

GENERAL NOTES

Sex Displays of the Slate-colored Junco, *Junco hyemalis*.—During a study of the winter behavior of a flock of Slate-colored Juncos in 1947 the writer was surprised, at the height of the spring migrant invasion, by the sudden appearance of varied and striking courtship patterns in the birds' behavior. Such premature displays were not seen, however, the following year nor in two subsequent studies of the Oregon Junco, *Junco oreganus*, in the Great Basin and the Puget Sound areas. Hence they may have been rare happenings. The observations here recorded were made in Ithaca, New York, April 19–22, 1947, in 22.5 hours. Methods of observation are described elsewhere (*Physiol. Zool.*, 22: 64–85, 1949) but two features should be mentioned. The winter residents were marked with colored feathers and were individually distinguishable from each other, as well as from the unmarked migrants. The displays were watched from a point six to ten feet from the birds. During April attendance at the observation station had naturally slackened, but a revival was brought about by a heavy snowfall on April 19. Four marked winter residents (of a total of 15) and unmarked birds up to 14 at a time were the participants. The Slate-colored Junco is not obviously sexually dimorphic externally. In the coloration of head and hood, individuals range from light gray to nearly black. Males are more frequently dark but they may be light, and females are sometimes dark.

There were five types of sex behavior: 1) A winter resident, WL, began suddenly to make drives of six to eight feet at every junco attempting to eat at the station with the exception of RC, a bird dominant to WL. If RC came to the station, WL left immediately. These long persistent drives, which were to the detriment of WL's opportunities to eat, and the unusual avoidance of RC showed a degree of intolerance of the proximity of other members of the species which is unknown in the winter flock. WL's behavior was identical with that of the male Oregon Junco when actually establishing his breeding territory. After a day and a half, WL lapsed into normal winter behavior; 2) One bird, always pursued by another, would fly into the lower branches of a tree, go up over one branch and down under another. During the downward sweep of this undulatory flight the white underparts and tail feathers were flashingly shown; 3) One little ceremony had an air of great "politeness." A bird would hop gently up to another and when about a foot away would make a deep bow. The other would respond in kind, and something like four to eight bows would be exchanged. The two would then separate with the appearance of having lost interest; 4) Two birds would face each other and stretch up into the most erect posture possible, with folded wings, fanned tails seeming to touch the ground, and open bills opposite and about an inch apart. Trilling and rigidly maintaining this posture, they would then execute swiftly, precisely, and in unison a series of vertical head thrusts up and down during which the bills were kept exactly opposite. These head dances probably lasted less than two seconds and the vertical movements appeared to cover a distance of one and a half to two inches. This detailed description is based on many observations during which the observer's attention was focused successively on different parts of the display. In this head dance the birds elongated and shortened the neck with a speed, exactitude, and synchronization which looked machine-like. Occasionally, instead of separating after the head dance, the two described an arc, somehow flying sidewise and maintaining their close-facing position, alighted about four feet away, and repeated the dance; 5) One pair of birds prefaced the head dance with a sequence seen only once. The

style of this sequence can hardly be described otherwise than by the word "romantic." RC, a large and very black bird and therefore probably a male, was perched in the cedar hedge overlooking the feeding bench about two feet below, where a second bird was feeding. Suddenly the latter darted to the hedge and crept up with extreme slowness from twig to twig, meanwhile reaching up toward the perching bird. RC kept its footing but slowly bent far down, likewise reaching toward the other. Finally their bills were about two inches apart. Then, as though at a signal, they sprang erect and opposite in the hedge, executed the head dance, the arc flight, and the second head dance, and disappeared after going through the undulating flight. RC was the pursuer in this flight.

These routines also occurred in a fragmentary way or in the form of a display by one bird to which the other did not respond. Sex recognition did not seem to be involved in these reactions, since there was no display which elicited different responses on different occasions. A curious fact was that some of the ordinary patterns of winter behavior seemed to become stylized. The pecks by which a junco shows its intolerance of a subordinate were not affected, but fights and threat postures altered their appearance in the direction of rigidity and preciseness. The regular junco fight is ritualistic, without pecking or clawing. The birds face each other and each appears to try to rise higher than the other. Usually there is a certain raggedness about this procedure, but the fights during the period under consideration became exact in the facing and the distance apart. In the normal, winter threat-posturing the birds merely draw up more or less tall, but now they were assuming a stiff, erect posture like that at the beginning of the head dance. So stylized had these reactions become that only one factor stood in the way of classifying them as sex rather than dominance reactions; they took place at the feeding bench and had the outcome expected from displays of dominance—that is, one bird stayed and the other left.—WINIFRED S. SABINE, 503 Triphammer Road, Ithaca, New York.

Nesting of Clay-colored Sparrow, *Spizella pallida*, in Northern Ontario.—The Clay-Colored Sparrow was first recorded in the District of Algoma in northern Ontario in 1931 by a party from the Royal Ontario Museum. In the spring of 1948, I found the species nesting in the Rankin Location, a rural school section about three miles east of Sault Ste. Marie. The habitat was made up of grassy fields with clusters of willows up to ten feet high and occasional solitary aspens twice that height. It was flooded to a depth of almost a foot by melting snow in spring, but thoroughly dry by mid-June. Sphagnum moss grew beneath the denser stands of willows. My first record of the species from such a field was on May 23. At that time the field was still ankle deep in water. Two more birds were seen five days later, in willows beside a stream, with a stand of aspens at one end of the shrubby border.

In the Rankin Location, I heard this species sing almost daily from May 26 until late in June. At least two males sang from the aspens, always perching above the tops of the willows. The singing birds stood erect, throwing their heads back, and pointing their beaks almost vertically upward.

Two males were singing one evening, permitting a direct comparison of their songs. One sang a series of 41 songs, each consisting of from two to ten buzzes, and averaging six. The three individual songs which consisted of only two buzzes were noticeably flatter in pitch and slower in tempo than the others. Meanwhile, the other male sang only seven songs, noticeably slower and shorter, from two to five buzzes long. At the only nest under close observation, the male sang less and less frequently until the evening before hatching.