

cases just mentioned the labour was well spent, but in others it is practically thrown away in the attempt to pierce a labyrinth the clue to which can be found only by mathematics. Prof. J. J. Thomson's book ought to be carefully studied by all physicists, and especially investigators who have discovered what they believe to be a new fact. In many cases it will suggest possible explanations which may prevent long and wearisome groping in the dark.

The author is to be warmly congratulated on his work, which is an achievement of a high order, and which will add to his already great reputation as a mathematical physicist.

#### RECENT WORKS ON ORNITHOLOGY.

*Argentine Ornithology.* By P. L. Sclater, M.A., F.R.S., &c., and W. H. Hudson, C.M.Z.S. Vol. I., pp. i.-xvi., 1-208, pls. i.-x. (London: R. H. Porter, 1888.)

*British Birds: Key List.* By Lieut.-Colonel L. Howard Irby. Pp. 1-58. (London: R. H. Porter, 1888.)

*Birds nesting and Bird-skinning: A Complete Description of the Nests and Eggs of Birds which breed in Britain.* By Edward Newman. Second Edition. Revised and re-written, with directions for their collection and preservation; and a chapter on Bird-skinning, &c. By Miller Christy. Pp. i.-xii., 1-138. (London: T. Fisher Unwin, 1888.)

DR. SCLATER AND MR. HUDSON have combined their forces to produce one of the best books ever written on South American ornithology. Each is a master of his own portion of the subject, for no one is better acquainted with neotropical ornithology than Dr. Sclater, and Mr. Hudson has been known for many years as one of the best living observers of the habits of birds in the field. The scheme of the book, therefore, leaves nothing to be desired, and the whole of the "get-up," as regards paper, print, and illustrations (the latter a matter of course when Mr. Keulemans is the artist), is about as good as it is possible to be, and reflects the greatest credit on the publisher.

One of the most interesting features of the work will doubtless be the introduction, which will appear in the second volume, when it will be possible to form some accurate notion of the relations of the avifauna of the Argentine Republic with that of the neighbouring States, a comparison which will doubtless be of importance to all naturalists who are interested in the somewhat complicated natural areas of the neotropical region. At present the genera and species peculiar to the region treated of by the authors seem to be few in number, and they would appear to be limited to the more western portions of the country, especially the district of Tucuman.

It would be easy to give many extracts from Mr. Hudson's charming writings on the habits of the birds, with the life-history of many of which he is as familiar as we are in England with that of many of our British birds, while his travels have enabled him in many instances to give an account of species both in their summer and winter homes. To any naturalist visiting Argentina this book will be of the highest value, the descriptions given by Dr. Sclater being short and concise, but sufficient for the identification of species, while he is to be congratulated

also on the success with which he has contrived to attach an English name to each bird. Everyone who has tried to do this, when writing on exotic birds, knows how difficult it is to invent English titles for species which have no counterpart in European nomenclature; and we must acknowledge that the names are a great improvement on some of the zoology "as she is taught" at our Zoological Gardens. Should some of the names bestowed upon animals in the "Zoo" ever be adopted in general works of travel, we might expect to find such truthful anecdotes as the following:—

"The insolent behaviour of one of the animals considerably annoyed us, from its persistent habit of making 'long noses' at us. On shooting a specimen we discovered that it was a Rude Fox (*Canis rudis*)," &c., &c.

"Some interesting little creatures now came in sight, dancing, apparently in perfect time, across the glade. They proved to be Pleasant Antelopes (*Tragelaphus gratus*)," &c., &c.

"Just as I was emerging from a thicket I managed to trip over something which brought me heavily to the ground. I fancied that I had fallen over a tree-stump, but on careful examination, it proved to be an Inconvenient Curassow (*Crax incommoda*) which had somehow got in my way," &c., &c.

In his useful little work, a "Key List to British Birds," Colonel Irby has supplied a real want—a handy pocket-book, giving just the diagnostic characters of every species. It is a desirable supplement to the "List of British Birds" published by the British Ornithologists' Union, which dealt with the nomenclature of the various species, but which might also with advantage have contained diagnoses, such as Colonel Irby's industry has now supplied.

What Colonel Irby has done for the birds, Mr. Miller Christy does for the eggs of British birds, and it is certain that with this little work in his hands the young student can gain a very good idea of the eggs which are likely to be met with in England. The call for this second edition of the late Mr. Newman's work shows apparently that there are a good many egg-collectors in this country, notwithstanding the prohibitions of an Act of Parliament; nor can we state with truth that there is any falling off in the number of students of the egg-collection in the British Museum since the Wild Birds Preservation Act became law. To the chapter on bird-skinning we would add a practical hint that before commencing operations a tiny wisp of wool should be inserted into the palate of the specimen. This greatly prevents the risk of discharge from the nostrils, and saves many a skin from being draggled and spoilt. The American method of enveloping the prepared skin in wadding is also far preferable to our method of fastening a paper band round the specimen.

R. BOWDLER SHARPE.

#### OUR BOOK SHELF.

*Mechanics.* By Edward Aveling, D.Sc. (London: Chapman and Hall, Limited, 1888.)

THIS is the first of four treatises on mechanics and experimental science, published to meet the requirements of candidates in the matriculation examination of London University. The volume before us contains a great number of numerical examples and exercises for students, and twenty pages are devoted to specimen examination