

**Bird Migration in the Mississippi Valley, by W. W. Cooke.**—Taking up this most interesting little volume, we desire in the very first place to express our admiration for the system and method of work. Whilst agreeing with many of the statements, theoretical or otherwise, we think it desirable to take up the whole of the preliminary chapters in detail, page by page, whether we agree or not.

Page 11. "Inherited Experience": "The habit was transmitted from parent to offspring": "governing impulse."—May we suggest:—Yes; inherited instinct aided by education, or "educated instinct," and guidance of young by old—as a more natural explanation than the other? "Love of nesting ground, the foundation of desire for migration."—We cannot agree with the expression "foundation," etc.,—but we perfectly agree with the concluding clauses of the same paragraph, as to "memory inherited"; and we also believe, that *choice of situation*, and *visual selection* must not be left out of the question. We quite agree that "strong home-love" is an important factor, but it is aided by memory, the suitability of the site, and great powers of vision (therefore selection) by the passing migrants, young or old.

The statement, in the editorial foot-note to same page (p. 11) that "Birds desert their winter homes because the food supply fails" seems to me to demand a great deal of proof. But the following condition seems to me more deserving of attention—viz., *temperature as a first cause*; and that "climatal conditions become unsuited to their needs." Of course, all dovetail into one another—temperature, insect-life, bird-life, conditions of existence, etc., motherly and parental instincts, incubation considerations; and a *large* question is at once opened up. To arrive at first causes means, first, simply accumulation of materials.

At p. 12.—The question of the great migration from north and south of certain Waders and Warblers passing over great distances seems to us simply to depend upon *temperatures* and *consequences* of temperatures. The Knot (*Tringa canutus*) finds a certain *normal* temperature and conditions of life, at, or nearest to, both poles, north and south.

Page 12. Undoubtedly we consider that "Birds discern approaching meteorological changes." The ornithologists who *deny* it, must *deny* it, upon *exceptions* to the rule, which have come under their own cognizance. Most sportsmen know how irritable, how uneasy, how watchful and abrupt are the movements of wild fowl on the *eve* of a change of weather, or even for a day or two before it is potent to human senses. Even how sportsmen (of experience), when they spring Snipe in wisps wide and wild, which mounting high in air direct their after flight directly away, think it high time to *wire* for fresh supplies of cartridges, in anticipation of an 'Arctic winter,' and a long crusade of snow and frost. But we doubt, except on *rare occasions*, if spring storms can be gauged in their effects as accurately as autumn storms can.

The concluding argument of this portion— at p. 12—must, we think, be considered subject to the others—I mean the considerations of *age* of individuals, etc. Lower animals, such as even the "hardier waterfowl (Ducks

and Geese)" are not infallible, any more than human beings are infallible in their judgments; and it really cannot be argued that they can *always* foresee these changes. It is well authenticated that in the Outer Hebrides Wild Geese on their spring migration northwards are greatly dependent on the actual personal guidance of their parents or guardians. An old bird distinctly leading detachments, from one favorite feeding or resting place to another and returning south again in cases of further services being required has been for ages known, and well observed by competent observers! What would a flock of geese do if their leader were shot or otherwise lost to them, and the flock were all young birds? Certain instincts *would* guide them no doubt, but *not too accurately*.

Returning to the former subject of "discernment of approaching climatal conditions" I would like to recall the often-observed fact of the disappearance of *mosquitoes* fully *half an hour* before the first advent of the north wind on the tundras of northeastern Europe, as observed, to our intense relief, by Seebohm and myself! I say, before the slightest suspicion of approaching north wind was perceptible to our senses, the mosquitoes suddenly dropped senseless and *stingless* into the wild grasses of the tundra. With a sigh of relief, we mutually whispered at last, as we lay watching—say a Plover or a Stint to its nest, "Ah! the north wind!" Then came the hurry of the birds up to cover their nearly incubated eggs, in the shallow depressions of the tundra.

