

FIRST SPECIMEN OF A ROBIN (*TURDUS MIGRATORIUS*) AND THREE IMPORTANT SIGHT RECORDS FROM ST. LAWRENCE ISLAND, BERING SEA, ALASKA

STEPHEN R. JOHNSON¹

Institute of Arctic Biology
University of Alaska
Fairbanks, Alaska 99701

A recent paper by Sealy et al. (Condor, 73:322, 1971) documents the first sight record of a Robin (*Turdus migratorius*) on St. Lawrence Island, Alaska. During my stay on St. Lawrence Island in July 1971, I found the remains of an adult Robin; the specimen (University of Alaska Museum No. 3263), found 22 July, in the headwaters of the South Fork of the Moghoweyik River, consisted of a feathered breast, back, neck, and skull. The feathers on the back were still partly sheathed, indicating the bird was molting. The condition of the carcass, stage of molt, bill color, and time of year when found suggested the bird had died the previous year (1970) either during or just before migration, and spent the winter under the snow.

Robins are abundant during the summer on the Seward Peninsula (Kessel, Checklist of birds of the Seward Peninsula, Alaska, 1 p. Mimeo., 1968; Roseaneau, pers. comm.) and according to several Eskimos (Donald Ungott, Vernon K. Slwooko, Sr., and Marvin Walunga), one or two Robins have been observed for the past several springs on the west end of St. Lawrence Island. One Robin was shot on the southeast side of Sevuokuk Mountain by Vernon K. Slwooko, Sr., in the spring of 1971, but no specimen was saved.

Sealy et al. (op. cit.) listed the Robin as accidental on St. Lawrence Island and suggested that the islands' lack of arborescent vegetation made it unsuitable as nesting habitat for Robins. On the Seward

¹ Present address: Department of Zoology, University of Auckland, Auckland, New Zealand.

COVERING OF STORES BY WHITE-BREASTED AND RED-BREASTED NUTHATCHES

LAWRENCE KILHAM

Department of Microbiology
Dartmouth Medical School
Hanover, New Hampshire 03755

Nuthatches occasionally cover stores of food with bits of bark or lichens. I have noted this 4 times for the Red-breasted (*Sitta canadensis*) and 23 times for the White-breasted (*Sitta carolinensis*) Nuthatch in Maryland and New Hampshire, beginning with a first observation in 1953. The only reference known to me for an American species is that of Skutch (1969), who wrote that "I once saw a White-breasted Nuthatch hide a bit of food in a crevice in bark, then stuff fragments of bark to cover it." There are, however, a number of references to the habit in European species including those of Richards (1949) and of Löhrl (1958) for the European Nuthatch (*S. europaea*) and of Löhrl (1961) for the Corsican Nuthatch (*S. whiteheadi*), a close relative of the Red-breasted Nuthatch.

The manner of covering stores by *S. carolinensis*

Peninsula, however, Robins commonly nest on cliffs and in rockpiles, as well as on beams and in rafters of old cabins scattered throughout the area (Roseaneau, pers. comm.). *T. migratorius* might nest on St. Lawrence Island, and on the basis of the few sight records, should be classified as accidental. However, judging from Robin nesting habitat on the Seward Peninsula, suitable nesting habitat does not seem lacking on St. Lawrence Island and should not be considered the limiting factor.

Another species of interest, and one more common in the southern Bering Sea region, the Whiskered Auklet (*Aethia pygmaea*), was observed by Vernon K. Slwooko, Sr., Abraham Kaningok, and me on 20 July 1971, at Tatik Point near Kongkok Basin. Neither of the Eskimos had seen this species on the Island before, but both had seen pictures of the bird previous to the sighting. The only other record of *A. pygmaea* on St. Lawrence Island is a specimen taken at Gambell by Silook in 1931 (Friedman, Condor, 34:257, 1932).

On 23 July 1971, I flushed a Lesser Yellowlegs (*Tringa flavipes*) from its nest of four eggs on the high tundra between Gambell and Kavalghak Bay. This bird feigned injury near me for 10–15 min, enabling clear and positive field identification. Sealy et al. (op. cit.) included *T. flavipes* in the avifauna on St. Lawrence Island on the basis of one previous sight record by Thompson (Condor, 69:411, 1967) at Northeast Cape; however, no specimen or photograph has yet been obtained.

Finally, I observed a pair of Upland Plovers (*Bartamia longicauda*), the first observation of this species by a person not resident on the Island. The pair was observed on 22 August 1972, feeding in disturbed ground near a sled trail about 5 miles S of Gambell. Both birds were approached closely and eventually flushed, thereby enabling clear field identification. Before this sighting, the Eskimo with whom I was traveling (Marvan Walunga) had assured me he had seen Upland Plovers on several occasions during the past, always in similar high, dry tundra.

Accepted for publication 22 September 1972.

followed any one of three patterns (table 1). (1.) After poking or hammering food into a storage crack or crevice, the bird most commonly snatched bits of closely adjacent lichen or bark without moving its body from where it had been working, all of this happening so quickly as to demand close attention by the observer. (2.) Less frequently, this species sought a piece of bark from a distance. For example, on 20 November 1966, I watched a bird (low down in an old maple stub and in direct sunlight) take a piece of beechnut out of storage in one place, restore it in a crevice in rotten wood, hammer it down well, and then move five times up to 10–12 cm away to collect bits of bark approximately 1 cm long to hammer down over it. (3.) On two other occasions I saw White-breasted Nuthatches fly to another tree to collect bark for covering, one such piece being 2 cm in length.

