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Comparative Studies of Fox, Lincoln, and Song Sparrow Vocalizations
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Project Number 155

A unique situation of interest to ornithologists and students of animal behavior in particular occurs in the Jackson Hole area of Wyoming. There three congeneric species of sparrow breed in sympatry. Almost nowhere else can the Fox, Lincoln, and Song Sparrows be found occupying such closely related niches. The opportunity to continue observations on the behavior of the Song Sparrow and to collect similar data on the Fox and Lincoln Sparrows was the determining factor in our choice of Jackson Hole for our vocalization studies. There was also the possibility of obtaining data on interspecific behavior.

Although intensive studies have been conducted in our lab on the song of the Song Sparrow, little work has been done on its calls (non-song). However, a thorough analysis of one common call-type had shown that the identity of the call remained the same among widely separated populations, namely, populations in Mexico, California, Wyoming, Illinois, and British Columbia. If this call-type is so clearly species specific in Song Sparrows, is the situation analogous in Fox and Lincoln Sparrows? How closely do these calls resemble one another among the three species? If they do resemble one another, are they used in similar situations? And, could we then learn something about the message or meaning of these calls from a comparative approach? These were some of the questions we hoped to answer in this study.

Accordingly, vocalizations were collected with a Uher 4000 type recorder equipped with a parabolic reflector. Males were stimulated to call by playing a species specific song within an occupied territory. Females were stimulated by merely approaching the center (nesting area) of the territory.

Work was begun at the Station on May 21 and terminated on August 10. In seventy recording sessions, approximately fifty hours of tape were made of the calls of sixty-three adults. Of these latter, fifteen were Fox Sparrows, twenty-eight were Lincoln Sparrows, and nineteen were Song Sparrows. Eight young were also recorded. Four call-types were prominent in the Fox Sparrow repertoire, eight in the Lincoln Sparrow, and seven in the Song Sparrow.

All tapes must be edited and the physical analyses of the calls made. The following preliminary conclusions may be offered:

1. There is a species specific call-type associated with defense in all three species.
2. In critical parameters of vocal and non-vocal behavior, the species are similar in most details.
3. Similar calls are used in similar situations among the three species.

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