

improbable that these small islands, like the West Indies themselves, should now have species resident upon them which were originally derived from the mainland where they have since yielded to the continental struggle for existence and given place to better adapted forms. *Margarops* on Bonaire is a case in point; *Spindalis* on Cozumel is perhaps a similar instance.—F. M. C.

Newton's Dictionary of Birds, Part I.¹—The scope of this highly useful and important work is thus defined by its principal author: "Those who may look into this book are warned that they will not find a complete treatise on Ornithology, any more than an attempt to include in it all the names under which birds, even the commonest, are known. Taking as its foundation a series of articles contributed to the ninth edition of the 'Encyclopædia Britannica,' I have tried, first, to modify them into something like continuity, so far as an alphabetical arrangement will admit; and, next, to supplement them by the intercalation of a much greater number, be they short or long, to serve the same end. . . . In the difficult task of choosing subjects for additional articles, one of my main objects has been to supply information which I know, from enquiries often made of me, to be greatly needed." The selection of names to be inserted, says the author, has been quite arbitrary, such compound names as Crow-Shrike, Crow-Titmouse, Shrike-Crow, Titmouse-Thrush, and the like, having been excluded, as well as "a vast number of local names of even British Birds," while such names as Caracara, Koel, Mollymawk, Tom-fool, etc., which occur more or less frequently in books of all sorts, but especially in works of travel, are included. Those of course who are familiar with the character of the ornithological matter in the 'Encyclopædia Britannica' need not be told that the work is not made up simply of bird names and their definitions, but includes the whole range of ornithology, embracing the anatomy of birds, their classification, their geographical distribution and much purely biographical matter, as will be noted later.

In respect to the authorship of the work, we are told that the anatomical portions are mainly contributed by Dr. Gadow, and that they bring, in the opinion of the principal author, "the anatomical portion to a level hitherto unattained in any book that has appeared." "For other contributions of not less value," says Professor Newton, "I have to thank my old pupil Mr. Lydekker, my learned colleague Professor Roy, and my esteemed correspondent Dr. Shufeldt, formerly of the United States Army."

¹ A Dictionary of Birds. By Alfred Newton. Assisted by Hans Gadow. With Contributions from Richard Lydekker, M. A., F. G. S., Charles S. Roy, M. A., F. R. S., and Robert W. Shufeldt, M. D., late United States Army. Part I (A-Ga). London, Adam and Charles Black, 1893. 8vo., pp. viii, 304, map, and numerous illustrations in the text.

In regard to the arrangement and character of the matter, it may be noted that the higher groups, as orders and suborders, are treated formally but briefly in their alphabetical sequence, but we look in vain for a similar treatment of genera or even families, at least under their technical names, such groups being generally entered under their English names, although there are some exceptions, as in the case of *Chamaea*, *Cereopsis*, etc. Thus while we find Amazon, Ani, and Bittern, we look in vain for *Chrysotis*, *Crotophaga*, and *Botaurus*. In respect to English names, we have something about their origin, etymology, and cognate equivalents in other modern languages, with usually some account of the bird or birds to which the name is applied, varying in extent from a few lines to several pages. Thus under *Accentor* we have three lines, stating that the name was used by Bechstein for a genus of Sylviidae, and that "some British authors have tried with small success to add [the name] to the English language"; while some three pages are given to *Albatross*, nearly two each to *Avocet*, *Bittern*, three to *Crane*, six to *Dodo*, etc., usually with one or more cuts under each. Under *Bob-white*, we are told that it is "a nickname of the Virginia Quail, *Ortyx virginianus*, aptly bestowed from the call-note of the cock," with no hint that the name has been adopted of late as the regular 'book-name' for not only this species but all its congeners by American writers generally. In respect to this phase of the work, the exacting critic might discover much to find fault with, even from the supposed standpoint of the author, but we should perhaps rather be thankful that so much useful and pertinent information has been selected for presentation from a field so wide and inviting that the difficulty is to keep the matter within reasonable limits.

