21.7

| Species | Sex | The longer horn | Termination ¹ | Difference ² |
|----------------------------|-----|--------------------|--------------------------|-------------------------|
| Centurus aurifrons | ô | R | 2 mm | 1.2 mm |
| C. aurifrons | 8 | R | 2 | 1.3 |
| Melanerpes erythrocephalus | 8 | R | 10 | 1.1 |
| C. carolinus | φ | L | 8 | 4.6 |
| C. striatus | 8 | L | 9 | 6.9 |
| n u | Q | R | 12 | 4.1 |
| 11 (1 | ₽ | L | 8 | 6.4 |
| M. portoricensis | ð | R | 6 | 7.0 |

R

22

Table 1 SUMMARY OF TYPE I APMORMATITIES

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Puerto Rican species, which also showed a greater overall frequency (21 percent) of individuals with abnormal development than the mainland and the Hispaniolan species.

Why the Puerto Rican Woodpecker manifests an increased level of abnormality in tongue structure is unclear, but considering the incidence it seems that a certain level of variation from the norm is not strongly selected against. Increased variation in trophic structures has been demonstrated in several species of island birds, including woodpeckers (Selander, Condor, 68:113-151, 1966), and perhaps the tongue aberration in this case is associated with insularity. Definitive answers, however, await more specific data on the evolution and ecology of these species.

I express my appreciation to Walter Bock, Jack L. King, Lester L. Short, and Stephen Rothstein for their criticism and useful suggestions. The fieldwork was supported, in part, by a Frank M. Chapman grant from the American Museum of Natural History and a pre-doctoral research grant from the University of Texas at Austin.-ROBERT A. Wallace, Department of Biological Sciences, University of California, Santa Barbara, California 93106. Accepted 25 September 1973.

A communal Common Raven roost in Virginia.—A nocturnal aggregation of at least 106 Common Ravens (Corvus corax) was observed roosting near Mountain Lake in Giles County, Virginia. This is the largest aggregation and the only communal roost known to be reported in the southern Appalachians. Wetmore (The list of birds of the Shenandoah National Park, Shenandoah Nat. Hist. Assoc. Bull., 1:12, 1950) observed a diurnal flock of more than 80 Common Ravens in Shenendoah National Park, Virginia, on 18 October 1947. Nocturnal roosts of Common Ravens have been reported in other parts of their range. Cushing (Condor, 43:103-107, 1941) reported a nocturnal roost of about 200 Common Ravens in the vicinity of Tomales Bay, California, Various authors in Great Britain have reported communal roosts, usually comprised of between 27 and 70 individuals, and on occasion up to several hundred.

The Mountain Lake roost was discovered shortly before sunset on 6 January 1973 when

¹ Distance of origin of shorter hyoid horn from the base of the bill when the tongue is completely enclosed by the bill.

² Distance between points of origin of the two horns.

a minimum of 62 Common Ravens was observed in the air simultaneously. The birds were soaring, sparring with one-another, and performing aerobatics prior to settling eventually into a clump of hemlocks (*Tsuga canadensis*). The high count of 106 ravens was established by photographs taken through a wide angle lens on 18 January 1973. A local resident reported that ravens have roosted in this vicinity in winters of previous years.—Vincent J. Lucid and Richard N. Conner, *Division of Forestry and Wildlife Resources*, *Virginia Polytechnic Institute and State University*, *Blacksburg*, *Virginia 24061*. Accepted 13 September 1973.

Predation on a shrew by an Eastern Bluebird.—On 23 July 1973, while making observations on the feeding behavior of a nesting pair of Eastern Bluebirds (Sialia sialis), near Mio, Oscoda Co., Michigan, the male was seen to capture and ingest a shrew (either Microsorex hoyi or probably Sorex cinereus). This unusual food item was obtained on a typical "drop" to the ground from a dead tree limb at 18:26. It was taken in the bird's bill to a fallen log where it was killed within 3 or 4 minutes. Subsequent preparation involved beating the prey against branches as the male held the lifeless shrew by its head. Twice the item was dropped, but on both occasions it was retrieved before it reached the ground. The bird changed limbs several times during preparation, appearing restless and seeking broader and more horizontal perches. As is typical for the bluebird the prey was always held and manipulated by the beak, never the feet, until it was finally ingested at 18:41.

During 30 minutes of observations prior to the capture of this food item the male fed his 8-day-old nestlings but once, although he foraged much for himself. After swallowing its prey the bird exhibited slight lethargy; his first trip to the nest with food was not until 18:56. During the 60 minutes following ingestion, 11 trips to the nest were recorded. Capture occurred at a time when insects appeared abundant and weather conditions (72°, sunny, light winds) were favorable.

Although the normal foods consumed by bluebirds are insects and fruits, Flanigan (Wilson Bull., 83:441, 1971) observed a female eating a snake about 8 inches long and Bent (U.S. Natl. Mus., Bull., 196:1949) reports finding a few bones of lizards and tree frogs in the stomachs of Eastern Bluebirds. While some insects consumed by this species are nearly equal in size to the shrew (e.g., Sphingidae adults, Mantidae, and Cicadidae), I could find no record of a bluebird feeding on mammalian prey in the literature. Of several thousand bluebird feedings observed by the author, this was unique and was not noted again during 3 subsequent days of observations on this pair.—Benedict C. Pinkowski, 8540 Hough, Almont, Michigan 48003. Accepted 4 September 1973.

Mountain Bluebirds nesting in North Dakota.—Although several specimens of the Mountain Bluebird (Sialia currucoides) have been taken in North Dakota, including in the extreme eastern portion, we have been unable to find any previous nesting record for the state. Bent (U.S. Natl. Mus., Bull. 196:286, 1949), on unspecified bases, gives the breeding range there as extending eastward to Fort Union, Arnegard, and Medora, all in extreme western North Dakota (the A.O.U. Checklist [1957] erroneously cites Fort Union as northeastern North Dakota.). On the J. Clark Salyer National Wildlife Refuge, McHenry County, in spring and early summer of 1972 and 1973, we found Mountain Bluebirds moderately common in sandhill-grassland-aspen parkland, habitat typical of the southern one third of the refuge, and found two nests.