The Red-breasted Nuthatch used only the first of these methods to cover food stores. Considering that both Red-breasted and White-breasted Nuthatches have numbers of competitors for their food stores, there may be a survival advantage to covering them quickly, or not at all, in order not to attract attention to the hiding place, especially when they are travel-

TABLE 1. Patterns of behavior in covering food stores, and the location of storage places observed for the White-breasted Nuthatch.

Patterns of behavior	No. of observations
(1) Seized 1-6 bits of closely adjacent bark or lichen without moving from storage place	18
(2) Moved 10-12 cm away to get pieces of bark	3
(3) Flew to another tree or stub to get bark	2
Locations of storage places	
(1) Rotten branch of live paper birch (used rotten wood to cover stores)	2
(2) Trunk or branch of hemlock	2
(3) Maple with rough bark, grown with lichens	6
(4) Bark of dead or live elm	10

ing with mixed flocks. I have seen both Hairy (*Dendrocopos villosus*) and Downy (*D. pubescens*) Woodpeckers supplant White-breasted Nuthatches at food stores. The Red-breasted Nuthatch, which can travel head down, peer in the same places as *S. carolinensis* and, one would suppose, even recognize covered stores, appears to be a main competitor of the larger species. It is conceivable, however, that matters would balance out if each species of *Sitta* robbed the other. Both may conceal their stores in maples, but *S. carolinensis* stores particularly in dead or living elms (table 1).

In most instances neither species of nuthatch attempts to cover stored food, but simply hammers it into a crevice or pushes it well under a flake of bark. The Crested Tit (*Parus cristatus*) in contrast, according to a most thorough study by Haftorn (1954) in Norway, covers its stores in a far more systematic fashion. Red-headed Woodpeckers (*Melanerpes erythrocephalus*) likewise cover stores of food, but

use shreds of wet, rotten wood that harden on drying, as well as bark (Kilham 1958).

It might be noted in conclusion that bits of bark or other material used to cover stores may also serve as markers, aiding nuthatches of both species in re-locating stores later on.

Of the four Red-breasted Nuthatches I observed, two were males and two were females. All but 3 of the 23 White-breasted Nuthatches were males. This sex distribution, however, may have been an artifact, for I have noted in year-round observations (Kilham 1972) that male White-breasted Nuthatches are more vocal and wide-ranging than females and hence are easier to locate.

LITERATURE CITED

- HAFTORN, S. 1954. Contribution to the food biology of Tits especially about storing of surplus food. Part I. The Crested Tit (*Parus c. cristatus*). Det. Kgl. Norsk. Vidensk. Selsk. Skr. 1953, Nr. 4:7-123.
- KILHAM, L. 1958. Sealed-in winter stores of Red-headed Woodpeckers. Wilson Bull. 70:107-113.
- KILHAM, L. 1972. Reproductive behavior of White-breasted Nuthatches. II. Courtship. Auk 89: 115-129.
- LÖHRL, H. 1958. Das Verhalten des Kleibers (*Sitta europaea caesia* Wolf). Z. Tierpsychol. 15:191-252.
- LÖHRL, H. 1961. Vergleichende Studien über Brutbiologie und Verhalten der Kleiber *Sitta whiteheadi* Sharpe und *Sitta canadensis* L. II. *Sitta canadensis*, vergleichen mit *Sitta whiteheadi*. J. Ornithol. 102:111-132.
- RICHARDS, T. J. 1949. Concealment of food by Nuthatch, Coat-tit, and Marsh-tit. Brit. Birds 42:360-361.
- SKUTCH, A. 1969. Life histories of Central American birds III. Pacific Coast Avifauna No. 35: 549.

Accepted for publication 18 October 1972.

SELECTED PHYSIOLOGICAL RESPONSES OF PHEASANTS TO MINERALS IN CORN

WILLIAM L. ANDERSON

AND

RONALD F. LABISKY

Illinois Natural History Survey
Urbana, Illinois 61801

For reasons that still remain obscure, Ring-necked Pheasants (*Phasianus colchicus*) have never become established south of the 39th parallel in the eastern half of the United States. Leopold (1931:125), upon noting that successful releases of pheasants in the North Central states were confined to soils that originated from recent glacial activity, suggested that "some plant growing on these soils, or some substance, such as a kind of lime or gravel, contained in them, was necessary to the welfare and breeding vigor of exotics of this region." In recent studies (Harper and Labisky 1964; Nelson et al. 1966; Jones et al. 1968; Anderson and Stewart 1969), elemental analyses of pheasant tissues were conducted to determine whether mineral imbalances were prevalent among pheasants subsisting on areas where these gallinaceous birds

have consistently failed to establish thriving populations. Basic to these studies was the assumption that mineral deficiencies or excesses on a particular area would be mirrored in the mineral makeup of the resident pheasants.

Corn (*Zea mays*) is recognized as an important, if not the most important, food for pheasants in the Midwest (Korschgen 1964:171). In Illinois, at least 80% of the food eaten by pheasants during the fall and winter months is corn (Anderson and Stewart 1969:261; R. F. Labisky, unpubl. data). Yet, corn is deficient in several inorganic and organic nutrients; the ash content of this grain is low, ranging from 1.3 to 2.1% (Korschgen 1964:164; Jones et al. 1968:6; Anderson and Stewart 1969:260).

The purpose of this study was to determine mineralogically oriented responses of juvenile hen pheasants, as measured by the mineral profile of their livers and by the weights of their parathyroid glands and femurs, to exclusive diets of corn. Two types of corn, normal hybrid (Pioneer 3306) and high-lysine (*opaque-2*), were used in this experiment. Endosperms of the *opaque-2* mutant contain about 70% more lysine, an essential amino acid, than the endosperms of normal hybrids (Mertz et al. 1964:279). Organic aspects of this study—the responses of our experimental birds to organic nutrients in normal