made obstacles. However, it is more unusual that they should be found at an inland television tower. The nearest known present breeding site for Black Rails are the marshes of Chesapeake Bay, about 200 miles NE of Raleigh.—Micou M. Browne and William Post, *Zoology Department, North Carolina State University, Raleigh, 27607, 3 February 1972.*

Eggshell removal in the Spotted Sandpiper.—Tinbergen and co-workers suggested that the latency of eggshell removal depends on two factors: the importance of cryptic coloration to protection of the eggs and young and the extent of predation on unguarded young (Tinbergen, Broekhagsen, Feekes, Houghton, Kruuk, and Szulc, Behaviour, 19: 74–117, 1962; Tinbergen, Nat. Hist., 72:28–35, 1963). Partially hatched and wet gull chicks are subject to heavy intraspecific predation (Tinbergen, 1963, op. cit.). Removal of conspicuous eggshells is often delayed until the chicks dry. The Ringed Plover (*Charadrius hiaticula*) and Oystercatcher (*Haematopus ostralegus*) are less subject to the intraspecific predation found in gulls, depend on cryptic coloration for escape, and remove their eggshells much sooner after hatching than do the gulls. But this is all the comparative evidence Tinbergen mustered in support of his hypothesis.

On 14 July 1970 I saw an adult Spotted Sandpiper (*Actitis macularia*) flying over a speckled alder thicket and holding an eggshell in its bill. The shell hung down, pointed end forward. The bird called loudly every 5 sec during its entire flight. It landed on a plank bridge and placed the eggshell on the bridge. It stood by the shell for a short time then flew through the alders in the general direction of its nest. It continued to call, a loud *peet-weet* whistle, while standing by the shell, but became silent upon departing.

The eggshell, the larger portion with the pointed end, the blunt end having been knocked out, was damp inside with the allantoic membranes still clinging to the inner surface. The shell was deposited about 40 m from the nest.

Four chicks were present in the nest which less than two hours earlier had contained only two chicks. There were no eggshells in the nest nor within 1 m of the nest. Two of the chicks were dry, one was damp, and the fourth was wet.

I had checked the nest two hours earlier, thus no more than two hours could have elapsed between hatching and eggshell removal. The wet membranes lining the eggshell and the chick's wet down would seem to indicate that only a few minutes had elapsed. The Spotted Sandpiper, a solitary-nesting species not subject to intraspecific predation on wet chicks, a species whose eggs and young are cryptically colored, appears to remove eggshells quickly as predicted by Tinbergen.

I made these observations while doing research supported by a grant from the Surdna Foundation to Bowdoin College.—Edward H. Burtt, Jr., *Department of Zoology, University of Wisconsin, Madison, Wisconsin 53706, 14 February 1972.*

Stomach capacity in the Common Nighthawk.—Analyses of the stomach contents of the Common Nighthawk (*Chordeiles minor*) have occasionally revealed the presence of surprisingly large numbers of insects, particularly winged ants (Bent, U.S. Natl. Mus. Bull., 176:224–225, 1940). Two nighthawks collected from a migratory flock near Roanoke, Virginia, on 4 September 1971, contained such an impressive quantity of food material that I was prompted to make the following measurements.

The birds, both female, weighed 101.2 g and 99.7 g, and were extremely fat. Their stomachs were distended with queen ants (Formicinae), and the wet weights of the

contents were 20.5 g and 19.7 g, respectively. This represents 25.4 per cent and 24.6 per cent of the food-free weight of each nighthawk. In comparison, Stevenson (Wilson Bull., 45:155–167, 1933) found the food in the stomachs of several species of passerine birds amounted to about 1.5 per cent of their body weight. The wing-loading of the Roanoke specimens (0.295 and 0.287 g/cm^2) is 36.6 per cent and 32.9 per cent greater than the value given by Poole (Auk, 55:511–517, 1938).

The food was freeze-dried and the caloric content measured in a Parr non-adiabatic bomb calorimeter. The average of three determinations was 7.434 ± 0.020 kcal/g dry weight. Total caloric values of the stomach contents were 78.9 kcal and 75.9 kcal, respectively. Using 70 per cent as a conservative estimate of the metabolic efficiency of this species, 55.2 kcal and 53.1 kcal would be available to the nighthawk from these meals. This is 3.7 to 3.8 times the daily standard metabolism of the nighthawk as calculated from the equation given by Lasiewski and Dawson (Condor, 66:477–490, 1964), and the average temperature of the collection site during September (20.6 C).

Since the time required for the passage of insect materials through an avian digestive tract may be as little as 1.5 hours (Stevenson, ibid.), the total calories collected by individual nighthawks from a generous source such as an ant mating swarm may be quite large. In the absence of a crop, a large stomach capacity is certainly adaptive in such feeding situations, although Bent (ibid.) intimates that one nighthawk met accidental death because of the handicap of carrying a large mass of food material.

I am indebted to C. F. Murray for assistance in collecting the nighthawks.—CHARLES R. BLEM, *Virginia Commonwealth University, Department of Biology, Richmond, Virginia 23220, 10 February 1972.*

Retention of egg in a wild Downy Woodpecker.—The observations given below on egg-binding in a wild Downy Woodpecker (*Dendrocopos pubescens*) have appeared worth reporting from three points of view: first, the condition which can be severe or even lethal under aviary conditions (Boosey, E. J., Foreign bird keeping. Iliffe Books, Ltd., London, 1970) might be even more so in the wild where the bird would be a helpless victim to any passing predator. Secondly, if egg-binding is as prevalent in the wild as in the aviary, it could be a highly important and largely unrecognized mortality factor among adult breeding birds of many species; and thirdly the present report serves to document that egg-binding can occur in the wild and is thus not just an artifact of captivity. The circumstances attending the observations were as follows:

A pair of Downy Woodpeckers had excavated a nest hole in Lyme, New Hampshire and I had witnessed a total of seven copulations on 6, 7, and 8 May 1971, when at 06:30 on 9 May I noted the female clinging to the bark of a tree not far from the nest stub. She was in a drooping position as if about to fall asleep. After a few minutes she ascended to a cavity, the work of a Pileated Woodpecker (*Dryocopus pileatus*) to rest at the bottom of it with her bill tucked into her back feathers. Her mate disturbed her a half hour later but she returned. I could not locate her at 09:15 until the male, coming close to another cavity, caused her to show herself. She clung to the bark weakly as before. On my next glance she was clinging with white belly uppermost, then fell fluttering into swamp water below. Here she made feeble efforts to reach a tree trunk. With head held back and having difficulties in breathing, she would doubtless have drowned had I not picked her up. I took her home, a 10-minute walk, and my wife and I both felt a hard ovoid mass, the size of a large egg, distending her abdomen. The woodpecker appeared to be in spasm and made no efforts to resist. Forty minutes later she was stronger,