which can be obtained from it more easily than from any other, on account of its being arranged alphabetically, and from the succinctness of the articles.

OUR BOOK SHELF

The Amateur's Photographic Guide Book. Being a complete *Résumé* of the most useful Dry and Wet Collodion Processes, especially for the use of Amateurs. By W. J. Stillman. (London: C. D. Smith and Co.)

ALTHOUGH we already possess numerous books of this class, the present little volume will doubtless meet with a welcome from amateur photographers, coming as it does from the pen of one well known to be a thoroughly practical worker. The book is small (numbering only 92 pp.), but contains sufficient information for those who desire to master the dry and wet collodion processes. Indeed, more pretentious works on photography which have come under our notice contain a large amount of what we are inclined to regard as utterly superfluous matter, and it is, moreover, refreshing to open a "Guide" which is not made a medium for some dealer's price-catalogue. The present work consists of three chapters and six appendices. The first chapter treats of cameras, and describes the process of taking pictures by the dry-plate method; some useful hints will be found in this chapter by outdoor photographers. The second chapter describes the ordinary wet collodion process—a process which has been so often described before, that Mr. Stillman has little to add by way of novelty; while the third chapter is devoted to positive prints. In the appendices we have special remarks on baths and bath solutions, on cleaning plates, on developers, on dry processes, &c. On this last subject, by the way, we notice that the decimal point has been omitted from several of the numbers in the formulæ, and although these are doubtless typographical errors, the figures as they stand will be apt to mislead beginners: "Sulphuric acid 1840," for instance, would at first sight lead the uninitiated into the belief that an acid in bottle since this date was necessary for success in making pyroxyline, whereas the author only means an acid of sp. gr. 1.840.

On consulting books on practical photography, anyone who pretends to any knowledge of chemical science cannot fail to be struck by the empiricism of the various formulæ proposed, and a feeling akin to regret is experienced on reflecting that this fascinating and useful art has reached its present state of perfection by processes which have been essentially methods of trial and error. The large numbers of practitioners, both professional and amateur, now engaged with this subject ought surely to produce from their ranks investigators willing, as we know they are able, to take up the purely scientific aspect of the subject. The harvest reaped by such an investigator would surely repay him, for we are of opinion that in the theory of the sensitive film lie hid some of the fundamental truths of molecular physics. R. M.