

from various localities in California discussed by Swarth (*op. cit.*, pp. 149-150), it differs from a series of Vancouver Island birds in the L. B. Bishop collection in having a stubbier bill and slightly duller coloration. However, unlike Swarth's specimen, the under parts (including the lower tail-coverts) appear to be as dark as in some examples from Vancouver Island. The color of the back is darker than in any other known fox sparrow, though slightly duller than in Dr. Bishop's birds.—G. WILLETT, *Los Angeles Museum, Los Angeles, California, November 16, 1938.*

**The Breeding Leucostictes of the Wallowa Mountains, Oregon.**—The fauna of the Wallowa Mountains in northeastern Oregon resembles closely that of the Rocky Mountains of Idaho. An exception to this generalization is found, however, in the rosy finches. In central Idaho, the peculiar Black Rosy Finch (*Leucosticte atrata*) occurs, whereas the breeding birds of the isolated Wallowa alpine area are similar to the Gray-crowned Rosy Finch (*Leucosticte tephrocotis tephrocotis*) that breeds no closer than in the Glacier National Park region of northwestern Montana. Jewett (Condor, vol. 26, 1924, p. 79) was the first to report breeding *tephrocotis* from the Wallowa Mountains. On July 23, 1923, when he secured samples of this species, he also took a Black Rosy Finch which was found to have testes that "were not enlarged as in the *tephrocotis* specimens." It would seem clear that this particular Black Leucosticte was not breeding. Some possibility existed, however, that both *L. atrata* and *L. tephrocotis* might nest in these mountains and that the two forms might interbreed.

Considerable attention was given to the leucostictes in the Wallowa Mountains last summer while a party from the Museum of Vertebrate Zoology was collecting in that range. A series of 19 breeding birds was obtained by Ward C. Russell, Donald T. Tappe, Frederick H. Test and myself from two alpine localities on Eagle Cap and Elkhorn Peak at the headwaters of the Lostine River. All are of the species *tephrocotis*, and no birds that resembled *atrata* were seen. The breeding *tephrocotis* prove to be different in coloration from *L. t. tephrocotis* of the Canadian Rockies and merit recognition as a distinct race.

*Leucosticte tephrocotis wallowa*, new subspecies. Wallowa Rosy Finch.

**Type.**—Adult male, no. 73998, Mus. Vert. Zool.; 18 mi. S, 2 mi. E, Lostine, 8800 feet altitude (north face of Elkhorn Peak), Wallowa Mountains, Wallowa County, Oregon; July 14, 1938; testis 10 mm. in length; collected by Alden H. Miller; original number 3263.

**Subspecific characters.**—Similar to *L. t. tephrocotis*, but cinnamon brown of ventral surface duller and more sooty, the feathers bearing either dusky areas or dusky shaft streaks immediately distal to downy gray basal parts. Black throat area grades less abruptly into breast. Streaks of back somewhat darker and broader and feather margins distinctly more neutral brown, with less yellow and red-brown pigment.

**Range.**—Known to breed only in the Wallowa Mountains of Oregon. Winter range not as yet determined.

**Remarks.**—The series of *wallowa* has been compared with specimens of *L. t. tephrocotis* in the United States National Museum that were taken in July in the Jasper Park area of the Canadian Rockies and with birds from the vicinity of Bowron Lake, Cariboo District, British Columbia. The Jasper Park birds are strictly comparable with *wallowa* in point of wear. Differences in average measurements of wing, tail, bill and feet between *wallowa* and *L. t. tephrocotis* are slight and are without statistical significance.

*Wallowa* differs from *L. t. dawsoni* of the Sierra Nevada of California in slightly sootier underparts, and in much darker, less tawny dorsal surface. Some individuals of *wallowa* are almost indistinguishable from *dawsoni* ventrally, but the dark, broad dorsal stripes of *wallowa* are in no instance closely approximated in *dawsoni*. *Wallowa* differs from *dawsoni*, as does *L. t. tephrocotis*, in greater average depth of bill and in more pointed wing tip.

Since 1913, when Grinnell (Condor, vol. 15, pp. 76-79) named *dawsoni*, additional representatives of that race have come to hand. The color characters which he ascribed to *dawsoni* have been confirmed. But, the size differences between *dawsoni* and *L. t. tephrocotis* have broken down, except for bill depth, as shown in the following table of averages.

