THE RACES OF SONG SPARROWS IN ALASKA

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The Song Sparrow (*Melospiza melodia*) has a peculiar habitat in Alaska. Its range extends along the coast from Dixon's Entrance on the east to Attu Island at the extreme western end of the Aleutians. Throughout this range it is a beach bird, which feeds, nests, and lives largely in the vegetation just above the high tide line. It obtains its food chiefly from the rocky beaches of its chosen home and uses the crevices between rocks and the openings in the talus slopes as escape cover. Only from Yakutat Bay south through southeastern Alaska does it show any evidence of moving inland during the breeding season. In this region it does leave the waterfront to nest inland for some distance along the streams. In the Aleutians it wanders away from the beaches in late summer only to return to the water's edge as cold weather approaches. The individuals that winter in southeastern Alaska also become veritable beachcombers.

The species has developed a variety of forms which have been assumed to be adaptations to climatic conditions. It is true that in Alaska the darkest and also the smallest races are found in the southeastern district, the birds becoming larger and grayer along the coast until the Aleutians are reached. Here, although the size continues to increase, it is also true that in the western Aleutians, the birds are browner than those in the eastern end of the chain. A browner form also has developed on Amak Island on the north side of the Alaska Peninsula.

In the Aleutians it is difficult to provide an ecological explanation for these facts. There is no obvious difference in weather, nor any marked difference in the relative abundance or zonal distribution of the dominant plants. There is, in fact, more noticeable difference between north and south slopes and between wet and dry sites on the same exposure than any that can be detected between islands. It seems probable that genetic variations having no vital relation to survival, plus isolation, are a more logical explanation of the variations of island forms. Furthermore, this also may be at least a partial reason for the survival of variations in sedentary forms that are not confined to insular areas.

Considering the territory occupied, this species is one of the most plastic to be found in Alaska, and it is a real experience for the ornithologist who is acquainted only with the small mainland forms of the United States to make the acquaintance of the huge dusky, Aleutian birds. Although these giants of the group sing about the same song and have the same mannerisms as their smaller cousins far to the south, it is probably true that if all the resident Song Sparrows between Kodiak Island and the Imperial Valley in California were suddenly destroyed, there are few observers who would believe that there was any close relationship between the large, dusky Aleutian birds and the small pale form about the Salton Sea.

As we have reached certain conclusions that are at variance with previous concepts of the Alaskan races of *Melospiza melodia*, all the Alaskan Song Sparrows are here reviewed.

The skins collected by O. J. Murie and his associates, in the course of several summers spent in the Aleutians, and those taken by Frank Beals and by Gabrielson when added to those already available in the United States National Museum provided a fairly adequate series of rather worn breeding birds. Study of a series of thirty-eight adult males and twenty-two adult females in breeding plumage indicates that there is an undescribed race of Song Sparrow in the western Aleutians.

McGregor (Condor, 3, 1901:8) in applying the name *sanaka* to the Aleutian Song Sparrow selected a bird from Sanak Island as the type. We have not seen this specimen but have had breeding birds from Sanak Island for comparison. His description applies to grayer birds rather than to the browner ones from farther west. We are therefore proposing to call this browner bird

Melospiza melodia maxima new subspecies
Giant Song Sparrow

Type.—Adult male, United States Fish and Wildlife Service Collection 230692, taken at Kiska Harbor on Kiska Island, June 17, 1911, by Alexander Wetmore. This specimen is in somewhat worn plumage but with wing and tail feathers relatively intact. It is representative of the average of this new race.

Diagnosis.—Separable from *sanaka,* to which it is most nearly related, by the following characters: bill slightly heavier and averaging somewhat longer, especially in the males; in breeding plumage back and head distinctly brownish in tone rather than grayish. This is due to the wider and heavier brown stripes in the center of the feathers of the back and to a darker brown color of the head. In specimens of *sanaka* in comparable plumage, the brown feather markings are narrower and more obscured, so that the general effect is an over-all grayish tone of the head and back.

The brownish appearance also is conspicuous in the fall, as at that season specimens of *maxima* in fresh plumage have darker brown centers to the feathers and browner margins which give a dark brownish tone to the back and head, whereas *sanaka* in similar plumage has back feathers with a lighter brown center and a wide olive edge which has a slight yellowish tone.

