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MAMMALS OF NORTHERN COLOMBIA

PRELIMINARY REPORT NO. 5: BATS (CHIROPTERA)

By Philip Hershkovitz

No other order of mammals is represented in northern Colombia by such diversity of forms and abundance of individuals as the Chiroptera, or bats. A hypothetical list of all the bats of that part of Colombia comprising the departments of Magdalena, Atlántico, Bolívar, Norte de Santander, and the Comisaría de la Guajira (map, fig. 38) would enumerate at least 100 species. The list would necessarily include nearly every species that occurs in both North and South America, a number of West Indian bats, and many other Neotropical species not heretofore recorded from northern Colombia and Central America.

The first published account of bats from northern Colombia was presented in 1900, by Bangs. He recorded 10 species collected by W. W. Brown, Jr., in the Santa Marta region, department of Magdalena. A few months later J. A. Allen listed 22 species represented by about 175 specimens collected by H. H. Smith in the same area. Later, in 1904, in a formal report on all the mammals collected by Smith, Allen repeated the earlier list of bats and added four more species. This brought the total number of species known from the Santa Marta region to 30. Sanborn, in 1932, identified a collection of bats in the Carnegie Museum which included 16 species of bats from the departments of Magdalena, Bolívar, and Norte de Santander. Some of the Colombian specimens identified were duplicates of the original Smith collection, but the greater number was collected by

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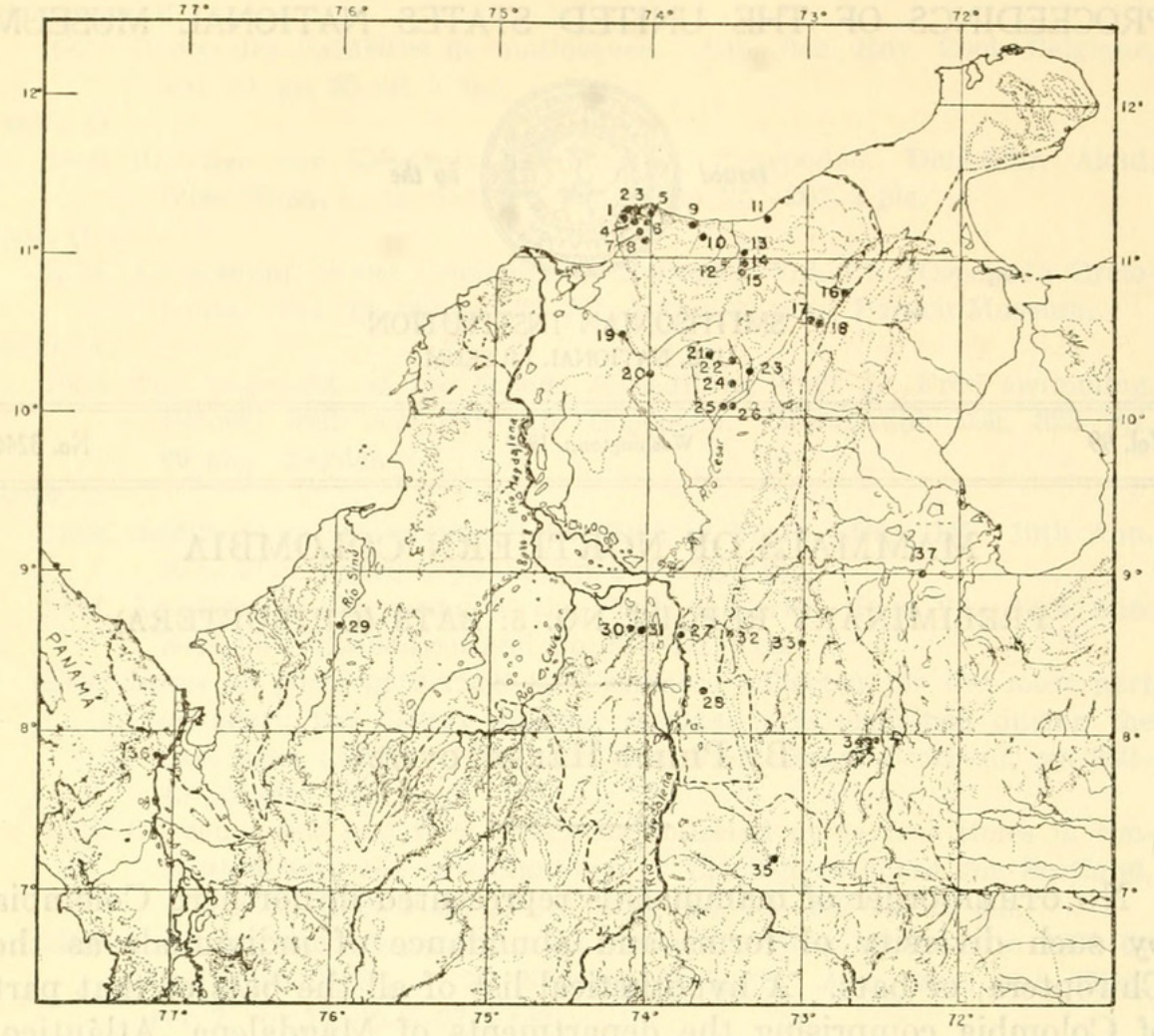

FIGURE 38.—Map of northern Colombia showing collecting localities of bats.

DEPARTMENT OF MAGDALENA:
- Aguachica—28
- Aguas Blancas—24
- Bonda—3
- Cacagualito—5
- Colonia Agrícola de Caracolicito—20
- Dibulla—11
- Don Diego—9
- El Orinoco—26
- El Salado—22
- Fundación—19
- La Concepción—13
- La Gloria—27
- Las Marimondas—16
- Mamatoco—4
- Minca—7
- Onaca—6
- Palomino—10
- Pueblo Bello (Pueblo Viejo Sur)—21
- Pueblo Viejo—14
- Río Guaimaral—25
- San Antonio—15
- San Miguel—12
- Santa Marta—1
- Sierra Negra—18
- Taganga (not "Taguaga" or "Tagauga")—2
- Valencia—23
- Valparaiso (=Cincinnati)—8
- Villanueva—17

DEPARTMENT OF BOLÍVAR
- Jaraquiel—29
- Norosí—31
- Río San Pedro—30

DEPARTMENT OF NORTE DE SANTANDER
- Cúcuta—34
- Guamalito—32
- Río Tarra—33

DEPARTMENT OF SANTANDER (extraterritorial)
- El Tambor (=El Tambo?)—35

INTENDENCIA DEL CHOCÓ (extraterritorial)
- Sautatá (not "Soatata")—36

STATE OF ZULIA, Venezuela (extraterritorial)
- Encontrados—37

M. A. Carriker, Jr. Sanborn's list included three species not previously recorded from northern Colombia. Subsequent publications on bats by Sanborn added four more species to the known bat fauna of the region, bringing the total of recorded species to 37. The bats collected in northern Colombia by the author during his tenure of the Walter Rathbone Bacon Traveling Scholarship consists of 33 species represented by 491 specimens, of which 172 are preserved in alcohol. Eight of the species are first records for the region. Bats have not yet been recorded from the department of Atlántico and from the Guajira, the northernmost part of Colombia. No doubt many species now known only from the Antilles will be found in the Guajira also.

The foregoing enumerates the 45 species of bats presently known from northern Colombia. In this paper only the specimens collected by the author are listed. Northern Colombian localities of bats recorded by other authors are given in the synonymies.

NOTES ON MEASUREMENTS

All measurements given in the text are in millimeters. Unless otherwise indicated the measurements are those of specimens collected by the author and preserved as dry skins with skulls separate. External measurements (except of the wing) are of bats in the flesh prior to skinning. Hind-foot measurements include claws; ear measurements are from the notch. Forearm and other wing measurements are from the dry skin. Measurements of specimens preserved in alcohol are given when the figures are greater or less than the extremes of the corresponding measurements of the dry skin or if they are the only ones available. Except where noted, measurements of individual specimens are given in the same order in which they are listed under the heading *Specimens collected.*

RHYNCHISCUS NASO Wied-Neuwied

Vespertilio naso Wied-Neuwied, Reise nach Brasiliens, vol. 1, p. 251, footnote, 1820.

Rhynchiscus naso, Sanborn, Publ. Field Mus. Nat. Hist., zool. ser., vol. 20, p. 325, 1937 (revision).

Type locality.—Banks of Rio Mucuri, near Morro d'Arara, Minas Gerais, Brazil.

