

NESTINGS OF SOME PASSERINE BIRDS IN WESTERN ALASKA

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On May 25, 1946, John J. Stophlet, Jim Walkinshaw and the writer reached Fairbanks, Alaska, bound for Bethel near the mouth of the Kuskokwim River, on the Bering Sea coast. Floods prevented landing at the air field at Bethel and our plane turned back to McGrath, 275 miles up-river. Bethel finally was reached by boat on June 1 and on June 4 we were flown to a cabin 30 miles to the west on the Johnson River. This river originates north and east of Bethel between the Yukon and Kuskokwim rivers and flows into the Kuskokwim about 30 miles below Bethel.

Breeding birds were observed extensively, especially at the Johnson River locality, where we were stationed from June 4 to 22. Particularly favorable opportunities were presented to observe and photograph the nests of Yellow Wagtails, Redpolls and Tree Sparrows among the passerine birds of the area. Our notes on these species are presented herewith.

Motacilla flava alasensis. Yellow Wagtail. On a short trip into the tundra northwest of Bethel, on June 2, we observed eight individuals, all males, and all singing. In 165 hours afield at Johnson River 153 individuals were counted.

Each male was strongly territorial, defending its area against other male wagtails. Above the territory he gave his aerial song, but he also had song perches. If we appeared on a territory the male flew to meet us, coming to a spot about 8 to 15 meters overhead where he continued to scold while we were in close proximity of the nest area. This scolding helped locate the nests. The males also scolded Sandhill Cranes when they appeared in the vicinity of the nests, but they paid little attention to other birds.

Song perches often were only 30 centimeters from the ground, on the tops of tussocks, but others consisted of tops of bushes about 180 centimeters in height. In aerial song the males flew to about eight to twelve meters, and after the song dropped back to the ground or to some bush.

The song was usually a high *tzee-zee-zee*, or a *ter-zwee--ter-zwee--zwee--zwee*. The regular rate of singing was about seven times per minute on warmer days during the morning. The birds sang periodically throughout the day, but not continuously. One rainy, cold day, June 7, when the wind was raw and strong, a male sang near our cabin near Johnson River at 5:35 p.m. He also was searching for food about the sod igloo just a few meters from the window where I was watching him. He returned again at 6:05 p.m. to sing at the rate of seven times per minute, but remained only a short time. He was back again at 6:30 p.m., singing. On June 6 he had been observed giving his aerial song from as low as 60 centimeters from the ground. Wagtails sang another warbler-like song, usually on warmer days.

Four nests were found, three of which contained eggs. Two of these were found on June 12, 1946, at Johnson River. The first was under construction, the female carrying the material as the male sang nearby. The nest was on a two-meter bank on the tundra, underneath overhanging bushes of Alaska tea, dwarf birch, cranberry and crowberry. It was in a hollowed-out spot, well back in the steep bank.

The second nest was much like a Tree Sparrow's nest, built on a steep bank just a little over one meter high. It was under Alaska tea, dwarf birch, and crowberry, and was composed of grasses and sedges, and lined with ptarmigan feathers. The diameter was 60 millimeters and the inside depth 37 millimeters. The six eggs were heavily spotted with small pink and reddish spots, distributed over the entire surface.

A nest found on June 16 was on the steep side of a 22-centimeter hummock, many of which were found on the open Alaskan tundra. The nest was hidden underneath dwarf birch, Alaska tea, cotton sedges, and sedges, and was made of cotton sedges and grasses, with a good lining of ptarmigan feathers. Both male and female scolded me with a sparrow-like *keee* or *zeep*.

On June 18, 1946, I began a search for a nest along the steep bank of the Johnson River which was about eight meters high near our cabin. About two meters from the top



Fig. 17. Yellow Wagtail at nest, 30 miles west of Bethel, Alaska, June 20, 1946.

I finally found the nest of the pair of Yellow Wagtails which had scolded us so much when we walked by that place. It was well hidden on the steepest portion of the bank and behind a tussock of dead grass. Made of dead grasses, it was similar to the others and measured 47 millimeters across and 49 millimeters inside. Photographs were taken of the female on June 20.

At this nest it was found that the female left when the male scolded us. Both birds then flew over us calling repeatedly while we were near. As soon as we retreated a short

distance, the female returned to the eggs. Both birds, like the other wagtails, were very nervous and wagged their tails continuously while we were near. John Stophlet examined the nest on June 22, finding two newly hatched young.

Acanthis hornemanni. Hoary Redpoll. *Acanthis flammea*. Common Redpoll. The resemblance of these two species is marked, but in flight the Hoary Redpoll shows much more-unstreaked gray on the rump. In order definitely to identify the species at each nest it would have been necessary to collect the birds, which we did not do. A male Common Redpoll was taken at McGrath from a small flock on May 29, 1946. The rump was streaked throughout and he, like the others in his flock and in the McGrath region, was darker in appearance than a pair observed in Fairbanks. This pair had a nest on a horizontal limb 6 meters high in a white birch almost in the heart of town. The young



Fig. 18. Another view of the Yellow Wagtail, here about to settle on nest.

were finally counted as they called for food in the yard where the nest was situated. This was on May 26, 1946. Some of the young were in a nearby spruce about 20 meters from the nest, others were in the nest tree and all periodically flew about the yard. One flew into the side of a building and was killed; he was a male and weighed 12.2 grams. The male taken at McGrath weighed 13.4 grams.

