**A Source of Variation in Avian Growth Studies: undigested food.**—In studies of avian biology, standardized growth curves are often obtained by weighing young at regular intervals. What is measured, in fact, is the bird plus the unassimilated food in the gut, some of which will be eventually assimilated but some of which will be excreted. Food in the gut is a source of variation in weight studies, though large samples minimize problems of excess. With small samples the potential for problem increases.

For most, if not all birds, there is a long period of inactivity each day during which the chicks are not fed (e.g., for diurnal birds this occurs during the night). At the end of this period one would expect measured weight to reflect the weight of the bird without food in the gut. By comparing this weight with the weight of chicks after feeding has begun, one can get an idea of the degree of variation due to food in the gut.

In 1979, I studied this question in Common Terns (*Sterna hirundo*) on Great Gull Island, Long Island Sound, New York. Common Tern chicks remain in the parental territory until they are about 23 days or older (Hays pers. comm.) and chicks reach their maximum weights at between 17 and 20 days of age (LeCroy and Collins 1972, Auk 89:595–611; LeCroy and LeCroy 1974, Bird-Banding 45:326–340; pers. obs.). The chicks are fed at variable rates from once every few minutes to once every few hours depending on feeding conditions for adults, weather, etc. (Hays pers. comm.; pers. obs.). At ages of 15 and 16 days I weighed chicks at sunrise (ca 0445) before they had been fed and at 0800, after feeding had been going on for some time. I compared the two weights each day and average growth increments calculated from the increments of individual birds.

On day 15 at 0445 chicks weighed a mean of 99.6 ± s.e. 2.03 g and at 0800 they weighed 108.0 ± 2.23 g (t-test, one-tailed, n = 10, $P < 0.001$). On day 16 the earlier weights were again lighter but not significantly so: 107.5 ± 1.93 g and 111.9 ± 2.26 g (t-test, one-tailed, n = 11, $0.10 > P > 0.05$). More importantly, the average daily weight increments were different as calculated with weights taken at the two times on the subsequent days. Weight increase, based on 0445 weights, was 5.7 ± 1.35 g and was significantly different from the increase based on 0800 weights, 0.2 ± 2.04 g (t-test, two-tailed, n = 9 and 10 for 0445 and 0800 increments, respectively, $P < 0.05$). Unassimilated food, then, can contribute a small, though significant amount of variation to measured weights and weight increments. In studies with large sample sizes unassimilated food is likely to contribute only a small amount of variation.

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**Commensal foraging between Hairy and Pileated woodpeckers.**—At 14:20 (C.S.T.), 13 March 1979, we observed 2 Pileated Woodpeckers (*Dryocopus pileatus*) at the Cedar Creek Natural History Area in east-central Minnesota, prying off chunks of bark near the base of a dead red oak (*Quercus rubra*) (78 cm dbh) and eating white coleopteran larvae exposed at the bark-cambium interface. The pair had cleared an area of trunk about 50 × 125 cm. One of the birds dropped to the snow several times to forage in the bark debris accumulating below. From a distance of 30 m we observed one of these birds consume a minimum of 9 larvae, each approximately 15–20 mm in length. After a few minutes one of the Pileateds flew off.

A male Hairy Woodpecker (*Picoides villosus*) landed on the trunk just below the cleared area at 14:27 but was immediately displaced by the remaining Pileated. The Hairy soon dropped to the pile of debris where it foraged unmolested about 5 min, flipping over several pieces of bark. Then it moved up the trunk to the cleared area, foraged a few moments, and left.

At 14:47 a female Hairy landed at the cleared area and foraged about a minute before the male Hairy returned and displaced her. She dropped to the debris pile where