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RECORDS OF BATS FROM HONDURAS AND NICARAGUA

Field collections in Honduras and Nicaragua in the summer of 1969 produced several significant distributional records of bats from these two countries. LaVal (1969) reviewed the literature pertinent to the chiropteran fauna of Honduras. Some important contributions to knowledge of bat distribution in Nicaragua are those of Davis *et al.* (1964), Jones (1964), and Carter *et al.* (1966).

Elevation, types of natural vegetation (for explanation see LaVal, 1969), and the major types of disturbed vegetation (in parentheses) for each Honduran locality follow: 36 km (by road) SE Choluteca, 600 m, Depto. Choluteca, tropical deciduous forest (coffee fincas); 5 km N Talanga, 750 m, Depto. Francisco Morazan, highland pine (lumbering); Lancetilla, 40 m, Depto. Atlantida, tropical lowland rain forest (banana groves, second growth forest, and botanical gardens); La Esperanza, 1660 m, Depto. Intibuca, cloud forest (pine-oak woodland maintained by grazing and burning; cleared cropland). The only locality at which collections were made in Nicaragua, 6 km N Tuma, 500 m, Depto. Matagalpa, is an area of tropical rain forest and gallery forest which has been partly cleared for grazing and cultivation of coffee. The specimens reported here are deposited in the Texas Cooperative Wildlife Collection, Department of Wildlife Science, Texas A&M University. All measurements are in millimeters and weights are in grams.

Peropteryx kappleri Peters.—HONDURAS: 5 km N Talanga, two males, 26 July. This large emballonurid has not been reported from Honduras since 1942 when it was first listed by Goodwin. It has been recorded from the adjoining countries of Guatemala and Nicaragua only by Sanborn (1937). Our specimens, along with a third individual that escaped, were roosting in a narrow crevice in the roof of a shallow cave about 30 feet inside the entrance. Measurements are within the range of those listed by Sanborn (1937). One weighed 16.8 and the other 17.2

Miconycteris hirsuta (Peters).—NICARAGUA: 6 km N Tuma, two males, 19 and 23 July. This species has not been reported from Nicaragua, although it is represented by seven specimens from Honduras and Costa Rica (see LaVal, 1969, and Gardner *et al.*, 1970). The specimens were netted in banana groves shaded by tall, second growth forest.

Measurements: forearm, 41.4, 40.7; third metacarpal, 34.9, 34.3; greatest length of skull, 23.0, 22.9; postorbital breadth, 4.6, 4.7; zygomatic breadth, 11.1, 10.7; greatest breadth across M2-M2, 6.6, 6.6; maxillary tooththrow, 8.7, 8.8; weight, 11.5, 10.0. These two individuals are much smaller than those from Costa Rica and other countries listed by Goodwin (1946), Sanborn (1949), Goodwin and Greenhall (1961), and Gardner *et al.* (1970); they differ little from the Honduran specimens reported by LaVal (1969).

Micronycteris minuta (Gervais).—NICARAGUA: 6 km N Tuma, one male, 21 July. This, the first record for Nicaragua, is a northward range extension of more than 250 kilometers from Costa Rica (see Gardner *et al.*, 1970). The bat was netted along a trail through a banana grove shaded by large trees. Taken in the same nets at the same place were *Tonatia minuta*, *Vampyrops helleri*, and many examples of *Carollia*, *Sturnira*, and *Artibeus*.

Measurements (Nicaraguan male, followed by range of three males and one female from Costa Rica): forearm, 33.2 (33.7–35.7); third metacarpal, 27.1 (26.6–28.4); fourth metacarpal, 26.4 (27.3–28.9); fifth metacarpal, 27.1 (28.7–29.8); greatest length of skull, 17.9 (17.7–19.0); zygomatic breadth, 8.0 (7.9–8.6); mastoid breadth, 8.4 (8.0–8.8); postorbital breadth, 4.0 (4.0–4.1); greatest breadth across M3-M3, 5.4 (5.5–5.9); mandibular tooththrow, 6.6 (5.7–7.4); weight, 7.1.

