1971). By ameliorating the effects of wind, particularly in large nests, convective losses also may be reduced.

The minimum energy savings resulting from elevated nest temperatures can be estimated from the relation of oxygen consumption (VO_2) to Ta of Monk Parakeets (Weathers and Caccamise, Oecologia 18:343–358, 1975). Below 25°C VO_2 of Monk Parakeets increases linearly with decreasing Ta at a rate of 0.099 ml O_2 g^{-1} hr^{-1} $°C^{-1}$. The energy savings attributable to the nest is the product of the excess of Tn over Ta and this factor. Taking the average Tn – Ta to be 1.76°C then

$$\text{Energy Savings} = (1.76°C) \times (0.099 \text{ ml } O_2 \text{ g}^{-1} \text{ hr}^{-1} \text{ °C}^{-1}) = 0.174 \text{ ml } O_2 \text{ g}^{-1} \text{ hr}^{-1}.$$

The resting metabolic rate of Monk Parakeets measured at night and in the thermal neutral zone is 1.17 ml O_2 g^{-1} hr^{-1} (Weathers and Caccamise, 1975). Thus the mean energy savings for the night depicted in Fig. 2, based on the difference between Tn and Ta, represents 15% of the standard metabolic rate. Expressed as the difference in predicted metabolic rate at –5.65°C versus –3.89°C the energy savings is 3.7%. This value does not take into account the effect of the nest in reducing radiant heat loss and therefore should be considered a minimal estimate of the energetic advantage of using the nest as a winter night-time roost.

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This report is a paper of the Journal Series, New Jersey Agricultural Experiment Station, New Brunswick, New Jersey.—DONALD F. CACCAMISE AND WESLEY W. WEATHERS, *Dept. of Entomology and Economic Zoology and Dept. of Environmental Physiology, Rutgers, The State Univ. of New Jersey, New Brunswick 08903* (Present address WWW: *Dept. of Avian Sciences, Univ. of California, Davis 95616*). *Accepted 17 Feb. 1976.*

Snake predation on Bell's Vireo nestlings.—Bent (U.S. Natl. Mus. Bull. 197: 260, 1960) found that cats and cowbirds were the Bell's Vireo's (*Vireo bellii*) worst enemies; he makes no mention of snakes. However, Mumford (Wilson Bull. 64:231, 1952) and Barlow (Univ. Kansas Publ. Mus. Nat. Hist. 12:291, 1962) both suggested snake predation as a cause of nest losses. Nolan (Condor 62:241, 1960) implicated the black rat snake (*Elaphe obsoleta*) and black racer (*Coluber constrictor*) as nest predators based on their abundance in the scrub habitat he studied. This note documents 3 observations of snake predation on nestling Bell's Vireos in Douglas County, Kansas.

On 14 June 1974, about 08:45, I heard the scolding notes of a pair of Bell's Vireos and several Dickcissels (*Spiza americana*) and Northern Yellowthroats (*Geothlypis trichas*) near a dogwood (*Cornus drummondii*) where I had discovered a vireo nest 3 days earlier. I reached the nest in time to see a black rat snake (*E. o. obsoleta*) with a vireo nestling in its mouth climbing quickly off the nest limb to the ground. The nest, which previously held 4 nestlings, was empty. This pair of vireos built a new nest about 10 m from the old site and laid a clutch of 3 eggs.

On 25 June 1975, about 10:00, I heard scolding notes of a pair of Bell's Vireos in the vicinity of a small dogwood. I located the nest on the southeast corner about 38 cm from the ground and observed a red-sided garter snake (*Thamnophis sirtalis parietalis*) on the supporting limb of the nest with its head in the nest engulfing the back half of a very young nestling. It dropped to the ground as I pulled back a branch for a closer look, and as I attempted to grab the snake, it dropped the live but bleeding nestling and escaped. I returned the nestling to the nest, but when I checked the nest again some 10 min later

the nestling was missing. Best (Auk 91:169, 1974) found that snakes would return for the remainder of the nest contents when disturbed. This pair of vireos renested about 15 m from the old site and successfully fledged 3 young.

On 27 June 1975, I heard mobbing calls from several species of birds near a Bell's Vireo nest. As I approached the dogwood where the nest was located I saw a black rat snake slipping away through the grass. I killed the snake and found that it had eaten the 3 Bell's Vireo nestlings from the nest.

Bell's Vireos nest very close to the ground and it is not surprising that snakes are important predators on them. Black rat snakes are good climbers, regularly take birds as prey (e.g., Jackson, Wilson Bull. 82:329–330, 1970), and can often be located by mobbing calls of birds (Fitch, Copeia 1963:649–658, 1963). Although red-sided garter snakes are not regarded as climbers they occasionally take nestling birds as prey (Fitch, Univ. Kansas Publ. Mus. Nat. Hist. 15:493–564, 1965).

My thanks to Ivan Boyd of Baker University, Baldwin City, Kansas for permission to use the Baker Wetlands Research Area and to Richard F. Johnston for his comments on the manuscript.—CALVIN L. CINK, *Museum of Natural History and Dept. of Systematics and Ecology, Univ. of Kansas, Lawrence 66045.* *Accepted 12 Jan. 1976.*

Crow predation on Black-crowned Night Heron eggs.—Corvids prey on the eggs of many species of birds. They feed on some eggs at nest sites and fly off and cache others at a distance. Descriptive and experimental data on crow predation has come from work in gull colonies located on flat ground with high visibility because the vegetation is sparse and low (e.g. Tinbergen et al., Behaviour 28:207–321, 1967). However, Fish (*Corvus ossifragus*) and Common crows (*C. brachyrhynchos*) also prey on the eggs of herons, egrets, and ibises that nest in dense tree colonies where nests are not as visible from the air (Milstein et al., Ardea 58:171–255, 1970; Meanley, Wilson Bull. 67:84–99, 1955; Dusi and Dusi, Wilson Bull. 80:458–466, 1968). No estimation of actual predation rates or descriptions of crow–heron interactions from heron and egret colonies are available. In this note we report on interactions between Black-crowned Night Herons (*Nycticorax nycticorax*) and Common and Fish crows observed in 5 heronries in southern New Jersey from 1973 to 1975. Data were collected in 3 Cherry (*Prunus* sp.) and Poison Ivy (*Rhus toxicodendron*) tree colonies of Black-crowned Night Herons, Snowy Egrets (*Egretta thula*), and Glossy Ibis (*Plegadis falcinellus*) on Little Beach Island, Brigantine National Wildlife Refuge; and in 2 *Phragmites* (with scattered *Iva* and *Juniperus* bushes) colonies of Black-crowned Night Herons, Snowy Egrets, Common Egrets (*Casmerodius albus*), Cattle Egrets (*Bubulcus ibis*) and Glossy Ibis on Big Heron and Islajo islands near Atlantic City (see Adams and Miller, EBBA News 38:103–107, 1975 for description).

All 5 heronries examined had at least 1 active crow nest. Two of the 3 heronries on Little Beach Island had cache nests (used only to store food items), located near the active nests. These contained heron eggshells, the unbroken eggs of night heron, Clapper Rail (*Rallus longirostris*) and Glossy Ibis, diamondback turtle (*Malaclemys terrapin*) eggs and hatchlings, and a dead Glossy Ibis chick. We often observed crows eating the numerous bird and turtle eggshells that were scattered on *Spartina* mats in the grassy areas near the heronries.

We systematically searched the tree areas on the northern end of Little Beach Island and found 2 inactive heronries each with an inactive crow nest, but no other crow nests. Similarly, crow nests were only located in the heronries (in *Juniperus*) on Islajo and Big Heron islands.