Page 13. Now comes a most interesting question. *First*, if old birds arrive first, they keep bold and jealous charge of their own old nesting places. But if young birds arrive first, they are driven away, before they can breed, by the older ones if the latter really do ever arrive later. I believe the *old birds* always arrive first. But in America, where the trend of the migration is from north to south and south to north, over continuous areas of land, and where every valley and depression soon becomes known and recognized by the migrants, *old and young* travel at the *same elevation*, or much more approximately so than in Europe. But in Europe where the trend of the migration is over both land and sea, and persistent in its east to west direction in autumn, and *vice versa* in spring (at least as regards land birds), I believe the *old* birds travel at a much higher elevation than the young birds, and travel more freely, still guarding the young beneath them. We have still to learn much as to the vision of birds, old and young, horizontal and vertical, above and below, and we know comparatively little about their power in these respects; except that an American astronomer is stated to have identified Curlews in the field of his telescope at over four miles distance above the earth's surface, traversing the disk of the moon.

If the American statement that old birds invariably predate the young; and the European statement that the young predate the old, are equally true, may not the variance be explained thus:—

In America the trend of the *land* and *migration* is continuous north and south. Therefore, the old and young *can* travel over known courses at similar elevations, the old *guiding* the young.

In Europe the trend of the *land* and *migration* is *discontinuous*, east and west; and therefore the older, *stronger-flying* birds ascend to higher levels to see over both land and sea, whilst the young birds keep lower down, but by *mutual* powers of vision are still guided by the higher-flying old birds above. Reaching land, the young birds sink exhausted it may be, but the 'first wave' of old birds passes on upon their further journey. More could be urged on this aspect of the question, but we refrain in fear of occupying too much valuable space. One more remark: Fogs and mists and haze and darkness, blot out the landmarks by sea from even these high-flying pioneers, and as described by Herr Gätke, "in the clap of a hand, in a second of time"—or words to that effect, or nearly—the island of Heligoland, off the entrance to the Elbe, is crowded by birds, in *tens of thousands*, when the fog lies heavy around.

We have only taken 13 pages of the article by Mr. Cooke as text for our reply, but there are many valuable and interesting points brought out and referred to in subsequent pages, worthy of equal attention. If our notes can be of use, we are happy to contribute even the smallest mite. If it should be considered desirable, further remarks upon pp. 14 *et seq.* might follow, but what *has already been said*, we believe, will be suggestive of what *might* be said again, and reasons and arguments adduced for the formation of what we in Europe call '*rushes*' and you in America, the "*arrival of the bulk*"—from your own showing.—J. A. HARVIE-BROWN, M. B. O. U., C. M. A. O. U.

**Publications Received.**—Allen, J. A. (1) On *Cyclorhis viridis* (Vieill.) and its near Allies, with Remarks on other Species of the Genus *Cyclorhis*. (Bull. Am. Mus. Nat. Hist., Vol. II, No. 3, 123-135, June 17, 1889.) (2) Descriptions of New Species of South American Birds with Remarks on various other little known species (Ibid., pp. 127-151 June 28.)

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Conklin, W. A. Report of the Central Park Menagerie. 8vo. pp. 43, 1889.

Gurney, John Henry. (1) On an apparently undescribed species of Owl from Anjouan Island, proposed to be called *Scops capnodes*. (Ibis, Jan., 1889, pp. 104-107.) (2) [On *Buteo unicolor* d'Orb.] (Ibid., pp. 134, 135.)

Harvie-Brown, J. A., and J. Cordeaux, R. M. Barrington, A. G. More, and W. Eagle Clark. Report on the Migration of Birds in the Spring and Autumn of 1887. Ninth Report, Vol. II, No. 4, 1889. 8vo. pp. 175, with map.

Ingalls, Charles E. Birds of Templeton [Mass.] and Adjoining Towns. (The Gardner, Mass., News, June 1, 1889.)

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