I am sure that the majority of redpolls at Fairbanks and McGrath were Common Redpolls. However, when we reached Bethel, we found many of the lighter colored species. Henry Kyllingstad, who has lived in the area for several years and handled many, identifies these lighter birds as Hoary Redpolls.

Brandt (Alaska Bird Trails, 1943:441) considered the Hoary Redpoll as the commonest species at Hooper Bay, but he found two nests of the Common Redpoll there. I feel sure that at Bethel the two species were present in about equal numbers and at Johnson River, 30 air-miles away, there were a few more Hoary Redpolls than Common Redpolls. I did not observe any Redpolls on a visit to Chevak in the Hooper Bay region. There is much less shrubbery there near the Bering Sea.

Since the behavior of the two kinds appeared similar, the following notes pertain largely to both. It is my belief that as a rule the Hoary Redpoll nested closer to water, often over shallow water, whereas the Common Redpoll nested in the willows on the higher tundra.

At Bethel and along Johnson River we found nine nests of redpolls. Henry Kyllingstad showed us two of these and John Stophlet found one. Seven were in small willows, one in a low alder, and the other in a picket-fence grave marker at Bethel. The willows over the tundra were rarely over one to one and a half meters tall. In many of them clumps of old leaves remained over natural crotches, producing a well-concealed site for the nest. I soon found that when redpolls scolded me in the vicinity of such groups of willows, they had a nest there.

The height of the nine nests varied from 27.9 to 99 centimeters, above ground, averaging 55.2. Five nests of the Hoary Redpoll averaged 71 centimeters above ground (30.5-99) and four Common Redpoll nests, 35.6 (27.9-41). Five Hoary Redpoll nests averaged 48.8 millimeters in inside diameter and 37.0 in depth. The outside diameters of the two species differed little: depth was 78 millimeters (68-91) and diameter, 104 (87-127).

Brandt (*op. cit.*:443) states that the Common Redpoll builds the greater portion of the exterior of its nest with small twigs whereas the Hoary Redpoll uses bronze-tinted grasses interwoven with silvery plant down and threads of bark. This was true in the nests we found. The twigs used were willow, alder, Alaska tea, and crowberry, and inside this mass, grasses and sedges, and a lining of finer grasses and Ptarmigan feathers were placed. All nests were well built. In fact I found many of the past years' nests in the low leafless willows at Johnson River.

Most of the eggs that I examined were similar to those of the Field Sparrow (*Spizella pusilla*) which I have seen in southern Michigan. Some were capped at the larger end with reddish brown spots, others were wreathed or capped with reddish-brown and lavender and some had black scrawls like those found on the eggs of the Baltimore Oriole (*Icterus galbula*). The number of eggs was either four or five, the sets averaging 4.3 eggs.

The average measurements of 11 eggs of the Hoary Redpoll were 17.57×12.76 millimeters and the average weight of seven was 1.50 grams. The average of 10 eggs of the Common Redpoll was 17.42×12.90 and the weight of five, 1.32 grams.

Brandt (*op. cit.*:443) states that in Common Redpolls the "spots, while concentrated at the large end, are never found to be wreathed as in the case of the Hoary Redpoll."

Lawrence Grinnell (Wilson Bull., 55, 1943:158) gives the incubation period of the Common Redpoll as 10 to 11 days, and the brooding period at one nest as 11 or 12 days. We found that usually when three young hatched the first day, the fourth hatched the following day. In five-egg sets, four usually hatched the first day. The newly hatched young appeared grayish in color with dark to light mouse gray down about 7 mm. long. At a nest found on June 9, three young hatched on June 10 and the fourth on June 11. On June 19, two of these young left the nest when nine days old; the others remained at least until June 20. The growth rate of the young is given in the table.

At the nest just mentioned I spent from 12:48 p.m. until 3 p.m. on June 13 in a photographic blind. The following notes were taken:

12:48 p.m. Female left nest.

1:15 p.m. Female returned and regurgitated food to all four young. Then she settled low on nest.

1:50 p.m. Male near, called *che-wee, che-wee*. Female with vibrating wings faced in his direction. He was frightened by the blind, so did not come at once. Female left the nest and went to him, whereupon he gave her food.

2:01 p.m. Female returned and fed all of young. Swallowed excreta.

2:10 p.m. Female left nest.

- 2:15 p.m. Female returned; brooded.
 2:20 p.m. Female frightened off. Weather cold.
 2:40 p.m. Young still holding heads up when wind rocked nest, as they did again at 2:49.
 2:50 p.m. Raining.



Fig. 19. Common Redpoll at nest, 30 miles west of Bethel, Alaska, June 13, 1946.

2:52 p.m. Male near, called *chce-chce-chce-chce*.

2:53 p.m. Female returned, brooded.

