

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, nidification 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.)

way that the Anatidæ, the Shorebirds, the Rails and the Herons have received attention in previous bulletins of the Department of Agriculture.

A brief introduction treats of the economic importance of Gulls and measures that have been taken for their protection. Then follows a detailed account of the summer and winter range and dates of migration for each of the 30 species and subspecies of Gulls, Skuas and Jaegers, found in North America, with the name of the authority for each record. A map showing the summer and winter range of each species is given with several figures of the more common Gulls.

Incidentally we note that *Larus nelsoni* remains one of the rarest of birds, only four specimens having been taken, three on the coast of Alaska and one at San Geronimo Island, Lower California. There has been no record of the species whatever since the specimen obtained by E. A. McIlhenny at Point Barrow, Alaska, on Sept. 5, 1897, which is now in the collection of the Philadelphia Academy.

Prof. Cooke's publication is a welcome summary of our knowledge of the distribution of the North American Laridæ and will prove a valuable work of reference.

The title may be regarded as a little unfortunate as the Terns are much closer allies of the Gulls than are the Skuas and Jaegers which belong to another family. Limitation in the size of the 'Bulletins' no doubt prevented the inclusion of the Terns, but this fact might have been mentioned and the close relationship of the two groups emphasized.— W. S.

Gaige's 'The Birds of Dickinson County, Michigan.'¹ — This list is based upon observations made from June 30 to August 24. The region is divided into several distinct habitats and the 88 species listed are considered with regard to their distribution in these habitats, with notes on migration, food, nesting, habits, etc. An interesting feature of the paper is the consideration of the effect of a severe forest fire upon the distribution of the various species. It undoubtedly drove out many forest loving species from the area which it covered, but opened up a new breeding area to Woodpeckers, Tree Swallows, Chimney Swifts and Bluebirds, while Vesper Sparrows and Goldfinches were drawn there to feed upon the seeds of weeds and thistles which covered the burned areas, and Sparrow Hawks to devour the grasshoppers which appeared in abundance. Even migrant Shorebirds were attracted by the cedar and tamarack swamps which the fire had converted into open shallow pools.

The paper contains much of interest and value, although it cannot be expected to cover nearly all the birds of the county. The title on this account is perhaps a little misleading.— W. S.

¹ The Birds of Dickinson County, Michigan. By Frederick M. Gaige. Reprinted from Sixteenth Report Michigan Academy of Science, pp. 74-91.



Cooke, Wells W. 1916. "Cooke on the Distribution and Migration of North American Gulls." *The Auk* 33, 87–88. <https://doi.org/10.2307/4072136>.

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