

**Red-headed Woodpeckers Defend Occupied American Kestrel Nest.**—Near Columbia, Missouri we found a large squarish hole 24 m above ground level in a large pine power-pole, probably excavated by a Pileated Woodpecker (*Dryocopus pileatus*). The hole was just below the cross arm and had been used 3 successive years by a pair of nesting American Kestrels (*Falco sparverius*). In 1982, the kestrels laid a clutch between 29 March and 3 April. These eggs hatched during the last 3 days of April.

On 7 May at 09:45 the female kestrel was seen at the nest with a vole (*Microtus ochrogaster*). She left after feeding the nestlings, which were approximately 10 days old. At 10:02 a Red-headed Woodpecker (*Melanerpes erythrocephalus*) flew to the nest cavity and peered inside. The male kestrel then stooped on and pursued the woodpecker which eluded it by flying low into the nearby woodlot.

On 9 May at 13:20 a Red-headed Woodpecker was seen perched on the pole just below the hole for 3 min. This bird twice chased other Red-headed Woodpeckers when they landed on the pole, each time returning to the kestrel nest hole and peering inside. It was then displaced by the female kestrel.

On 15 May at 14:00 a pair of Red-headed Woodpeckers perched just beneath the kestrel hole. At 14:05 one of this pair chased a Common Flicker (*Colaptes auratus*) that passed nearby. The Red-headed Woodpecker returned to the pole immediately. This pair of woodpeckers remained on the pole for 6 min and periodically peered into the nest hole. At 14:11 these woodpeckers chased a conspecific pair from the area. The female kestrel then chased both woodpeckers from the area.

During 9 h of observation, from 20 to 22 May, a woodpecker pair was seen at the kestrel nest cavity continuously. During that time they chased other Red-headed Woodpeckers 9 times, Common Flickers twice, and a Hairy Woodpecker (*Picoides villosus*) once. The female kestrel arrived twice with voles and displaced the woodpeckers. On all occasions the woodpeckers returned to the pole immediately after the kestrel departed.

Between 22 and 27 May the nest hole was observed for 18 h during which the young kestrels periodically perched in the cavity opening, peering outside. The woodpeckers perched just below the hole during these periods and moved up to the hole when the young kestrels moved back down in the nest cavity. During this 5-day period the Red-headed Woodpeckers chased conspecifics 20 times, Common Flickers 5 times, and Hairy Woodpeckers once. They in turn were displaced by the kestrels 15 times. One attack by the female kestrel was particularly aggressive; the falcon struck the woodpecker hard enough to dislodge several contour feathers.

On 27 May, 3 kestrels (2 male, 1 female) fledged from the nest cavity and later flew to a woodlot 25 m distant. The next day they were seen 200 m away in the powerline corridor. The Red-headed Woodpeckers were observed entering the kestrel nest cavity for the first time at 08:45 on 27 May, and subsequently nested therein.

We have found no previous records of kestrels tolerating a nest competitor which was actively defending the same nest site or of Red-headed Woodpeckers defending a nest pole in use by kestrels.—BRIAN TOLAND AND WILLIAM H. ELDER, *School of Forestry, Fisheries and Wildlife, University of Missouri, Columbia, Missouri 54211*. Received 1 Aug. 1983; accepted 14 Feb. 1984.

**Intraspecific Nest Parasitism in Willow Ptarmigan.**—Intraspecific nest parasitism (females laying eggs in nests of conspecifics) is apparently rare among galliformes and has not been reported in ptarmigan. However, opportunities for observing this behavior in these species are restricted because it is difficult to distinguish between eggs from different individuals. In addition, ptarmigan nests are difficult to find during the laying period because of their sparse distribution, the covering of eggs with debris, and the secretive behavior of hens. Here, I report observations of intraspecific nest parasitism by Willow Ptarmigan (*Lagopus lagopus*) at La Perouse Bay, on west coast Hudson Bay, Manitoba, Canada (58°24'N, 94°24'W).

