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Territoriality in a nectar feeding Northern Oriole in Costa Rica.—Nectar feeding by orioles is well-known and has been described for the Northern Oriole (*Icterus galbula*) at *Combretum* in Costa Rica (Timken 1970, Wilson Bull. 82: 184) and *Ochroma limonensis* in Panama (Fisk 1974, Auk 91: 162), but in neither case was the maintenance of a defended area mentioned. Activities of a wintering male Northern Oriole in Guanacaste National Park, Santa Rosa, Costa Rica from 16-23 February 1973 indicated that it was actively defending nectar resources at *Combretum farinosum*, a canopy-supported liana. This appears to be the first instance of feeding territoriality recorded for a member of the genus *Icterus*.

Territoriality in nectar feeding orioles is probably rare and to be expected only at an economically defendable nectar source. Flowers of *Combretum* grow symmetrically in multiple rows on large inflorescences. Thus the oriole could feed efficiently at all ($\bar{x} \cong 58$) flowers on an inflorescence from a single perch and did not have to fly between inflorescences.

During the observation period the oriole defended a cube 4 m on a side containing 8-12 nectar-producing inflorescences. Although insects were abundant on the liana, the oriole appeared to feed solely on nectar, as it consistently dipped slowly into successive flowers on an inflorescence without the erratic search and pursuit activity associated with insect catching. Aggressive encounters were brief

(≤ 3 sec) and characterized by short, flightless hops toward any bird entering the defended area. It was impossible to determine whether the intruders were seeking nectar or insects as the territorial oriole quickly chased them away. During 2 h of observation on each morning of 18, 19, and 20 February aggression toward hummingbirds was most common, with 71 attacks against the Cinnamon Hummingbird (*Amazilia rutila*) and a combined total of 20 against the Fork-tailed Emerald (*Chlorostilbon canivetii*), Blue-vented Hummingbird (*Amazilia saucerrottei*), and Plain-capped Starthroat (*Helioaster constanti*). The Cinnamon Hummingbird figure is high because an individual of this species defended a feeding territory intersecting that of the oriole, and both birds used the inflorescences in this area of overlap. Rufous-naped Wrens (*Campylorhynchus rufinucha*) elicited 21 chases, Yellow Warblers (*Dendroica petechia*) and Tennessee Warblers (*Vermivora peregrina*) four each, the Flame-headed Oriole (*Icterus pustulatus*) two, and the Western Tanager (*Piranga ludoviciana*) eight. Rufous-naped Wrens always visited *Combretum* in groups of three or four and appeared to be the most difficult visitor for the oriole to repel.

MacArthur (1972, *Geographical ecology*, New York, Harper & Row, pp. 203-204) suggested that avian winter visitors to the tropics exert a strong influence on the food supply and may produce local food shortages. Aggression between visiting and resident species at floral resources such as those described here and by Emlen (1973, *Wilson Bull.* 85: 71) could be indicative of such conditions. Emlen (op. cit.) attributed the tenacity of aggressive interactions between wintering warblers at a nectar resource on Bahama to a "maladaptive over-extension of a mild territorial dominance," based on the subjective impression that food resources were abundant, hence territoriality was unwarranted. I suggest that the feeding territoriality in migrant birds as shown here and by Emlen is an indication of competition for food and that flexibility of aggressive behavior in these species is adaptive. The fact that some primarily insectivorous birds are able to express facultative territoriality at nectar resources has importance in understanding dominance and diversity in avian communities.

These observations were made while I was a member of the Organization for Tropical Studies Fundamentals Course 73-1, whose support I gratefully acknowledge.—DOUGLAS W. SCHEMSKE, *Department of Ecology, Ethology and Evolution, Vivarium Building, University of Illinois, Champaign, Illinois 61820*. Accepted 16 May 74.

First specimen of Ground Dove from Wisconsin.—The A.O.U. Check-list (1957) shows the Scaly-breasted or common Ground Dove, *Columbina passerina*, as casual or accidental in some northern states such as Iowa, Virginia, Maryland, Pennsylvania, New Jersey, and New York, and more recent accounts report this species in Indiana (Graber 1962), Ontario, Canada (Goodwin 1969), and Massachusetts (Howe 1974). Only one hypothetical observation exists for Wisconsin (Maurin 1967).

The present specimen (MPM 19806) was found dead at a bird feeder in Fox Point, Milwaukee County, Wisconsin, on 15 October 1973 and brought to the Milwaukee Public Museum by Mrs. Mary E. Decker, an active local birdwatcher. The bird had evidently flown into some undetermined object and broken its neck; it was still warm when recovered. The dove proved by gonadal examination to be a female, but the degree of skull ossification was not observed. It had adult plumage. Dimensions: wing chord 88.9, tail 63.5, culmen 12.7 mm.

The plumage shows no wear nor any other suggestion of recent confinement,