size (Table 1), but no other pair of variables is significantly correlated. Social factors may be important in single-species flocks, and family members may stay together even when not foraging.

The preceding analysis indicates that it is the combination of the data on mixed-species flocks and those on single-species which produce most of the significant correlations for the data on all flocks. Mixed-species flocks may be functionally distinct from single-species flocks, a point also suggested by examining the mean values for all variables (Table 2). All means are greater for tanagers in mixed-species flocks than for those in single-species flocks (Mann-Whitney U-test, $p < 0.01$), indicating that tanagers move at a faster rate and forage faster and higher in the mixed-species flocks.

Scarlet-rumped Tanagers may gain any number of several advantages from joining large mixed-species flocks. Some possible advantages are: flocks may help the tanagers locate fruiting trees; flocks may "flush" insects; competition may be reduced by monitoring other species with similar food habits; there may be increased protection from predators in a flock which allows the tanagers to increase foraging. These and other ideas pertaining to flocking as an adaptation are discussed along with the pertinent literature elsewhere (Moriarty, Biologist 58: in press, 1976). Some or all of these benefits of flocking may also apply to single-species flocks, but if family relationships are an important aspect of single-species flocks, then it may not be surprising to find the foraging-related aspects of flocking occur more regularly and intensely in mixed-species flocks.

J. R. Karr, D. W. Schemske, C. E. Schnell, and M. F. Willson kindly reviewed the manuscript. Financial support was from the National Science Foundation through the Organization for Tropical Studies.—David J. Moriarty, *Dept. of Ecology, Ethology and Evolution, Vivarium Building, Univ. of Illinois, Champaign 61820.* *Accepted 15 Dec. 1975.*

Yellow Warbler nest used by a Least Flycatcher.—While checking Yellow Warbler (*Dendroica petechia*) nests near the Delta Marsh, Manitoba, I observed a Least Flycatcher (*Empidonax minimus*) making use of a deserted Yellow Warbler nest. The nest, 94 cm above the ground, was placed next to the trunk of a small maple (*Acer negundo*). On 5 June 1975 it contained 5 Yellow Warbler eggs but by 8 June only 1 egg was present and the nest's interior had been disturbed. An active Yellow Warbler nest was located several meters from the deserted nest; the first egg in this nest was laid about 12 June. On 14 June the first nest contained the single Yellow Warbler egg and 2 Least Flycatcher eggs. The nest was shallower now and there was no evidence that the flycatcher had added material to it. The flycatcher clutch was completed by the following day with the addition of a third egg; the Yellow Warbler egg was gone. One Least Flycatcher egg disappeared 6 days later but by 28 June, 2 nestlings were present. An empty nest on 29 June suggested predation had occurred.

Interest in old nests by the Least Flycatcher during the period of nest site selection has been noted by Mumford (unidentified nest, Wilson Bull. 74:98–99, 1962) and de Kiriline (Rose-breasted Grosbeak's nest: Audubon Mag. 50:149–153, 1948). No occupation occurred in either case. Use of nest material from a previous year's Yellow Warbler nest by a Least Flycatcher (pers. observ.) indicates that old nests may be a source of nest material.

It is possible that the Least Flycatcher was physiologically ready to lay, but since its own nest had been destroyed, it took over the available Yellow Warbler nest. I noted Least Flycatcher nest building in the area on 28 May. The present observations were therefore

made mid-way through its breeding season. It is possible that this was a renesting attempt. Yellow Warbler nests resemble Least Flycatcher nests (Bent, U.S. Natl. Mus. Bull. 179, 1942); thus the stimulus of a familiar nest structure may have enhanced this opportunistic behavior. As the breeding season progresses, it may be more advantageous to occupy an existing nest and to channel the energy saved into egg production rather than expending it on building another nest.

This behavior may also indicate the initial stages of nest parasitism. Davis (Auk 57: 179–218, 1940) defines a nest parasite as one which builds no nest of its own but rather raises its young in old nests of other birds. The use of deserted or old nests may not illicit competition for the nest site with the original owner thereby allowing egg-laying to occur with minimal disturbance.

This work was funded by grants from the National Research Council of Canada and the University of Manitoba Research Board to S. G. Sealy, whom I thank for assistance in preparing this note. This is paper number 34 of the University of Manitoba Field Station (Delta Marsh).—J. PAUL GOOSSEN, *Dept. of Zoology, Univ. of Manitoba, Winnipeg R3T 2N2.* *Accepted 26 Mar. 1976.*

Pintail reproduction hampered by snowfall and agriculture.—The reproductive strategy of the Pintail (*Anas acuta*) shows several adaptations to the semi-arid variable climate of the prairie pothole region of north central North America where the species is a common breeder. By nesting early and using temporary and seasonal water areas replenished by snow melt waters or early spring rains, the species has successfully occupied broad areas containing limited permanent and semi-permanent water. The Pintail is prone to select new breeding grounds during periods of drought. Smith (J. Wildl. Manage. 34:943–946, 1970) has shown that part of the population moves northward from the prairies and parklands when widespread drought conditions occur there. Though well-suited for the natural prairie pothole environment, this reproductive strategy makes the Pintail vulnerable to spring snowstorms and modern agricultural practices. In recent years, high cereal grain prices have caused most of the prime Pintail breeding areas of eastern North Dakota to be placed under annual cultivation. Because the Pintail is prone to nest on cultivated lands, it is particularly vulnerable to spring farming operations. The magnitude of direct nest loss attributable to agriculture varies with the chronology of planting operations, size of the nesting population, and timing of nesting. These factors are affected by precipitation patterns. A recent study indicated few Pintail and other duck nests survive when nests are initiated on cropland prior to spring planting operations (K. Higgins, J. Wildl. Manage. in press). Field observations of Pintail hens and examination of reproductive tracts of sampled specimens during the spring of 1970 in eastern North Dakota provided an opportunity to identify nesting patterns and to study their relationship to precipitation, including snowfall, and to agricultural operations.

Pintails began arriving in substantial numbers in Stutsman County, North Dakota, on 4 April. Pair dispersal was initially slowed by a lack of water in shallow wetland basins, but in mid-April water conditions improved dramatically following a wet snowfall on 12 and 13 April and additional precipitation on the 15th. Pintail pairs soon occupied the newly flooded habitat and egg laying was in progress by 18 April at the onset of a 10 cm snowfall. Precipitation at Jamestown, North Dakota during April 1970 totaled 5.77 cm (U. S. Dept. Commerce, Climatological Data 79:43–57, 1970).