

specimen, one in winter plumage, was observed on April 28. By the 8th of May they were extremely common in their northward migration, and I collected a good series of birds at this time. They flew in compact flocks at great speed, sometimes high in the air, or again dropping low over the water. Invariably they skirted the edge of the pack along the open lead, keeping well to the seaward side. Great numbers are taken by the natives for food. On the Diomedes on June 3 I found them abundant, the faces of the cliffs seeming alive with them and the air filled with darting birds. They did not begin to nest until the latter part of June, only one egg being seen on Fairway Rock on June 25.

Denver, Colorado, January 12, 1925.

THE TIMBERLINE SPARROW A NEW SPECIES FROM NORTHWESTERN CANADA

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(Contribution no. 442 from the Museum of Vertebrate Zoology of the University of California)

DURING the summer of 1924 the two authors of the present paper were collecting birds together in the Atlin region, in the extreme northwestern corner of British Columbia. One of the most interesting of our finds was the discovery, in the higher parts of the mountains of that region, of a *Spizella* apparently distinct from any other known species. This bird is closely similar to *Spizella breweri* in general appearance, but it differs appreciably from *breweri* in details of structure and coloration. This northern *Spizella* we propose to name

*Spizella taverneri** , new species Timberline Sparrow

TYPE.—Male adult; Museum of Vertebrate Zoology, no. 44856; Spruce Mountain, at 5000 feet altitude, 10 miles east of Atlin, British Columbia; August 8, 1924; collected by H. S. Swarth; original no. 13048.

DIAGNOSIS.—Most nearly like *Spizella breweri*. Slightly larger, with (usually) rather longer tail, and with weaker, more slender bill. Coloration darker than in *breweri*, with heavier streaking on top of head and back, darker flanks, and a tendency toward the development of narrow streaks on breast and flanks. Bill and feet darker than in *breweri*: "bill black at tip; upper mandible brownish, lower mandible flesh; feet pale drab, tarsus brownish flesh" (Brooks' field notes).

SPECIMENS EXAMINED.—Adult male, 3; adult female, 4; immature, first winter plumage, 4; juvenal, 6; molting from juvenal to first winter, 6. Total, 23.

It seems best to accord this form specific standing, rather than to regard it as a subspecies of *breweri*. The characters of *taverneri* seem constant. At any rate, in the series at hand there is none that could be confused with *breweri*, and in extensive series of *breweri* (numbering some hundreds of skins, from many localities) we have found no specimen of equivocal character. The difference in bill alone seems diagnostic. This member is slender and dark colored in *taverneri*, relatively stubby and pale colored in *breweri*. In the dried skin this feature is retained to its full extent, so that the darker bill of a specimen of *taverneri* appears in strong contrast to that of any *breweri* with which it is compared.

* Named for P. A. Taverner, Ornithologist, Canadian Geological Survey, Ottawa, Canada.

In dorsal coloration *breweri*, in all plumages, presents a ground color of sandy buff, with narrow streakings. In *taverneri* there is none of this pale sandy appearance. The general ground color is grayish, with the limited brownish areas of individual feathers of a darker shade than in *breweri*. In coarser dorsal streakings, in the fairly well defined grayish area between streakings of head and back, in the suggestion of a median line upon the crown, and in the fairly distinct superciliary stripe, *taverneri* shows an approach toward the characters of *Spizella pallida*.

In juvenal plumage, *taverneri* and *breweri* present differences comparable to what is seen in adults, young *taverneri* being darker colored generally, and more heavily streaked. In later plumages there is in *taverneri* a tendency toward the development of narrow streaks on breast and sides to a far greater extent than is ever seen in *breweri*. This is most noticeable in certain immatures in first-winter plumage (but these streaked feathers are not left-overs of the juvenal plumage), and it appears also to some extent in freshly molted adults.

In a study of the relationship of *taverneri* and *breweri*, account must be taken of the geographical ranges of the two forms. *Breweri* finds its center of abundance in the Great Basin region. It is an inhabitant of arid portions of the Upper Sonoran and Transition zones, a desert bird, that, as a rule, follows the sage-brush in its distribution. It extends northward along the lower valleys of the interior of southern British Columbia, as far as the sage-brush goes. *Taverneri* is an inhabitant of the Alpine-Arctic zone on mountain tops far to the northward of the known range of *breweri*. We found it only above the limit of upright timber. It occupies a higher zone in the Atlin region than do the Western Tree Sparrow and the Willow Ptarmigan; it is associated rather with the Golden-crowned Sparrow and the Rock Ptarmigan. While it would not be safe to say that *taverneri* occurs nowhere in the 800 miles to be traversed to the southward before the nearest record station of *breweri* is reached, still parts of that region have been visited by various collectors who have failed to find either species there.

