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,

attacking my finger for the first time. Her abdomen was no longer distended. There was no trace of her having laid an egg and I presumed that she had either laid one and eaten it or that it had broken inside. I now took her back to the swamp. She was barely able to flutter to a tree where she remained clinging to the bark without further efforts to move.

By afternoon a second female with different head markings (Kilham, Condor, 64:126, 1962) and habits, had arrived by the nest stub. She engaged the attentions of the male Downy Woodpecker on this and throughout the following day. On 11 May, the original female re-appeared. She was now in excellent condition and after further copulations she must have laid at least four eggs, for on 21 June I watched three fledglings fly from the nest, leaving a fourth one still looking out.—LAWRENCE KILHAM, *Department of Microbiology, Dartmouth Medical School, Hanover, New Hampshire 03755, 1 March 1972.*

The use of sawdust piles by nesting Bank Swallows.—The Bank Swallow (*Riparia riparia*) generally digs its burrows in banks of sand, gravel, or clay along inland bodies of water and marine coastlines. Rarely, it employs such unusual man-made substrates as drain holes in concrete banks (Hollom, Auk, 60:270–271, 1943) or a pile of iron ore "tailings" (Van Deusen, Auk, 64:624–625, 1947). Sawdust heaps in abandoned mill yards are used also as colony sites by the Bank Swallow (Torrey, Auk, 20:436–437, 1903; Barrows, Michigan Bird Life, 1912; Norton, Bird-Lore, 29:117, 1927; Brewster in Griscom, Bull. Mus. Comp. Zool., 66:554, 1938; and Palmer and Taber, Auk, 63:299–314, 1946).

The colonies in sawdust heaps reported by the above authors occur in northern lumbering regions from Michigan to Maine. These occurrences, together with additional ones discovered by the present author in Maine and northern New York, suggest that the use of this substrate in the north may not be altogether unusual. Few of the above authors provided much more than a simple notice of the location of such a colony.

In this paper, I present information on two colonies of Bank Swallows in old sawdust piles along the Aroostook River near Ashland, Aroostook County, Maine. Both colonies (about 600 m apart) were discovered in 1962 shortly after the mill sites were abandoned. To my knowledge, there had not been any colonies in the immediate area before 1962, apparently because of the absence of suitable natural or man-made banks. Both colonies were still active in 1970 when one of them was bulldozed out of existence. In the late 1960's swallows established a few burrows in narrow veins of sand in a new gravel pit nearby.

Burrows in the sawdust piles.—Repeated visits to the colonies from 1962 to 1970 revealed that slumping, erosion, and perhaps human disturbance changed the total amount of bank surface available to the Bank Swallows as burrow sites from one year to the next. The size of the colonies varied accordingly from ca. 50 to 100 active burrows in each sawdust heap.

Some swallows apparently faced local slumping problems on the steep banks as they dug fresh burrows into the compact, weathered sawdust (Fig. 1). Partly excavated burrows with severe slumping around their entrance, forming large, irregular depressed areas in the side of the bank, were abandoned. Other burrows with only slightly or moderately enlarged entrances contained active nests. The entrances to still other burrows, especially those near the rim of the banks, retained a compact, elliptical shape. Norton (op. cit.) and Brewster (op. cit.) also reported compact, horizontally elliptical entrances to burrows in other sawdust piles in Maine.