Specimens collected.—Five. Colonia Agrícola de Caracolicito, 2 males, 3 females (2 in alcohol).

SACCOPTERYX BILINEATA Temminck

Urocryptus bilineatus Temminck, *in* Van der Hoeven and Vriese, Tijdschr. Nat. Gesch. Physiol., Leiden, vol. 5, p. 33, 1938–39.

Saccopteryx bilineata, Bangs, Proc. New England Zool. Club, vol. 1, p. 101, 1900 (Santa Marta).—Allen, Bull. Amer. Mus. Nat. Hist., vol. 13. p. 93, 1900

(Bonda; Minca).—Sanborn, Ann. Carnegie Mus., vol. 21, p. 171, 1932 (Bonda; Mamatoco); Publ. Field Mus. Nat. Hist., zool. ser., vol. 20, p. 328, 1937 (Bonda; Santa Marta; Minca; revision).

Type locality.—Surinam.

Specimens collected.—Sixty-five. El Salado, eastern slope of Sierra Nevada de Santa Marta, 4 males (3 in alcohol), 3 females (1 in alcohol), 1 skeleton only; Río Guaimaral, 13 males (6 in alcohol), 12 females (9 in alcohol); Villanueva, 2 males (in alcohol), 9 females (6 in alcohol); Norosí, Bolívar, 9 males (4 in alcohol), 9 females (4 in alcohol); Guamalito, Norte de Santander, 1 male (in alcohol), 2 females (in alcohol).

SACCOPTERYX LEPTURA Schreber

Vespertilio lepturus Schreber, Die Säugthiere, vol. 1, p. 173 (description), pl. 57 (name), 1774.

Saccopteryx leptura, Bangs, Proc. New England Zool. Club, vol. 1, p. 101, 1900 (Santa Marta).—Allen, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 94, 1900, part (Bonda).—Sanborn, Publ. Field Mus. Nat. Hist., zool. ser., vol. 20, p. 332, 1937 (Santa Marta Mountains; Bonda; revision).

Type locality.—Surinam.

Specimens collected.—Three. Villanueva, 1 male (in alcohol), 2 females.

SACCOPTERYX CANESCENS Thomas

Saccopteryx canescens Thomas, Ann. Mag. Nat. Hist., ser. 7, vol. 7, p. 366, 1901.—Sanborn, Publ. Field Mus. Nat. Hist., zool. ser., vol. 20, p. 334, 1937 (Dibulla; Fundación; Mamatoco; Bonda; revision).

Saccopteryx leptura, Allen (*nec* Schreber), Bull. Amer. Mus. Nat. Hist., vol. 13, p. 94, 1900 (part; Bonda).—Sanborn, Ann. Carnegie Mus., vol. 21, p. 172, 1932 (Mamatoco; Fundación; Dibulla).

Type locality.—Obidos, Rio Amazonas, Pará, Brazil.

Specimens collected.—Thirteen. Villanueva, 2 males (in alcohol), 5 females (3 in alcohol); Río Guaimaral, 1 male (in alcohol), 1 female; El Orinoco, Río Cesar, 2 females; Norosí, Bolívar, 1 male (in alcohol), 1 female.

Measurements.—Forearm, 34.4–36.4 mm. in 4 males, 34.4–39.0 in 9 females.

PEROPTERYX MACROTIS MACROTIS Wagner

Emballonura macrotis Wagner, Wiegmann's Arch. Naturg., Jahrg. 9, vol. 1, p. 367, 1843.

Peropteryx canina, Allen, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 93, 1900 (Bonda).

Peropteryx macrotis macrotis, Sanborn, Publ. Field Mus. Nat. Hist., zool. ser., vol. 20, p. 339, 1937 (Bonda; revision).

Type locality.—Matto Grosso, Brazil.

Specimens collected.—Twenty-seven. Villanueva, 13 males (8 in alcohol), 14 females (7 in alcohol).

CORMURA BREVIROSTRIS Wagner

Emballonura brevirostris WAGNER, Wiegmann's Arch. Naturg., Jahrg. 9, vol. 1, p. 367, 1843.

Cormura brevirostris, SANBORN, Ann. Carnegie Mus., vol. 21, p. 172, 1932 (Don Diego); Publ. Field Mus. Nat. Hist., zool. ser., vol. 20, p. 348, 1937 (Don Diego; revision).

Type locality.—Marabitanas, Rio Negro, Amazonas, Brazil.

NOCTILIO LEPORINUS LEPORINUS Linnaeus

Vespertilio leporinus LINNAEUS, Systema naturae, ed. 10, p. 32, 1758.

Type locality.—"America." Restricted to Surinam by Thomas (Proc. Zool. Soc. London, 1911, p. 131).

Specimens collected.—Two. Río Guaimaral, 1 male; El Orinoco, Río Cesar, 1 female.

Measurements.—Head and body, 90, 99; tail, 31, 26; hind foot, 36, 34; ear, 30, 30; forearm, 85.0, 84.7; greatest length of skull, 26.8, 25.4; condylobasal length, 24.8, 23.9; zygomatic breadth, 18.9, 18.5; width of brain case, 13.9, 13.2; interorbital constriction, 7.0, 6.9; distance across canines at cingula, 8.9, 8.2; maxillary tooth row, 10.5, 10.3; length of mandible (to front of canine), 19.2, 18.2.

Remarks.—The female is browner on dorsal surface than the male.

NOCTILIO LABIALIS MINOR Osgood

Noctilio minor OSGOOD, Publ. Field Mus. Nat. Hist., zool. ser., vol. 10, p. 30, 1910.

Type locality.—Encontrados, south of Lake Maracaibo, Zulia, Venezuela.

Specimens collected.—Six. Río Guaimaral, 1 subadult female; La Gloria, Río Magdalena, 5 females (3 in alcohol).

Measurements.—Head and body, 57, 58, 54; tail, 19, 19, 18; hind foot, 16, 15, 17; ear, 24, 24, 24; forearm, 59.0, 58.9, 56.3 (of the specimens in alcohol, 56.9, 59.7, 61.2); greatest length of skull, 18.4, 20.2, 20.2; condylobasal length, 17.2, 18.5, 18.3; zygomatic breadth, 13.2, 14.6, 14.3; width of brain case, 10.0, 10.6, 10.7; interorbital constriction, 5.2, 5.6, 5.7; distance across canines at cingula, 5.3, 6.3, 6.6; maxillary tooth row, 7.3, 7.5, 7.4; length of mandible (to front of canine), 13.4, 13.6, 13.8.

Remarks.—In this species there is considerable geographic and individual variation in color, size, and proportions. Generic distinction of the small fish-eating bat from the larger, typical form of the genus is not indicated, and the name *Dirias* should be discarded even as a subgenus.

The earliest published specific name for the small *Noctilio* is *Vespertilio labialis* Kerr (Animal Kingdom, p. 93, 1792). Kerr's description of *labialis* is based on Pennant's Peruvian bat variety β (Syn. Quad., p. 365, 1771). According to Pennant (and Kerr) the species "inhabits Peru and the Mosquito shore," eastern Nicaragua.

Pennant added that the bat of the latter locality "differs from the former in size, being less; in all other respects agreed." An examination of available material from South and Central America and comparisons with published measurements show that the Colombian-Venezuelan and Central American representatives of the species indeed average smaller than the Peruvian form. It is best, therefore, to conserve the name *minor* Osgood for the northern race, while the type locality of *Noctilio labialis labialis* Kerr is restricted to Peru, more specifically to the lower Río Ucayali region in the department of Loreto. Individual variation in color is so great among the fish-eating bats that in selecting a type locality for a described form of uncertain origin little importance can be attached to the color of underparts, whether gray, buffy, orange, or red. *Noctilio zaparo* Cabrera (Proc. Biol. Soc. Washington, vol. 20, p. 57, 1907), from Ahuano, Río Napo, eastern Ecuador, agrees in size with the northeastern Peruvian *labialis* and must now be regarded a synonym of it. The name *Noctilio albiventer* Spix (Simiarum et Vespert. Brasil., p. 58, 1823) based on a bat from the Rio São Francisco, Bahia, Brazil, is preoccupied by *Noctilio albiventris* Desmarest (Nouv. Dict. Hist. Nat., vol. 23, p. 15, 1818), based on a specimen from "l'Amérique méridionale." Unless comparisons of the type specimens with each other and with typical *labialis* show otherwise, the white-bellied bat of eastern Brazil should be known as *Noctilio labialis albiventer* Desmarest.