In series, a comparable difference is noticeable in the juvenal plumage. In *maxima* a brownish margin about the dark center of the back feathers gives an over-all brown tone to the back. The head also is darker brown. In *sanaka* the head is a grayer brown and in the plumage of the back, the brown centers are bordered by a wider margin of olive with a yellowish cast somewhat stronger than in fresh fall adults, giving the bird a brighter and paler color than in *maxima.*

Birds from Attu are the darkest and also measure larger than those from Atka, which island, on the basis of available specimens, seems to mark the dividing line between the two races. Birds from the islands between Atka and Unalaska are intermediate in size, especially in bill length, between the two races and also are intermediate in color between the gray birds to the east and the brown ones to the west. Some individuals are as brown as Atka birds and others are as gray as those from Unalaska, but these variants are not always in strict geographic sequence. The series of specimens in similar plumage is too limited to make a certain decision, but those available from this region are gray rather than brown and also are more comparable in size to *sanaka.*

This new race is a permanent resident of the western Aleutians from Atka (including that island) to Attu.

Average Measurements of Comparable Birds in Millimeters

Bill Depth	Culmen	Tarsus	Wing	Tail
Twenty-two breeding males, Atka to Attu (*maxima*).				
7.84	16.50	26.91	82.54	76.77
Sixteen breeding males, Seguam to Shumagins (*sanaka*).				
7.21	14.85	26.50	82.67	79.62
Fourteen females from Attu to Atka, inclusive (*maxima*).				
7.40	15.23	26.90	79.14	75.64
Eight females from Seguam to Unimak (*sanaka*).				
7.42	14.74	25.37	79.50	75.50

The tail and wing measurements vary somewhat more than normal on account of wear and are not fully reliable. A sufficient number of fresh fall skins from points west of Unalaska is not available to provide satisfactory averages, but six fall males from Unalaska average 83.83 mm. for both tail and wing measurements.

Melospiza melodia sanaka McGregor
Aleutian Song Sparrow

Type locality.—Sanaka Island.

This race as now restricted by us occupies the Aleutians from Seguam Island eastward to the Alaska peninsula at least to Stepovak Bay and including Sanak, the Shumagins, and the smaller islands south of the peninsula as far east as the Semidi Islands.

Birds from the Semidi Islands have been described as *M. m. semidiensis* (Brooks, Proc. New Engl. Zool. Club, 7, 1919:27) which we do not consider recognizable for the following reason. From this group of islands we have had for study 19 adult breeding birds and four that are in fresh fall plumage. The breeding series have shorter bills, eight males having culmens averaging 14.32 in length as compared with the average of 14.85 for sixteen breeding specimens of typical *sanaka*. Four breeding females from the Semidi group have culmens that average 14.50 in length as compared with 14.74 for eight breeding females of *sanaka*. Although these birds average slightly browner than *sanaka*, they nevertheless are still gray like that race. The four fall specimens further complicate the problem. These are two males and a female taken by Gabrielson on Choweit Island, August 5, 1945, and a female obtained by the same collector on Aghiyuk Island on August 21, 1946. All four are in fresh fall plumage which is a mottled dusky pattern more like that of *insignis* although the series is slightly grayer and paler than comparable plumage of that race.

Another female taken by Gabrielson on Choweit on June 18, 1940, is also colored much like *insignis* although other breeding birds from these islands are much like *sanaka*. All of these *insignis*-like birds have culmen lengths below average for *sanaka* although none falls below the minimum of some individuals from points west of Unalaska. It is, however, odd that the only fall birds from this group, taken in two different seasons, should all be grayish colored, more like *insignis*, than like the brownish fall color of *sanaka*. The single *insignis*-like specimen taken on June 18 gave every evidence of being a breeding bird yet the eleven other breeding specimens are definitely of the *sanaka* type.

