

tion of non-native species the author's verdict is strongly opposed to the practice. They rightly assert that the native species are better adapted to our country and it is our duty to use all our efforts toward their conservation.

The systematic account of the various species naturally occupies most of the text and is admirably done. Under each heading come paragraphs on: other names; description; marks for field identification; voice; nest; eggs; general distribution; and distribution in California. Then follows in larger type a general account of the habits and history of the species and its relative importance as a game bird. The birds included are the Geese, Ducks and Swan; Spoonbill and Ibises; Cranes, Rail, Gallinules and Coots; Shorebirds; Quail and Grouse; Pigeons and Doves, 108 species in all. The technical nomenclature follows the A. O. U. 'Check-List' and so do the vernacular names except where they are not in accord with Californian usage. This is perfectly proper in a work of this kind especially as the other names are usually mentioned as well. It is rather amusing however to the eastern ornithologist to read of the Mud-hen "known in booklore as the Coot." The authors would find that along the Atlantic Coast "Mud-hen" means the Clapper Rail while "Coot" is by no means a book name in the Eastern States. A little further information on this point might save some of their readers no little trouble, especially as they refer in one place to the "Mud Hen in the east, meaning the Coot." Twelve of the colored plates are by Fuyentes and represent that artist at his best while four are by Major Allan Brooks. They form a valuable addition to the published portraits of American birds and add materially to the attractiveness of this well printed volume.

This work will prove of great importance to many different classes of readers: the sportsman will learn more about the game birds of the state than can be found in any other volume and will find the important recognition characters of each species clearly set forth; the bird student, be he amateur or professional, will find it an invaluable work of reference and the conservationist will find in it the facts and suggestions for which he has been seeking. The bibliographies will also prove of the greatest help to those who wish to carry their studies farther and to consult the other works on the subject.

It is encouraging to know that one of the authors of this work, Dr. Bryant, was called, before his task was completed, to fill an important position in the California Fish and Game Commission, and we wish that all the State Game Commissions might be induced to seek men of this type to carry on their activities — surely that is a most important point in game conservation. — W. S.

**Mathews' 'The Birds of Australia.'**—Part IV of Vol. VII of Mr. Mathews' great work<sup>1</sup> brings us almost to the end of the Cuckoos, only a

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<sup>1</sup>The Birds of Australia. By Gregory M. Mathews. Vol. VII, Part IV, December 19, 1918, pp. 321-334.

portion of the text of the Coucal remaining to be completed, so that the next part after considering the Lyre Bird will begin the Passeres.

The present number treats of the genera *Cacomantis*, *Vidgenia*, *Owenavis*, *Chalcites*, *Lamprococcyx*, *Eudynamis*, *Scythrops* and *Polophylus*. The most interesting species among these is the giant "Channel-bill," *Scythrops*, which lays its eggs in the nests of Crows and Crow-Shrikes, birds of about its own size. It has a remarkably loud call and is often active at night, resembling in the latter particular our American Black-billed Cuckoo, while curiously enough its appearance is considered to indicate approaching storms and it is known as "Stormbird" and "Rainbird" just as our own Cuckoos are named "Rain Crows." Further investigation of the origin of this belief would be well worth while for those interested in the "folk-lore" of ornithology. There are eleven plates of the various species and one of the tails of Bronze Cuckoos, all by Grönvold, and among the best that have appeared.

We notice one new genus, *Vidgenia* (p. 327), type *Cuculus castaneiventris* Gould, and one new race *Cacomantis pyrrhophanus vidgeni* (p. 326).—W. S.

**De Fenis on Bird Song in its Relation to Music.**—This paper<sup>1</sup> is one of the most important and carefully prepared contributions to the study of bird song that has recently appeared. M. de Fenis has considered his subject systematically, under various headings and the results of his investigations are summed up in his conclusion that "The laws of musical development are the same for the music of man as for the song of birds," which corresponds essentially with Mr. Henry Oldys' views on the subject.

The topics which are discussed in the paper are: song of birds in its relation to habits and habitat; difficulties encountered in the notation of bird song; birds which repeat their song regularly; birds which vary their melody but preserve the same rhythm; birds which imitate; birds which improvise.

Many musical and syllabic representations of songs are presented showing some original methods of notation, and illustrating the variation in the song of a single species, especially of the Wren and the Nightingale. An interesting table also shows the relative pitch of the songs of various species of birds in comparison with the range of the human voice and other sounds. In this there seems to be a fairly regular correspondence between the weight of the bird and the pitch of the voice; the highest notes belonging to the smallest and lightest birds.

Those interested in this fascinating subject, which demands considerable musical as well as ornithological knowledge, will do well to read M. de Fenis's valuable paper.—W. S.

<sup>1</sup> Contribution a L'Etude des Cris et Chant des Oiseaux dans ses Rapports avec la Musique. par M. F. de Fenis. Bull. Institut General Psychologique July-December, 1917, pp. 87-130. Paris, at the Office of the Society, 143 Boulevard St. Michel.