Three specimens of the La Gloria series and the individual from Río Guaimaral are in the bright-orange color phase; the remaining two specimens are in the brown phase. The underparts are approximately a tone paler than the upperparts. The pale median dorsal stripe is well defined in the brown-phase individuals, weakly evident in two of the others, barely suggested in another and absent in the subadult from Río Guaimaral.

CHILONYCTERIS RUBIGINOSA FUSCA Allen

Chilonycteris rubigincsa, ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 20, p. 457, 1904 (Cacagualito).

Chilonycteris rubiginosa fusca ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 30, p. 262, 1911.

Type locality.—Las Quiguas, 5 miles south of Puerto Cabello, northern Venezuela; altitude 650 feet.

Specimens collected.—Six. Colonia Agrícola de Caracolicito, southern slope of Sierra Nevada de Santa Marta, 2 males, 3 females; Norosí, Bolívar, 1 male.

Measurements.—Head and body, 62–75; tail, 19–25; hind foot, 12–14; ear, 21–22; forearm, 57.0–62.0; greatest length of skull, 21.6–23.3; condylobasal length, 20.5–21.7; zygomatic breadth, 12.3–12.7; inter-

orbital constriction, 4.2–4.6; greatest width across rostrum, 7.9–8.4; maxillary tooth row, 9.0–9.5.

Remarks.—In the absence of any opinion indicating otherwise, the name *Chilonycteris rubiginosa fusca* Allen applies to the race of *Chilonycteris rubiginosa* found in Venezuela, Colombia, and Central America north into Guatemala.

MICRONYCTERIS MEGALOTIS MEGALOTIS Gray

Phyllophora megalotis Gray, Ann. Mag. Nat. Hist., vol. 10, p. 257, 1842.

Micronycteris megalotis, Bangs, Proc. New England Zool. Club, vol. 1, p. 101, 1900 (Santa Marta).—Allen, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 190, 1900 (Bonda).

Micronycteris megalotis f. *typica*, Andersen, Ann. Mag. Nat. Hist., ser. 7, vol. 18, p. 53, 1906 (revision).

Micronycteris megalotis mexicana, Andersen (*nec* Miller), Ann. Mag. Nat. Hist., ser. 7, vol. 18, p. 54, 1906 (Bogotá).

Micronycteris megalotis megalotis, Sanborn, Ann. Carnegie Mus., vol. 21, p. 173, 1932 (Bonda; Aguachica; El Tambor, Santander; Jaraquiel).

Type locality.—Brazil.

Specimens collected.—Twenty. Río Guaimaral, 7 males (3 in alcohol), 7 females (5 in alcohol); Río Cesar, 2 males (in alcohol); Villanueva, 2 males (in alcohol), 1 female (in alcohol); Río Tarra, upper Río Catatumbo, Norte de Santander, 1 female.

Measurements.—Total length, 56–65; tail, 12–16; hind foot, 9–11; ear, 21.0–23.0; forearm, 32.7–35.1 (of a male in alcohol, 36.5); length of skull, to front of canine, 17.5–18.5; zygomatic breadth, 8.2–9.1; mastoid breadth, 8.0–8.4; interorbital constriction, 3.6–3.9; across cingula of canines, 3.1–3.2; M^{3-3}, 5.6–6.0.

Remarks.—The northern Colombian specimens grade into the larger *M. m. mexicana* Miller.

MICRONYCTERIS MINUTA Gervais [vel MICRONYCTERIS HYPOLEUCA Allen]

Schizostoma minutum Gervais, Expédition dans les parties centrales de l'Amérique du Sud, Zool., Mamm., livr. 15, sheet 7, p. 50, pl. 7, fig. 1, pl. 10, figs. 4, 4a (not 5, 5a as cited in text), 1856.

Micronycteris hypoleuca Allen, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 90, 1900.

Micronycteris minuta, Andersen, Ann. Mag. Nat. Hist., ser. 7, vol. 18, p. 55, 1906 (revision).

Type locality.—Of *M. minuta* Gervais, Capella Nova, Minas Gerais, Brazil; of *M. hypoleuca* Allen, Bonda, Colombia.

Remarks.—*Micronycteris hypoleuca*, known from a skin without skull, is questionably referred to *minuta* by Andersen (*op. cit.*). No specimens positively identified as *minuta* have been recorded from Colombia.

XENOCTENES HIRSUTUS Peters

Schizostoma hirsutum Peters, Monatsb. Akad. Wiss. Berlin, 1869, p. 396.—Dobson, Catalogue of the Chiroptera in the British Museum, p. 477 (measurements of type, p. 480), 1878.

Micronycteris hirsutus, THOMAS, Ann. Mag. Nat. Hist., ser. 7, vol. 2, p. 318, 1898 (Pozo Azul, Costa Rica, 2 specimens in alcohol).—ANDERSEN, *ibid.*, vol. 18, p. 57, 1906 (Pozo Azul, Costa Rica; measurements, p. 64).

Xenoctenes hirsutus, SANBORN, Ann. Carnegie Mus., vol. 21, p. 173, 1932 (Mamatoco, 1 specimen; measurements).—HAYMAN, Journ. Mamm., vol. 19, p. 103, 1938 (Trinidad, 2 specimens in alcohol).—GOODWIN, Bull. Amer. Mus. Nat. Hist., vol. 87, p. 302, 1946 (2 specimens, Costa Rica).

Type locality.—Unknown. Designated as Pozo Azul, Costa Rica, by Goodwin (Bull. Amer. Mus. Nat. Hist., vol. 87, p. 302, 1946).

Specimens collected.—Three. Villanueva, Magdalena, 2 males, 1 female.

Measurements.—Those of the female followed by those of the two males. Head and body, 66, 60, 65; tail, 18, 15, 16; hind foot, 14, 12, 13; ear, 26, 25, 25; forearm, 45.4, 44.7, 44.5; third metacarpal, 35.1, 35.5, 35.7; first phalanx of third digit, 15.9, 15.4, 17.4; second phalanx of third, 17.0, 16.7, 19.1; third phalanx of third, 13.1, 13.2, 13.0; fourth metacarpal, 36.0, 36.4, 37.0; length of skull (to front of canine), 23.5, 22.5, –; mastoid width, 10.0, –, –; zygomatic breadth, 11.8, 11.6, –; maxillary width across third molars, 7.4, 7.4, 7.5; interorbital constriction, 4.9, 4.8, 5.2; distance across cingula of canines, 4.3, 4.4, 4.4; maxillary tooth row, 9.3, 9.6, 9.5; length of mandible (to front of incisors), 16.3, 16.2, 16.7.

Remarks.—Besides the type preserved in alcohol in the Paris Museum, four specimens from Costa Rica, two from Trinidad, and four from northern Colombia have now been recorded. Two other specimens from Trinidad are in the collection of the Chicago Museum of Natural History.

MACROPHYLLUM MACROPHYLLUM Schinz

Phyllost[*oma*] *macrophyllum* SCHINZ ("P. Max"), Das Thierreich, vol. 1. p. 163 1821.

Dolichophyllum macrophyllum, ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 91, 1900 (Bonda).

Type locality.—Rio Mucurí, Minas Gerais, Brazil (see Wied-Neuwied, Beiträge zur Naturgeschichte Brasiliens, vol. 2, p. 192, 1826).

TONATIA AMBLYOTIS Wagner

Phyllostoma amblyotis WAGNER, Wiegmann's Arch. Naturg., Jahrg. 9, vol. 1, p. 365, 1843.

Chrotopterus auritus, ALLEN (*nec* Peters), Bull. Amer. Mus. Nat. Hist., vol. 13, p. 91, 1900 (Bonda).

Tonatia amblyotis, GOODWIN, Journ. Mamm., vol. 23, p. 208, 1942 (Bonda; revision).

Type locality.—Matto Grosso, Brazil.

Specimens collected.—Three. Las Marimondas, Sierra de Perijá, 1 male, 2 females.

PHYLLOSTOMUS HASTATUS PANAMENSIS Allen

Phyllostomus hastatus, ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 90, 1900 (Bonda); vol. 20, p. 457, 1904 (Bonda).

Phyllostomus hastatus panamensis ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 20, p. 233, 1904.

Phyllostomus hastatus cauræ ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 20, p. 234, 1904 (type locality, Cali, upper Río Cauca Valley, Colombia).

Phyllostomus hastatus caucæ [sic], ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 25, p. 225, 1916 (Río Frío, upper Río Cauca Valley).