There are several possible solutions. These birds could be a mixed group, some coming to breed from both the east and the west, with so few or so recent infusions of the two forms that a local type has not yet become fixed. Another possibility is that this is a fairly fixed population with a breeding plumage like *sanaka* and a winter plumage like *insignis*. If the fall birds were not all so predominently the sooty type, it would seem odd that four specimens collected at random at that season did not contain one or more of the brown plumaged individuals. A third solution would be to consider these fall birds as wanderers from Kodiak. It is evident that a more extensive series of these birds, especially in fresh fall plumage, is needed before this point can be definitely settled and their racial identity fully established. For the present we are leaving them in the *sanaka* group on the basis of breeding plumage comparisons.

The races *maxima* and *sanaka* are permanent residents. We have seen no specimens of the former from outside its breeding range and only four of *sanaka*, all of them being fall and winter birds. Two of these were taken at St. George in the Pribilofs and the others at Nushagak.

In studying the skins available, which have included 17 from the Museum of Com-

parative Zoology, those in the Gabrielson collection, the United States National Museum and the United States Fish and Wildlife Service collection, it is evident that there is an undescribed race, resident on Amak Island, a rocky island of considerable size north of the western end of the Alaska Peninsula. We are therefore naming it as

Melospiza melodia amaka new subspecies
Amak Song Sparrow

Type.—Adult male, United States Fish and Wildlife Service collection 298522, taken on Amak Island, July 13, 1925, by O. J. Murie.

Diagnosis.—Resembles *maxima* from the western Aleutians in color and extensive brown markings, but somewhat more heavily marked with brown than that race both on back and breast; in most available specimens the brown markings also somewhat brighter. Closer in color to *maxima* than to the geographically closer race *sanaka*. Bill short and stubby as in *sanaka*.

The average measurements in millimeters of the adults are: 4 males, culmen 14.75, wing 83.00, tail 79.12; 2 females, culmen 14.75, wing 77.50, tail 75.00.

Melospiza melodia insignis Baird
Bischoff Song Sparrow

Type locality.—Kodiak Island.

This is the breeding bird of Kodiak, Afognak, Sitkalidak, and Raspberry islands, including the almost innumerable smaller islands that dot the bays and inlets as well as the coast line of the larger islands. It also breeds on the Barren Islands and on the base of the Alaska peninsula from Kukak Bay for an unknown distance eastward toward Cook Inlet. No specimens were available from the area between Kukak and Stepovak Bay which is the most eastern point from which specimens of *sanaka* have been taken. Gabrielson has collected at both Chignik and Wide bays without obtaining any birds, although neither of these localities furnishes much suitable Song Sparrow habitat. He had a similar experience on Mitrofania Island which is a fairly large and very rugged body of land with little or no beach such as is preferred by Song Sparrows. From a distance many of the islands along the coast between Stepovak and Wide Bay appear to have suitable habitat and specimens are needed from this area before the ranges of the two races can be defined with accuracy.

This race is somewhat smaller than *sanaka* and is darker, with a sooty wash that noticeably obscures the markings and tends to make the color more uniform. It is, however, paler and grayer than the next race to the east.

Melospiza melodia kenaiensis Ridgway
Kenai Song Sparrow

Type locality.—Port Graham, Cook Inlet.

In selecting a type for this race Ridgway chose a specimen from what proves to be the western extremity of its range. It is not common on the western side of the Kenai Peninsula.

Grinnell (Univ. Calif. Publ. Zool., 5, 1910:402-403) in studying a series of forty-two Song Sparrows taken by members of the Alexander Alaska Expedition (of 1908) decided that this group of birds should be called *kenaiensis*. He states "I should not hesitate to name this as a new subspecies, if more material from Cook Inlet were available, so that I could be surer of the average characters of true *kenaiensis*. However, there is scarcely any doubt that, even if divergent towards *caurina*, the form under consideration is closest in the aggregate of characters to *kenaiensis*."

We have seen Grinnell's series and we also have for examination a series taken by

Gabrielson on the islands in Prince William Sound and as far eastward as the mouth of the Copper River. As a result of our study we agree with Grinnell's conclusion, although the Copper River birds are slightly closer to *caurina* than are those from the shores of the Sound.