2:59 p.m. Female fed young as she raised up. After feeding she ate excreta.

The female at one nest went onto the empty nest as I measured and weighed her eggs nearby. She allowed me to approach to within 61 centimeters and then only went a few meters away. The males were much wilder. I watched them on occasion give an aerial song similar to that of the American Goldfinch, an undulating flight with the song *che-wee-wee-wee*.

Average Growth Rate of Young Redpolls at Johnson River, Alaska

Age	Number of individuals	Wt. in grams	Wing in mm.	Tarsus in mm.	Culmen in mm.	First Primary
Hatching	4	1.3	5.3	5.2	3.0	
One day	4	1.9	6.2	5.2	3.7	
Two days	7	2.9	7.0	7.1	3.6	
Three days	2	3.2	8.0	8.0	4.0	
Four days	5	4.6	11.6	9.8	4.1	trace
Six days	1	4.1	12.0	11.0	4.0	1
Seven days	3	6.5	20.3	14.0	5.0	8.6

Spizella arborea ochracea. Western Tree Sparrow. On May 26, 1946, when we made our first field trip into the muskeg areas near Fairbanks, the song of the Tree Sparrow was often heard. At McGrath and along the Kuskokwim River it was not seen but at Bethel and Johnson River it was one of the most common species. I did not observe any at Chevak.

The song of the male, *sweet-sweet-see-see*, was given from some bush or from the ground on the tundra. Even at Fairbanks where there were trees from which they could sing, Tree Sparrows usually sang from points no higher than 130 centimeters from the ground. Each male had his territory, but we arrived too late to see many territorial battles.

Many of the males at Fairbanks were not mated on May 26 but when we arrived at Bethel and Johnson River, on June 2 and 4, they were paired and the females were



Fig. 20. Two views of Tree Sparrow at nest with young, 30 miles west of Bethel, Alaska, June 17, 1946.

building nests. Some had eggs. Henry Kyllingstad showed us a nest with three eggs at Bethel on June 2, 1946, and I found a nest with five eggs on June 4, 1946, at Johnson River. Four of these eggs hatched on June 16; the fifth on June 17.

A female was carrying nesting material to a new nest on June 4. She obtained this material at least 100 meters from the nest and did all of the work of nest construction, but she was accompanied on each trip by the male, the two flying from bush to bush as they proceeded toward the nest. Other nests were found as follows: June 5, nest with five eggs; June 6, nest with five eggs; June 8, nest with five eggs; June 11, nest with five eggs; June 12, nest with five eggs; June 15, nest with five eggs.

Six nests were built on the ground, the rims even with the moss and the tops well hidden by Alaska tea, crowberry, dwarf birch, cranberry, or alder. One was built similar to these but on the side of a steep two-meter bank much like the nest of a wagtail. The other nest was built in a low marshy area in a clump of tall, dead, rank grass. It was 14 centimeters from the ground and there was some water within just a few centimeters of it. The outside diameter of this nest was 120 millimeters. Usually the nest was built under the base of some shrub but occasionally far from the nearest shrubbery, well out on the open tundra.

Nests were constructed of mosses, mostly with some finer grasses to give them strength, and were lined with a layer of ptarmigan feathers. The average diameter of the interior of six nests was 58 millimeters (49-69); the average depth, 50.6 (47-57).

The eggs showed a bluish tinge over which were many brownish spots, often several millimeters wide. On some eggs there were so many spots that the ground color was not discernible; on other there were fewer spots. The sets were very similar. The largest eggs measured 20.5×15 and 20×15.4 millimeters; the smallest, 17.5×14 and 20×13.7 millimeters. The heaviest egg weighed 2.3 grams and the lightest, 1.8 grams.

Incubation was performed by the female alone. At the nest found on June 4, with a full complement of eggs, they hatched 12 and 13 days later. Baumgartner (Bird-Banding, 8, 1937:108) gave the incubation period as 12-13 days for the eastern race of Tree Sparrow (*Spizella arborea arborea*). At hatching, the young Tree Sparrow resembles the young of the Field Sparrow. The skin is flesh colored and the down is mouse-gray, about five to seven millimeters in length.

The weights of four young the day of hatching varied between 1.5 and 1.9 grams, averaging 1.8; at one day of age five young averaged 2.5 grams (2.2-2.8); at two days, 4.3 grams (3.6-4.8); at four days, 6.7 grams (5.0-8.2). None was studied after that date. The primaries began showing through the skin when two days of age and they had broken through slightly on the following day. The young at three days of age gave a low lispng call when handled.

On June 17 when I photographed the parents at a nest near our cabin, both were feeding insects to five young. The male was afraid of my blind and camera and fed only at 4:52, 5:33, and 5:45 p.m.; the female fed at 4:00, 4:07, 4:15, 4:40, 4:45, 4:50, 5:12, 5:20, 5:30, and 5:32 p.m. Thus, in one hour and 45 minutes the young were fed 13 times. Usually when approaching, the adults landed in a nearby alder and then proceeded cautiously to the nest.

Battle Creek, Michigan, August 15, 1947.