

which includes in all 420 titles, is most valuable. Professor Call's estimate of the value of these writings is a very kindly one. Bad as it was, Rafinesque's work unquestionably entitles him to recognition as the pioneer student of the ichthyology and conchology of the Mississippi valley, and he was also among the earliest to study its botany and its prehistoric archæology.

All the existing portraits of Rafinesque are reproduced, as well as a specimen of his handwriting, and in the appendix is reprinted his will, which affords a better insight into his character than all else he ever wrote.

The book is exhaustively complete, well written and beautifully printed, and in its publication the author and the Filson Club have accomplished admirably the task which they had undertaken. They have reared a noble monument to him who was 'the first Professor of Natural Science west of the Alleghanies.'

G. BROWN GOODE.

*The Royal Natural History.* Edited by RICHARD LYDEKKER. Illustrated by 72 colored plates and 1600 engravings. Frederick Warne & Co., London and New York. Royal 8°. 1894-95. Issued in monthly parts.

The second full volume of this important work is now out and, like the first, is devoted entirely to the Mammalia. The first comprised the Apes, Monkeys, Bats, Insectivores and part of the Carnivores; the second completes the Carnivores and includes also the Ungulates, Manatees and Dugongs. The well-known reputation of the editor and principal author, Mr. Lydekker, gives special value to these parts.

In general scope and plan of treatment the work resembles Brehm's *Thierleben*, of which several editions have appeared in Germany, and the *Standard Natural History*, published in this country. The illustrations

are in the main borrowed from Brehm; they were pirated by the *Standard Natural History* ten years ago, and here appear for the third time. Of course this is not the fault of the author; but it is a pity original works cannot have original illustrations. Good plates are as much a part of a book as the text itself, and should be allowed to stand unmolested as monuments to the author. It is not intended to deprecate the exchange of technical figures or the judicious bringing together of scattered cuts illustrating special subjects—a very different thing from the wholesale reproduction of a previous author's pictures.

The original cuts are not of high merit. Those of the hooded seal and skull of the cave bear are gross caricatures, and nearly all the skulls and teeth are far inferior to modern standards for such work; and it is not too much to say that Mr. Lydekker himself, in previous publications, has done much toward fixing these higher standards. The colored plates are cheap chromos, in striking contrast to the excellent and artistic plates borrowed from Brehm.

In quoting American writers on 'big game' the most authentic and best informed writers are not always chosen. The one book that is beyond all comparison the best yet written on our larger mammals—I refer of course to Roosevelt's *Wilderness Hunter*—is apparently unknown to the editor. As a natural result some surprising statements are made, as, for instance, when Oregon antelope hunters are told that the pronghorn has 'almost or quite disappeared' from their State.

Some confusion arises from different usages of the common names of animals. The statement that in North America "the range of the *elk* appears to have extended originally from about the 43d to the 70th parallel of latitude, its northern limit being marked by the southern limit of the so-called barren grounds," will take the breath

away from most Americans who read it for the first time, but a careful perusal of the context shows that our *moose* is the animal meant.

The hooded seal is said to be 'nowhere met with in large numbers,' a statement that will bear qualification in view of the fact that many thousands are sometimes taken by single vessels at the Newfoundland and Labrador seal fisheries. More than 15,000 were killed on the ice and brought to Newfoundland in March, 1883, by a sealer—the *Proteus*—which I accompanied as surgeon-naturalist, and similar catches are not rare.

In the matter of genera, the comprehensive groups of the past are commonly used instead of the smaller groups of to-day. The same conservatism characterizes the treatment of species—perhaps a good fault in a popular work, though one that can be carried too far—as when a dozen skunks are lumped under a single name, and the most specialized of our true foxes is left out.

The author seems to be constitutionally averse to the recognition of American species as distinct from their European representatives. This is shown by his treatment of our wolf, red fox, lynx, wolverine, marten and weasels. Even in the case of the mink the opinion is expressed that the American and European animals are 'mere local varieties of a single species.' The only explanation of such statements, from a man of Lydekker's experience in studying fossil mammals, is that he has not personally compared the skulls and teeth of the American and European forms. The number of American species is reduced out of all proportion to the sharpness of their characters or the size of the areas they inhabit. Thus, while three martens are accorded specific rank for Eurasia, only one is allowed for America, and it is given as doubtfully distinct. It should be stated, however, that no European collection of mammals con-

tains more than a fraction of our species; hence it is not so surprising that a foreign author should fail to appreciate their characters.

