

were secured during the first week of September, five of which were *Chordeiles minor minor* and one, a female, *Chordeiles minor sennetti*, shot on September 4. Thus out of eleven Nighthawks collected at random from passing flocks in two different years, two were the breeding form of the northern Great Plains region. It is not presumed that the proportion of Sennett's Nighthawks in flocks which migrate through Ohio is as high as this figure would indicate, but it does seem probable that this more western form, although previously unrecorded, is of somewhat regular occurrence in this state.

The identification of these specimens was corroborated by Dr. Harry C. Oberholser who considered the male bird a perfectly typical example of *Chordeiles minor sennetti*.—JOHN W. ALDRICH, *The Cleveland Museum Nat. Hist., Cleveland, Ohio*.

**Winter-killing of Flickers in Central Iowa.**—The Northern Flicker (*Colaptes auratus luteus*) occasionally winters in central and southern Iowa, with at least some apparent success.

During the past season of 1935-36, a winter of extraordinary severity, I had an excellent opportunity to follow the fortunes of a small group of birds that stationed themselves on an area I was keeping under observation north of Ames. These birds were commonly to be seen within three-quarters of a mile of a coniferous planting, adjacent to which were divers environmental types represented by a wooded creek, the outskirts of a residential district, corn fields, pasture, and a scattering of large trees and brushy and herbaceous growths.

I was unable to obtain what I considered a satisfactory count of the Flickers present in late fall, but there seemed to be three or four. Some of these, however, apparently had left by December 20, at which time we experienced the first sub-zero weather of the season, a minimum of  $-7^{\circ}$  (F.) (U. S. Weather Bureau). More sub-zero temperatures occurred from December 24 to 27. There seemed to be two birds remaining, and these were seen from time to time during the next few weeks, feeding in a sumac thicket and in a corn field near-by.

Several inches of more or less crusted snow had accumulated by January 17, but there had been no sub-zero temperatures thus far in the month, the average daily minimum being  $13^{\circ}$ . On January 18, a cold wave arrived, and the minimum temperatures ranged from  $-3^{\circ}$  to  $-26^{\circ}$  for the duration of the month, with an average daily minimum of  $-15.8^{\circ}$ .

On January 24, one Flicker was observed to make a flight from the vicinity of the conifers to a corn field some hundreds of yards distant. Its flight was labored, straight, and steady, without the characteristic flaps and dips. It passed within thirty yards of me, and I gained the impression that its feathers were standing peculiarly "on end," as feathers do on birds that are in poor condition. This was the last day that I saw a living Flicker until after the winter had broken.

The carcass of a Flicker which had been dead but a few hours was picked up in the afternoon of January 25. Crows had eaten the viscera and some of the flesh, but the breast contour suggested a dying weight of perhaps seventy-five to eighty percent of normal, or a little less than the degree of emaciation noted for winter-killed Mourning Doves in this locality (Paul L. Errington, *Wilson Bull.*, 47: 159-160, 1935). Prior to death, the bird had done a great deal of fluttering over the snow in vain efforts to rise.

On the same day, very fresh feeding sign was to be seen in the corn field to which the one Flicker had flown on January 24. Subsequent indications were that this individual had managed to hold out for a few days longer, when it was killed by a Great Horned Owl. At the time of its death, its crop had contained sumac fruits (*Rhus glabra*).

A third Flicker carcass, eviscerated by small mammals, was discovered on April 6 at the bottom of the cavity of a large tree and in the position in which it doubtless had died. Its breast contour was about the same as that of the Flicker found starved on January 25, and it had the appearance of having died at about the same time. The hollow tree was more than half a mile from the coniferous planting, so I am not sure that this bird was one I had been watching.

Droppings were to be found scattered in the cornfields and in quantities at the base of certain trees. Approximately a quart of winter fecal material (271 grams, dry wt.) was gathered from beneath one tree, and of this a 75.2 g. random sample was examined. This upon analysis was found to be made up of: seeds and debris of sumac fruits, 64 g.; seed coats and partially digested kernels of corn, 7 g.; hackberry (*Celtis occidentalis*) seeds, 2.4 g.; Virginia creeper (*Psedera quinquefolia*) seeds, 0.4 g.; insect exoskeleton fragments, 1.4 g. Dr. H. H. Knight kindly checked over the insect remains, which proved to be almost entirely of the carpenter ant (*Camponotus herculeanus pennsylvanicus*) with single examples of Elateridae, Cucujidae (*Catagenus rufus*), and an undetermined bark-inhabiting beetle.

Insofar as sumac fruits are composed for the most part of hard seeds and other indigestible substances, the proportion of this item to corn and insects is considerably higher in the fecal contents than it was in the actual diets of the Flickers, but it is apparent that sumac was eaten in far larger amounts than anything else. The majority of the fecal passages, indeed, were made up exclusively of sumac debris, and these were commonly much more bulky than those representing chiefly the debris from the more completely digestible corn and insects.

While some individual fecal samples contained a mixture of items, the majority contained only the debris from a single food, indicating, as did observations in the field, that the birds tended to fill up rather exclusively upon what was convenient and swallowable where they happened to be feeding. Even the rarer items, such as *Psedera* seeds and insect chitin, were for the most part concentrated in relatively few fecal samples.

All in all, I would say that these wintering Flickers displayed a singular lack of adaptiveness in their feeding habits. Despite the fact that they experienced no evident difficulty in finding corn ears in the cornfields, nor in excavating considerable snow to get at them, this obviously superior food (seldom would corn debris other than seed coats pass through in the feces) would be wholly neglected, days in succession, for sumac fruits which happened to be more conveniently accessible and conspicuous. The freshest droppings for the week previous to the death of the one Flicker on January 25, and the sighting of another in miserable condition on the day before, consisted of practically nothing but sumac debris; the latter bird, according to the "sign," apparently had maintained itself on corn for the next few days, but at the time of its death had gone back to a sumac diet again.

W. L. McAtee (personal letter, April 8, 1936) suggests that, as 60 percent of the Flicker's normal food is animal, inability to obtain this sort of food might in itself place the bird under a serious handicap, regardless of the quantity of vegetable subsistence available.

So far as I know, Flickers were absent from this vicinity during the blizzard-ridden month of February, and the first evidence of their return was recorded on March 4. I have no information as to the northernmost points at which this species found the vicissitudes of the winter within its limits of tolerance.—PAUL L. ERRINGTON, *Iowa State College, Ames, Iowa.*

**Southern Sharp-tailed Sparrow in Georgia and South Carolina.**—So far