Phyllostomus hastatus subsp. SANBORN, Ann. Carnegie Mus., vol. 21, p. 175, 1932 (Sautatá, Río Atrato; Mamatoco).

Type locality.—Boquerón, Chiriquí, Panamá.

Specimens collected.—Thirty-six. Villanueva, 8 males (2 in alcohol), 22 females (4 in alcohol); Río Guaimaral, 4 males (1 in alcohol); Las Marimondas, 1 male; Norosí, Bolívar, 1 female.

Measurements.—The means and extremes of the external measurements are taken from 28 adults, those of the cranial measurements are from 20 of the adults. Total length, 133 (127–150); tail, 22 (17–25); hind foot, 22.7 (20–25); ear, 32.8 (28–34); forearm, 86.7 (82–90.3), of 7 specimens in alcohol, 86.3–93.1; greatest length of skull, 38.2 (36.7–39.5); condylobasal length, 33.9 (32.9–35.0); zygomatic breadth, 20.7 (20.0–21.6); maxillary tooth row, 13.6 (13.1–14.1).

Remarks.—The above have been compared with typical *panamensis* and with 14 specimens representing *P. h. hastatus* from Venezuela (La Guaira, Macuto, San Julián, Suapure). The measurements confirm the larger average size of the Panamanian and Colombian race. On the other hand, *P. hastatus paeze* Thomas (Ann. Mag. Nat. Hist., ser. 9, vol. 13, p. 235, 1924) from Bogotá, but more probably from east of Bogotá in the upper Río Meta region, is described as similar but with a proportionately shorter skull (greatest length, 35 mm.). Two specimens from Villavicencio, upper Río Meta, and another from Cúcuta, north of Bogotá (collection of Chicago Natural History Museum), agree with *panamensis* in every respect. The status of *paeze*, therefore, still remains obscure. The central Colombian *caurae*, purportedly larger than *panamensis*, represents simply a large population of this race.

TRACHOPS CIRRHOSUS Spix

Vampyrus cirrhosus SPIX, Simiarum et vespertilionum Brasiliensium species novae, p. 64, pl. 36, fig. 3, 1823.

Trachops cirrhosus, ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 13, 1900 (Bonda).—SANBORN, Ann. Carnegie Mus., vol. 21, p. 175, 1932 (Sautatá, Río Atrato).

Type locality.—Brazil.

Specimens collected.—Twenty. Río Guaimaral, Río Cesar, near Valencia, 7 males (1 in alcohol), 6 females (4 in alcohol), 1 skull

only, 2 skeletons only; El Orinoco, Río Cesar, 2 females; Norosí, Bolívar, 1 female; Las Marimondas, 1 male (suckling young; in alcohol).

Measurements.—Head and body, 77–88; tail, 17–21; hind foot, 18–22; ear, 34–39; forearm, 58–63.1; third metacarpal, 46.3–51.5; condylobasal length, 25.3–27.3; zygomatic breadth, 14.1–15.7; mastoid breadth, 12.9–14.0; interorbital constriction, 4.9–5.7; maxillary tooth row, 10.2–10.8.

Remarks.—The only other species of *Trachops* known is the smaller *coffini* Goldman from Guatemala.

GLOSSOPHAGA SORICINA SORICINA Pallas

Vespertilio soricinus Pallas, Miscellanea zoologica, p. 48, pls. 5 and 6, figs. 16–18, 1766.

Glossophaga soricina, Allen, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 89, 1900 (Bonda).—Sanborn, Ann. Carnegie Mus., vol. 21, p. 176, 1932 (Jaraquiel; Aguachica).

Glossophaga soricina soricina, Miller, Proc. U. S. Nat. Mus., vol. 46, p. 419, 1913 (Bonda; revision).

Type locality.—Surinam (restricted by Miller, U. S. Nat. Mus. Bull. 79, p. 39, 1912).

Specimens collected.—Nine. Villanueva, 3 females; Sierra Negra, Sierra de Perijá, 1 male; Las Marimondas, Sierra de Perijá, 1 male; Guamalito, 2 females; Río Guaimaral, 2 females (in alcohol).

Measurements.—Those of the three females from Villaneuva are given. Head and body, 62–67; tail, 53–59; hind foot, 8–10; ear, 10–11; forearm, 34.9–35.6 (of two females in alcohol, 35.2, 34.2; third metacarpal, 33.5, 33.7; first phalanx of third finger, 12.4, 12.5; second phalanx of third finger, 14.1, 15.0); condylobasal length, 19.1–19.8; width of brain case, 8.4–8.7; upper tooth row (I to M^3), 7.9–8.3; lower canine to back of M_3, 7.3–7.6.

Remarks.—The Sierra Negra specimen is erythristic, the male from Las Marimondas blackish brown. The others are in various intermediate stages. One of the Villanueva specimens (U.S.N.M. No. 281272) has a small supernumerary premolar in the left upper jaw in the space between the canine and Pm^3. Another specimen, from Guamalito, has lost in some accident the molars of both lower jaws; the alveoli are ossified but the mandibles are otherwise complete.

GLOSSOPHAGA LONGIROSTRIS LONGIROSTRIS Miller

Glossophaga longirostris Miller, Proc. Acad. Nat. Sci. Philadelphia, 1898, p. 330.—Bangs, Proc. New England Zool. Club, vol. 1, p. 101, 1900 (Santa Marta Mountains).—Allen, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 89, 1900 (Taganga; Bonda).

Glossophaga longirostris longirostris, Miller, Proc. U. S. Nat. Mus., vol. 46, p. 422, 1913 (Bonda; Taganga; revision).—Sanborn, Ann. Carnegie Mus., vol. 21, p. 176, 1932 (Taganga; Mamatoco).

Type locality.—Sierra Nevada de Santa Marta, near Santa Marta, Magdalena, Colombia.

Specimens collected.—Seven. Villanueva, 5 males, 2 females (in alcohol).

Measurements.—Head and body, 55–63; tail, 6–9; hind foot, 12–13; ear, 16–17; forearm, 37.2–39.8 (of two females in alcohol, 39.4, 39.3; third metacarpal, 38.5, 38.1; first phalanx of third finger, 14.1, 14.1; second phalanx of third finger, 18.4, 16.9); condylobasal length, 22.0–22.5; width of brain case, 9.1–9.5; upper tooth row (front of incisor to back of M^3), 8.8–9.4; lower canine to back of M_3, 8.4–8.6.

Remarks.—Where this species occurs together with *G. soricina*, it is readily distinguished by larger size, longer rostrum, and smaller nose leaf. The incisors are present in all above specimens. The dentition of this bat, as well as of all the other species of glossophagines, is weak and frequently defective. Where teeth are missing, the loss appears to be the result of some violence, most probably in connection with the bat's voracious attacks on soft pulpy fruit containing hard pits.

LONCHOGLOSSA CAUDIFERA CAUDIFERA Geoffroy

Glossophaga caudifer Geoffroy, Mem. Mus. Hist. Nat., Paris, vol. 4, p. 418, pl. 17, 1818.

Lonchoglossa caudifera caudifera, Sanborn, Publ. Field Mus. Nat. Hist., zool. ser., vol. 20, p. 27, 1933 (revision); vol. 27, p. 375, 1941 (Cúcuta).

Type locality.—Rio de Janeiro, Brazil.

Specimens collected.—Five. Pueblo Bello, Sierra Nevada de Santa Marta, 2 males (1 in alcohol); Sierra Negra, Sierra de Perijá, 2 males, 1 female.

Measurements.—Those of a young adult male from São Sebastião, São Paulo, Brazil, given in parentheses, head and body, (60) 55–59; tail, 4–7; hind foot, (10) 10–12; ear, 14–14; forearm, (36) 34–37; metacarpal of third finger, (35.4) 35.4–37.3; first phalanx of third finger, (13.6) 11.5–13.1; second phalanx of third finger, (18.2) 17.7–19.9; greatest length of skull, 21.5–22.7; condylobasal length, (21.1) 20.7–22.4; width of brain case, 8.6–8.7 (2 specimens); postorbital constriction, (4.3) 4.2–4.5; maxillary tooth row, (7.9) 7.8–8.4; distance across third upper molars, (5.1) 5.4–5.7.

Remarks.—Assignment of the Colombian series to typical *caudifera* is provisional. The only other recognized form of the genus is *L. caudifera aequatoris* Lönnberg from western Ecuador. This race is known from too little material for exact determination of its distinctive characters. It is said to be darker in color and smaller in cranial and wing measurements.

