

## DISCUSSION

The interpretation of bird weights, as I have already shown, (Blake 1956) is fraught with difficulties. Dealing, as we are here, with a scattering of weights taken at divers times and places only increases the difficulties.

The only general statement that seems justified is that the migrant warblers showed a tendency toward a minimum weight in January. Two causes may have been cooperating: the unseasonable cold of January 1956 and a normal "off passage" fall in weight. We may propose a working hypothesis for the weight pattern of migrants. An individual arrives on its wintering ground at low to very low weight; the bird rests and feeds, probably overshooting the mark and attaining somewhat more than normal winter weight. The excess is gradually lost and the weight may even go below seasonal normal. Toward spring heavy feeding is renewed and a relatively high weight is attained just at the beginning of spring migration. These changes will probably involve a normal sequence of changes in fat metabolism. This pattern is what one would infer from the work of Odum, Wolfson, and others on sparrows.

## REFERENCES

- BALDWIN, S. P., AND KENDEICH, S. C.  
1938 Variations in the weight of birds. *Auk*, **55**: 416-467, 6 figs.
- BLAKE, C. H.  
1956 Weight changes in birds. *Bird-Banding*, **27**: 16-22.
- MILLER, A. H.  
1947 The tropical avifauna of the upper Magdalena Valley, Colombia. *Auk*, **64**: 351-381, 2 pl.
- PAYNTER, R. A., JR.  
1955 The ornithogeography of the Yucatán peninsula. *Peabody Mus., Yale Bull.*, **9**: 1-347, 1 map, 4 pl.
- POOLE, E. L.  
1938 Weights and wing areas in North American birds. *Auk*, **55**: 511-517.
- STEWART, P. A.  
1937 A preliminary list of bird weights. *Auk*, **54**: 324-332.
- VOOUS, K. H.  
1953 Vogeltek op de Nederlandse Benedenwindse Eilanden. *West-Ind. Gids.*, **33**: 183-190.
- WEATHERBEE, OLIVE K.  
1934 Some weights and measurements of live birds. *Bird-Banding*, **5**: 55-64. *Museum of Comparative Zoology, Cambridge, Mass.*

## THE SOFT PARTS OF SOME JAMAICAN BIRDS

By Charles H. Blake

During my tenure of a Fulbright fellowship in Jamaica, B.W.I., between August 1955 and May 1956, as a by-product of bird-banding operations, I made notes on the soft parts of a number of local birds. For the most part these birds appeared to be adult. Leg sizes will be included in another paper. It should be noted that I use the term "gape" for what is more formally the rictus of the gape.

The success of my work and the favorable and pleasant conditions under which I was able to make these observations were due in large measure not only to the assistance of the staffs of the Institute of Jamaica and the University College of the West Indies but to the hospitality of many friends. They seemed quite philosophical about holes punched in lawns or flower beds and the installation of hazards to navigation. Our friends went even further; they provided sustenance for the inner man at appropriate moments.

**White-bellied Dove** (*Leptotila j. jamaicensis*). Beak and cere blackish, eyelids red, iris white with pink vermiculations toward the outer edge, legs bright pink, major diameter of eye opening  $5\frac{1}{2}$  mm.

**Ground Dove** (*Columbigallina passerina jamaicensis*). Adult: beak and cere orange with tip of beak black, eyelids light greenish yellow, iris with a whitish line next the pupil on the posterior side, a slate colored inner zone and a reddish outer zone, legs pink, diameters of eye opening 4 and  $4\frac{1}{2}$  mm.

Immature: beak and cere grayish brown, tomium dull yellow, eyelids pale yellow, iris as in adult, legs flesh color.

Two females are recorded as having the base of the beak yellow, perhaps these were not quite mature.

**Ruddy Quail-dove** (*Geotrygon m. montana*). Immature male: cere, bare skin of face, gape, eyelids coral, distal portion of beak brownish, iris cinnamon, leg scales bluish red, interspaces light pink. Dr. Bernard Williams examined this specimen, the only one handled, with me and considered it an immature male. He also suggested the designation of the iris color which seemed to me the *mot juste*.