			Wing	Tail	Bill length from nostril	Bill depth	Tarsus
<i>L. t. tephrocotis</i>	♂	11	105.7 mm.	69.8 mm.	8.86 mm.	7.45 mm.	19.96 mm.
<i>L. t. wallowa</i>	♂	11	103.7	67.6	8.76	7.31	19.65
<i>L. t. dawsoni</i>	♂	38	105.6	70.0	8.79	6.93	19.15
<i>L. t. tephrocotis</i>	♀	8	100.8	66.9	8.80	7.66	19.29
<i>L. t. wallowa</i>	♀	9	98.9	65.4	8.91	7.23	19.60
<i>L. t. dawsoni</i>	♀	42	99.9	66.2	8.76	7.01	19.11

Examination of the frequency distribution of bill depth measurements shows that the differences in average of that dimension probably represent a true difference in average genetic constitution of *dawsoni* and *L. t. tephrocotis*. Depths in male *dawsoni* range from 6.4 to 7.5 mm. (chiefly 6.7 to 7.2), in *wallowa* from 7.1 to 7.6, and in *L. t. tephrocotis* from 7.2 to 7.8.

Grinnell (*loc. cit.*) showed that in *dawsoni* there were more individuals with a rounded type of wing than in *L. t. tephrocotis*. He classified wings according to the relative lengths of the three outer primaries, designating each type by a formula that consisted of the primary numbers in order of decreasing length. The four formulae in order of decreasing sharpness of the wing tip are: (1) 9-8-7, (2) 8-9-7, (3) 8-7-9, and (4) 7-8-9. Occurrence of these types in the material that I have examined is as follows:

	1	2	3	4
<i>L. t. tephrocotis</i>	9	5	2	0
<i>L. t. wallowa</i>	13	6	0	0
<i>L. t. dawsoni</i>	5	32	21	3

It may be seen that the occurrence of a larger proportion of round-winged types in *dawsoni* is substantiated, and that *wallowa* shows no intermediacy toward *dawsoni*.

The sooty coloration, which distinguishes *wallowa* from its conspecific relatives, may have something to do with *L. atrata*, even though the latter form does not breed in the Wallowa Mountains. It is likely that *wallowa* possesses just a few of those factors for dark pigmentation that produce the solid blackish body plumage of *atrata*. *Wallowa* is not the result of recent hybridization of *L. tephrocotis* and *atrata*, for if it were, coloration more or less typical of *atrata* should appear sporadically in it. The sooty coloration is relatively uniform in the race and in no instance has it been found completely lacking. Thus, although *wallowa* may have certain factors in common with *atrata* that were derived from some common ancestor or from some former hybridization, it is not actually an annectant population linking *atrata* and *L. tephrocotis*. The differences in coloration between *wallowa* and *atrata* are great and there is no evidence of any break-down at the present time of the isolation of the breeding populations of *atrata*. It is impossible to conclude from available evidence whether the isolation of *atrata* is physiologic as well as geographic.—ALDEN H. MILLER, *Museum of Vertebrate Zoology, Berkeley, California, November 28, 1938.*

**Linnet Nests in Hole in Tree.**—In the vicinity of Benicia I have found California Linnets (*Carpodacus mexicanus frontalis*) using a variety of nesting sites. These sites may be in bushes or vines next to a house, on projections or woodwork about a building, in trees, on a beam under a bridge, or in wild artichokes (*Cynara*). This season, for the first time, I have found a pair of these birds nesting in a hole in a tree.

The tree was a small willow on the bank of a stream two miles southwest of Cordelia, Solano County, California. When I walked by this tree on May 26, 1938, the female flew from the hole which was well filled with dry grasses and which held four eggs. The cavity was about six feet from the ground and was about the size which might have been dug by a California Woodpecker; however, this hole appeared to have been formed by the breaking off of a dead limb at its base, which left an opening into the partly hollow interior of the trunk. On a later visit, June 5, there were young in the nest.—EMERSON A. STONER, *Benicia, California, September 3, 1938.*

**Waterfowl at Deep Springs Valley, Inyo County, California.**—During the spring of 1938, while living at Deep Springs Ranch, I enjoyed the opportunity of making bird observations both at the ranch and at Deep Springs Lake. Both are located, eight miles apart, on the floor of Deep Springs Valley, a typical desert valley, devoid of any large vegetation and completely surrounded by mountains some of which reach to over 11000 feet. The floor of the valley is comparatively flat and lies at an elevation of about 5000 feet in the Inyo Mountains of eastern California.

The water of Deep Springs Lake is highly charged with various salts and is barren of any important living organisms. Surrounding the saline lake on the north and east are numerous fresh-water ponds, each separated by small hillocks and fed by artesian springs. The ponds abound with a tremendous fauna of shrimp, snails, relict fishes, and frogs. Deep Springs Lake and its surrounding ponds, and Deep Springs Ranch with its irrigation ditches, puddles, and reservoir provide ideal havens for a wealth of migratory waterfowl and shore birds, while Deep Springs Lake is an excellent breeding ground for several species.

My observations in the valley were greatly limited up until about the middle of March, when migration seemed well under way. Many ducks certainly wintered at Deep Springs Lake, though I was not able to discover their identities. In late February a fairly large flock of Redheads was