CAROLLIA PERSPICILLATA PERSPICILLATA Linnaeus

Vespertilio perspicillatus LINNAEUS, Systema naturae, ed. 10, p. 31, 1758.

Hemiderma brevicauda, BANGS, Proc. New England Zool. Club, vol. 1, p. 101, 1900 (Santa Marta; Pueblo Viejo; Palomino).—ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 90, 1900 (Bonda); vol. 20, p. 457, 1904 (Cacagualito).

Hemiderma perspicillatum, HAHN, Proc. U. S. Nat. Mus., vol. 32, p. 108, 1907 (Santa Marta; revision).

Carollia perspicillata perspicillata, SANBORN, Ann. Carnegie Mus., vol. 21, p. 176, 1932 (Sautatá, Río Atrato; Mamatoco; Bonda).

Type locality.—Surinam (fixed by Thomas, Proc. Zool. Soc. London, 1911, p. 130).

Specimens collected.—Seventy-nine. Pueblo Bello, Sierra Nevada de Santa Marta, 6 males (1 in alcohol), 21 females (6 in alcohol); El Salado, Sierra Nevada de Santa Marta, 4 males, 2 females; Río Guaimaral, 1 male, 3 females (in alcohol); El Orinoco, 1 male; Villanueva, 8 males, 5 females (1 in alcohol); Sierra Negra, 17 males, 5 females; Río Tarra, 2 males, 1 female; Norosí, 1 male, 1 female; Guamalito, 1 female (in alcohol).

Remarks.—The collection includes two erythristic individuals, both males and both from Villanueva. The forearm varies in length from 38.2 to 44.2 millimeters, the greatest length of the skull averages 22.6.

CAROLLIA CASTANEA H. Allen

Carollia castanea H. ALLEN, Proc. Amer. Philos. Soc., vol. 28, p. 19, 1890.

Hemiderma castaneum, HAHN, Proc. U. S. Nat. Mus., vol. 32, p. 116, 1907 (revision; description and measurements).

Type locality.—Costa Rica.

Specimens collected.—Two. Río Tarra, upper Río Catatumbo, Norte de Santander, male and female (in alcohol).

Measurements.—Head and body, 48 (of male); tail, 7, 8; hind foot, 12, 10; ear, 17, 17; tibia, 14, 15; calcar, 6, 7; forearm, 34.3, 36.0; third metacarpal, 32.3, 34.4; first phalanx of third finger, 14.6, 14.2; second phalanx of third finger, 19.9, 20.0; third phalanx of third finger, 12.6, 13.3; fourth metacarpal, 31.4, 33.5; first phalanx of fourth finger, 12.5, 12.5; second phalanx of fourth finger, 13.5, 13.4; fifth metacarpal, 34.8, 35.6; thumb, 14, 12; nose leaf, 8.3, 8.4; distance across base of upper canines, 4.3 (female); maxillary tooth row, 6.1; length of mandible, 12.3; lower tooth row ($C–M_3$), 6.9.

Remarks.—*Carollia castanea* is distinguished from *C. perspicillata* by smaller size throughout, nose leaf shorter and less lanceolate in outline, outer side of tragus without the conspicuous concave subterminal emargination characteristic of *perspicillata;* shape of skull of *castanea* essentially as in *perspicillata* but markedly smaller (less than 21 mm. in greatest length); inner upper incisors about a third smaller, their outline on outer surface more nearly rectangular, the lower edges chisel-shaped (subtriangular and tapering to a blunt point in *per-*

spicillata); low heel of upper first premolar without a distinct cusp; space between first and second upper premolars accentuated on inner side by the oblique angle of the anterointernal corner of the second premolar; posterointernal cusp of second upper premolar obsolete, the tooth situated medially of the first molar and breaking the line along the outer surface of the cheek teeth; outer surface of lower premolars triangular in outline, the teeth about as high as long, the second premolar larger than the first; first lower molar not as high as second and third molars, its crown surface nearly smooth, the cusps indistinct, the outline of the tooth contrasting sharply with that of the second lower molar.

Beside Costa Rica and Colombia, the species has been recorded from Panamá, Honduras, and British Guiana by Goodwin (Bull. Amer. Mus. Nat. Hist., vol. 79, p. 32, 1942; vol. 87, p. 316, 1946) and from Ecuador and Peru by Thomas (Proc. U. S. Nat. Mus., vol. 58, p. 222, 1920).

STURNIRA LILIUM PARVIDENS Goldman

Sturnira lilium parvidens Goldman, Proc. Biol. Soc. Washington, vol. 30, p. 116, 1917.

Type locality.—Papayo, about 25 miles northwest of Acapulco, Guerrero, México.

Specimens collected.—Two. Sierra Negra, Sierra de Perijá, 1 male, 1 female.

Measurements.—Head and body, 63, 59; hind foot, 13, 13; ear, 16, 16; forearm, 39.3, 40.3; greatest length of skull, 21.5, 21.5; condylobasal length, 19.4, 19.5; zygomatic breadth, 12.8, –; width of brain case, 9.9, 10.0; interorbital constriction, 5.7, 5.9; maxillary tooth row, 6.3, 6.3.

Remarks.—The epaulettes of the male are straw-colored. In a series of five males from Paraguay the epaulettes are absent in one, bright yellow to rusty red in the others.

STURNIRA LUDOVICI Anthony

Sturnira ludovici Anthony, Amer. Mus. Nov. No. 139, p. 8, 1924.

Sturnira lilium bogotensis Shamel, Proc. Biol. Soc. Washington, vol. 40, p. 129, 1927 (type locality, Bogotá, Colombia).

Sturnira hondurensis Goodwin, Amer. Mus. Nov. No. 1075, p. 1, 1940 (type locality, La Cruz Grande, near San José, La Paz, Honduras).

Type locality.—Near Gualea, Pichincha, northwestern Ecuador.

Specimens collected.—Four. Sierra Negra, Sierra de Perijá, 2 males, 2 females.

Measurements.—Those of the type specimen of *bogotensis* Shamel are given in parentheses. Head and body, 65–70; hind foot, 13–15; ear, 18–19; forearm, (45.4) 44.2–46.0; greatest length of skull, (24.0) 22.9–24.2; condylobasal length, (22.0) 21.3–22.4; zygomatic breadth, (13.4) 13.2–13.8; interorbital constriction, (6.4) 6.2–6.7; width of

brain case, (10.5) 10.3–10.7; maxillary tooth row, (6.9) 6.5–7.0; width across bases of incisors, (6.0) 6.0–6.8.

Remarks.—The genus *Sturnira* is represented in Colombia by at least two well-defined species. The first, *S. lilium*, is characterized by its comparatively short rostrum, short forearm (40.44 mm. in 12 topotypes from Paraguay), trilobate lower incisors with the middle lobe nearly as large as the outer ones, paraconids, metaconids, and entoconids of first two lower molars distinct and separated by deep valleys, upper molar row symmetrically curved (compare Miller, U. S. Nat. Mus. Bull. 57, pl. 4, fig. 3, 1907). The second, *Sturnira ludovici*, resembles *S. lilium* externally and in shape of skull but averages larger, lower incisors deeply bilobate in young individuals, simple or weakly bilobate, often with a minute middle lobe, in fully adult specimens; paraconids and metaconids of first two lower molars low, poorly defined, the entoconids suppressed with no division between them and the metaconids, the median longitudinal groove of these molars not so well defined as in *S. lilium*, the second upper molar turned inward and not in line with the first molar.

The range of *Sturnira ludovici* encompasses and exceeds that of *S. lilium parvidens*. The present series of *ludovici* was taken in the same locality as were two specimens of *S. lilium parvidens*. Two skulls from Mirador, México, in the United States National Museum collection represent *ludovici*, and another skull from the same locality is referable to *S. lilium parvidens*. *Sturnira hondurensis* Goodwin, described from Honduras and recorded from Costa Rica, *Sturnira lilium bogotensis* Shamel from Bogotá, and, in the collection of the Chicago Natural History Museum, 12 specimens from western Ecuador and one from San Esteban, Venezuela, are all referable to *S. ludovici*.

Another species nearly related to *Sturnira ludovici* has been described from Costa Rica as *Sturnirops mordax* Goodwin (Amer. Mus. Nov. No. 976, p. 1, 1938). Except for its long rostrum with the attendant greater curvature of the maxillary tooth row and the attenuation of the mandibles, *S. mordax* is practically indistinguishable from *ludovici* in external, cranial, and dental characters. Full generic separation of *mordax* from *Sturnira lilium* is hardly advised in view of the close relationship to the annectant *S. ludovici*.