The two specimens from Cook Inlet referred to by Grinnell are still the only ones from this area that have been available to us. Gabrielson has seen an occasional bird about the wharves in Seldovia and Homer, but he has not found them away from the towns when collecting in that region. Additional breeding specimens from this district are needed before the true relationship of this group of birds can be determined. Other birds also are needed from points along the coast between the mouth of Copper River and Yakutat Bay before the exact ranges of these two races can be worked out, although it is probable that *caurina* will be found to occupy most of that area. This surmise is based on the rather sudden darkening of birds from Cordova and Copper River when compared to the birds from the islands in Prince William Sound. These birds are smaller, black streaked and much slatier than *insignis,* but they are larger and more leaden, that is less brownish, than *caurina.*

This is the first race reviewed in this paper that shows any migratory tendencies. We have seen a number of specimens from southeastern Alaska taken between August 15 and February 6.

Melospiza melodia caurina Ridgway
Yakutat Song Sparrow

Type locality.—Yakutat Bay.

Most of the specimens of this race are from Yakutat or its immediate vicinity. Some breeding birds from as far south as Cross Sound are so intermediate between this race and *rufina* that they cannot be satisfactorily assigned to either group. The range of *caurina* therefore extends south nearly if not quite to Glacier Bay and Cross Sound and westward to some point between Yakutat Bay and Copper River. In comparison to *kenaiensis* it is smaller and darker, with the streaks more distinct on the back, whereas it has a longer bill and grayer coloration than *rufina.*

Caurina has a distinct migration which in winter carries it south in small numbers as far as central California. It is the most common wintering race in southeastern Alaska where in some seasons it is more or less mixed with *rufina.*

Melospiza melodia rufina Bonaparte
Sooty Song Sparrow

Type locality.—Sitka.

This is the breeding Song Sparrow found on the large outer islands of southeastern Alaska (Chichagof, Baranof, Kuiu, Prince of Wales) some smaller ones, and the Queen Charlotte Islands of British Columbia.

This sooty brown race, with usually rather indistinct crown and back markings, is the darkest of the Alaskan forms. When birds taken at Sitka and on the Queen Charlotte Islands in 1903 and prior years are compared to recently taken specimens from the same locality and season, they show more foxing than is apparent on specimens of similar age of the larger grayer races.

This race winters chiefly in areas south of Alaska. Swarth (Univ. Calif. Publ. Zool., 7, 1911:89) failed to find it when he arrived in the Alexander Archipelago in April, 1909. Nevertheless, it now appears that occasionally some numbers do remain through the winter season in the southern part of this island group.

Melospiza melodia inexpectata Riley
Riley Song Sparrow

Type locality.—Three miles east of Moose Lake, British Columbia.

The breeding birds of the mainland from Glacier Bay south, and of the inner islands from Admiralty to Revilligigedo, have been called *morphna* by most workers, in some cases for want of a better name. They certainly are not the same as the breeding birds of western Oregon and Washington, wintering individuals of this northern population being picked out and collected from among the more abundant resident birds. In color they are intermediate between the rusty brown *morphna* and the sooty brown *rufina*. In fresh plumage they have a distinctly greenish or olive shade due to the lighter colored edges of the back feathers.

In the large series available to us from the Alaskan breeding range as outlined, there are only two birds, one taken at Juneau on April 5 and one taken at Loring on September 21, that are rusty enough to be called *morphna*. A third specimen from Juneau collected on June 4 is more rusty than the average of the breeding birds but all three can be considered as extremely brown variants of the local race. All other breeding birds from this region can be closely matched with inland birds from the interior of British Columbia and accordingly, in our opinion, should be classified as *inexpectata*.

Gabrielson has several birds from Garforth and Willoughby islands in Glacier Bay that approach *caurina* in color but have the size and shorter bill of *inexpectata*. Two breeding specimens from Gustavus Point also seem closer to this race and we are therefore including Glacier Bay in its breeding range. In this respect we are to some extent following Swarth (Condor, 25, 1923:214-223) who included all these birds under the name *morphna*. Nevertheless, we believe that *inexpectata* is a valid race and that these southeastern Alaska birds properly belong under this name rather than under *morphna*.

There are no wintering specimens from Alaska and this race apparently leaves Alaska to winter farther south.

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