

## THE FOX SPARROW IN SOUTHWESTERN YUKON AND ADJACENT AREAS

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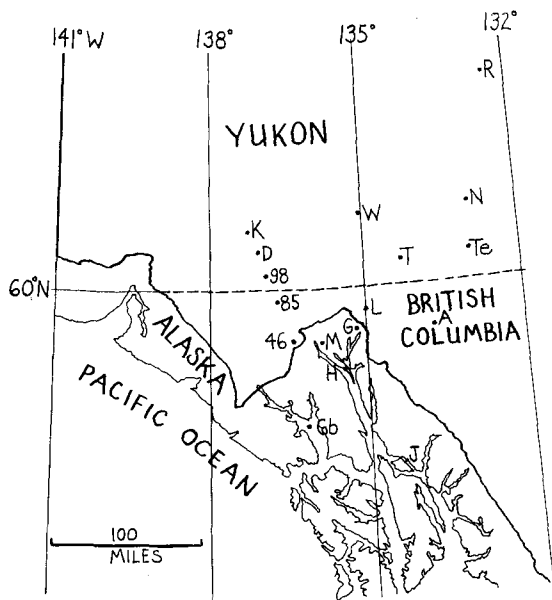
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The Fox Sparrow (*Passerella iliaca*) has not been reported from Yukon Territory of Canada southwest of Dawson, Teslin Lake, Nisutlin River, and Pelly River (Rand 1946; the last locality, on the Canal Road, is now called Ross River). From extreme northwestern British Columbia, Swarth (1936) reported it as a rare migrant and breeding bird at Atlin, but collected only one juvenile of the breeding population; Brooks (1927) saw several and collected an immature on 4 September 1924 at Log Cabin, near White Pass; Munro and Cowan (1947:231) recorded Shortt's July specimens from mile 85, Haines Road. From the northeastern corner of southeastern Alaska (east of Glacier Bay and north of Juneau) there are two records: Hartlaub (1883) reported a specimen taken by Arthur Krause on 1 February 1882 from Portage Bay; Bishop (1900:87) reported a specimen he took, one of several seen near White Pass on 9 June 1899.

In 1972 I searched for Fox Sparrows in the areas mentioned above in June and early July and again in September and early October. They were scarce,



Map of a part of northwestern North America, showing localities referred to in text. Symbols: 46, 85, 98—Mileposts on Haines Highway. A—Atlin. D—Dezadeash Lake. G—Glacier, on White Pass. Gb—Glacier Bay. H—Haines. (Portage Bay 1 mile south; Chilkoot Lake 10 miles northwest.) J—Juneau. K—Kathleen Lake. L—Log Cabin. M—West of Mosquito Lake. (= northwest of Kluckwan; Klehini River locality slightly south.) N—Nisutlin River. R—Ross River. T—Tagish. Te—Teslin Lake. W—Whitehorse.

both as breeding birds and as fall migrants. In summer in Yukon, I found three family groups in the dense willow thickets at the head of Lake Marsh, near Tagish, 5–7 July, and also four pairs in alder thickets just above the edge of white spruce timber line near mile 98 of the Haines Road on 12 and 13 July. In British Columbia, I saw two birds in alder-willow thickets 2 miles S of Atlin on 30 June and 1 July; along the Haines Road from mile 46 to mile 54 in dense alder thickets among scattered Sitka spruces, I saw 13 birds, 18 June to 10 July, and found one nest with small young on 22 June. In Alaska, I saw one bird on 26 June in an alder thicket beside the Chilkat River at mile 8 of the Haines Road (presumably a vagrant, for I could not relocate it subsequently), and one in a timber-line alder thicket west of Mosquito Lake on 14 July.

In autumn in Yukon I saw a flock of four at Kathleen Lake on 20 September, with 3 inches of fresh snow on the ground; the next day I saw three near Dezadeash Lake; all appeared to be *P. i. zaboria*. In British Columbia, I saw nine (all belonged to one of the dark-brown races) on 8 and 9 September, near mile 54 of the Haines Road. In Alaska, I noted 13 (of the 10 seen, 3 were reddish *zaboria* and 7 one of the dark races), 23 September to 6 October, at various spots near Haines.

I have compared my specimens with most of those existing in Canadian and United States museums. Also I have examined and compared each of the specimens reported in the literature cited above except for the February bird from Portage Bay. The last was reported by Hartlaub (1883) as the eastern form (presumably *P. i. zaboria* of present-day taxonomy). All specimens listed are in the California Academy of Sciences collection except those noted otherwise. My identifications of all specimens from the area are:

- P. i. zaboria*, summer—Pelly River, 1 specimen (= Ross River; Nat. Mus. Canada) and Tagish, Yukon, 2; Atlin, British Columbia, 2.
- P. i. zaboria*, September—Kathleen Lake, Yukon, 2; Atlin, British Columbia, 2; Chilkoot Lake, Alaska, 1. Presumably all of these birds were migrants.
- P. i. fuliginosa*, summer—Along the Haines Road near mile 98, Yukon, 2; mile 85, 5 (Royal Ontario Mus. Zool., 4 and Natl. Mus. Canada, 1); and miles 54–46, British Columbia, 7; west of Mosquito Lake (= 7 miles NW of Kluckwan), 1; Glacier (on White Pass; Field Mus.), Alaska, 1. The last specimen was recorded by Bishop (1900) as *townsendi* and Swarth annotated the label “nearer *townsendi*.” But Swarth (1920) did not list the specimen in his monograph; perhaps he didn’t see it until after 1920. New specimens from White Pass would be important.
- P. i. fuliginosa*, autumn—Along the Haines Road at miles 52 and 54, British Columbia, 5; Klehini River 4 miles W of Kluckwan, Alaska, 1. Another taken at the last locality on 6 October is intermediate between *zaboria* and *fuliginosa*.
- P. i. annectens*—The immature taken by Brooks (Mus. Vert. Zool. and see above) at Log Cabin, British Columbia, is nearest *annectens*, although identified by the collector (1927) as *fuliginosa*. If Swarth ever saw the specimen, he neither annotated the label nor published the record.