URODERMA BILOBATUM Peters

Uroderma bilobatum Peters, Monatsb. Akad. Wiss. Berlin, 1866, p. 394.—Allen, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 89, 1900 (Bonda; Cacagualito; Minca).—Andersen, Proc. Zool. Soc. London, 1908, p. 217 (Onaca; revision).—Sanborn, Ann. Carnegie Mus., vol. 21, p. 177, 1932 (Bonda; Cacagualito; Minca).

Type locality.—São Paulo, Brazil.

Specimens collected.—Thirty-eight. Colonia Agrícola de Cara-

colicito, 2 males, 9 females (1 in alcohol), 1 skull only; Pueblo Bello, Sierra Nevada de Santa Marta, 1 male (in alcohol), 1 female (in alcohol); Río Guaimaral, 3 males (1 in alcohol), 1 female (in alcohol); Villanueva, 4 males, 5 females; Sierra Negra, 1 male, 3 females; Norosí, 1 male; Río San Pedro, Norosi, 1 female (in alcohol); Guamalito, Norte de Santander, 1 male (in alcohol), 4 females (1 in alcohol).

Measurements.—Head and body, 59–70; hind foot, 11–14; ear, 15–19; forearm, 39.2–44.5; greatest length of skull, 21–1–22.6.

VAMPYROPS UMBRATUS Lyon

Vampyrops lineatus, Bangs (*nec* Geoffroy), Proc. New England Zool. Club, vol. 1, p. 100, 1900 (San Antonio; Palomino; San Miguel).

Vampyrops umbratus Lyon, Proc. Biol. Soc. Washington, vol. 15, p. 151, 1902.

Type locality.—San Miguel, Río Macotama, northern slope of the Sierra Nevada de Santa Marta, Colombia; altitude, 5,260 feet.

Specimens collected.—Five. Sierra Negra, Sierra de Perijá, 4 males (2 in alcohol), 1 female.

Measurements.—Head and body, 66, 66, 62; hind foot, 12, 14, 12; ear, 19, 19, 20; forearm, 42.1, 40.8, 41.7 (of one male in alcohol, 43.7); (the following are of a single male specimen) greatest length of skull, 25 (*c.*); basal length, 20.4; zygomatic breadth, 15.5 (*c.*); width of brain case, 10.6; mastoid width, 12.5; interorbital width, 6.2; distance across canines, 6.6; M^{2-2}, 10.8; maxillary tooth row, 9.3; greatest length of mandible, 17.4; lower canine to back of M_3, 9.9.

Remarks.—The presents eries brings to eight the known number of specimens of the species. The measurements of *V. oratus* Thomas agree with those of *umbratus*, but that species is said to have ledges on the inner sides of the lower molars not present in *umbratus*. *V. vittatus* Peters, recorded from the same region, is a much larger species.

VAMPYROPS VITTATUS Peters

Artibeus vittatus Peters, Monatsb. Akad. Wiss. Berlin, 1859, p. 225.

Vampyrops vittatus, Allen, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 88, 1900 (Valparaiso).—Miller, Proc. Acad. Nat. Sci. Philadelphia, 1902, p. 106, footnote (Valparaiso; measurements).

Type locality.—Puerto Cabello, Carabobo, Venezuela.

VAMPYRESSA THYONE Thomas

Vampyressa thyone Thomas, Ann. Mag. Nat. Hist., ser. 8, vol. 4, p. 231, 1909.

Type locality.—Chimbo, Bolívar Province, western slope of Cordillera Occidental, western Ecuador; altitude, 1,000 feet.

Specimens collected.—One. Colonia Agrícola de Caracolicito, southern slope of the Sierra Nevada de Santa Marta, 1 female.

Measurements.—Head and body, 49; hind foot, 10; ear, 14; forearm, 31.5; greatest length of skull, 18.2 (*c.*); condylobasal length, 16.6; zygomatic breadth, 10.8; mastoid breadth, 9.4; width of brain case,

9.3 (*c.*); interorbital breadth, 4.6; maxillary tooth row, 5.4 (*c.*); length of mandible to front of incisors, 11.7.

Remarks.—The six described species of *Vampyressa* are separable into two groups. The first includes the small species *thyone* Thomas, *minuta* Miller,[1] and *venilla* Thomas.[2] In these the forearm measures 30 to 33 mm. in length, the skull between 17 and 19 mm. in greatest length. The second group includes the larger species, *pusilla* Wagner,[3] *nymphaea* Thomas,[4] and *melissa* Thomas,[5] with forearm between 35 and 38 mm., skull 20 to 22 mm. in greatest length. The geographic range of both groups are coextensive in South America. Only the small *minuta* is known from Central America (Panamá). Both the small *V. thyone* and the large *V. nymphaea* have been recorded from the Chocó in western Colombia, and two specimens of *thyone* (identified by Thomas) are available from Amazonian Ecuador. *V. minuta* is almost certainly an absolute synonym of *thyone*; hence the use of the latter name for the specimen of the present collection.

CHIRODERMA JESUPI Allen

Chiroderma jesupi ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 88, 1900.

Type locality.—Cacagualito, a plantation, now abandoned, 20 miles east of Santa Marta on the road to Río Hacha, Magdalena, Colombia.

ARTIBEUS JAMAICENSIS JAMAICENSIS Leach

Artibeus Jamaicensis LEACH, Trans. Linn. Soc. London, vol. 13, pt. 1, p. 75, 1821.
Uroderma planirostris, BANGS, Proc. New England Zool. Club, vol. 1, p. 101, 1900 (Santa Marta).
Artibeus planirostris, ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 20, p. 458, 1904 (Mamatoco).
Artibeus jamaicensis, ANDERSEN, Proc. Zool. Soc. London, 1908, p. 247 (*part*).

Type locality.—Jamaica.

Specimens collected.—Three. El Salado, eastern slope of Sierra Nevada de Santa Marta, 1 male, 1 female; Río Guaimaral, 1 male (in alcohol).

Measurements.—Head and body, 75, 74; hind foot, 14, 15; ear, 22, 22; forearm, 55.6, 54.8 (of the male in alcohol, 56.0); length of skull to front of canine, 27.3, 26.6; zygomatic breadth, 16.1, 16.1; width of brain case, 11.9, 11.9; mastoid breadth, 14.1, 14.3; maxillary width across first molars, 11.6, 11.1; width across cingula of canines, 7.5, 7.2; canine to back of second molar, 9.9, 9.4; canine to back of third molar (in male only), 10.1; length of mandible to front of incisors, 18.3, 18.4.

Remarks.—According to Andersen's classification of the genus

[1] Proc. U. S. Nat. Mus., vol. 42, p. 25, 1912.
[2] Ann. Mag. Nat. Hist., ser. 9, vol. 13, p. 532, 1924.
[3] Arch. Naturg., vol. 1, p. 366, 1843.
[4] Ann. Mag. Nat. Hist., ser. 8, vol. 4, p. 230, 1909.
[5] Ann. Mag. Nat. Hist., ser. 9, vol. 18, p. 157, 1926.

Artibeus (Proc. Zool. Soc. London, 1908, pp. 224–319) the female of the pair from El Salado is properly identified as *A. jamaicensis*, owing to the absence of the rudimentary third upper molar. The male, taken together with the female, has a third upper molar in each jaw and should be referred to *A. planirostris planirostris*. However, both specimens are so obviously alike otherwise that it would be folly to persist in the illusion that the presence or absence of the evanescent third upper molar is of more than individual or local significance. Examination of the large series of *Artibeus* in the collections of the United States National Museum and of the Chicago Natural History Museum confirms the absolute unreliability of the dental formula for separating *A. jamaicensis* from *A. planirostris*. The indications are that the number of upper molars may be an individual as well as a geographic variable. The incidence of M^3 appears to be highest in the *Artibeus* of Brazil, upper Amazonia, the Guianas, Trinidad, and the Grenadines and lowest in Paraguay, the trans-Andean regions, and in Central America and México. Whatever Andersen may have had in mind, the relationship between the form of the posterior border of M^2 and the presence or absence of M^3 pointed out by him (*op. cit.*, p. 252) has no specific significance. The posterior border of the second upper molar may be emarginate where no trace of M^3 exists, and it is not always emarginate in the presence of M^3. The third upper molar may occupy any position behind the second molar whether or not the posterior border of the latter is notched. In some series where no third upper molar appears, an alveolus in various stages of obsolescence may be present. In conclusion, it appears that the small form, *A. planirostris* Spix, cannot be treated as other than a specific synonym of the similarly small *A. jamaicensis* Leach.