The common skunk of New England is said to range from Hudson Bay to Guatemala, but it does not reach even the Southern United States. Again, skunks are said to be good climbers, but neither *Mephitis* nor *Conepatus* can climb trees—the ability to do this being limited to the agile weasel-like members of the genus *Spilogale*.

The article on the fur seal is full of mis-statements and savors too strongly of a political argument from the British side of the case. The number of fur-seals killed at the Pribilof Islands each year is said to be 'limited to 100,000,' and it is implied that the number actually killed is still larger. As a matter of fact, 100,000 have not been killed since 1889, while the number killed at the islands since 1890 is as follows: 1890, 25,701; 1891, 14,406; 1892, 7,509; 1893, 7,390; 1894, 15,033.

We are told that the seals taken at sea (by pelagic sealers) 'appear to be exclusively young males or barren females.' In reality the great majority of these seals are breeding females. The author's ideas of humanity are simply past comprehension. He says: "Of the two methods of sealing, the shooting in the open sea is decidedly to be preferred on humanitarian grounds, more especially if it be true, as asserted, that on the Pribiloffs a considerable number of breeding female seals are killed before their cubs are old enough to shift for themselves." No female seals are ever killed on the islands except by accident—possibly one in many thousands—while in the open sea, as already stated, the great majority are females. Of these females, those killed on their way to the islands in spring are heavy with young, and those killed in Bering Sea in summer are nursing; so two lives are sacrificed for every one taken. Ever since

pelagic sealing has been carried on in Bering Sea, thousands of motherless 'pups' have died on the islands each year of starvation.

It is lamentable that the author has been so grossly deceived in these matters, and still more unfortunate that a scientific work should be tainted with partisan odor.

It is stated that no islands in Bering Sea besides St. Paul and St. George are inhabited by fur-seals. This must be a slip of the pen, for of course Mr. Lydekker knows that the Commander Islands are the breeding grounds of the *west* Bering Sea herd, just as the Pribilof Islands are the home of the *east* Bering sea herd.

In the matter of nomenclature the author seems to be on the fence. In some cases the law of priority is rigidly enforced; in others a name in common use is retained rather than the earlier name. Preoccupied generic names are as a rule discarded, but *Bassaris*, though preoccupied, is given instead of *Bassariscus*—doubtless by oversight.

The author's attitude as to genera is shown by the remark that in a certain group only one genus can be admitted 'on account of intermediate forms.' Is this not a surprising position for one of the most distinguished of living paleontologists? Are not all mammals connected by intermediate forms, living or extinct, even if all are not yet discovered? And would not Lydekker's system, if logically enforced, result sooner or later in the destruction of most of our generic groups? Is it not more rational to found genera on the weight of characters as presented in extremes of differentiation rather than on the accident of the survival or extinction of annectant species?

As a general criticism of the Royal Natural History, so far as now issued, it may be said that the parts on American mammals are weak. On the other hand, the foreign species—foreign from our stand-

point—are treated with a fullness and reliability not to be found in any other work. The magnitude of the undertaking and the haste in which the parts had to be prepared (to appear monthly) inevitably led to occasional inaccuracies; but the defects are far outweighed by the merits, and the work will prove helpful to naturalists and amateurs alike for many years to come. It is, indeed, a great satisfaction to be able to turn to a single publication in which the principal facts respecting the mammals of the world are brought down to date and stated with clearness and authority.

C. HART MERRIAM.

*The Book of Antelopes.* By P. L. SCLATER and OLDFIELD THOMAS. Illustrated by JOSEPH WOLF and J. SMITH. 4°, London, R. H. Porter, 1894-95.

The second part of this handsome and useful work, dated January, 1895, has come to hand. The distinguished authors make no attempt to offer a complete scientific treatise on the antelopes, but furnish "descriptive letter-press [with full synonymy] for the beautiful series of lithographic plates drawn some twenty years ago under the supervision of the late Sir Victor Brooke, making thereto such necessary modifications and additions as the progress of science demands."

The work comprises the diverse members of the Bovidae commonly called antelopes, hartbeests, gnus, duikers, water-boks and gazelles, and also the gemsbok, saiga, oryx, eland and many others. The geographic range of each species is given, together with an interesting account of its habits and peculiarities. Besides the full page colored plates, there are many excellent cuts in the text, mostly of horns and skulls. The book therefore is helpful alike to the naturalist and the sportsman, and is a handsome addition to any library.

The animals treated in the first two parts