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ADDITIONAL RECORDS OF BATS FROM NICARAGUA,
WITH A REVISED CHECKLIST OF CHIROPTERA

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In the summers of 1971 and 1972, field parties from Texas Tech University collected bats in Nicaragua, principally gathering material for karyotypic investigations and for studies of brain morphology. In the course of this field work, specimens were collected of seven species previously unreported from the country as well as information on several taxa that were poorly known there. This paper places on record the species formerly unrecorded from Nicaragua as well as comments on some of those for which additional material is noteworthy. This and other recent publications have outdated a checklist of Nicaraguan bats prepared by Jones et al. (1971), and a revision of this list is, therefore, presented here.

All measurements in the following accounts are in millimeters. We are indebted to W. J. Bleier, B. L. Davis, R. G. Jordan, V. R. McDaniel, and C. S. Rouk for participating in field studies, support for which was provided by the National Science Foundation (grants GN 29132X and 29132X1) and the Graduate School of Texas Tech University. Support for laboratory studies was provided in part by a National Science Foundation grant (GB 28957).

Centronycteris maximiliani centralis Thomas, 1912.—A female (TTU 13419) of this species was obtained 9 mi. E Rama on 2 August 1971 at a place known locally as “Dos Bocas.” A nonpregnant adult, it was netted approximately 6 meters above the ground in a telegraph right-of-way through second growth forest in which logging was underway. Several other individuals, believed to be of this same species, were seen in flight, traveling extremely slowly and in a straight path along the right-of-way.
C. maximilianii is known to occur from southern México into central South America, but has not been reported previously from Nicaragua.

Cyttarops alecto Thomas, 1913.—A nonpregnant adult female (TTU 13420) of this rare and unique diclidurine, which was taken 4½ km. (by road) NW Rama, Zelaya, on 27 July 1971, provides the first report of this bat from Nicaragua and the northernmost record for the species (see Starrett, 1972). The bat was captured in a mist net set in a large grove of cultivated oil palms some 100 meters from the Río Mico. More than 20 species of bats were taken in this same palm grove on several nights of netting, including Micronycteris megalotis, Lichonycteris obscura, and Vampyressa pusilla.

External measurements of our specimen are: total length, 80; length of tail, 25; length of hind foot, 8; length of ear, 13; length of tragus, 6; length of forearm, 45.8. Unfortunately, it was necessary to break the skull for studies of brain morphology and the remaining parts subsequently were misplaced.

The karyotype, shown in Fig. 1, is the first to be reported from a representative of the subfamily Diclidurinae. The diploid number is 32 and the fundamental number is 60. All chromosomes are biarmed (most elements are submetacentric or subtelocentric); one of the smallest pairs has a secondary constriction on the shortest arm. Karyotypic data available for five New World species of emballonurines reveal a diploid number ranging from 22 to 32 and a fundamental number ranging from 36 to 60 (Baker, 1970; Baker and Jordan, 1970). Two species of Taphozous, an Old World emballonurine genus, have a diploid number of 42 and a fundamental number of 58 (see Baker, 1970). Karyotypic characteristics of Cyttarops thus fall within the range of variation described for the family.

Pteronotus personatus personatus (Wagner, 1843).—Seven specimens (TTU 16814-20) of this small mormoopid were collected 6.9 mi. E San Juan del Sur, Rivas, on 23 July 1972. They were taken in mist nets set in gallery forest adjacent to a small stream in an otherwise highly agriculturized area, and provide the first record for the species from Nicaragua.

When Smith (1972) revised bats of the family Mormoopidae, he conveniently divided the larger subspecies personatus (to the south) from the smaller psilotis (to the north) through Nicaragua because he had no material from there. The forearms of our specimens, all females in alcohol, average 46.3 (range, 44.5 to 47.8), clearly identifying them as P. p. personatus, which Smith (1972:92) reported from adjacent Guanacaste in Costa Rica.
Micronycteris hirsuta (Peters, 1869).—In a recent paper, Baker et al. (1973b) reported on the karyotype and morphometrics of Nicaraguan specimens of this species, but gave no details of capture. Eight specimens now are known from the country (see also Valdez and LaVal, 1971:247), six of which are from: 5 mi. N and 1 mi. W San Juan del Sur, Rivas (TTU 13157-59); 9 mi. E Rama, Zelaya (TTU 13155-56); 3 km. NW Rama, Zelaya (TTU 13154). Bats from Rivas, all males, were netted on 15 August 1971 over a small road separating a banana grove from gallery forest; one of two males from 9 mi. E Rama (2 August 1971) was taken as described in the account of Centronycteris, whereas the other was netted nearby in second growth forest; a subadult female from 3 km. NW Rama (28 July 1971) was captured in a small stand of mature (possibly virgin) rainforest.