Living side by side with *A. jamaicensis* is a markedly larger species, the largest of the genus. The specimens of this species taken in El Salado and other nearby localities are listed and discussed below under the heading *Artibeus lituratus palmarum*. If Andersen were again followed, this large species would be identified as *A. jamaicensis palmarum*, thus recording the unhappy situation of two "races" of the same species occupying identical habitats.

ARTIBEUS LITURATUS PALMARUM Allen and Chapman

Artibeus palmarum Allen and Chapman, Bull. Amer. Mus. Nat. Hist., vol. 9, p. 16, 1897.—Allen, *ibid.*, vol. 13, p. 89, 1900 (Bonda; *femurvillosum* Bangs, a synonym).—G. M. Allen, Bull. Mus. Comp. Zool., vol. 52, p. 42, 1908 (*femurvillosum*, synonym).

Artibeus femurvillosum Bangs, Proc. New England Zool. Club, vol. 1, p. 73, 1899 (La Concepción, type locality); vol. 1, p. 101, 1900.

Artibeus jamaicensis palmarum, Andersen, Proc. Zool. Soc. London, 1908, p. 278 (revision).

Type locality.—Trinidad.

Specimens collected.—Twenty-three. Pueblo Bello, 2 males (in alcohol); El Salado, 2 males; Colonia Agrícola de Caracolicito, 1 male; Sierra Negra, Sierra de Perijá, 4 males, 14 females.

Measurements.—Head and body, 87–100; hind foot, 16–21; ear, 23–25; forearm, 66–73.6; length of skull to front of incisors, 29.2–31.5; mastoid width, 15.7–16.9; width of brain case, 13.0–13.9; zygomatic breadth, 18.4–19.6; maxillary width across first molars, 12.8–14.1; width across cingula of canines 8.6–9.1; canine to back of second upper molar, 10.8–11.4; length of mandible to front of incisors, 20.7–21.9.

Remarks.—The abundant and reliable data presented by Andersen (*op. cit.*) in his revision of the genus *Artibeus* do not support his conclusions that *A. planirostris* and *A. jamaicensis* are distinct species each composed of a group of large and a group of small races. Once the presence or absence of the rudimentary third upper molar is discounted as a variable (see "Remarks" under *A. jamaicensis*), nothing is left by which to distinguish the large "race" of Andersen's *planirostris* from the large ones of his *jamaicensis*, and the small "races" of his *planirostris* from the corresponding ones of *jamaicensis*. It becomes clear, then, that the smaller "races" of each compose one species which should be designated as *jamaicensis* Leach, and the larger "races" form together another species for which the earliest available name is *lituratus* Olfers.[6] Andersen could not demonstrate intergradation between the large and the small "races" composing each of his species. He implied, however, that additional material would show this. Moreover, he interpreted the occurrence of individuals of both the large and the small "races" in any one locality as a migratory invasion of the one into the territory of the other. This conjecture is baseless. The considerable amount of material since accumulated (also, see Anthony, Amer. Mus. Nov. No. 114, p. 5, 1924) confirms the specific discreetness of the large and small forms and adds to the very evidence presented, but otherwise either ignored or misinterpreted, by Andersen himself, that the normal range of both species, the large and the small, is coextensive from México into southern Brazil, and on some of the Neotropical islands. The subspecific names recognized as valid by Andersen plus two forms, *richardsoni* and *fraterculus*, described since, may be arranged as follows:

Artibeus jamaicensis jamaicensis Leach, type locality, Jamaica (*richardsoni* Allen, with type locality, Matagalpa, Nicaragua, a synonym).

A. j. parvipes Rehn, type locality, Cuba.

A. j. yucatanicus Allen, type locality, Chichén-Itzá, Yucatán, México.

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[6] "*Ph. lituratus* Ill.," *in* Eschwege, "Journal von Brasilien," Neue Bibliotheck der Reisebeschreibungen zur Erweiterung der Erd- und Wölkerkunde, Weimar, vol. 15, No. 2, p. 224, 1818, antedates "*Phyllostomus lituratus* Ill.," Lichtenstein, Verzeichniss der Doubletten . . ., p. 3, 1823. Both authors based the name *lituratus* on Azara's *chauve souris obscure et rayée*, Olfers giving Paraguay as the type locality.

A. j. trinitatis Andersen, type locality, Trinidad (*grenadensis* Andersen, with type locality, Grenada, W. I., a synonym).

A. j. fraterculus Anthony, type locality, Portovelo, El Oro Province, southern Ecuador.

A. j. planirostris Spix, type locality, Bahia, Brazil.

Artibeus lituratus lituratus Olfers, type locality, Paraguay.

A. l. fallax Peters, type locality, Guiana.

A. l. palmarum Allen and Chapman, type locality, Trinidad.

A. l. praeceps Andersen, type locality, Guadeloupe, W. I. (doubtfully distinct from *palmarum; dominicanus* Andersen, Proc. Zool. Soc. London, 1908, p. 249, a *nomen nudum*).

A. l. aequatorialis Andersen, type locality, Zaruma, southern Ecuador (doubtfully distinct from *palmarum*).

So far as can be determined from available material, separation of the large *lituratus* from the small *A. jamaicensis* is based solely on size. There is considerable range of variation in size within each of the species, and old individuals of large races of *jamaicensis* may equal, and even exceed, in size small (usually subadult) individuals of small races of *lituratus*. In view of the difficulty in distinguishing subadults from fully adults, it is not always possible to separate the species, especially of their respective West Indian and North American representatives. In general, the forearm of *lituratus* is normally longer than 62 mm. to a maximum of about 75 mm. In *jamaicensis*, the forearm is usually less than 63 mm. and may be as short as 50 mm. Mensural differences between the two species in other external and in cranial characters are in the same proportions.

None of the specimens of *palmarum* collected in northern Colombia bears a third molar in the upper jaw. The posterior edge of the second molar in this series varies from deeply emarginate to convex. In some individuals there is a bony ledge of the maxillary behind the second molar; in others the ledge, which could support a third molar, is lacking. The localities of these bats are included within the range of *palmarum* as given by Andersen, and they show agreement with this form, as compared with *fallax*, in size and in the consistent absence of M^3.

ARTIBEUS CINEREUS BOGOTENSIS Andersen

? *Dermanura quadrivittatus*, Bangs, Proc. New England Zool. Club, vol. 1, p. 101, 1900 (Pueblo Viejo).

Artibeus cinereus bogotensis Andersen, Ann. Mag. Nat. Hist., ser. 7, vol. 18, p. 421, 1906.

Type locality.—Curiche, near Bogotá, Colombia.

Specimens collected.—One. Sierra Negra, Sierra de Perijá, 1 female.

Measurements.—Head and body, 58; hind foot, 12; ear, 17; forearm, 40.8; third metacarpal, 37.6; first phalanx of third digit, 14.7; second phalanx of third, 20.5; length of skull to front of canines, 19.9; mastoid width, 10.0; width of brain case, 9.3; zygomatic breadth, 11.3

(*c.*); maxillary width across first molars, 7.8; width across cingula of canines, 5.1; maxillary tooth row, 6.1; length of mandible to front of incisors, 12.7.

Remarks.—Andersen's classification (Proc. Zool. Soc. London, 1908, pp. 285–315) of the pygmy forms of *Artibeus* is based mainly on the presence or absence of a rudimentary third lower molar and, in the first upper molar, the degree of development of the posterointernal lobe, the hypocone ("cusp 7" of Andersen). The diagnostic value of the presence or absence of the third lower molar may be ruled out as in the case of the large species of *Artibeus* (see foregoing "Remarks" under headings *A. lituratus palmarum* and *A. jamaicensis*). In his treatment of the pygmy "species" normally lacking the third lower molar, Andersen indicated the presence of this structure in one jaw, absent in the other, of individuals of *rosenbergi* and *toltecus*.

