

In terms of relative numbers, the Lincoln Sparrows are the most common. This is to be expected since their habitat covers the greatest area. In some census counts, taken during the latter part of June and the month of July during both years, I obtained the following approximate figures for density, expressed as individuals per ten acres: Lincoln Sparrow 6, Song Sparrow 3, Fox Sparrow 2.

As a further note on the ecological separation of these three species one can derive from Martin, Zim, and Nelson (1951, American Wildlife and Plants) the following estimates for the composition of the diets of the three species during summer months: Lincoln Sparrow, plant food 40 per cent, animal food 60 per cent; Song Sparrow, plant food 60 per cent, animal food 40 per cent; Fox Sparrow, plant food 55 per cent, animal food 45 per cent. Linsdale (*op. cit.*), however, found the diet of Fox Sparrows in western Nevada during May to consist almost entirely of insects. These figures are only a general indication, of course, since they do not necessarily reflect the situation existing at Jackson Hole. They do seem to show, however, that there is only partial overlap in the food habits of the three species.

Of the three species, the Fox Sparrows appear to be the most restricted in type of habitat occupied. I have not found them in any other vegetation-type at Jackson Hole. The Lincoln Sparrow, which one thinks of as a bird of grassy meadows, occurs in such places along the east base of the Tetons. They also occur in the chaparral-like willow scrub on the slopes of the Tetons, although they are not as numerous there as in the marshes. Some are also found in the herbaceous understory of the aspen groves, but these groves are commonly near willows and this occurrence may represent peripheral foraging. Song Sparrows are found wherever there is open water both in the valley, as along the banks of the Snake River, and in the canyons of the Tetons near small streams.—GEORGE W. SALT, *Department of Zoology, University of California, Davis.*

Notes on the White-breasted Thrasher.—The White-breasted Thrasher (*Ramphocinclus brachyurus*) is one of the rarest of West Indian birds. Formerly it was much more numerous and widespread, but it has decreased steadily during the past hundred years, with the result that both the Martinique and St. Lucia races are now threatened with extinction.

The Martinique form (*R. b. brachyurus*) appears to be confined at present to the Presqu'île de la Caravelle, an extraordinary peninsula that juts out over five miles into the Atlantic Ocean. For many years thought extinct, this race was rediscovered here in 1950 by Père Pinchon and Marcel Bon Saint-Come (*L'Oiseau et Rev. Française d'Ornithologie*, 21: 267, 1951). Subsequently a number of "colonies" of *Ramphocinclus* were found on "La Caravelle." I had an opportunity of visiting one of these at Pointe Ferret in January, 1956, in company with Père Pinchon and M. Bon Saint-Come. The birds inhabit semi-arid country, much like the acacia-covered hillsides of southern Martinique, and were found without difficulty by their chattering—a harsh *chek*, or *chek—chek—chek—chek*. No song was heard. In habits they are largely terrestrial and are not particularly shy. As many as five disused nests were located the day I was there, including one that contained fragments of greenish blue eggshell. The nests were comparatively bulky and loosely put together, composed of large twigs and leaves, the inner cup lined with grass and rootlets. They were situated in saplings between 7 and 20 feet above the ground. M. Bon Saint-Come told me that he had found a nest with two young.

The St. Lucian race (*R. b. sanctae-luciae*) is apparently restricted to the northeastern part of that island in the region about Grand Anse and Marquis. I collected *Ramphocinclus* near the latter locality in 1927, encountering it in semi-arid

woodland somewhat denser than that at Pointe Ferret. This thrasher also breeds in colonies in St. Lucia, according to Mr. Stanley John, who collected a nest with two immaculate greenish blue eggs (27×19 ; 25.5×19.5 mm.) on June 15, 1954, at Grand Anse. This was situated only $4\frac{1}{2}$ feet above the ground. The eggs resemble those of *Cinlocerthia* and do not agree with the description as given by Thibault de Chanvalon (*Voyage à la Martinique, 1763*, p. 99), who stated that they are of a "beau bleu céleste, taché à l'un de leurs bouts de petites marques noires," which would apply to eggs of *Sallator*. It is of interest that de Chanvalon refers to *Ramphocinclus* as "le gorge-blanc" (*op. cit.*, p. 180) rather than "gorge-blanche": the species is still known to the natives of both Martinique and St. Lucia as the "gorge-blanc."

As far as I could ascertain, the only other species of Mimidae that at present associate with *Ramphocinclus* are *Mimus gilvus* and *Allenia montana*; but the former prefers more open country, the latter more heavily wooded terrain.—JAMES BOND, *Academy of Natural Sciences, Philadelphia, Penna.*

Displacement Singing in a Canada Jay (*Perisoreus canadensis*).—Few observers seem to have heard the singing of the Canada Jay and, indeed, it probably is of rather rare occurrence. Hence the following may be of interest.

In January, 1956, a Canada Jay came to our feeding-station at Pimisi Bay, Ontario. This bird took to roosting in one of the surrounding conifers and got into the habit of coming down very early in the morning before any of the other birds arrived and I had time to put out any food. Taking advantage of the absence of distractions and the strong urge of the bird to feed at this particular time, I attempted to induce it to come to hand for its first meal. On the second morning when I was thus engaged the jay greeted me with several phrases of *krē* notes, a croaking note repeated quickly three or four times so that it sounds like fits of hoarse mirthless laughter. This is apparently a "scolding" note which expresses an admixture of fear and aggressiveness. Having thus declared itself, the jay showed further reluctance to accept the offering in my hand by making short flights from branch to branch. It finally ended up in a thick spruce where it perched well shielded on all sides except the one from which it faced me. Then the jay commenced singing, giving a continuous sequence of soft notes, most of them distinctly melodious to my ear. The song lasted no less than 30 to 40 seconds and reminded me a little of the Starling's (*Sturnus vulgaris*) continuous notes. Presently shyness overcame the jay altogether and it flew off in search of food elsewhere.

It is obvious that during this episode a conflict arose between two drives which possessed the jay, the urge to feed and the urge to flee, caused by hunger and the finding of food in an "unapproachable" place. The bird reacted by perching at a distance in a "safe" spot, and here it burst into song. This, therefore, was clearly displacement singing.

During an earlier observation (*Can. Field-Nat.*, 61: 7, 1947), I heard another Canada Jay singing under similar circumstances. The bird which I had just released after having banded and examined it, during which procedure it fought violently though in vain, sang a song of considerable length composed of soft whistled notes, standing this time on the ground at a short distance from me.

Dr. Tinbergen (*Quart. Rev. Biol.*, 27: 18, 1952) pointed out the close connection that seems to exist between displacement activities and innate movements that are frequently used; and also that "displacement activities are characteristic of the species, and of the situation" (*Proc. Xth Internat. Ornith. Congr. 1950*, p. 368).