There seem to be some notable differences in actions. *Breweri* is essentially a retiring and unobtrusive species, though not particularly wild. *Taverneri*, on the other hand, is extremely wary, and is frequently seen, apparently on the lookout, on the tops of the stunted trees of its timberline home. On two occasions, pairs of birds, presumably near their nests, were seen perched on the tallest bushes, jerking their tails in a manner seen in no other *Spizella* except *monticola*. On the whole, considering the differences in geographical distribution and the differences in zonal distribution, coupled with the physical characteristics of the two forms, it seems logical to regard *breweri* and *taverneri* as distinct species.

The Timberline Sparrow is, of course, a summer visitant only, in the Atlin region. It must spend the winter far to the southward, and it seems likely that the line of migration lies to the eastward of the Rocky Mountains, as is the case with so many non-resident birds of the region. Its winter home, however, is as yet unknown. We are indebted to Dr. Joseph Grinnell for making comparisons of specimens of *taverneri* with series of *breweri* in the collections of the United States National Museum, including that of the Biological Survey. He failed to find a single example of *taverneri* in those collections. It seems likely, though, that winter specimens must have been collected somewhere, and it would be advisable to subject series of *breweri*, wherever available, to close scrutiny on the chance of finding examples of *taverneri* from southern record stations.

MEASUREMENTS IN MILLIMETERS (AVERAGE, MINIMUM AND MAXIMUM) OF
SPIZELLA BREWERI AND *SPIZELLA TAVERNERI*

| | Wing | Tail | Culmen | Tarsus | Middle toe with claw |
|--------------------------------------------------------|------------------|------------------|---------------|------------------|-------------------------|
| <i>Spizella breweri</i> 10 males ¹ | 61.8 (60.5-64.5) | 61.0 (58.5-67.0) | 8.2 (8.0-8.5) | 17.2 (16.6-18.0) | 14.8 (13.5-15.5) |
| <i>Spizella taverneri</i> 6 males | 64.1 (61.5-66.2) | 65.1 (62.5-68.0) | 7.8 (7.0-8.5) | 17.3 (17.0-18.0) | 15.5 (15.0-16.0) |
| <i>Spizella breweri</i> 10 females ¹ | 59.2 (57.5-60.0) | 58.7 (57.5-60.0) | 8.4 (8.0-8.8) | 17.1 (16.2-17.5) | 15.2 (14.5-16.0) |
| <i>Spizella taverneri</i> 3 females | 60.7 (60.0-62.0) | 59.5 (57.0-62.0) | 8.2 (8.0-8.5) | 17.6 (17.0-18.0) | 15.7 (15.0-16.5) |

¹ Breeding birds, from Humboldt County, Nevada.

WEIGHTS IN GRAMS (AVERAGE, MINIMUM AND MAXIMUM) OF
SPIZELLA BREWERI AND *SPIZELLA TAVERNERI*

| <i>Spizella breweri</i> | | <i>Spizella taverneri</i> | |
|-------------------------|-----------------|---------------------------|------------------|
| 10 males | 10.6 (9.8-11.5) | 6 males | 12.3 (10.0-14.0) |
| 5 females | 10.6 (9.3-11.8) | 2 females | 12.3 (11.5-13.0) |

Berkeley, California, January 26, 1925.

FROM FIELD AND STUDY

Western Evening Grosbeak at Diablo, California.—Visits of Western Evening Grosbeaks to this section of the state are events of such rare occurrence that I feel it is worth while to report the recent presence of these beautiful birds in the park of the Diablo Country Club, which is located at the southwestern base of Mount Diablo. On the morning of December 18 just passed, while engaged at my desk, my attention was attracted by a small flock of birds that suddenly appeared in a leafless tree-top but little more than twenty feet away. A glance told me they were birds that I had never seen here before. What were they? Strange visitors surely! While studying their striking colors and beautiful markings, and raking my puzzled brain for a clue to their relationship, I finally noticed those heavy mandibles—the grosbeaks'. The rest was simple, for only two or three evenings before, I had casually picked up a bird book and happened to open it at a colored plate picturing the Western Evening Grosbeak (*Hesperiphona vespertina californica*). I was at once interested and read the accompanying text, wondering why I had never encountered a representative of the showy tribe, and wishing I could see one. Now the birds themselves came and seemed to say, "You wanted to see us! Here we are!"