

## RECENT LITERATURE.

**Wetmore's 'The Migrations of Birds.'**<sup>1</sup>—For the present reviewer the problem of the migration of birds has always held a peculiar fascination and his first paper presented before the A. O. U. in 1888 dealt with methods for the recording of migration data, while the recurrent arrival of the birds in spring has seemed to him, as doubtless to all field students, one of the most impressive of nature's phenomena.

Consequently he welcomes the appearance of any new contribution to the subject especially one containing so many original observations and written in such an entertaining style as Dr. Wetmore's recent volume entitled 'The Migrations of Birds.'

Looking back one is impressed by the diverse views and opinions of writers on bird migration in the past and the varied reaction to them. In 1886 we remember the appearance of Mr. William Brewster's classic pamphlet on 'Bird Migration,' forming Memoir No. 1 of the Nuttall Ornithological Club, in which the mystery of migration is explained on the ground that birds make use of river valleys, coast lines and other landmarks in shaping their course and become trained by experience, the younger birds following the lead of the adults, and Mr. Brewster's suggestion that "bearing these facts in mind, the manner in which birds find their way seems very simple," was very generally accepted.

Then came the appearance of Gätke's famous volume on bird migration at Heligoland with the lengthy reviews by Drs. Allen and Coues. Gätke's summing up of the question was as follows: "I have been guided by the conviction, rendered firmer with increasing knowledge of the phenomena, that what at present has been ascertained in reference to the migration of birds furnishes us with no clue by the aid of which we are enabled to penetrate the depths of this wondrous mystery." To this Dr. J. A. Allen replied<sup>2</sup> that "in reality great light has been thrown upon the cause of migration," etc. by the researches of the past ten years but "the love of mystery is so inherent in the popular mind and the habit of viewing the migration of birds as the 'mystery of mysteries' is so firmly fixed that it is perhaps not strange that a reasonable explanation of all the principal phenomena of the subject should be received as unwelcome iconoclasm."

Dr. Coues, taking as usual the other side, praises Gätke to the skies and writes<sup>3</sup> "There is no Heligoland but Heligoland and Gätke is its prophet." "He smashes our idols right and left; he leaves us helpless for lack of gods to supplicate, for he sets up none of his own. . . . Flight remains for him

<sup>1</sup> The Migrations of Birds. By Alexander Wetmore, Assistant Secretary, Smithsonian Institution, Fellow, American Ornithologists' Union, Cambridge, Harvard University Press, 1926, pp. i-viii + 1-217, figs. 1-7. Price \$2.50

<sup>2</sup> Auk, 1896 p. 137.

<sup>3</sup> Auk, 1895, p. 322.

an 'insoluble problem' and migration a 'wondrous mystery,' . . . Gätke knows too much about these things for our peace of mind. He files a great caveat that we shall do well to heed. Isepieteses and magnetic meridians, coast lines and river channels, food supply and sex impulses, hunger and love, homing instinct and inherited or acquired memory, thermometer, barometer and hygrometer, may all be factors in the problem, good as far as they function, but none of them, and not all such together can satisfy the whole equation. . . . His conclusion concerning 'the way of the Eagle in the air' is identical with that ascribed to the old Hebrew ornithologist who had a great reputation for sagacity in spite of his complicated connubialities, and may be aspired to by some of the present gentile generation."

Later we recall the contribution of Capt. Reynaud of the French army presented at the A. O. U. meeting of 1899, by Dr. Chapman<sup>1</sup> upon the homing instinct of Carrier Pigeons in which orientation, the sense of direction, comes to the fore as the guiding influence and many then thought the problem finally solved. Later came the emphasis on hormones and the physiological impulse to migration and an admirable review of the subject by Dr. John C. Phillips,<sup>2</sup> which closes with the statement: "Whether it [the periodical recurrence of migration] is even worth while discussing in the light of our scant knowledge of instinctive actions and their causes, is doubtful. With the mass of facts being brought constantly to light relative to bird travels we are perhaps a little too apt to lose sight of some of the old time mystery of the subject. The modern tendency seems to be to sniff at the word mystery as applied to any phenomenon of bird migration, but mystery there certainly is and mystery there will always be as long as *the* great problems remain unsolved."

In view of all these reactions to the evidence and theories of the past it is interesting to learn the present day attitude of broad minded students of the subject, and two works prepared entirely independently and appearing almost simultaneously furnish us with the latest conclusions. One by Dr. J. Landsborough Thomson has already been noticed in these columns and we now have Dr. Wetmore's volume before us.

The two differ radically in character, Thomson basing his review upon an exhaustive study of the literature, coupled of course with a certain amount of personal observation; while Wetmore presents almost entirely his own observations as a basis for his discussion and refers as little as possible to the work of others. Nevertheless their conclusions agree to an interesting extent. According to Thomson "The purposes served by migration do not in themselves explain its causation. Migration is assumed to be an innate racial custom and only speculation is possible as to its origin. All theories which seek to explain the origin of migration are beset with difficulties and complexities nor do these theories explain

<sup>1</sup> Bird Lore, II, p. 101.

<sup>2</sup> The Auk 1913, p. 191.

the nature or the manner of its inheritance. Not one cause but a complex series of causes may have operated."

Wetmore says: "It appears that the beginning of the present instinct for migration and the habit of its continuance are so ancient that they are wholly obscure and may be interpreted only in terms of present conditions. The underlying cause is certainly complex and is due to multiple factors. We have in the past fifty years cleared away many uncertainties regarding it but must look to the future to explain definitely the basic reasons for the instinct of migration and the method of orientation followed in pursuing flight over courses which to young individuals at least are unknown."

Therefore we, it seems, may continue to enjoy "the love of mystery" to which Dr. Allen referred and wonder whether the curtain which shrouds the ancient origin of migration and the development of animal instinct will ever be drawn aside.

Dr. Wetmore's little volume is virtually the printing of a course of lectures delivered before the Lowell Institute of Boston in the autumn of 1925. Intended for a popular audience it is prepared in a style that is extremely interesting and readable while it, at the same time, presents all of the technical aspects of the subject. It is moreover essentially an American product as almost all of the persons whose observations are quoted are Americans and many of the observations have been made in the United States. By far the greater number of incidents quoted in illustration are from the author's experience and as he has travelled widely in carrying on his ornithological studies—to Alaska, Hawaii, Argentina, the West Indies and remote sections of the United States, he has had exceptional opportunities for observation. The pages therefore teem with original matter, which is refreshing after the somewhat hackneyed examples that we are wont to find quoted in the literature of bird migration.

His six chapters treat of (I) history and theories, (II) nocturnal and diurnal migration, weather, speed and sense of direction, (III) regularity of migration (IV) altitudinal migration, distance travelled and mortality, (V) lines of migratory flight, (VI) migration in special groups of birds.

The book at every page is so full of meat that it is difficult to pick out special topics for comment and it should be read in its entirety. It is by all odds the best and most thorough treatise on migration that has been published in America and the most readable and entertaining account with which we are acquainted.—W.S.

**Taverner's 'Birds of Western Canada.'**<sup>1</sup>—One of the pleasant surprises of the recent Ottawa meeting of the A. O. U. was the presentation

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<sup>1</sup> *Birds of Western Canada.* By P. A. Taverner. Canada. Department of Mines, Victoria Memorial Museum. Museum Bulletin No. 41. Biological Series, No. 10, September 15, 1926. Ottawa. F. A. Acland, Printer to the King's Most Excellent Majesty. 1926. pp. 1-380, pls. I-LXXXIV, figs. 1-315. Price 75 cents paper cover, \$1.00 cloth.