

egg by a shorebird, nor have I seen opening of the mandibles repeatedly in the crack of a hatching egg. It is not uncommon for an adult of many species of shorebirds to put the bill close in a sort of inspection of a hatching egg, but such inspections ordinarily last only 5 or 10 seconds and do not involve actual contact.—MARY M. TREMAINE, *Dept. of Medical Microbiology, University of Nebraska Medical Center, Omaha, Nebraska 68105. Accepted 18 September 1973.*

Sunbathing in the Streamertail Hummingbird.—Sunbathing is a widespread avian behavior, but is apparently unreported for the large New World family of hummingbirds, Trochilidae (*Brit. Birds*, 62:249-258, 1969). On 14 July 1973 I was taking feeding notes on birds in the Blue Mountains, Jamaica, at an elevation of about 5,000 feet, near Newcastle and the Clydesdale Forest Reserve. At noon a male Streamertail Hummingbird (*Trochilus polytmus*), which had been foraging within 12 feet of me, perched in a small tree and began sunbathing. The bird widely spread the wings and tail (with the primaries almost touching the outer rectrices), holding them motionless and perpendicu-

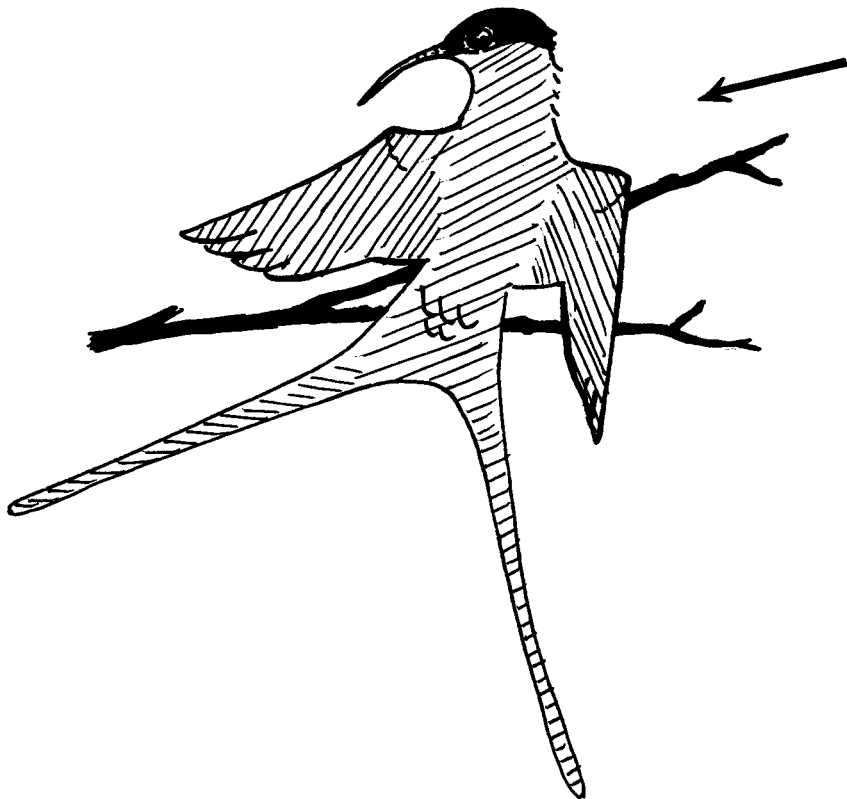


FIG. 1. Sunbathing posture of the Streamertail Hummingbird. The arrow shows the direction of the sun's rays.

lar to the sunlight (Fig. 1). The head was turned to the left with neck and body feathers fluffed, again maximizing incident radiation. The bird remained in this position for several minutes before resuming its foraging. While the bird was sunbathing I was able to approach it within several feet, and made a quick sketch of the posture.

This behavior may have been associated with the bird's "need" for additional heat absorption in the cool montane forest. Not surprising, in spite of hours of observation, I have not recorded the behavior in Streamertails of the warm lowlands. Other species of hummingbirds of high elevations may also engage in sunbathing and this should be watched for in the future.—CHARLES F. LECK, *Department of Zoology, Rutgers University, New Brunswick, New Jersey 08903. Accepted 23 July 1973.*

Aberrations in the tongue structure of some melanerpine woodpeckers.—In woodpeckers the tongue is a highly specialized apparatus, differing structurally, in certain respects, from that of most other families of birds. While the structure is mentioned in many ornithology texts, few detailed studies of it have appeared since Leiber's (*Zoologica*, 20:1-79, 1907) thorough treatise.

In the woodpeckers considered in this study, the two elongated hyoid horns, composed of the ceratobranchial and epibranchial bones, extend posteriorly from the posterior end of the basihyal, curving around the occipital region and roof of the skull and extending forward along the dorsal cranial surface toward the right nostril (Fig. 1A, B). Inserting on the distal tip, i.e. nostril end, of and completely surrounding each horn posteriorly is the branchiomandibularis muscle, which has its origin on the mandibular ramus. Upon contraction, this set of muscles pushes the tongue out of the mouth. In detail, the force of the muscles pulls on the distal tip of the hyoid horns which slide over the surface of the skull away from the nostril. The horn moves within a sheath of connective tissue which is normally attached to the rim of the right nostril. When the tongue is retracted the hyoid bones may extend within their sheaths into the right nostril in male birds. In females the horns may be somewhat shorter, terminating 6-10 mm short of the posterior margin of the right nostril.

In a recent study of the ecology and behavior of several species of melanerpine woodpeckers (Wallace, mss), I found that a surprising number of birds showed abnormal tongue development. The study involved examination of 14 males and eight females of the Red-bellied Woodpecker (*Centurus carolinus*), nine males and five females of the Golden-fronted Woodpecker (*C. aurifrons*) and four males and two females of the Red-headed Woodpecker (*Melanerpes erythrocephalus*), all from the North American mainland. Two island species were also studied: 15 males and 13 females of the Hispaniolan Woodpecker (*C. striatus*) and 15 males and 14 females of the Puerto Rican Woodpecker (*M. portoricensis*).

Examination included removal of the skin of the head to expose the hyoid horns and associated branchiomandibularis muscle. The abnormalities in every case involved the position or relative size of the epibranchial horns with their attached branchiomandibularis muscles. One of the more common aberrations involved horns of different lengths as illustrated in Fig. 1C and summarized in Table 1. Such relatively minor aberrations I have termed type I.

More pronounced aberrations included crossed horns (type II) and abnormal curvature of the horns with displaced attachment of the connective tissue sheath (type III), both shown in Fig. 2. Crossed horns were found in every species examined. In some such cases the horns were of different lengths, but neither horn predominated in being