**Ani** (*Crotophaga ani*). Beak, eyelids, iris, legs black, mouth lining dark gray. This is the only one of more than 100 species I have examined whose iris color may be fairly called black.

**Jamaican Tody** (*Todus todus*). Maxilla dark brown, mandible red, eyelids buffy, iris light gray, legs horn color, soles pinkish buff. The apparent red rim of the eye is an eye-ring composed of rimal feathers.

**Jamaican Mango Hummingbird** (*Anthracothorax mango*). All soft parts black except iris which is deep brown, major diameter of eye opening  $2\frac{1}{2}$  to 3 mm.

**Streamer-tailed Hummingbird** (*Trochilus p. polytmus*). Eyelids and legs black, iris deep brown, major diameter of eye 2 mm. The beak may be entirely red in fully adult males but almost all black in some females. The red first appears at the base and proceeds distally. The mandible usually has more red than the maxilla.

**Loggerhead Flycatcher** (*Tyrannus caudifasciatus jamaicensis*). Beak, eyelids, legs black, gape pale pink or whitish, mouth lining pink, sometimes white anteriorly, iris dark brown.

**Rufous-tailed Flycatcher** (*Myiarchus validus*). Beak blackish brown with basal half of mandible pinkish buff, gape buff, mouth yellow, eyelids buffy brown, iris brown, legs deep gray, major diameter of eye opening 6 mm.

**Sad Flycatcher** (*Myiarchus barbirostris*). Beak deep brown but mandible lighter, gape pale buffy, mouth yellow or orange-yellow, eyelids fuscous, iris brown, legs black.

**Jamaican Yellow-crowned Flycatcher** (*Myiopagis cotta*). Beak blackish brown, gape pale buff, eyelids fuscous, iris brown, legs black.

**Northern Mockingbird** (*Mimus polyglottos orpheus*). Adult: beak, gape black, eyelids dark brown, iris yellow, legs gray-black.

Immature: generally similar, mouth pink, iris yellow-brown or dull yellow. The gape was yellow in one example at least four months old. My opinion is that the adult color of gape and iris is not acquired in less than six months.

**White-eyed Thrush** (*Turdus jamaicensis*). Beak black-brown, mouth yellow, eyelids fuscous, iris white with tiny Delft blue spots which are concentrated toward the outer edge, legs dark brown with pinkish yellow soles, major diameter of eye opening  $7\frac{1}{2}$  mm.

**White-chinned Thrush** (*Turdus aurantius*). Beak and legs orange-yellow to yellow, culmen more or less black for about the distal 6 mm., eyelids brown, iris yellowish brown, major diameter of eye opening 8 mm.

**Rufous-throated Solitaire** (*Myadestes genibarbis solitarius*). Beak and gape black, mouth yellow, eyelids fuscous, iris brown, legs brownish yellow, claws black, major diameter of eye opening  $5\frac{1}{2}$  mm.

**Jamaican White-eyed Vireo** (*Vireo modestus*). Beak gray, the mandible lighter than the maxilla, eyelids fuscous, iris light gray, legs gray with yellowish soles. Under a lens the iris shows a white ground overlain with a fine black reticulum. The major diameter of the eye opening is  $3\frac{1}{2}$  mm.

**Blue Mountain Vireo** (*Vireo osburni*). Beak and gape black, eyelids light gray, iris violet-brown, legs livid gray. The iris color of this species is quite different from that of any other bird I have examined.

**Black-whiskered Vireo** (*Vireo a. altiloquus*). Beak largely gray, gape pink, mouth bright pink, eyelids gray brown, iris brownish orange, legs gray. The iris color seemed to me to be distinctly more yellow than that of the Red-eyed Vireo (*V. o. olivaceus*).