Macrophyllum macrophyllum Schinz.—HONDURAS: Lancetilla, one male. This is the third locality record for Honduras (see Davis *et al.*, 1964). Our specimen was netted just above the water, near the bank of a stream.

Tonatia bidens (Spix).—HONDURAS: Lancetilla, two males (including one subadult), six females (including two subadults). These specimens represent the first record of this species for Honduras. Two of the females (6 August) were lactating but the others were reproductively quiescent. All of our specimens, as well as the one reported by Carter *et al.* (1966), possess a short white stripe (longitudinal and medial) on the dorsal surface of the head. This stripe, which is present on these and other specimens of *T. bidens* we have seen, is typical of the species.

Measurements (adult male, followed by means and ranges in parentheses of adult females): forearm, 55.5, 57.2 (56.8–58.2); third metacarpal, 47.0, 49.1 (48.4–49.7); greatest length of skull, 27.6, 28.4 (28.1–28.6); condylobasal length, 24.0, 24.6 (24.4–24.9); zygomatic breadth, 13.4, 13.7 (13.3–14.0); postorbital breadth, 5.8, 5.6 (5.4–5.7); breadth of braincase, 10.8, 10.6 (10.5–10.6); greatest breadth across M3-M3, 8.6, 8.8 (8.4–9.0); maxillary tooththrow, 9.7, 9.6 (9.6); mandibular tooththrow, 10.8; 10.5 (10.2–10.6).

Tonatia minuta Goodwin.—NICARAGUA: 6 km N Tuma, one male, one female. HONDURAS: Lancetilla, one female. These constitute the third and fourth specimens from Nicaragua and the third locality record (fourth specimen) for Honduras. All were netted in disturbed forest with many tall trees. The specimen from Honduras is large (as are the three previously reported for Honduras by LaVal, 1969), but the Nicaraguan specimens are notably smaller. The female from Tuma contained an embryo (4 millimeters in crown-rump length) and the female from Lancetilla (4 August) was lactating.

During the past 3 years, one of us (LaVal) has observed that Central American bats of the genus *Tonatia* exude a sweet, pleasing odor similar to that of certain flowers and perfumes. During this period, 13 *T. minuta*, 5 *T. sylvicola*, and 10 *T. bidens* were examined in the field. The odor was easily perceptible in all but two, both *T. minuta*. Although Goodwin and Greenhall (1961) listed the food of *T. bidens* as fruit, little is actually known about foods of these bats. The odor may result from contact with fruits and flowers; however, we have not detected such an odor in other species of frugivorous bats. The odor may be intrinsic, of course, but while skinning specimens we observed no glandular structure that might originate the scent.

Mimon cozumelae Goldman.—HONDURAS: Lancetilla, one female, two males. Previously reported from Mexico, Guatemala, Costa Rica, and Panama, this is the first record of this species from Honduras. The female and one of the males were caught at the same instant in a net set in gallery forest parallel to a stream. The female (30 July) was lactating. We

prefer to regard *M. cozumelae* as a species distinct from *M. bennettii*, following Carter *et al.* (1966).

Measurements (female, followed by mean of males in parentheses): forearm, 56.4 (55.6); third metacarpal, 47.8 (48.5); greatest length of skull, 27.2 (26.4); postorbital breadth, 4.9 (4.8); greatest breadth across M3-M3, 9.3 (9.5); maxillary toothrow, 9.8 (9.6); mandibular toothrow, 10.9 (10.9); weight, 22.9 (21.5).

Trachops cirrhosus Spix.—HONDURAS: Lancetilla, two males (including one juvenile), two females (including one juvenile). Goodwin (1942) recorded this species from Honduras (Las Flores, Depto. Lempira). The adult female (6 August) was lactating. Except for smaller wing measurements in one of the males, measurements of the adults are within the range for a series of 22 adults from El Salvador (Burt and Stirton, 1961).