Micronycteris nicefori Sanborn, 1949.—A lactating female (TTU 13160) of this relatively rare species was netted 3 km. NW Rama at dusk on 28 July 1971 in a patch of mature rainforest. This specimen represents the first report of M. nicefori from Nicaragua and also the first to the north of the Caribbean coastal region of Panamá. Available measurements are: total length, 64; length of tail, 11; length of hind foot, 11; length of ear, 19; length of tragus, 9; length of forearm, 37.9; length of maxillary toothrow, 7.6.

Micronycteris schmidtorum Sanborn, 1935.—A male (TTU 13165) from 5 mi. N and 1 mi. W San Juan del Sur, Rivas, captured on 15 August 1971 (see previous account of M. hirsuta), constitutes the
second record from Nicaragua and the first from the Pacific versant in that country. Species taken in the same or nearby nets included *Micronycteris megalotis* and *Tonina nicaraguensis*. External and cranial measurements of our male are: total length, 60; length of tail, 14; length of hind foot, 11; length of ear, 19; length of tragus, 8; length of forearm, 34.0; greatest length of skull, 19.7; zygomatic breadth, 9.2; postorbital constriction, 4.3; mastoid breadth, 8.9; length of maxillary toothrow, 7.8.

*Lonchophylla robusta* Miller, 1912.—A male (TTU 13139) from 3 km. NW Rama, Zelaya, provides the first record of this bat from Nicaragua. This monotypic species has been reported previously only from Costa Rica, Panamá, Colombia, and Perú. Our specimen was netted in cut-over forest adjacent to a stand of mature rainforest.

*Artibeus inopinatus* Davis and Carter, 1964.—A series of 10 specimens (TTU 12915-24) from 25 mi. WNW Managua, in León, netted in a banana grove on 17 August 1971, provides the second locality record in Nicaragua for this frugivorous species. In the original description, Davis and Carter (1964:120) recorded a single male from San Francisco, Boaco. Of eight adults in our series, only two are males. Two juveniles had incompletely fused phalangeal epiphyses.

*Diaemus youngii* (Jentink, 1893).—This relatively rare vampire bat has been recorded from scattered localities from Tamaulipas southward to southern Brazil. A male (TTU 13106), netted on 15 August 1971 near a farm dwelling located 5 mi. N and 1 mi. W San Juan del Sur, Rivas, constitutes the first Nicaraguan record for the species.

*Lasiurus borealis frantzii* (Peters, 1871).—A female red bat (TTU 13390), captured 3 km. NW Rama, Zelaya, on 29 July 1971, is the second specimen of this species to be recorded from Nicaragua and the first therein from the Caribbean versant. It was netted in an open space beneath the canopy in a stand of mature rainforest. The only previous record is of a female reported by Davis and Carter (1962:73) from southeast of Rivas on the Pacific versant.

*Promops centralis centralis* Thomas, 1915.—A male in alcohol (TTU 13477) from 5 mi. N and 1 mi. W San Juan del Sur, Rivas, netted on 15 August 1971, provides the first record from Nicaragua of this widely distributed molossid.

**CHECKLIST OF NICARAGUAN BATS**

Following is a checklist of the 77 species of bats currently known to occur in Nicaragua. For each taxon, citations are given to all pub-
lications that are primary sources of information on Nicaraguan material. In some instances, specimens have been reported in the literature under a name different from the one used here and we have listed such names where it seemed appropriate to do so. Taxa preceded by an asterisk are discussed on previous pages of this paper.

Arrangement of genera generally follows Hall and Kelson (1959). Species are listed alphabetically.

Family EMBALLONURIDAE


*Saccopteryx leptura* (Schreber, 1774).—Davis *et al.* (1964:375), Jones (1964:506), Jones *et al.* (1971:3).

*Cormura brevirostris* (Wagner, 1843).—J. A. Allen (1910:110)—specimens listed as *Peroptyx canina* from Peña Blanca, see Sanborn, 1937:348, Miller (1924:38), Sanborn (1937:349), Goodwin (1942c:119).


*Peroptyx macrotis macrotis* (Wagner, 1843).—Jones *et al.* (1971:3).

