

Grinnell's Distributional List of the Birds of California.¹ — This is Dr. Grinnell's third list of California birds, the first appearing as 'Pacific Coast Avifauna No. 3,' in 1902; and the second, a mere nominal list of species, as 'Avifauna No. 8,' in 1912. These contained respectively 491 and 530 species and subspecies while the present list totals 541.

The plan of this work is practically that of the 1902 list with the addition of many definite records and references covering the extremes of range or other critical occurrences. In the case of rare species references to all the records are given.

As the list is solely distributional in character no data regarding migration, extent of breeding season, etc., are included. Synonyms used in works on California birds are given as in the earlier list and these are included in the index so that any of the old records may readily be referred to the currently recognized form. The three maps are a valuable aid in understanding the details of distribution given under each species and subspecies and a chapter on 'Distributional Areas' gives Dr. Grinnell's latest views on a subject upon which he is the recognized authority.

The classification is that of the A. O. U. Check-List, which was also followed in the 1902 list, but not in that of 1912, the author agreeing with the A. O. U. Committee that the benefits of uniformity in sequence with the great bulk of American ornithological literature outweighed the advantages of being more 'up to date' with a classification which itself is admittedly only temporary. Sequence of species and subspecies and nomenclature are nearly those of the A. O. U. Check-List differing in the rank accorded certain forms and in the relationship of subspecies. Species and subspecies are printed in the same type and numbered consecutively with no binomial headings for groups of subspecies and no headings for generic or higher groups, as the list, being distributional, only does not concern itself with details of classification or nomenclature.

Some forty races not admitted or not yet considered by the A. O. U. Committee are recognized by Dr. Grinnell while *Melospiza melodia morphna*, *Aphelocoma californica obscura* and *Falco sparverius phalaena* which appear in the A. O. U. Check-List are rejected.

We notice that the recognition of extralimital races in the case of several groups leads to the doubling of the specific name as *Ochthodromas wilsonianus wilsonianus* but this is not done in the case of *Passer domesticus* where several extralimital races are generally admitted. The A. O. U. Committee committed this same error (cf. Auk, 1913, p.) and doubtless Dr. Grinnell followed their example as he apparently did in writing '*Actitis macularius*'

¹A Distributional List of the Birds of California. By Joseph Grinnell. Contribution from the Museum of Vertebrate Zoölogy of the University of California. Cooper Ornithological Club. Pacific Coast Avifauna. Number 11. Hollywood, California. Published by the Club, October 21, 1915. pp. 1-217, pl. I-III [maps].

erroneously so published in the 'Pocket Edition' of the Check-List, although it appears correctly '*macularia*' in the regular edition.

Dr. Grinnell's work closes with a 'Hypothetical List' of 61 species erroneously accredited to California or recorded upon evidence which he is unable to accept as conclusive.

Altogether this list is admirably prepared and gives us the status of the Californian avifauna up to date by one whose opinion upon this subject is accepted as authoritative, although there may be differences of opinion as to the number of geographic races that it is desirable to recognize even in so diversified a State as California.

There may be expressions of regret at the absence of data on migration, nification and taxonomy, but the author has explained in the introduction that the list is solely distributional and he has consistently adhered to his plan.—W. S.

Wood on the Eyelids of Birds.¹—Dr. Wood here presents the results of investigations made in conjunction with Prof. Slonaker in the physiological laboratories of Stanford University, largely upon the eye of the English Sparrow, although various other species were also examined. He considers in great detail the muscular structure of the eyelids and the method of lachrymal drainage. Not only is the activity of the lids reversed from what we find in the mammals, the lower not the upper one being movable, but the whole method of closing is different. The Ostrich, Seriema and certain birds of prey have filoplumous feathers which serve the purpose of eyelashes in mammals and closely resemble them. The Sparrow's eyelashes, however, do not apparently offer any protection to the eye while the Parrots have no trace of eyelashes.

Dr. Wood's paper is a careful piece of technical work, and similar studies in the anatomy of other avian organs would be welcome.²

The confusion that may arise when the technicalities of two branches of science are brought together is curiously illustrated in Dr. Wood's treatise. He constantly makes use of the word 'tarsus' familiar to ophthalmologists as indicating a plate of condensed connective tissue on the edge of the eyelid, but when he addresses ornithologists who know the tarsus only as the usually exposed portion of the bird's foot above the toes, this term is somewhat confusing!—W. S.

Cooke on the Distribution and Migration of North American Gulls.³—In this pamphlet Prof. Cooke treats the Laridæ in the same

¹ The Eyelids and Lachrymal Apparatus of Birds (reprinted from Ophthalmology, July, 1915). By Casey A. Wood, M. D. Repaged 1-18.

² cf. p. 84, *antea*.

³ Distribution and Migration of North American Gulls and their Allies. By Wells W. Cooke. Bull. No. 292, U. S. Dept. of Agriculture. October 25, 1915. pp. 1-70. (For sale by Supt. of Documents Gov't. Printing Office, Washington, D. C. 15 cents.)