

commented on an earlier draft.—HANS BLOKPOEL, *Canadian Wildlife Service, Ontario Region, 1725 Woodward Drive, Ottawa, Ontario, Canada K1G 3Z7*, AND GERARD T. HAYMES, *Ontario Hydro, Aquatic Biology Section, 800 Kipling Avenue, Toronto, Ontario, Canada M8Z 5S4*. Accepted 15 Feb. 1979.

Wilson Bull., 91(4), 1979, pp. 625–626

Premigratory fat in the American Kestrel.—Premigratory fat deposition has been reported in many avian families (King and Farner, *Annu. N.Y. Acad. Sci.* 131:422–440, 1965), but I do not know of any previous report of it among the Falconiformes.

Methods.—Fourteen adult males, 1 immature male, 7 adult females and 1 immature female American Kestrel (*Falco sparverius*) were trapped in Balchatri traps in Cache County, Utah, in April, July, and September of 1973 and 1974. Birds were transported to the laboratory at Utah State University, and weighed to the nearest 0.1 g. Each was then sacrificed in an atmosphere of N₂, frozen and stored. Later, each carcass was vacuum dried at 5 mm Hg for a minimum of 3 days to constant weight. To facilitate drying, the body cavity was opened and the pectoral muscles were macerated. Each carcass was chopped into small pieces and the fat extracted in a Soxhlet apparatus using petroleum ether (B.P. 60–80°C) as the solvent, and dried to constant weight in a hot-air oven at 80°C. The weight of body fat was equated with the vacuum-dried weight minus the dry weight of the fat-extracted carcass (i.e., the fat-free dry weight). Student's *t*-test was used to compare any 2 means.

Results.—Body fat of males decreased from April to early September, then increased sharply in the latter half of September (Fig. 1). Body fat of females decreased from April to late July and increased steadily during September.

The average weight of body fat on males expressed as a percentage of body weight was about 4% in April. In July it was 3–4% for both males and females. Females had significantly more fat than males in September (7.0 and 5.3%, respectively).

The pattern of seasonal change in fat levels in the kestrel is typical of a migrant, i.e., the lowest level occurs soon after the breeding season in mid-summer and rapid deposition of fat occurs preceding and/or during the southward migration in the fall. The timing of the southward migration was identified by the disappearance of color-marked summer resident birds from the county. In spring, kestrels that winter south of Utah begin to arrive in Cache County between the last week of March and the first week of April. The summer population of adult kestrels in Cache County is about 10 times larger than the winter population. The population decreases noticeably in mid- to late September as the summer resident kestrels move southward. Banding records show that some individuals that summer in northern Utah migrate to Mexico (Gessaman, unpubl. data). The birds collected in September may represent a mix of summer residents in northern Utah and others which had bred at locations further north.

The percentage of fat in kestrels immediately preceding or during the fall migration is significantly less than the 15–50% reported for land birds that migrate over large bodies of water or extensive desert areas (Odum, *Science* 123:892–894, 1956; Ward, *Ibis* 105:109, 1963). The kestrel's fall migratory routes likewise do not pass over these kinds of barriers (Bent, *Life Histories of North American Birds of Prey*, Pt. 2. U.S. Natl. Mus. Bull. 170, 1938).

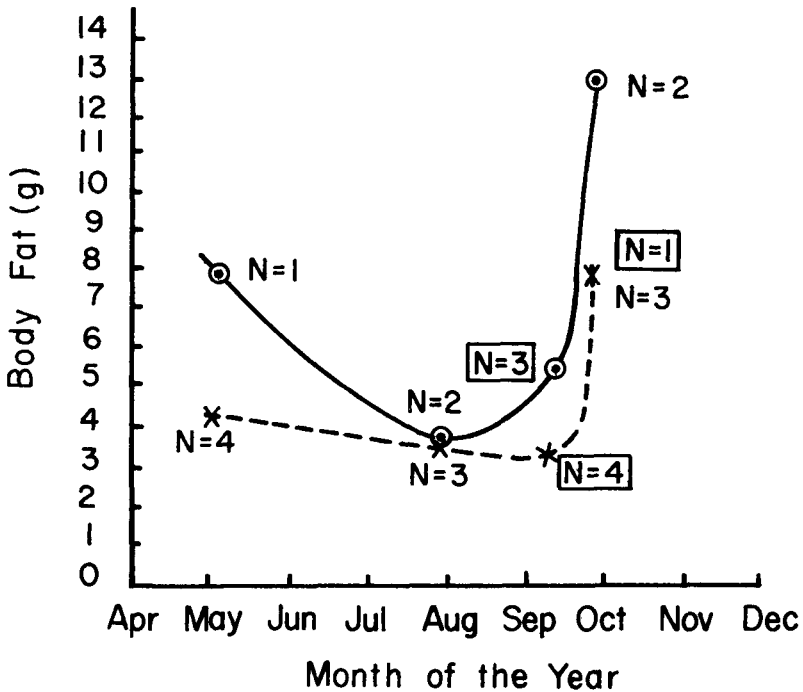


FIG. 1. Seasonal changes in body fat of kestrels in northeastern Utah. Boxed Ns represent birds trapped in 1973; Ns are birds taken in 1974, solid lines are males and dashed lines females.

This work was supported by NSF Grant GB 40109. Scott W. Sawby contributed significantly to this project. I wish to thank David W. Johnston for suggesting improvements in the original manuscript.—JAMES A. GESSAMAN, *Dept. Biology and Ecology Center, UMC 53, Utah State Univ., Logan, Utah 84322. Accepted 8 Dec. 1978.*

Wilson Bull., 91(4), 1979, pp. 626–628

First reports of pellet ejection in 11 species.—Pellet casting, widespread in birds of prey, also occurs in other groups. Birds whose foods contain indigestible hair, bone, shell, chitin, etc. are most likely to eject pellets. Hanson (List of species known to eject pellets, the International Bird Pellet Study Group, Bull. 7, with additions, 1977) reported pellet casting in 18 orders comprising 67 families and 316 species. One hundred and twenty-nine (41%) species were Falconiformes and Strigiformes. Stenzel (Using pellets to study bird diets, Point Reyes Bird Observatory News Letter, No. 36, 1975) mentions the Long-billed Curlew (*Numenius americanus*) and the Black Turnstone (*Arenaria melanocephala*) which were not listed by Hanson.