*Centronycteris maximilianii centralis* Thomas, 1912.


*Dictlidurus virgo* Thomas, 1903.—Alston (1879-82:30).

*Cyttarops alecto* Thomas, 1913.

Family NOCTILIONIDAE


Family MORMOPOIDAE


*Pteronotus personatus personatus* (Wagner, 1843).


Family Phyllostomatidae


*Micronycteris megalotis mexicana* Miller, 1898.—G. M. Allen (1929:130), Jones et al. (1971:5).


*Micronycteris nicefori* Sanborn, 1949.

*Micronycteris schmidtorum* Sanborn, 1935.—Davis et al. (1964:378).

*Macrophyllum macrophyllum* (Schinz, 1821).—Davis et al. (1964:378), Jones (1964:506).


*Phyllostomus hastatus panamensis* J. A. Allen, 1904.—Goodwin (1942c:126), Wenzel et al. (1966:597), Jones et al. (1971:8).

*Trachops cirrhosus coffini* Goldman, 1925.—Carter et al. (1966:491), Jones et al. (1971:8).

*Chrotopterus auritus auritus* (Peters, 1856).—Jones et al. (1971:9).


*Glossophaga soricina leachii* (Gray, 1844).—Gray (1844:18), Dobson (1878:501), Alston (1879-82:44), J. A. Allen (1910:111), Miller
*Lonchophylla robusta* Miller, 1912.
*Choeronycteris godmani* (Thomas, 1903).—Handley (1966:86), Jones et al. (1971:9).
*Lichonycteris obscura* Thomas, 1895.—Thomas (1895:57), Davis et al. (1964:380), Jones et al. (1971:10).
*Carollia brevicauda* (Schinz, 1821).—Davis and Carter (1962:71—as *C. subrufa*), Davis et al. (1964:379—as *C. subrufa*), Pine (1972:43).
*Carollia castanea* H. Allen, 1890.—Davis et al. (1964:379), Jones et al. (1971:10), Pine (1972:21).
*Carollia subrufa* (Hahn, 1905).—Pine (1972:29).
*Sturnira ludovici ludovici* Anthony, 1924.—Jones et al. (1971:11).
*Vampyressa nympheae* Thomas, 1909.—Jones et al. (1971:13), Baker et al. (1973b:9).
*Vampyressa pusilla thyone* Thomas, 1909.—Starrett and de la Torre (1964:60), Jones et al. (1971:13), Baker et al. (1973b:9).
*Chiroderma villosum jesupi* J. A. Allen, 1900.—Jones et al. (1971:14).
*Ectophylla alba* H. Allen, 1892.—H. Allen (1892:441, 1898:267), Lyon and Osgood (1909:266), Poole and Schantz (1942:129),

*Artibeus inopinatus* Davis and Carter, 1964.—Davis and Carter (1964:120).


*Artibeus lituratus palmarum* J. A. Allen and Chapman, 1897.—Andersen (1908:279), Davis and Carter (1964:120), Davis et al. (1964:379), Starrett and de la Torre (1964:61).


*Artibeus phaeotis phaeotis* (Miller, 1902).—Davis et al. (1964:379), Davis (1970a:399).


*Artibeus toltecus toltecus* (Saussure, 1860).—Andersen (1908:300), Davis (1969:28), Jones et al. (1971:15).


*Centurio senex senex* Gray, 1842.—Goodwin (1946:327, restricted type locality to El Realejo, Nicaragua), Jones et al. (1971:16), Watkins et al. (1972:22).


*Diaemus youngii* Jentink, 1893.

*Diphylla ecaudata centralis* Thomas, 1903.—Jones et al. (1971:17).

**Family Natalidae**

*Natalus stramineus saturatus* Dalquest and Hall, 1949.—Jones et al. (1971:17).

**Family Thyropteridae**


**Family Vespertilionidae**

Eptesicus furninalis gaumeri (J. A. Allen, 1897).—Miller (1897:100), Davis (1965:234), Jones et al. (1971:20).

Family Molossidae

Tadarida laticaudata yucatanica (Miller, 1902).—Jones et al. (1971:21).
*Promops centralis centralis Thomas, 1915.
Molossus bondae J. A. Allen, 1904.—Miller (1913a:89).
Molossus sinaloae sinaloae J. A. Allen, 1906.—Miller (1913a:89), Goodwin and Greenhall (1964:13), Jones et al. (1971:27).

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