



# REVIEWS

*A History of Birds.* By W. P. Pycraft. Illustrated. (Methuen & Co.) 10s. 6d. net.

MR. PYCRAFT has produced an extremely interesting book, and, besides this, one which throws new light on some important questions. The plan which he has followed is one which, unfortunately, has up till now but rarely commended itself to writers of books on natural history. He does not merely describe structure and habit, and call upon us to wonder at what is curious, but he asks perpetually *Whence?* and *Why?* And this gives to the book an exceptional interest. To Mr. Pycraft the bird is a metamorphosed reptile. The acquisition of the power of flight has dominated everything, so that variations have been confined within narrower limits than is the case with mammals. The necessity of flight has allowed none to deviate very far, though some few species, after aspiring to the realms of air, have lapsed to earth again. Hence the great difficulty of the classification of birds: the number of forms is vast and the differences by the light of which they can be divided and subdivided are small. However, the subject of classification is well and clearly dealt with by Mr. Pycraft, and when his account of it is read in connection with a later chapter on convergent evolution, the interest becomes very great. When the comparatively conservative muscles and viscera are examined rather than the comparatively plastic bony framework, new relationships come to light: the Owls, for example, have to be severed from the Hawks and become the kin of the Nightjars.

Mr. Pycraft writes of geographical distribution, the effect of moisture and temperature, migration, the relation of birds to the animate environment (they pollinate flowers, they distribute seeds), peculiar inter-relations (*e.g.*, between Bee-eaters and Bustards), gregarious habits, nidification, care of offspring, phases of plumage (a subject in which he has made original investigations), natural selection (its methods of working are well described), sexual selection, isolation, adaptation. Since these are only some of the subjects treated of,

and since in illustration of each a mass of facts is adduced, it goes without saying that occasional slips have been made, and that all critics will not assent to everything. Under the former head we may mention that experiment has revealed in the *Apteryx* a wonderful power of detecting earthworms, and, apparently, by the use of its olfactory powers. By way of criticism we may point out that Mr. Pycraft has not explained with sufficient fulness all that inevitably follows from the acquisition of the power of flight. For example, the head had to be lightened. Hence the loss of teeth, for strong teeth involve strong and heavy jaws. Hence, for some species, the necessity of a strong-walled gizzard. With the acquisition of great mobility came the need of a strong voice to keep the flock in touch with one another or to bring the sexes together. And so from silent reptiles have come loud-voiced birds. After an admirable survey of the facts comes a very inadequate theory of sexual selection. It is true that for a species any display, poor or splendid, may do, but as soon as variation in the direction of fine plumage has begun, it will not do for an individual cock-bird to be dowdy. Hence male finery must be definitely due to sexual selection, and not merely to the absence of natural selection. Of pairing and polygamy no explanation is offered. Surely the constancy of mate to mate is due to the fact that in the monogamous species the assistance of the male is required for the rearing or defending of the young. Lastly, it may be mentioned that the index is very far from complete. But, summing up, we may describe the book as a vast collection of facts illuminated by stimulating theory. The illustrations are many and nearly all of them excellent.

F. W. H.