The pocket of the net from which the adult female was removed also contained a freshly-killed anole (*Anolis lemurinus*). Puncture marks indicated that the anole had died as a result of a bite in the dorsopectoral region of its body. Goodwin and Greenhall (1961) reported gecko remains (*Thecadactylus rapicaudus*) in the stomachs of *T. cirrhosus* from Panama. Evidently, *T. cirrhosus* feeds on a variety of lizards. Some anoles are known to spend the night on surfaces of leaves and branches, which may expose them to predation by bats. The only other known lizard-eating bat in the New World is *Chrotopterus auritus* (Tuttle, 1967).

Chrotopterus auritus Peters.—HONDURAS: Lancetilla, one male. This represents the first record of this species from Honduras. The specimen was netted in a bamboo thicket.

Choeroniscus godmani (Thomas).—HONDURAS: Lancetilla, three males, one female. With the addition of four more specimens of *C. godmani* from Honduras, this species may be more common there than formerly believed. Measurements do not differ significantly from those of previously reported specimens, and support the contention of LaVal (1969) and Gardner *et al.* (1970) that *C. godmani* is sexually dimorphic in size. Moreover, females are grayish, whereas males tend to be brown. The female (29 July) was reproductively inactive.

Vampyroides major G. M. Allen.—HONDURAS: Lancetilla, 13 males, 16 females. Three specimens have been reported previously from Honduras (see LaVal, 1969). All but seven of our specimens were caught in a row of mist nets set parallel to a stream in a path surrounded by tall second-growth, rain forest. Two females (1 August, 8 August) were reproductively quiescent, whereas the remainder of the females (taken in late July and early August) were pregnant with embryos ranging in size from 22 to 37 millimeters in crown-rump length. The measurements of 12 males and 14 females averaged slightly larger than the three males and nine females measured by Starrett and Casebeer (1968). Twelve males weighed an average of 32.8.

Vampyressa pusilla (Wagner).—HONDURAS: Lancetilla, one male, one female. A single specimen each from Nicaragua, Belice (British Honduras), and Chiapas (see Starrett and de la Torre, 1964; Davis *et al.*, 1964; Peterson, 1965) have been reported previously from north of Costa Rica. Our specimens were taken in a tall, dense, rain forest that, according to the manager of the botanical gardens at Lancetilla, has not been disturbed in many years. Most of the measurements are in the range given by Gardner *et al.* (1970). The female contained an 18-millimeter embryo (7 August).

Centurio senex Gray.—HONDURAS: 36 km SE Choloteca, one male, one female. These specimens, netted in a coffee grove shaded by deciduous trees, are the first for the Pacific versant of Honduras. See LaVal (1969) for other Honduran records. Most of the measurements of the two specimens lie within the ranges given by Paradiso (1967) for a series from Guatemala.

Diphylla ecaudata Spix.—HONDURAS: Lancetilla, five females; La Esperanza, one female. *Diphylla* has been reported previously in Honduras only by Goodwin (1942) from two localities in the mountainous interior. Our specimens were netted in gallery forest. Bats taken on 6 and 9 August contained embryos of 20 millimeters and 10 millimeters,

respectively; another taken on 9 August was lactating, and the remaining three were neither pregnant nor lactating in July and August.

Molossops greenhalli (Goodwin).—HONDURAS: Lancetilla, one pregnant female (embryo 16 millimeters). This individual was netted over a stream along with two species of *Molossus* and various phyllostomatids. Our example, which weighed 22, is larger than the female specimens of *M. g. mexicanus* reported by Jones and Genoways (1967). It is, however, within the size range of the seven recently reported from Costa Rica (Gardner *et al.*, 1970) and the other Honduran specimen (LaVal, 1969).

We thank Drs. W. B. Davis and D. C. Carter for editorial assistance and Dr. J. R. Dixon for identification of the anole. We offer special thanks to the personnel of the Division of Tropical Research of the United Fruit Company, La Lima, for the many courtesies extended to us in Honduras. This paper is contribution no. TA 8720 of the Texas Agricultural Experiment Station.

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