I contemplate further field work in the area. I thank the authorities of the various museums cited for their help. The Hanover College Faculty Re-

search Committee provided financial assistance for the first field trip.

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### TIME BUDGET AND FORAGING SITE PREFERENCE OF THE CINNAMON HUMMINGBIRD IN COSTA RICA

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Information on the apportionment of time for maintenance and breeding activities is important for understanding the evolution of avian reproductive and foraging behavior (e.g., Verner 1965, Stiles 1971, Verbeek 1972). Birds that maintain feeding territories exclusive of the breeding season (e.g., hummingbirds) often utilize resources relatively stable in time and space. Floral nectaries represent such resources and provide opportunities for prolonged observation of an individual bird's activities. This study describes the time budget and pattern of inflorescence utilization by the Cinnamon Hummingbird (*Amazilia rutila*) at a tropical flowering plant during the dry season in Costa Rica.

The plant serving as a nectar source in this study was *Combretum farinosum* (Combretaceae). *Combretum* grows as a bush or liana, and in the latter case may climb high into the canopy. Inflorescences contain many flowers arranged in rows and each flower passes through several age-dependent color forms. On first opening the flower is green, changing to orange the second day, and red by the third day. Flowers on an inflorescence are often totally synchronized in development, but if not, the changes occur in waves along the inflorescence, so some degree of color uniformity is always achieved. Nectar is produced primarily by the green, first-day flowers, with a lesser proportion from orange flowers of the second day (D. Inouye, pers. comm.). Red, third-day flowers produce little or no nectar and may remain on the inflorescences for several days.

The general study area was located on a wooded

tract near the field station at Santa Rosa National Park, Guanacaste, Costa Rica. Two specific sites were selected for observation. Site 1 consisted of three separate patches of *Combretum*—A, B, and C. All three patches were linearly ordered, with patch A 3 m E and patch C 15 m W of B. Patch A was an understorey bush, while patches B and C were lianas supported in the canopy by large trees. Patch B was divided into three subzones—B<sub>1</sub>, B<sub>m</sub>, and B<sub>n</sub>; and C, into two—C<sub>1</sub> and C<sub>n</sub>. Site 2 was located in a canopy-supported *Combretum* vine.

Each site was occupied and defended by a Cinnamon Hummingbird. There is no evident sexual dimorphism in this species so the sex of territorial birds was not determined. Zone B<sub>n</sub> was periodically occupied by a migrant Northern Oriole (*Icterus galbula*) that exhibited interspecific feeding territoriality at the *Combretum* nectar source (Schemske, in press).

Observations were made on the mornings of 19 and 20 February at Site 1 and 16 and 21 February at Site 2. Morning and afternoon observations were made at Site 1 on 18 February. During each period the time allocated by each Cinnamon Hummingbird to perching, feeding, miscellaneous flying, chasing, and preening was recorded, as was the time each bird was out of my sight. Timing was done with two stop-watches and a tape recorder run concurrently with an electronic metronome. The frequency of feeding visits to inflorescences of different developmental stages (i.e., colors) was recorded at Site 1, patch B, for the Cinnamon Hummingbird on the morning of 23 February.

#### RESULTS AND DISCUSSION

The time budgets of each Cinnamon Hummingbird are given in table 1. The combined observation time for both sites was 26.7 hr. Although each of the two hummingbirds observed had favored perching sites, they would often move to different spots around the periphery of their territories and cause me to

TABLE 1. Time budgets of two Cinnamon Hummingbirds at *Combretum farinosum*.

| Site  | Date    | Perching     | OOS         | Feeding     | Preening  | Chasing  | Flight   | Total  |
|-------|---------|--------------|-------------|-------------|-----------|----------|----------|--------|
| 1     | 18 Feb. | 397.8(70.0)  | 125.1(22.0) | 40.5( 7.1)  | +         | 3.4(0.6) | 1.5(0.3) | 568.3  |
| 1     | 19 Feb. | 216.2(70.1)  | 60.5(19.6)  | 28.4( 9.2)  | 0.5(0.2)  | 2.0(0.6) | 1.0(0.3) | 308.6  |
| 1     | 20 Feb. | 162.7(72.2)  | 27.7(12.3)  | 23.8(10.6)  | 8.4(3.7)  | 1.7(0.8) | 1.0(0.4) | 225.3  |
| 2     | 16 Feb. | 217.9(79.8)  | 29.0(10.6)  | 23.5( 8.6)  | 0.6(0.2)  | 1.3(0.5) | 0.8(0.3) | 273.1  |
| 2     | 21 Feb. | 154.8(68.3)  | 33.4(14.7)  | 33.3(14.7)  | 2.0(0.9)  | 1.0(0.4) | 2.2(1.0) | 226.7  |
| Total |         | 1149.4(71.7) | 275.7(17.2) | 149.5( 9.3) | 11.5(0.7) | 9.4(0.6) | 6.5(0.4) | 1602.0 |

First number is amount of time in minutes in each activity. Number in parentheses represents percent of observation time in each activity. OOS—Out of sight.