

and a Snowy Owl (*Nyctea scandiaca*). The suggested motives were nest defense against the hawks and defense of young against the owl. An additional account occurred in March 1981 during the spring migration just south of Albany, New York. T. K. Judge (pers. comm.) witnessed a Merlin strike and kill a Red-tailed Hawk. The Merlin was watched for approximately 20 min prior to the assault. The falcon initiated its attack from a perch in a tree, and struck the larger bird in mid-air. The Red-tailed Hawk lost some feathers, appeared limp and lifeless, and immediately dropped to the ground. No motive for this killing was evident.

Suggested motives for interspecific killing by raptors are competition for territory, food, or breeding sites (Mikkola, Br. Birds 69:144–154, 1976). Rudebeck (1951), referring to large raptors attacking smaller ones, suggested that the conspicuousness of some raptors might make them more vulnerable to larger ones, especially on migration when large numbers of raptors regularly interact while traveling in close proximity. In addition, large raptors kill smaller ones for what has been described as annoyance (p. 141, Brown and Amadon, Eagles, Hawks and Falcons of the World, McGraw-Hill Book Co., New York, New York, Vol. 1, 1968).

In sum, field observations suggest that raptors kill other raptors for food, in self-defense, and in defense of territories, nests, and young.

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Ants and foraging behavior of the Collared Forest-Falcon.—Few details concerning the habits of the Collared Forest-Falcon (*Micrastur semitorquatus*) are known. A nest was described recently by Mader (Condor 81:320, 1979). An egg, laid by a captive falcon, was described by Wetmore (Condor 76:103, 1974). Birds, lizards, and snakes have been reported as prey (Sutton and Pettingill, Auk 59:1–44, 1942; Wetmore, Smithsonian Misc. Coll. 150:266–268, 1965; Smithe, The Birds of Tikal, Natural History Press, Garden City, New York, 1966). Smith (Ibis 111:241–243, 1969) suggested that the Collared Forest-Falcon calls to provoke mobbing by small birds in order to capture them, and mentioned that *Micrastur* falcons are attracted to the sounds made by excited birds such as those following swarms of army ants. The Barred Forest-Falcon (*M. ruficollis*) is a “persistent ant follower that terrifies small birds, but mostly captures large insects” (Willis and Oniki, Ann. Rev. Ecol. Syst. 9:243–263, 1978). Slud (Bull. Am. Mus. Nat. Hist. 128:70–72, 1964) stated that Barred Forest-Falcons are attracted to swarms of army ants to prey on the attendant small birds. Skutch (New Studies of Tropical American Birds, Nuttall Ornithol. Club, Cambridge, Massachusetts, 1981) observed an immature Collared Forest-Falcon following army ants, eating large insects and spiders, and ignoring the small birds present. Here, I report three incidents of a mature Collared Forest-Falcon at swarms of ants.

My observations of Collared Forest-Falcons and ants occurred at Monteverde, Costa Rica,

in the surrounding premontane moist semideciduous forest at an elevation of 1300–1400 m in the dry season in March 1983. All three observations were made within an area of approximately 0.5-ha. I used a pair of 9 × 36 binoculars. Two species of ants were involved, but no specimens were collected for identification. The army ants that attracted the falcon were small and black and moved in columns that radiated like fingers from a hand. The second species of ant involved in the observations was not an army ant. The latter moved back and forth in a column, along trails, not steadily ahead as did the army ants.

I first observed a falcon in mature plumage foraging at an army ant swarm on 11 March. It perched 0.2–0.5 m above the ants and intently watched the column. Three times the bird dropped to the forest floor, scratched in the litter first with one foot, then the other, pecked at insects fleeing the ants, and returned to its perch just above the forest floor. Although I was able repeatedly to approach within 3–9 m of the falcon, I was unable to see if prey was taken. Finally, the falcon dropped into the army ant swarm, scratched vigorously, fluffed up its feathers and squatted down on the ants, much like a brooding hen, for 45–60 sec. The falcon then hopped to a low perch, picked two ants off its toes and flew away.

On 18 March, I watched a Collared Forest-Falcon foraging near a column of non-army ants for a period of 35 min. I saw it pick up arthropods near the ants and heard crunching noises as it ate. Consistent with the previous observation on 11 March, the falcon perched on low branches (0.3–2 m above ground) and made sallies (N = 6) to the ground to pick up insects and other small items, returning to a low perch each time.

My final observation occurred on 21 March. Some lizards and large numbers of insects and spiders were fleeing a swarm of army ants. A Collared Forest-Falcon perched quietly about 0.3 m above the swarm. I watched the falcon for 38 min. The foraging technique of the falcon was similar to that in the two previous episodes. It sallied to the ground (N = 11) from low perches (0.1–1 m); but the bird spent much more time on the ground than in the previous two episodes, actually running after prey, sometimes with half-opened wings. I saw it pounce (N = 4) on arthropods and lizards with both feet and then pick the prey from under its toes with its bill and eat. Three times the falcon did a brief staccato “tap dance” alternately with each foot, and occasionally scratched itself with one of its feet. My impression was that the bird was attempting to dislodge ants crawling up its feet and legs. It ignored my presence and foraged to within 2.5 m of me on several occasions.

No small birds appeared to be following the army ant swarms observed, although several species of migrant and resident birds that frequently follow army ants (Willis 1966; Hilty, Wilson Bull. 86:479–481, 1974; Willis and Oniki 1978) were present in the area. Two Long-tailed Manakins (*Chiroxiphia linearis*) sang 3 m above the falcon during the second observation with no apparent interaction between the species. The observation of a wild Collared Forest-Falcon, scratching in the litter, and running on the ground after prey, often with half-opened wings, corroborates the report of Peeters (J. Ornithol. 104:357–364, 1963) on the foraging behavior of two captive Collared Forest-Falcons in California, and is similar to a description of ant-following by *M. ruficollis* (Willis, Wechsler and Stiles, Rev. Brasil. Biol. 43:23–28, 1983). The technique of making sallies from a low perch is the most common foraging pattern used by ant-following birds (Willis, Wilson Bull. 94:447–462, 1982).

The 11 March observation may be the first report of passive anting by a wild raptor. A description of anting by a captive Great Horned Owl (*Bubo virginianus*) was cited by Whitaker (Wilson Bull. 69:195–262, 1957).

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