

include the 'food habits, distribution, and migrations of North American birds and mammals in relation to agriculture, horticulture, and forestry.' A year later the section became an independent division, and in 1896 its name was changed by Congress to the broader title of Division of Biological Survey."—J. A. A.

**Meyer and Wiglesworth's 'Birds of Celebes.'**<sup>1</sup>—We take great pleasure in bringing to the notice of the readers of 'The Auk' this excellent monograph of the 'Birds of Celebes,' in two large quarto volumes of over 1100 pages, beautifully illustrated with nearly 50 colored plates. It embodies the results of many years of work by experts in this particular field, the senior author, Dr. A. B. Meyer, the eminent Director of the Dresden Museum, having spent several years (1870-73) in Celebes collecting the materials for this long-contemplated work. He has thus not only the advantage of thoroughly knowing the physical conditions of the region, but of having made the personal acquaintance of many of the species in life. His valuable 'Field Notes on the Birds of Celebes' appeared in 'The Ibis' for 1879, and were followed by a long series of special papers on the birds of the East Indian Archipelago.

The region here included as the 'Celebesian area' embraces "The Talaut Islands in the north, the Sulu Islands in the east, and the Djampea Group in the south. . . . The boundary so chosen adjoins to the north the southern limit of the Philippines, as defined by Tweeddale, Worcester and Bourns, and others; to the east it coincides with Salvadori's western border, as drawn in his 'Ornitologia della Papuasie e delle Molluchi, and by other writers: to the south it takes in all the islands between Celebes and the Lesser Sundas. The book may thus be said to fill up an ornithological gap, and the bounds as chosen appear also to be the most natural, except possibly in the case of the Djampea Group." The number of species included is 393, with about 150 additional subspecies, each being treated fully as regards its bibliography, its plumages and relationships, its geographical distribution and life-history, so far as the details are known. The numerous colored plates give for the first time adequate illustrations of the 70 species here figured.

The 'Introduction,' occupying 130 pages, treats subjects of general interest, as the 'Travel and Literature' of the region (pp. 2-16); the 'Seasons and Winds in the East Indian Archipelago' (pp. 17-37); 'Migration in the East Indian Archipelago' (pp. 38-52); 'Variation,' in its five phases of (1) individual variation, (2) geographical variation, (3)

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<sup>1</sup> The | Birds of Celebes | and | the Neighboring Islands. | By | A. B. Meyer and L. W. Wiglesworth. | — | With 45 Plates (42 coloured) and 7 coloured Maps. | — | Berlin: | R. Friedländer & Sohn. | 1898. — 2 vols. 4to. Vol. 1, pp. i-xxxii + 1-130 + 1-392, pll. 17 (14 col.) and 7 col. maps; Vol. II, 2 ll., pp. 393-962, pll. vol. 28.

seasonal changes, (4) sexual differences, and (5) changes depending upon age' (pp. 53-79); and 'Geographical Distribution' (pp. 80-130). 'Migration,' 'Variation,' and 'Geographical Distribution' are discussed from the broadest standpoint and with admirable conservatism. Migration proper, though occurring to only a limited extent, is well-marked in the Indian Archipelago, but through lack of competent resident observers its details are to a large extent unknown. In referring to the local movements of certain species of Pigeons at particular seasons the following may be of interest: "For the sake of the general reader, who may be apt to suppose that narrow straits of the sea offer no barrier to the geographical distribution of tropical species, it may be mentioned that, so far from this being the case, there is reason to believe that resident species never, or very exceptionally, cross the sea; were it otherwise the species would not be found with such restricted ranges as is actually the case."

Under the subheading 'Hereditary effects of shelter and exposure' (pp. 73-79), an attempt is made to explain the origin of racket-tail-feathers and other similar modifications of the plumage, which are believed to be due to "the inherited results of attrition."

'Wallace's line' is considered at length under 'Geographical Distribution,' the views of previous authors cited respecting it, and the conclusion reached that, in our present state of knowledge of the question it is a "waste of time to speculate on it with the help of an up-and-down system for the islands and continents, just as required." The distribution of the Celebesian birds is tabulated and the relationships of the avifauna of Celebes as a whole and of the several lesser groups of islands is considered at length. "The results of our study of the birds of Celebes," say these authors, "as well as of those of the countries around, is that by its avifauna Celebes has far stronger connections with the Philippines than with any of the neighboring lands, and that the relation of its birds with the Oriental Region is more than twice as strong as with the Australian Region."