**Bananaquit** (*Coereba f. flaveola*). Beak black, gape rose-red and tumid, mouth deep pink, eyelids slate, iris brown, legs dark gray to gray. Dr. Williams called my attention to the fact that the gape is sometimes paler, even as pale as light pink. Some but not all of the birds with such gapes are immature. It may be partly a seasonal variation. *C. f. portoricensis* does not appear to differ in the color of its soft parts from *C. f. flaveola*.

**Orangequit** (*Euneornis campestris*). Beak black, gape black or pink, mouth pink, eyelids black, iris brown, legs blackish brown with the proximal portion of the soles yellow, major diameter of eye  $2\frac{1}{2}$  mm. The difference in gape color may prove to be sexual. Adult males have the gape uniformly black.

**Golden Warbler** (*Dendroica petechia eoa*). Female or immature bird: maxilla slate, mandible light gray, eyelids brown, iris brown, legs horn color.

**Jamaican Oriole** (*Icterus l. leucopteryx*). Beak blackish with gray mandibular rami, mouth light pink, eyelids black, iris blackish brown, legs gray, major diameter of eye opening  $4\frac{1}{2}$  mm.

**Jamaican Euphonia** (*Pyrhophonia jamaica*). Beak black with

base blue-gray, gape and eyelids gray, iris dark brown, legs gray with light brown soles.

**Stripe-headed Tanager** (*Spindalis zena nigricephala*). Maxilla black, mandible mostly bluish, gape and eyelids black, iris blackish brown, eyelids gray.

**Yellow-faced Grassquit** (*Tiaris o. olivacea*). Beak black, gape usually pink, eyelids black, iris deep brown, legs livid, major diameter of eye opening 3 mm. The gape is variable in color; a February male had a livid gape and another male in late April a swollen dull pink one. Compare the next species.

**Black-faced Grassquit** (*Tiaris bicolor marchii*). Beak black, sometimes partly yellow, iris dark brown, legs light flesh color. The gape color is variable. In late April nearly 40 birds were handled in the garden of Mr. and Mrs. Arthur Pomeroy at Content Gap. The color varied from whitish through buff, tan, and yellow to pink. The range was about the same in the two sexes and in adult and immature birds. However, the males seemed to favor pink and the females buffy. Some gapes were noted as swollen. A single female of *T. b. omissa* handled at Ponce, P. R. in March had a deep buff gape, a light brown iris, and pinkish legs.

**Yellow-backed Finch** (*Loxipasser anoxanthus*). Beak blackish, eyelids black, iris and legs dark brown.

**Greater Antillean Bullfinch** (*Loxigilla violacea ruficollis*). Beak, gape, and eyelids black, mouth pink, iris dark brown, legs gray black. major diameter of eye opening 4 mm. The immature differs in no evident respect from the adult.

**Saffron Finch** (*Sicalis f. flaveola*). Maxilla dark gray, mandible yellow, eyelids blackish, iris dark brown, legs light gray brown, major diameter of eye opening  $4\frac{1}{2}$  mm. Apparent females and immatures were quite the same as adult males.

**Grasshopper Sparrow** (*Ammodramus s. savannarum*). Beak gray, gape whitish, eyelids slate, iris brown, legs pink, major diameter of eye opening  $3\frac{1}{2}$  mm.

The foregoing notes may have raised more questions than they answer. If so, this only goes to show the amount of work which remains to be done on West Indian birds.

It is worth noting that the four birds whose irides would, on casual examination, be called white proved each to have a distinctive character on closer inspection.

*Museum of Comparative Zoology, Cambridge, Mass.*

## OBSERVATIONS ON THE STREAMER-TAILED HUMMINGBIRD

By Charles H. Blake

The strikingly beautiful Streamer-tailed Hummingbird (*Trochilus polytmus*) is endemic to the island of Jamaica. It is abundant, wide-spread, and easily seen. The male has a glittering green body and black head. Each fourth (next to outer) rectrix in the adult male is greatly