

species is considered a great agricultural pest, the parakeets feed frequently in corn fields and do considerable damage to commercial crops of various grains (U.S. Dept. of Interior, Bureau of Sport Fisheries & Wildlife Leaflet 496, May 1971). As no corn fields exist in the rather urban area of Pittsburgh chosen by these parakeets, the only corn available is in the form of handouts. The parakeets are very much the rulers of the feeding periods when hungry, aggressively intimidating all other birds from approaching the food.

The birds have had wide exposure in area newspapers, company publications and other communications media, but nest disturbance has not visibly deterred the birds from beginning what may well become a small colony similar to those on the Atlantic Seaboard.—DAVID B. FREELAND, 336 *Earlwood Road, Pittsburgh, Pennsylvania 15235*, 29 November 1972.

Response by a Long-eared Owl to Barred Owl Calls.—On 21 April 1972 I saw an interspecific reaction by a Long-eared Owl (*Asio otus*). I was with one other observer in Massachusetts Audubon's Highlands Farm Sanctuary in Belmont, Massachusetts. At about 22:00 we were passing from a thick pine forest through a stand of young oaks bordering a small clearing, much of which was surrounded by mature spruces. About every fifteen seconds I was hooting the typical eight-hoot call of the Barred Owl (*Strix varia*).

After approximately five owl imitations, an owl flew rapidly across the clearing with quick wingbeats and several sharp turns. On each of two subsequent Barred Owl calls the bird flew directly over our heads, roughly fifteen feet off the ground. Immediately following a third call it flew from a stand of spruces and perched in a young oak twenty feet from us. A flashlight illuminated an adult Long-eared Owl, quickly glancing about and periodically shifting positions on the branch. Several additional hoots caused marked reactions in the bird—it appeared agitated by the calls, turning sharply toward us, staring intently in our direction, and at least twice moving several inches farther out on the branch. Throughout the encounter it remained silent. After approximately three minutes the bird left, apparently flying back into the spruce thickets. Although a pair of Long-eared Owls had been reported nesting in the vicinity, further attempts to call it back, that night and on later nights, failed to attract a bird. Based on its attention to the Barred Owl calls, however, I have no doubt that the owl was attracted and excited by the possible presence of that species.

Instances of interspecific reactions among smaller owls have been documented (Foster, *Auk*, 82:651–653, 1965), but I have found no indication in the literature of such behavior in any of the larger species. Two possible situations may explain this behavior. First, L. Miller (*Condor*, 54:89–92, 1952) describes instances in which several birds, including some large hawks, were attracted by his imitations of the Great Horned Owl (*Bubo virginianus*), presumably in response to the presence of a potential predator. The presence of a Barred Owl may pose a threat to fledgling Long-eared Owls, causing this nervous response in the adult. Second, the occurrence of interspecific territoriality between birds with similar ecological requirements continues to receive increasing attention in the literature (e.g. Murray, *Ecology*, 52:414–423, 1971). The similar nesting habits and food sources of these species suggest that the recognition of a competitive owl species may have caused the bird to seek out the source of the calls. A Barred Owl had recently been seen within the 44-acre sanctuary, and it apparently left the area within several days of the first reported sighting of the Long-eared Owl. Its disappearance may have been related to the

arrival and territorial behavior of the latter species. Baumgartner (Auk, 56:274-282, 1939) found that no other large owl species nested or fed within the territories of Great Horned Owls, even in areas where Barred Owls were common. However, the Craigheads (Hawks, owls, and wildlife; Harrisburg, Stackpole Co., 1956) found instances of Long-eared Owls maintaining territories partially or entirely within those of Great Horned Owls. Apparently some interspecific territorial behavior does occur among large owls, but its exact extent is as yet undetermined. The behavior described in this note suggests its possible occurrence between Long-eared and Barred Owls.—JOHN W. FITZPATRICK, 40 Mallard Road, St. Paul, Minnesota 55110, 9 November 1972.

Use of marked prey to study raptor predation.—The food habits of many raptors have been studied by analysis of pellets (e.g., Errington, Condor, 32:292-296, 1930). In addition, hunting territories and prey preferences could be studied if the home ranges of most prey were known. Southern and Lowe (J. Anim. Ecol., 37:75-97, 1968) marked small mammals with numbered leg bands and then used the bands recovered in pellets to estimate hunting territories and prey selection of Tawny Owls (*Strix aluco*). However, they did not give information on the proportion of tags ingested by the owls. Since many tags could be lost as indicated for Marsh Hawks (*Circus cyaneus*) feeding on cotton rats (*Sigmodon hispidus*) marked with subcutaneous radioactive Cobalt-60 tags (Schnell, J. Wildl. Mgmt., 32:698-711, 1968), comparison of prey selection between different raptors would be biased if tags of marked prey were differentially ingested and regurgitated by the predators.

I examined the proportion of tags recovered in pellets of Barn Owls (*Tyto alba*) and Screech Owls (*Otus asio*) feeding on live old-field mice (*Peromyscus polionotus*). Radioactive tags (see Hirth, et al., Ecology, 50:332-339, 1969 and references therein for use of radioisotopes as markers for vertebrates) were used so that all live mice, loose tags, or tags in pellets were recovered, however, radioactive tags would not be necessary in field studies of prey selection by raptors or other predators.

Old-field mice were tagged with radioactive Tantalum-182 pins (1 × 5 mm) inserted subcutaneously through a hypodermic needle into the dorsal neck region. Mice were released into large mouseproof enclosures (3.6 m wide × 9.0 m long × 3.9 m high) containing either a Barn Owl or Screech Owl (described in Kaufman, Ph.D. disser., Univ. Georgia, 1971). Pins were then relocated in pellets or loose in the pens with a portable beta-gamma survey meter (EP 432) with a NaI-Tl activated crystal (range approximately 7 m).

Barn Owls and Screech Owls killed and ate 21 and 11 tagged mice, respectively. A greater proportion of the ¹⁸²Ta pins were recovered in Barn Owl pellets (16 in 9 pellets, 5 not in pellets) than in Screech Owl pellets (6 in 5 pellets, 5 not in pellets). Differences in tag recovery in pellets for Barn Owls (76 percent) and Screech Owls (55 percent) was probably due to differences in eating behavior, since Barn Owls often swallowed each mouse whole until several mice had been eaten while Screech Owls nearly always tore each mouse into pieces. If prey were larger, such as cotton rats, Barn Owls would tear up their prey and a greater proportion of tags would be lost as in Marsh Hawks (Schnell, op. cit.).

In summary, the proportion of tags (ear tags, leg bands, or subcutaneous tags) recovered in pellets from different raptors would be dependent on prey size, predator size, and feeding behavior of the raptor, and any differences in the recovery of tags would have to