

THE STATUS OF MACGILLIVRAY'S SEASIDE SPARROW

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THE only recent attempt to treat the Seaside Sparrows as a group, is that of Griscom and Nichols (1920) who in their revision mention that dark, medium, and light forms are found together in South Carolina and Georgia. The present paper deals with one of the most variable of the entire group, Macgillivray's Seaside Sparrow (*Ammodramos maritima macgillivrayi*), with emphasis on the color variations occurring within the breeding range as given in the current Check-list,—North Carolina to northern Florida. The paper also touches briefly on the Northern Seaside Sparrow (*A. m. maritima*).

Since the publication of Griscom and Nichols' revision, Oberholser (1931) has described a pale bird (*Thryospiza m. waynei*) from Chatham County, Georgia, re-affirmed the status of *macgillivrayi* as a dark bird breeding from North Carolina to the South Edisto River, South Carolina, and described another dark bird (*T. m. pelonota*),—type locality New Smyrna, Florida—as slightly different in size and proportion from *macgillivrayi*. Bailey (1931) described a new subspecies (*T. m. shannoni*), from Duval County, Florida. This supposed race appears synonymous with *pelonota*, and reference is made only to indicate that it has not been overlooked.

At first, it seemed unlikely that both dark and light forms were breeding together, unless two distinct species were present breeding contiguously but not mixing. The presence of intermediates, however, would make this theory untenable. It seemed that late migrants or non-breeders might have confused the matter if taken along with breeding birds. Now, however, the evidence proves quite conclusively that dark, light, and intermediate birds breed together in two distinct areas, one in North Carolina and the other in northeastern Florida. In the intervening area, Georgia and South Carolina (at least as far north as Charleston), only the light form breeds. This form appears to be identical with the light birds, occurring among the dark, in North Carolina and northeastern Florida. Furthermore, when in fresh fall plumage, the race breeding in Georgia and southern South Carolina is oftentimes indistinguishable in color and size from fresh Connecticut birds.

In reaching this conclusion use has been made of skins from North and South Carolina, loaned to the Charleston Museum by the U. S. National Museum; the Wayne journals and collection (mostly migrants and winter birds), as well as the series of local birds in the Charleston Museum; Dr. Louis B. Bishop's series of birds from the four States involved, and a few

Connecticut birds; and my own sixty-odd skins collected at all times of year, during the last seven years, in Georgia and southern South Carolina.

The migration of the species has not been well worked out, due to obvious difficulties, and in view of the close resemblance between certain winter *waynei* and *maritima*, some of the winter records of the latter subspecies are probably incorrect. About the only positive long-time migration records in this area come from the Wayne journals, and concern the dark form only. He knew this form under several names from 1890 until his death in 1930; knew them in the field and collected many. He found the earliest autumnal specimen in late July, then two in August, and increasingly through the autumn. He found them throughout the winter and recognized a migration flight from April 17 to 27. But he found none during May, June, and most of July. About the Savannah River mouth, the local birds arrive much earlier. The males appear first in late March, go at once to the breeding grounds, and are in song.

The measurements of the group have been tabulated in various ways, as: dark *vs.* light North Carolina birds; dark *vs.* light Florida birds (from Amelia Island); all the dark against all the light birds south of Virginia, etc., but no satisfactory basis of differentiation has been found in size or proportion. This agrees with the findings of Griscom and Nichols.

The dark form varies considerably in degree, apparently shading completely into the light form, but in the stronger shades can definitely be distinguished, no matter what the state of wear of the plumage. Other writers have inferred that the blackish back feathers wear in the late breeding season to an approximation of the light form, but this proves incorrect. Wayne's July specimen was marked "belly bare" in his journal, indicating worn breeding plumage, yet he recognized it correctly. The Seaside Sparrows have but one complete moult a year, and usually breed in well-worn plumage. The occasional one to be found then in fair feather is probably in that condition because of a delayed postnuptial (or postjuvenile) moult of the fall before.

The blackish center streak to the tail feathers, formerly regarded as diagnostic of *macgillivrayi*, may be found in any of the group, even *maritima*, but the streak is widest and darkest in the dark North Carolina and the dark Florida birds. It is often absent in worn *maritima* and *waynei*.

This anomaly of mixed color variations is hard to construe, as to evolution. It upsets the common belief in a regular geographical progression of races, and makes it impossible to believe that density of cover is much of a determining factor. An analogous situation exists among two other birds of nearly the same habitat, the Long-billed Marsh Wrens (*Telmatodytes palustris*), and the Clapper Rails (*Rallus crepitans*).

The color differences of this group might be explained, genetically, by the

presence of one or more color mutations, normally recessive until a hurricane or other severe cause destroys a considerable portion of the breeding stock, and permits enough inbreeding of the isolated remainder to establish the characters according to Mendelian law. The dark form may or may not have once bridged the several hundred miles between the two parts of the present range. And the recessive genes may be quite widely spread through the group, and have become evident in two different places due to similar cause. Possibly in each place there is a slightly different, though quite similar mutation. Certainly it is found in both sexes. This theory might be expanded to cover the entire group of Seaside Sparrows, and in connection with destruction by hurricane, mentioned before (Tomkins, 1934) explain the seemingly erratic distribution of the variously colored forms of the group. A point in favor of the hurricane factor as applied to the present group of Seaside Sparrows, is that the species is most stable north of North Carolina (the range of *maritima*), where the tropical storms of summer are less destructive, and is most variable along the more tropical parts of the range.

It is difficult to fit our present system of nomenclature to such a situation. With a definitely graded and fairly constant difference in color or size, it is hard enough to mark a definite point of departure, where the range is continuous. But where, as in this case, there are several color differences shading into each other *in the same territory*, and the added confusion of this happening in two widely separated parts of the range, with the common color forms fairly constant between, the nomenclatural problem becomes almost too complicated.

The type locality of *macgillivrayi* is Charleston, South Carolina, but if Oberholser's *waynei* is a distinguishable race,—which to me seems at least debatable,—and breeds on through the Charleston territory, then the name *macgillivrayi* may belong to that subspecies. There are several possibilities here. First, that Dr. Bachman furnished Audubon with migrant birds from farther north. This is at least plausible when it is considered that the probable type was a young and very dark bird, and not a breeder (Chapman, 1899, p. 10). There is also the possibility that the range of the dark birds has receded in the hundred years intervening between Audubon's time and the present. Equivalent changes have taken place in other species in that length of time, and the damage done by storms has occasionally been considerable.

On the whole, the best course is to retain the arrangement of the present Check-list until later research shall prove more plainly the relationship and range of the forms in question. Briefly, there is no point in making a change in arrangement, when such a doubtful situation exists.

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