The anatomical side of the subject is treated with much fullness, and for the most part satisfactorily, so far as the limits of the volume will permit. It is to be noted, however, that Dr. Gadow's complete belief in the great efficacy of 'sexual selection' as an agent in evolution is manifested without reserve or check, as shown especially in his article on *Colour*, where he says: "Natural and sexual selection, whether combining or striving against each other, have worked marvels in plumage. Significant colours, as for instance total blackness or whiteness, could be developed only when higher intellectual qualities, bodily size and strength, or occasionally even special smallness, guaranteed the safety of the bird." With such elasticity in premises, it is little wonder that explanations seem easy, although we have white and black birds of all orders and of all sizes, and living amid the most diverse surroundings. He observes further that "The very early assumption of the black plumage by the nestlings of Ravens and Crows is a strong argument for their relatively highest position on the hypothetical avine tree." It would be interesting to know what evidence Dr. Gadow can advance for the intellectual superiority of Crows and Ravens over Magpies and Jays.

The article on color is, however, a most useful one, as it gives in a condensed and intelligible form a general summary of our present knowledge of the subject, including the nature and kinds of color pigments, 'objec-

tive structural' colors, and 'subjective structural,' prismatic, or metallic colors. Respecting the distribution of coloring matter he says: "To judge from the growth of a feather, the production of crossbars seems to be the older stage, since they will result from the intermittent deposition of pigment, while, on the other hand, the production of shaft-streaks is not yet satisfactorily explained. At any rate, it must be borne in mind that possibly various groups of birds have gone independently through such stages, and that what is primitive or archaic in one need not be so in all."

It seems strange not to find under *Dimorphism* some reference to the familiar phenomenon of dichromatism as exemplified in numerous genera of Owls, Hawks, Goatsuckers, Herons, etc., some of which seemingly should have come to his mind in this connection rather than the far-fetched cases he does cite. In fact, it would seem only fair to expect that a subject of so much importance and interest as dichromatism would at least receive mention, if not be made even the subject of a short article.

Among other subjects treated at considerable length are *Eggs*, by Newton, forming an article of 10 pages; *Embryology*, by Gadow, 18 pages; *Extermination*, by Newton, 12 pages; *Feathers*, by Gadow, 10 pages; *Flight*, by Prof. Roy, 12 pages; *Fossil Birds*, by Lydekker, 8 pages. These are all articles of the highest interest and importance, though that on Flight is somewhat disappointing, both in method of treatment and results. For instance, the relation of flight to the form of the wing is given much less consideration than its importance merits; and there is a tendency to treat the subject, and particularly soaring, from the standpoint of the physicist and the mathematician. The fact seems to be ignored that a bird is not a dead weight—a piece of card board, or a lump of dead matter—but a living, sensitive, highly endowed animal.—a living kite, to employ a simile, in which the attraction of gravitation represents the kite-string, while the soaring bird, representing the kite as a whole, under the direction of its keen senses, is constantly, automatically perhaps or at least almost unconsciously, trimming its sails—its wings and tail—to secure its desired course or position. Any one who has observed birds soaring under a variety of circumstances need not be told that while "upward currents of air" and "varying velocity of wind at different altitudes" may be necessary for soaring in the opinion of the physicist, birds themselves are not thus restricted, at least to any essential degree. A certain amount of momentum must evidently be acquired, after which birds seem able to soar at pleasure in either a practically calm atmosphere or in a gale of wind; within a few yards of the surface of the earth or at altitudes almost beyond the reach of the vision. A slight, even almost imperceptible movement of a wing or inclination of the tail may suffice to place the bird in the proper plane to receive a new impetus or enable it to radically change the direction of flight.

Much of the 'Dictionary,' as already explained, is matter republished with little change from the 'Encyclopædia Britannica,' but there is a great deal that has been expressly written for the present work. The illustra-

tions are a prominent and useful feature, and include a very large number of excellent wood-cuts, from Swainson's 'Classification of Birds,'—figures, which for "truth of detail and beauty of design have seldom been equalled and rarely surpassed."—J. A. A.

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