

In issuing this third index to the literature of Californian ornithology, the Cooper Club has provided what is undoubtedly the most thorough listing for any limited area in North America.—G. M. ALLEN.

Forbush and May's 'Natural History of the Birds of Eastern and Central North America.'—The popularity of Forbush's 'Birds of Massachusetts and other New England States' (1925-29) very soon resulted in exhausting the edition of at least the first volume, so that sets of all three volumes are now difficult to secure. The Directors of the Massachusetts Audubon Society have therefore taken the necessary steps for the publication of this new and abridged edition¹ which forms a single volume at a popular price and includes the original colored plates by Fuytes and Major Brooks. Dr. John B. May, who assisted with the publication of the first edition, has undertaken the preparation of the abridgment. By omitting the descriptions of plumages, the paragraphs on measurements, molts, and occurrence in Massachusetts, and by condensing those on ranges, identification marks, and nesting, to the smallest compass, as well as by editing and cutting the main text, he has succeeded in reducing the three volumes to a single one of convenient size. The order of the species as well as the nomenclature have been changed to conform with the last edition of the A. O. U. 'Check-list.' The 'Introduction' gives a brief account of the history of the work and a sketch of Forbush's life. As if all this were not enough, Dr. May has broadened the scope of the book by the addition of short accounts of over one hundred other species regularly found as breeding birds, migrants, or winter visitors east of the 95th meridian, taking in therefore eastern North America from a little west of the Mississippi River. The many species of casual occurrence in the area are gathered in a nominal list at the back of the volume instead of being accorded a regular place with details of records in the body of the book. Four additional new plates by Roger Peterson are added to illustrate some of the birds now included.

While it is true that the general accounts written by Forbush for the different species in the main part of his text are treated from a sufficiently broad point of view to be widely applicable, nevertheless one does not lose sight of the fact that they were prepared from the standpoint of New England and especially Massachusetts. The result is that the new edition, by the omission of a large amount of local matter, loses much of its particular interest without a corresponding gain in thus stretching it to cover eastern and central North America. It would have been much more valuable if instead we might have had a new edition with Massachusetts conditions brought down to date and some account of the many changes and interesting new points made out in recent years of bird study. Thus there is no indication of the occasional and perhaps regular presence of the Western Grebe on our coast in winter, nothing on the changing status of the Ring-necked Duck, or on the recent expansion of gull and tern colonies, nor any attempt to work in new information such as that now available on the Bicknell's Thrush, while from the general nature of the sketches very little data on migration could be given. As a piece of book-making, the volume is well printed and the proof-reading has been excellently done. On the shelf beside the original volumes, the abridgment stands a little higher, since the explanations of each plate, instead of occupying a facing page, are given an extra inch of space at the bottom of each, while as a

¹ Forbush, Edward Howe, and May, John Bichard. *Natural History of the Birds of Eastern and Central North America* revised and abridged with the addition of more than one hundred species. Large 8vo, xxvi + 554 pp., 97 col. pls., 1939; Houghton Mifflin Co., Boston, Massachusetts. Price \$4.95.

further expedient to save bulk, the plates are printed on both sides of the leaf. It is a pity, however, that the manufacturers should not have used greater care in weeding out imperfectly registered plates, nor are the four new ones so well printed as the others.

For the purposes of the new edition, Dr. May has done a difficult task with considerable care, and has presented the reading public with an attractive volume of short sketches of eastern birds.—G. M. ALLEN.

Niedrach and Rockwell's 'Birds of Denver.'—The last comprehensive work on Colorado birds was that of Sclater in 1912, and the last local list for Denver was published in 1928. In the years that have since elapsed much new material has accumulated and many groups of birds have been more critically studied by Dr. Alfred M. Bailey and the authors at the Colorado Museum. This new list¹ comprises the birds known to occur within a radius of twenty-five miles of Denver and includes also the Denver Mountain Parks System, a short distance farther westward among the foothills of the Rocky Mountains, so that the area embraces an altitudinal range of almost a mile and a half, taking in the various life zones from Transition to Arctic-Alpine.

The introductory matter includes a sketch of the topography and a short account of the plant life of the successive zones with their characteristic birds. In another chapter the ornithological history of Colorado is briefly outlined. In the body of the work, the birds are taken up in the 'Check-list' order, giving for each the English and Latin names, the field marks, a statement of occurrence, and a paragraph of remarks, chiefly records of interest or notes on habits; finally there is an excellent bibliography and a thorough index. The many illustrations are largely from photographs of characteristic western birds and well exhibit the skillful work of Dr. A. M. Bailey and his associate Mr. Niedrach, both of whom have for a number of years cooperated in the careful study of the birds of the State. Including as it does a large number of typically western birds, the book forms an excellent field guide for visitors to this region, as well as a convenient summary of the local avifauna for the many active observers in this center.—G. M. ALLEN.

Tinbergen's 'Behavior of the Snow Bunting in Spring' is an outstanding field study² of this bird on its breeding grounds in southern Greenland. The author distinguishes nine successive stages in the progress of the breeding cycle, as follows: (1) the arrival of the males in flocks at a time depending on the weather conditions but averaging about March 21; the complete breeding dress is not attained until about mid-April. (2) The selection of a territory by the males and consequent breaking up of the flocks about a month later. During this stage the males daily spend a great part of the morning on the territory, singing, but often leave for foraging. (3) The arrival of the females in late April or early May. (4) The fourth period begins with the securing of a mate, who is attracted to the male by its song and display on the territory. The female is not yet ready for copulation; there is an increase in territory fighting between neighboring males, and the boundaries of territories undergo some shrinkage. Mated females drive off other females, but there is no intersexual fighting. (5) With the first coition the fifth period commences. The female's oestrus is marked by the carrying of nesting material to a selected site. (6) The female commences to lay eggs, for the nest is now ready. (7) With the

¹ Niedrach, Robert J., and Rockwell, Robert B. *The Birds of Denver and Mountain Parks*. 8vo, (6) + 196 pp., illustr., map; Colorado Mus. Nat. Hist., Popular Series, no. 5, 1939. \$1.25.

² Tinbergen, N. 'The Behavior of the Snow Bunting in Spring.' *Trans. Linn. Soc. New York*, 5: 1-95, 2 pls., text-figs., Oct. 1939.