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#### GROUND FORAGING BY THREE SPECIES OF SWALLOWS

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Ground foraging by swallows is rare, but has been previously described by Bent (U.S. Natl. Mus. Bull. 179, p. 450, 1942) for Barn Swallows (Hirundo rustica) and by Jackson and Weber (Iowa Bird Life 45:99, 1975) for both Barn Swallows and Cliff Swallows (Petrochelidon pyrrhonota). This note describes a case of ground foraging by Barn Swallows, Cliff Swallows, and Bank Swallows (Riparia riparia), which I observed at Decatur, Alabama on July 23, 1978.

The incident to be described occurred at the Decatur boat harbor, on an island in Wheeler Lake on the Tennessee River, between 7:00 and 7:30 a.m. About 25 Bank Swallows, 25 Barn Swallows, and at least 3 or 4 Cliff Swallows were observed attempting to pick insects off the surface of a paved parking lot. The main object of interest was two species of large mayflies (mainly Isonychia aurea Traver, with smaller numbers of Hexagenia limbata (Guerin)) which had settled in large numbers on the pavement and were swarming over the adjacent lawns. Two Common Grackles (Quiscalus quiscula) were also feeding on the mayflies, but a number of House Sparrows (Passer domesticus) and Red-winged Blackbirds (Agelaius phoeniceus) which were feeding nearby on scraps of garbage showed no interest in the insects.

Although both Barn and Bank Swallows were seen to successfully capture and swallow some mayflies, the rate of success seemed quite low. Frequently a swallow would alight several inches away from a mayfly and walk toward it, only to have the mayfly take wing before the swallow could catch it. The swallows also seemed handicapped by their short bills in dealing with these rather large insects (both mayfly species have a body length of 16 to 20 mm. (about 0.7 in.), or about 50 mm. (2 in.) including the twin "tails"). Often a swallow would drop a mayfly three or four times in succession, and then either would seemingly lose interest in it or would lose it to another equally clumsy bird.

The behavior of the swallows while foraging differed from that noted by Jackson and Weber (1975). Rather than alighting, pecking, and quickly taking wing again, the swallows would often spend a minute or more on the ground, and would walk from one insect to another. Aggressive interactions occurred frequently, both intraspecifically among Barn Swallows and Bank Swallows, and interspecifically between the two species. The Bank Swallows in particular often pecked at inappropriate objects, such as cigarette butts and feathers; some of these birds appeared to be juveniles, which perhaps had not yet learned to consistently discriminate food from nonfood items. The swallows appeared nervous while feeding on the ground, and frequently all of them would take off for no obvious reason, only to land again in a few seconds.

Swallows are highly-specialized aerial predators of insects, with short legs and bills which are ill-adapted for catching insects on the ground. Nonetheless, observations like those above show that they will take insects on the ground under some conditions (unusual abundance and/or conspicuousness of insects on the ground, or possibly scarcity of flying insects) even if their efficiency at doing so is not high.