growth as determined by this technique appears to vary throughout development, and tends to be greater than the caloric value of individual passerine nestlings reported in the literature. Future laboratory investigations of the energetics of nestling development from hatching to fledging might well consider aspects of metabolized energy as well as standard metabolism and caloric content of the nestlings.

I am grateful to S. Charles Kendeigh and Herbert W. Kale II for critically reviewing this manuscript.

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Breeding attempts by juvenile Great Blue Herons.—Although most North American herons probably do not attempt to breed for the first time until the breeding season of their second year, records of breeding by Black-crowned Night Herons (*Nycticorax nycticorax*) (Gross 1923), Green Herons (*Butorides virescens*) (Meyerriecks, *in* Palmer 1962), and Little Blue Herons (*Florida caerulea*) (Palmer 1962) in juvenal plumage indicate that in these species a few individuals attempt breeding at about 1 year of age. Owen (1959) reported breeding that he considered exceptional by yearling Grey Herons (*Ardea cinerea*) in Great Britain. Millstein et al. (1970) found breeding attempts by yearling Grey Herons to be common at the Willoughby Wood heronry in England in 1967. The Cattle Egret (*Bubulcus ibis*) also sometimes breeds at the age of 1 year (Palmer 1962).

So far as I can determine, breeding by juvenile Great Blue Herons (*Ardea herodias*) has not been reported previously. I saw two nesting attempts by Great Blue Herons in juvenal plumage during a 6-year study at the heronry at Audubon Canyon Ranch in central California. In this heronry the Great Blue Herons nest

with Common Egrets (*Casmerodius albus*) in the tops of coast redwoods (*Sequoia sempervirens*) growing from the bottom and up one side of a steep, narrow canyon. From an observation point about 100–200 yards away on the opposite side of the canyon and above the level of most of the nests the nesting activities can be studied in detail without apparent disturbance to the breeding birds. Observations were made at least twice weekly, sometimes oftener, using 7× binoculars and 20× spotting scopes. For a more complete description of the study area and methods see Pratt (1970).

I saw the first breeding attempt by a juvenile heron at the heronry in 1970. On 23 March the nest was occupied by a pair of herons, one in full adult plumage with a white crown, black occipital plumes, black shoulder patches, and both jugular and scapular plumes. Its mate had a slaty crown with a small bit of white in the center, darker and browner body plumage than the adult's, and jugular plumes but no scapular plumes. It had black occipital plumes similar to those of the adult. I described the shoulder area in my field notes as "gray," but a more complete description would probably have indicated color variation similar to the 1972 juvenile mentioned below. Except for the occipital and jugular plumes, this plumage seems to correspond to the alternate I plumage of yearling Great Blue Herons (Palmer 1962). Bent (1926) says "occipital plumes may appear" in the first spring plumage. The pair was not seen in copulation so sex of the juvenile was not established. A clutch of three eggs was laid and two hatched. One chick died soon after hatching. The other was lost at about the end of its second week for unknown reasons and the nest was abandoned.

The second juvenile breeding attempt was in 1972. On 6 March this nest was occupied by a heron in adult plumage. Its mate had a slaty crown with black occipital plumes that seemed a bit shorter than those of the adult; its jugular plumes were clearly shorter than those of the adult, it had no scapular plumes, and its body feathers were somewhat darker than the adult's. Its shoulder area was streaked with gray and white anteriorly and with gray and cinnamon posteriorly. The juvenile bird was identified as a female when the pair was seen copulating later that day.

The first egg was laid in this nest about 23 March. Clutch size could not be determined accurately because intervening foliage partly obscured the nest bowl, but clearly there were at least two eggs and possibly three. Incubation proceeded until 6 April when the male was seen standing on the nest from 15:15 until 16:00 without incubating. At observations on 7, 8, and 9 April, all taken between 15:00 and 16:00, the female was on the nest. In the morning of 10 April the female was again on the nest. She stood from 09:10 through 11:40, when observations were interrupted, without incubating. In the afternoon at about 14:31, after a period of restless moving about during which she stepped off the nest and then back on it twice, she flew off the nest leaving it unattended with the eggs still in it. At 14:36, an egret from a nest nearby took a twig from this nest. This was soon followed by raids on nesting material by a neighboring heron and at the next observation on 12 April, the site was unoccupied.

Although it was the female that deserted the nest, the nesting failure cannot be ascribed merely to her immaturity, as the male had interrupted his incubation 4 days earlier. The fact that the female was on the nest in the afternoon of 9 April, in the morning of 10 April and for the remainder of that day until she departed at 14:31 suggests that the male may have failed to return to the nest to relieve the female, thus precipitating her desertion.

At Audubon Canyon Ranch in 1971, similar interruptions in Great Blue Heron incubation were followed by desertion (Pratt 1972). Millstein et al. (1970) saw a male Grey Heron that also stood without incubating the eggs and apparently broke them by stabbing them with his bill. They suggest that there may be a connection between abnormal parental behavior and high levels of pesticides in the breeding birds. Lowered blood level of estradiol has been demonstrated for birds on dosage of DDT (Peakall 1970), and Jefferies (1967) reported that a male Bengalese Finch on dosage of DDT removed the young from the nest and dropped them on the floor of the cage. Both Grey Herons and Great Blue Herons have been found to accumulate high levels of chlorinated hydrocarbons (Prestt 1969, Vermeer and Reynolds 1970). It seems possible that cessation of incubation before completion of the incubation period might result if the normal sex hormone balance were disturbed. Evaluation of this possibility awaits further study on the relationship between high pesticide levels and breeding behavior of birds.

I am indebted to Barbara Fearis for help in the field. In the years of these observations, the study was supported by Audubon Canyon Ranch. This is Point Reyes Bird Observatory contribution number 53.

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Diurnal sleep rhythm of a young Barred Owl.—The Barred Owl, *Strix varia*, is said to be "a forest-loving bird . . . but when its haunts are invaded, it is not caught napping" (Bent 1938, U. S. Natl. Mus. Bull. 170, part 2: 182). Unexpectedly we had an opportunity to determine how much of its time a