

Immature Females with Adult Male Plumage Characters.—In general, when there is sexual dimorphism in birds, the young bird's first plumage of contour feathers may be similar to that of the parent of its sex or to that of the female parent, or it may be neutral, asexual, and presumably phylogenetically older than the adult plumage. To have the young female show plumage characters of the adult male, only acquiring the adult female plumage later, is a condition present in very few species. Stonor (Ibis, 1937: 178–179) brought together records of four species in which this occurs: two hornbills, one duck, and one woodpecker. Whistler (Ibis, 1937: 408–409) added another, a cuckoo. To this short list it is possible to add several more. The following are all the examples known to me:

ANATIDAE.—The young female of the New Zealand Paradise Duck (*Casarca variegata*) has a black head like that of the adult male, not acquiring the white head of the adult female until the post-juvenile molt (Sclater, quoted by Stonor). Stonor points out that this is correlated with the female's taking the more active part in courtship.

Delacour and Mayr (Wilson Bull., 57: 15, 1945) point out that in the three related species, *Casarca ferruginea*, *C. cana*, and *C. tadornoides*, which have less sexual dimorphism than *C. variegata*, the juvenile plumage of both sexes also resembles that of the adult male and is always different from that of the adult female, though not conspicuously so.

TURNICIDAE and PEDIONOMIDAE.—In the 14 species of button quail and the related Plains Wanderer, it is the rule for the young to resemble the male which is less brilliantly colored than the female. This condition is correlated with the more active role of the female in courtship and with the assumption of the duties of incubation by the male.

BUCEROTIDAE (hornbills).—The young female *Rhyticeros* (= *Aceros*) *plicatus* has a light chestnut-brown head like that of the adult male; it acquires the black head of the adult female during the "first post juvenile moult" (Stonor, *op. cit.*).

In *Ptilolaemus tickelli* the plumage of the young female is like that of the adult male, and unlike that of the adult female (Stonor, Ibis, 1936: 179, editor's footnote).

Three full-grown young hornbills (*Aceros leucocephalus*) collected in Mindanao, Philippines, by Dr. D. S. Rabor and sent to the Chicago Natural History Museum, include a male in a plumage similar to that of the adult; a male undergoing extensive head molt into its second plumage which is similar to both the first plumage and that of the adult male; and a third bird, of about the same age, judging by the small unwrinkled bill, which is a female. The head of the female is in heavy molt. About half of the head is covered with a buffy and chestnut, old, plumage similar to that of the adult male; the incoming feathers, which cover about half the head, are black, like those of the adult female.

CUCULIDAE (cuckoos).—In parts of the Asiatic range of the Koel (*Eudynamis scolopacea*), the young female is black or blackish, approaching the black condition of the adult male rather than the brown of the adult female; however, in the Australian-Papuan part of its range, both nestling male and female are brown, like the adult female. There is thus geographical variation in the immature plumage.

Presumably this is correlated with these cuckoos' parasitizing crows in the Asiatic area and honey eaters in the Australian area. The former have black and the latter brown, young; it is probably an advantage for the young cuckoos to resemble the young of their foster parents.

PICIDAE—In some woodpeckers of the genus *Dendrocopos*, the young male and the young female may have more red on the head than the adult female, and some-

times more than the adult male. The red is on the crown in the young, rather than on the nape as in the adult.

In the three-toed woodpeckers (*Picoides*) the young female has a yellow crown similar to the condition in the adult male.

In the Yellow-shafted Flicker (*Colaptes auratus*), the malar areas of the males are black and those of the adult female are tan. The young of both sexes, however, have black malar stripes.

STURNIDÆ.—In a Starling (*Onychognathus blythii*) of Sokotra the young female is said to have the head and neck black as in the male, rather than gray as in the adult female (Ogilvie-Grant and Forbes, 1903, *Natural History of Sokotra* . . . Aves, p. 23, Liverpool).

The presence of adult male characters in the female is in some cases (Paradise Duck) correlated with the more active role of the female in courtship, and in some cases (button quail) with a partial reversal of the roles of the sexes, the male assuming the duties of incubation. In the case of the Koel, a social parasite, the color of the young varies geographically and is correlated with the color of the young of the foster parents. In other cases (the starlings, hornbills, and woodpeckers) there is no obvious correlation.

That such a condition is not widespread throughout a group is shown by the hornbills and the woodpeckers. Some species of hornbills have a juvenile plumage different from that of either adult.

In the woodpeckers, the young may differ from both parents, young males may resemble adult males and young females may resemble adult females, or young of both sexes may resemble the adult male. A. L. RAND, *Chicago Natural History Museum, Chicago, Illinois*.

Further Comments on the Breeding Season of Barn Owls in Southern California.—In referring to my paper, "Dispersal, Breeding Behavior, and Longevity of Banded Barn Owls in North America" (*Auk*, 69: 227-245, 1952), Wilson C. Hanna (*Auk*, 71: 90, 1954) stated, "I was astonished to note (page 244) that 'Barn Owls in southern California breed only during March, April, May, and June, with the peak occurring in April'." Hanna presented nesting dates for Barn Owls in Southern California and pointed out that his records for 32 sets of eggs fall in the period between mid-January and mid-April. He stated that the mean date for all sets of eggs was March 10. The stages of incubation are not indicated in each case, but fresh or slightly incubated eggs were reported for January 16 and April 17.

By implying disagreement which does not actually exist between our independent conclusions, Hanna creates confusion regarding the breeding season of Barn Owls in southern California. It is unfortunate that Hanna's quotation from my paper was removed from its context. The sentence following that quoted by Hanna states, "All of the months given represent the time of banding and should be adjusted backward about six or seven weeks, if the dates of egg laying are desired." If the necessary time is allowed for the eggs to hatch and for the birds to reach an age suitable for banding, a strikingly close agreement will be found between the breeding period indicated by the banding records and that indicated by Hanna's oölogical data.—PAUL A. STEWART, *Ohio Cooperative Wildlife Research Unit, Department of Zoology and Entomology, Ohio State University, Columbus 10, Ohio*.