NESTING OF THE TIMBERLINE SPARROW

WITH ONE ILLUSTRATION

By HARRY S. SWARTH

In the summer of 1924, the writer, in the employ of the University of California Museum of Vertebrate Zoology, made a first visit to the Atlin region, northern British Columbia. There, Major Allan Brooks and I, collecting together, discovered the bird that we later named the Timberline Sparrow (*Spizella taverneri*) (see Condor, XXVII, 1925, p. 67). The species was first encountered July 8, near the summit of Monarch Mountain, some three miles south of the town of Atlin. A pair of the birds was flushed by Brooks, recognized by him as different from anything we had thus far seen in the region, and, with some difficulty, he shot one of the pair. That particular mountain top was a favorite collecting ground, frequently visited by us during the next three months, but we saw no more Timberline Sparrows there, which seems rather curious in light of my experiences in a subsequent year.

Fig. 92. NEST SITE OF TIMBERLINE SPARROW. THE FARTHER OF THE TWO BALSAMS (about 10 feet high) WAS THE SINGING PERCH OF THE MALE. THE NEST WAS ABOUT 20 FEET FROM THE TREE.

Later in that season a series was collected at another point.

My second visit to Atlin was on behalf of the California Academy of Sciences. We arrived there on June 17, 1929, and on June 22 I made a first climb of Monarch Mountain. Soon after reaching the series of benches and hollows that, at about 4500 feet elevation, surround the rocky summit of the mountain (fig. 92), I began to hear a fine, trilling song that was unfamiliar to me, and that I decided must come from the Timberline Sparrow. A singing male, shot a few minutes later, verified this surmise, and from then on I heard many others. It was a cicada-like trill, with many interpolations suggestive of a canary's song, and, as with the canary, it was long sustained. There seemed to be a fairly regular sequence of trills and stops,

but it was not a short, definite and unvaried song, as with the Golden-crowned and Gambel sparrows. The birds were singing on all sides, and they continued until late afternoon, when there was a rather sudden cessation.

It was evident that singing males were occupying perches in fairly close proximity, a bird, perhaps, to every five or six acres, where conditions were favorable. They were wary, and generally flew before they could be closely approached, but always moved about within a rather short radius, unwilling to be driven far afield. For each singing male it seemed likely that there was a mate upon a nest near-by, but even so, with several acres of low tangled bushes to be searched, the chances of finding one did not seem very bright, at any rate to an admittedly non-expert bird nester.

However, I began a quartering of the territory surrounding each of several singing males, tramping back and forth through the tangles of birch bush, which here lay close to the ground. This was continued for some time without success, but finally a small bird darted out, not more than fifteen feet away but to one side, out of my direct line of vision. Search of the thick shrubbery was attempted, but given up as hopeless in lack of a more exact center as a starting point; so, for the time being, I withdrew to a nearby lakelet, where I ate my lunch.

A cautious return later resulted in flushing my bird at close range from a nest with four eggs. Even then, the bird arising not more than three feet away and directly in front, I had to make careful search on hands and knees. The birch was only partly leaved out, but the closely interlaced branches made a perfect cover from above. The nest, its bottom a scant six inches from the ground, was loosely placed among the supporting vegetation, not fastened to the twigs. When the surrounding branches were cut away the nest was removed separately; it could not be kept associated with the shrubbery in which it had been placed.

The nest is constructed almost entirely of rather stiff dried grass stalks and gray shreds, apparently from the fire-weed. The lining is of fine dried grass and a few moose hairs. Average external diameter (excluding long, protruding stalks), 130 millimeters; inside diameter, about 50 mm.; inside depth, about 30 mm.

The eggs are generally similar to those of *Spizella breweri,* three sets of which are available for comparison. The ground color is microcline green (Ridgway), and, as in *breweri,* the eggs of *taverneri* are marked with small blotches and tiny spots of reddish brown. In *breweri* these markings are gathered into rings at the large end, most of the remaining surface being immaculate, while in *taverneri* there is little or no tendency toward such a ring, the markings being finer and distributed over most of the egg. Of course, larger series of both species might show this difference not to be of specific importance.

The extent of the summer habitat of the Timberline Sparrow has not been learned, or of the winter habitat either, for that matter. The species is known only from a limited area about Atlin in summer, and from the capture of a very few migrants farther south. I have not been in the summer home of the species at the time when the birds were arriving from the south, but during the nesting season and subsequently up to the time of departure I saw none below an altitude of about 3500 feet. The valley in which Atlin is located lies at about 2200 feet altitude, and the valley avifauna is to a great extent different from that of the surrounding mountains. The upper limit of any extensive growth of upright timber is at about 3500 feet; some of the higher peaks reach 6000 feet. Some bird species that are restricted to high altitudes during the breeding season appear in the lowlands in

migration, but apparently the Timberline Sparrow, as also its associate, the Golden-crowned Sparrow, "takes off" for the southland directly from the high elevations where it breeds.

The conspicuous vegetational features of the timberline habitat of the bird are found in the balsam fir (*Abies balsamifera*), a species of birch (*Betula glandulosa*), and willows (whether of one species or several I can not say).

There are, of course, a host of annuals and other low growing plants, for the mountains are ablaze with flowers during the summer; but the characteristic appearance of the region is produced by the miles of low "chaparral" formed by the birch, the scattered clumps of dwarfed or prostrate balsam, and the thickets of willow about the lakes and along the streams. In this connection the birch deserves special mention. As the sage-brush is to the Brewer Sparrow (first cousin of *taverneri*), the two almost invariably found associated together, so is the trailing birch to the Timberline Sparrow. This plant varies in growth with altitude and exposure, from a prostrate condition, easily walked over, to bushes that are waist-high, or occasionally to thickets ten feet high or more, growing generally on the more dry and gravelly slopes; and it forms to a marked extent the preferred habitat of this bird.

The Western Tree Sparrow (*Spizella monticola ochracea*), also a mountain bird of this region, though on the average at a slightly lower altitude, occurs together with the Timberline Sparrow but in different surroundings. The Tree Sparrow favors the willow thickets, on the damper ground, at least during the nesting season, so that the two species are mostly in different vegetational belts. After the young are out both species scatter more widely, but even then the Tree Sparrow occurs in the birch thickets more commonly than the Timberline Sparrow in the willows.

Early in July the male birds were still singing to some extent, though the volume of sound had lessened considerably; on July 18 a few persistent songsters were still to be heard, but it was noticeable that there were only a few so engaged. Young in streaked juvenal plumage were out of the nest by the middle of July, the post-juvenal molt was in progress the latter part of July and early in August, and birds in first winter plumage, completely acquired, were collected by the middle of August. An adult in the midst of the annual molt was shot August 6, and others in fresh winter plumage throughout, on September 1 and 5. Nearly all were gone by the end of August, and September 5 was the last date on which the species was seen.

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