During the study, Willow Ptarmigan laid 1 egg per day, occasionally skipping a day

before depositing the final one. Intraspecific nest parasitism was defined as occurring whenever the rate of egg deposition exceeded 1 per day (Clawson et al., J. Wildl. Manage. 43:347-355, 1979). In 1981-1982, 30 nests found during the laying period were visited on consecutive days, thus enabling documentation of the deposition of an egg from a parasite. Nest parasitism was also suspected if additional eggs appeared in the clutch several days after incubation was initiated. In the two years, I made 289 visits to 64 nests after final clutch size was determined.

Evidence of nest parasitism occurred during laying when 2 eggs were added in less than 10 h and again when 3 eggs were deposited in less than 32 h, both in the same nest. In one instance, clutch size may have increased several days after onset of incubation.

I made the following observations of parasitism in a single nest. On 28 May 1982 at 0840, nest #1-82 had 2 eggs and on the same day at 1800, 4 eggs were found. Encrusted snow covered the nest during 29 May and the morning of 30 May. On 31 May at 0840, 4 eggs were observed and on 1 June at 1600, there were 7; an addition of 3 eggs to the nest in 31 1/2 h. Laying continued at the rate of 1 egg per day until there was a clutch of 10. On 10 and 12 June, the nest had 4 cold and uncovered eggs, a suspected partial predation and subsequent desertion. However, on 16 June at 1255, there were 7 cold eggs, one of which looked freshly laid (pigmented blotches were shiny). This was the only instance in the 123 nests observed during the study in which a single site was used more than once. On 17 June at 2245, 9 eggs were found. I suspect another instance of parasitism here, but since the intervening period was 34 h, it would have been possible for the resident hen to lay 2 eggs if she had not in fact laid an egg on the morning of 16 June. On 17 June at 2245, the clutch was slightly warm and uncovered, indicating that incubation had begun. The following day, 18 June at 1400, the resident female was sitting on 9 warm eggs, but on 21 June at 1138, she was incubating 10 eggs.

All mated females within a 1 km radius of nest #1-82 were individually color-banded. However, on 3 occasions (26 June, 2 and 8 July) an unbanded and apparently unmated hen was observed in the vicinity. It was most unusual to see a lone hen on the study area before mid-July, and it is possible that two or more of these sightings were of the same female and that she was the nest parasite.

I suspect that nest parasitism is an uncommon event in Willow Ptarmigan, but do not know if my observations of 2 actual and 2 potential instances in 30 nests are a reliable estimate of frequency for the species. Willow Ptarmigan have apparent defenses against conspecific nest parasites. Pairs are secretive near their nests, and during the laying period, hens conceal their eggs by covering them with surrounding debris. Hannon (J. Anim. Ecol., in press, 1983) reported that female Willow Ptarmigan, and to a lesser extent their mates, behave aggressively to intruder hens during the pre-laying period. If female-female aggression extended through the laying period, this would be an effective deterrent to potential nest parasites.

*Acknowledgments.*—I thank S. Alexander and S. Stephenson for assistance with nest observations, and F. Cooke for use of the La Perouse Bay field camp. This note was reviewed critically by J. Eadie, J. Hamann, S. Hannon, and J. Reynolds. Financial assistance for this study was provided by the Canadian National Sportsmen's Fund, Arctic Institute of North America, Canadian Wildlife Service, Canadian Wildlife Federation, Department of Indian Affairs and Northern Development, and Queen's University Advisory Research Committee.—KATHY MARTIN, *Biology Department, Queen's University, Kingston, Ontario, Canada, K7L 3N6*. Received 31 Aug. 1983; accepted 8 Jan. 1984.

**Observations on Detrimental Effects of Great Blue Herons on Breeding Black Terns.**—Great Blue Herons (*Ardea herodias*), although primarily piscivorous, occasionally eat birds (e.g., Bent, U.S. Natl. Mus. Bull. 135, 1926; Palmer, Handbook of North American Birds. Vol. 1, Yale Univ. Press, New Haven, Connecticut, 1976). We observed 2 instances of Great Blue Herons eating Black Tern (*Chlidonias niger*) chicks on the Creston Valley Wildlife Management Area, Creston, British Columbia. To our knowledge, Black Terns have not been reported as prey of Great Blue Herons.