In regard to methods of nomenclature in the case of subspecies, the authors, while freely employing trinomials for such forms, are not fully satisfied that some better system may not be devised. They say: "Perhaps in future — when the want becomes sufficiently pressing to necessitate such a step — a somewhat considerable change in the nomenclature of the present day may be effected as follows: species as at present defined will remain under their original binomials; subspecies under trinomials; but the degree of relationship between the interconnecting forms to these subspecies will be displayed by the use of numbers — somewhat after the manner of chemical formulæ. Thus, in the case of *Haliastur indus* — taking four degrees of relationship into consideration — the typical subspecies will be *Haliastur indus typicus*, that of New Guinea *H. indus girrenera*; that of Celebes, which may be supposed to have three times as strong a connection with *girrenera* as with *typicus*, will be represented as *H. indus, girrenera*<sub>3</sub>; that of Java being just about midway in charac-

tens as *H. indus*, *girrenera*<sub>2</sub>; that of Malacca as *H. indus*, *girrenera*. This method could be carried to any degree of refinement, and is certainly less complex than the use of a quadrinomial such as *Haliastur indus girrenera ambiguus*," — the latter a name applied to the New Guinea form by Brüggeman. They add in a footnote: "We are not so sanguine as to believe, that our brother ornithologists will adopt our innovations of nomenclature, but we trust that future 'rules of nomenclature' will also take into consideration cases like this, and make some proposition which can be generally adopted." The suggestion is worthy of consideration, as the matter is one with which other workers have had to struggle, though as yet they have hardly dared to introduce innovations respecting it.

As a source of general information on the birds of Celebes and neighboring islands, this admirable work will ever remain an authority, not only on the technicalities of the subject but on the habits and distribution of the species. — J. A. A.

**Publications Received.**—Allen, J. A. List of Birds Collected in the District of Santa Marta, Colombia, by Mr. Herbert H. Smith. (Bull. Am. Mus. Nat. Hist., XIII, pp. 117-183, Aug. 25, 1900.)

**Bangs**, Outram. (1) Description of a New Rice Grackle (Proc. New Engl. Zoöl. Club, II, pp. 11, 12, June 30, 1900). (2) List of Birds Collected by W. W. Brown, Jr., at Loma del Leon, Panama. (*Ibid.*, pp. 13-34, Sept. 20, 1900.)

**Beal**, F. E. L. Food of the Bobolink, Blackbirds, and Grackles. Bull. No. 13, U. S. Dept. of Agriculture. 8vo, pp. 77.

**Bennetts**, W. J. Notes on the Food of the Ruffed Grouse. (Bull. Wisconsin Nat. Hist. Soc., Vol. I, No. 2, April, 1900.)

**Bonhote**, J. Lewis. On Moults and Colour-changes in Birds. (Ibis, July, 1900, pp. 464-474.)

**Cooke**, W. W. The Birds of Colorado. A Second Appendix. Bull. 56, Agric. Exp. Station of Agric. College of Colorado, May, 1900.

**Currie**, Rolla P. A New Bird of Paradise. (Proc. U. S. Nat. Mus. Vol. XXII, pp. 497-499.)

**Dubois**, Alphonse. Synopsis Avium, Fasc. III, pp. 161-224, pl. iii and vi.

**Dwight**, Jonathan, Jr. The Plumage and Moults of the Indigo Bunting (*Passerina cyanea*). (Science, N. S., Vol. XI, No. 277, pp. 627-630, April, 1900.)

**Finsch**, Otto. (1) On a Collection of Birds made by Mr. Karl Schädler at Sekru, northwest coast of New Guinea. (Notes from the Leyden Mus. Vol. XXII, pp. 49-69.) (2) Ueber eine auscheinend neue Art Dicaeum vom Arfak-Gebirge, New Guinea. (*Ibid.*, p. 70.) (3) Zur Catalogisirung der ornithologischen Abtheilung. (*Ibid.*, pp. 75-125.)

**Howe**, R. Heber, Jr. Notes on Rhode Island Ornithology, Vol. I, No. 3, July, 1900.