

The number of species treated in the present volume is 221, with 168 additional subspecies, or a total of 389 forms, of which about one half come within the scope of the A. O. U. Check-List, the rest being extralimital. In preparing the present volume the author has had far more material, and given a far greater amount of time to the subject than any of his predecessors, and in justice to him it is but fair to give here his own statement of how the investigation has been conducted: "No doubt many of the forms which the author has recognized as subspecies in the present work may appear trivial to others, especially those who have not had advantage of the material upon which they are based; but in all cases it has been the author's desire to express exactly the facts as they appear to him in the light of the evidence examined, without any regard whatever to preconceived ideas, either of his own or of others, and without consideration of the inconvenience which may result to those who are inclined to resent innovations, forgetful of the fact that knowledge can not be complete until all is known." Yet it is sometimes possible for slight differences to become magnified and their importance over-estimated by long and intense consideration of them — in other words, there is danger of losing one's poise of judgment in dwelling upon minute details, which tend thereby to assume exaggerated importance.

In comparing the present work with the A. O. U. Check-List, so far as they cover the same field, it is to be noticed that in a few instances forms admitted by the A. O. U. Committee have been rejected by Mr. Ridgway, while on the other hand a larger number that have been rejected, or held in abeyance by the Committee, are here recognized. Probably neither can be assumed to be always in the right, and that in some cases the last word has yet to be said.

The volume bears on every page the stamp of patient and conscientious labor and that thoroughness of research which characterizes all its author's work. When the 'Birds of North and Middle America' is completed we shall have for the first time a treatise including the whole North American avifauna down to the Isthmus of Panama, together with that of the West Indies and the Galapagos Archipelago, for which students of ornithology the world over cannot be too grateful. It is to be hoped that strength and health will enable the author to complete the herculean task already so well advanced. — J. A. A.

Scott on the Song of Baltimore Orioles in Captivity.¹— The observations here detailed are of remarkable interest as tending to throw light on the question of how birds acquire their distinctive songs and call notes. It is, indeed, not too much to say that this is one of the most interesting and important series of observations as yet contributed to the subject.

¹ Data on Song in Birds. Observations on the Song of Baltimore Orioles in Captivity. By William E. D. Scott. Science, N. S., Vol. XIV, No. 353, pp. 522-526, Oct. 4, 1901.

They relate to two young Baltimore Orioles (*Icterus galbula*) taken from the nest when about five days old, reared by hand, and kept isolated from all other birds, so that they did not hear any other birds sing, nor any person sing or whistle. When about a month old "they had a single call note very like that of wild birds, but with a slightly different quality difficult to define, more abrupt, musical and much louder. They also had the peculiar rattling chatter associated with orioles. These were all their notes and were uttered rarely." The birds were both females, and were under observation for five years, when they died, apparently of old age.

When nearly eight months old, in February, after a partial spring moult, they began to sing. "The intervals between the singing was sometimes several days, and only a very few minutes in each day were devoted to song. This song was very low and soft, and more or less broken, reminding one of the song of the White-throated Sparrow (*Z. albicollis*) as it is heard during the fall and early spring migrations." The song of both birds "increased in volume and frequency all through the month of March, and during April and the first half of May while daylight lasted, the song was incessant in both birds. It was now a loud clear series of notes of great brilliancy, and poured forth in such rapid succession as to be like that of the House Wren (*T. ædon*) in the intervals, and lasting about as long as the warble of that bird. Except for the 'rattle' which was now and then a part of the repertoire, this song had nothing in it that reminded one of the song of the Baltimore Oriole as heard in New York, Massachusetts or at any other point where the birds occur. Through the second week in May, the song of both birds gradually diminished."

The moult occurred in June, and in early July both were in full plumage. "After the moult there was a secondary song season of short duration. The song was of the same character, but not so prolonged or elaborate." The succeeding years were but repetitions of the first, with slight variations.

Two years later a second brood of orioles was taken, and "were reared in the same way as the others had been, except that they had the *society of, and were closely associated during their earlier lives with*, the two older Orioles." In the following year, the birds of this later brood, one by one, joined in the song of the older birds, "and in a month all were singing a song not to be distinguished from that of the two older birds." They outlived the older birds a year or more "and always sang," says Mr. Scott, "as I believe they had been taught by older birds of their own kind. In short, only six orioles have ever sung this song, for I pursued the experiment no farther, other matters interfering."

Mr. Scott's conclusion is as follows: "My conclusion is that two birds, *isolated from their own kind and from all birds*, but with a strong inherited tendency to sing, originated a novel method of song, and that four birds, *isolated from wild representatives of their own kind, and associated with these two who had invented a new song* learned it from them and never sang in any other way."

This is important testimony, and so far as it goes, seems to favor the presumption that young birds must learn their songs through association with older members of their own species. Yet before this can be assumed as satisfactorily proven, and that the characteristic songs of birds are not innate, further experiments of like nature, and with other species, are desirable. It is a field of great interest and well worthy of careful and persistent investigation. — J. A. A.

Barlow's List of the Land Birds of Placerville, California.¹—The area to which the present paper relates appears to be a narrow belt of country along the old Lake Tahoe stage road, from Placerville to Tallac, 62 miles from Placerville and on the eastern slope of the Sierra. Placerville is situated at an altitude of 1800 feet, the route thence rising for the next 50 miles to Summit, with an altitude of 7000 feet, and thence 12 miles down the eastern slope to Tallac at an altitude of 6200 feet. The first eight pages of this very interesting and important paper contain a general description of the country through which the route passes, with numerous half-tone illustrations from photographs, an account of the 'life zones' of the region, and of the recent explorations on which the paper is based, followed by an extensively annotated list of the land birds, numbering about 130 species.

Placerville is situated at "the lower limit of the Transition zone, which extends up to about 5000 feet"; this is followed by the Canadian zone, extending from 5000 feet up to 7500, with the Hudsonian above, extending "from about 8000 feet upward on the slopes of the higher peaks." Mention is made of the characteristic birds and trees of these several zones.

The list is based on observations made by various observers during the breeding season for the last nine years, notably upon those of Mr. W. W. Price, who "made his first investigations in the summer of 1893 and has since devoted three months of each year to the exploration of the country contiguous to the stage road. His twenty-seven months' experience has made him familiar with even the more remote portions of the region so that the addition of his notes [included in brackets and designated by the initials 'W. W. P.'] to the present list insures its reasonable completeness." Mr. Barlow went over the entire route in 1901, and had previously spent short periods, at various points, in company with other observers, to whom he acknowledges valued assistance. These include Messrs. W. H. Osgood, R. H. Beck, L. E. Taylor, H. W. Carriger, John M. Welch, Wm. L. Anderson, and others. The list thus naturally deals

¹A List of the Land Birds of Placerville-Lake Tahoe Stage Road. Central Sierra Nevada Mountains, Cal. By Chester Barlow. With Supplementary Notes by W. W. Price. The Condor, Vol. III, No. 6, pp. 151-184, Nov. 16, 1901.