The form of M^1 in the pygmy *Artibeus* is similar to that of the large *Artibeus* of the *jamaicensis-lituratus* group. Sufficient specimens of the latter group were available to Andersen to demonstrate the variable structure of M^1. On the other hand, the few small localized series of pygmy *Artibeus* examined by him caused Andersen to attach undue significance to the structure of the same tooth in the pygmy species. A comparison of the molars of 8 skulls of *toltecus* from México and of 10 skulls identified as *A. toltecus ravus* from Ecuador with those of 10 skulls of *A. cinereus* from Venezuela shows complete intergradation in the size and structure of the first upper molar. In one specimen from Pambilar, northwestern Ecuador, the hypocone of this tooth is as little developed as that described for the type of *rosenbergi* from Cachaví, a locality in the same general area. The hypocones of M^1 in the remaining specimens from Ecuador (Pambilar and Carondolet) show increasing development to the condition described by Andersen as distinctive of *toltecus*. Similarly, the appearance of the hypocone of M^1 in Venezuelan series of *cinereus* ranges from the condition typical of *toltecus* to the greatly reduced one of *rosenbergi*. The specimen (U. S. N. M. No. 62635) from La Guaira, Venezuela, the only one other than the type identified by Andersen as *rosenbergi*, is simply one of the same series of bats collected by Robinson in northern Venezuela, which were assigned to *A. cinereus bogotensis* by Andersen. Additional material in the collection of the Chicago Natural History Museum confirms the specific identity of *cinereus*, *toltecus*, and *rosenbergi*. Of four specimens from San José, Manaví Province, Ecuador, not far from the type localities of *rosenbergi* and *ravus* in Esmeraldas Province, one shows "cusp 7" of M^1 as described for *ravus*, another as described for *rosenbergi*, the first upper molars of the remaining two specimens being intermediate in structure.

With the elimination of the dental characters held to be significant by Andersen, the evidence presented by that author points to the probable conspecificity of all the pygmy forms of *Artibeus* said to be otherwise indistinguishable from either *cinereus* or *toltecus*.

The following classification of the pygmy bats of the *A. cinereus* group is based on examination of specimens in the collections of the United States National Museum and the Chicago Natural History Museum. These include the types of *ravus*, *phaeotis*, *jucundum*, and *anderseni*, topotypes or near topotypes of *glaucus*, *watsoni*, *bogotensis*, *rosenbergi*, and *toltecus*, and three pygmy *Artibeus* from the upper Río Pastaza, eastern Ecuador (in the Chicago Natural History Museum), referable to either *anderseni* or *pumilio* but geographically nearer the latter. Subspecific status of some of the forms listed is provisional.

Artibeus cinereus cinereus Gervais, type locality, Brazil (*quadrivittatus* Peters, from Surinam, is probably a synonym).

Artibeus cinereus bogotensis Andersen, type locality, Curiche, near Bogotá, Colombia.

Artibeus cinereus rosenbergi Thomas, type locality, Cachaví, Esmeraldas, Ecuador (*rava* Miller, from San Javier, Esmeraldas, Ecuador, a synonym).

Artibeus cinereus glaucus Thomas, type locality, Chanchamayo, Junín, Peru.

Artibeus cinereus pumilio Thomas, type locality, Tushemo, near Masisea, Río Ucayali, Loreto, eastern Peru.

Artibeus cinereus anderseni Osgood, type locality, Porto Velho, Rio Madeira, Amazonas, Brazil.

Artibeus cinereus watsoni Thomas, type locality, Bugaba, Chiriquí, Panamá.

Artibeus cinereus toltecus Saussure, type locality, México, here restricted to Mirador, Veracruz, whence most of Saussure's Mexican material originated (*jucundum* Elliot, from Veracruz, México, a synonym).

Artibeus cinereus phaeotis Miller, type locality, Yucatán, México.

SPHAERONYCTERIS TOXOPHYLLUM Peters

Sphaeronycteris toxophyllum Peters, Sitzb. Akad. Wiss. Berlin, 1882, p. 989, pl. 16.—Sanborn, Publ. Field Mus. Nat. Hist., zool. ser., vol. 27, p. 380, 1941 (Cúcuta, Norte de Santander).

Type locality.—South America.

DESMODUS ROTUNDUS ROTUNDUS Geoffroy

Phyllostoma rotundum Geoffroy, Ann. Mus. Hist. Nat. Paris, vol. 15, p. 181, 1810.
Desmodus rufus, Allen, Bull. Amer. Must. Nat. Hist., vol. 13, p. 87, 1900 (Bonda).
Desmodus rotundus, Sanborn, Ann. Carnegie Mus., vol. 21, p. 180, 1932 (Bonda).

Type locality.—Paraguay.

Specimens collected.—Forty-seven. El Orinoco, Río Cesar, 9 males (4 in alcohol), 20 females (8 in alcohol); Villanueva, 7 males (3 in alcohol), 11 females (5 in alcohol).

Measurements.—The extremes of 14 fully adult females are preceded by figures in parenthesis giving the measurements of the largest adult male. Head and body, (76), 77–87; hind foot, (18), 15–19; ear, (19), 19–21; forearm, (58.4, of another male, in alcohol, 60.2), 56.9–62.7,

of another female, in alcohol, 63.7; third metacarpal, (56.0), 51.4–55.9; greatest length of skull, to front of incisor, (24.2), 23.4–24.9; zygomatic breadth, (12.2), 11.7–12.6; mastoid width, (12.4), 11.9–13.0; interorbital constriction, (5.4), 5.3–5.8; height of brain case, from basisphenoid, (11.4), 11.1–11.9; upper tooth row, (5.7), 5.3–6.1.

Remarks.—The males are appreciably smaller than the females of comparable ages.

DIPHYLLA ECAUDATA Spix

Diphylla ecaudata SPIX, Simiarum et vespertilionum Brasiliensium species novae, p. 68, pl. 36, fig. 7, 1823.—ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 87, 1900 (Cacagualito).

Type locality.—Brazil.

THYROPTERA TRICOLOR ALBIGULA G. M. Allen

Thyroptera tricolor, ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 94, 1900 (Cacagualito).

Thyroptera tricolor albigula G. M. ALLEN, Proc. New England Zool. Club, vol. 9, p. 1, 1923.

Thyroptera albiventer, G. M. ALLEN and BARBOUR, Bull. Mus. Comp. Zool., vol. 65, p. 271, 1923 (Río Jesusito, eastern Panamá).—G. M. ALLEN, Proc. New England Zool. Club, vol. 9, p. 2, 1923 (*albiventer* distinct from *tricolor!*).—DUNN, Journ. Mamm., vol. 12, p. 429, 1931 (Barro Colorado Island, Canal Zone, Panamá).

Thyroptera tricolor albiventer, DUNN (*nec* Tomes), Journ. Mamm., vol. 12, p. 430, 1931 (Gutierrez, the type specimens of *albigula;* name *lapsus calami* for *Thyroptera tricolor albigula* Allen).

Type locality.—Gutierrez, in the mountains about 25 miles inland from Chiriquito, on the trail from the Chiriquí Lagoon to Boquete, western Panamá; altitude, approximately 4,000 feet.

Specimens collected.—Eighteen. Colonia Agrícola de Caracolicito, southern slope of the Sierra Nevada de Santa Marta, 7 males (2 in alcohol), 11 females (5 in alcohol).

Measurements.—Head and body, 39–49; tail, 29–31 (of 7 specimens in alcohol, 24–30; free portion of tail 4–8, or 15–28 percent of total length); hind foot, 6–7; ear, 12–13; forearm, 34.3–37.7; greatest length of skull, 14.4–15.1; condylobasal length, 13.4–14.0; zygomatic breadth, 7.1–7.6; width of brain case, 7.2–7.4; depth of brain case, including bullae and cochleae, 6.5–7.0; width of rostrum, 4.0–4.3; interorbital constriction, 2.6–2.9; maxillary tooth row, 5.6–6.0.

Remarks.—Individual variation in color of underparts and in other characters in the large series from northern Colombia, as well as from other regions, shows that specific distinction of *Hyonycteris albiventer* Tomes (Proc. Zool. Soc. London, 1856, p. 179) from *Thyroptera tricolor* Spix (Simiarum et Vespert. Brasil., p. 61, 1823) cannot be maintained as advocated by G. M. Allen (Bull. Mus. Comp. Zool., vol. 52, p. 42, 1908) and Cabrera (Trab. Mus. Nac. Cienc. Nat.,

Madrid, ser. zool., No. 31, p. 15, 1917). In *tricolor* (*albiventer*), underparts to lower lip are usually sharply contrasted white, sometimes with yellowish tinge on parts of belly and chest, and either yellow or brown on chin and throat; ears small, blackish; calcar with two cartilaginous projections extending into posterolateral border of uropatagium. In *discifera*, the only other known valid species of the genus, underparts are brown, slightly paler than upperparts; ears yellowish, larger than in *tricolor;* calcar with one cartilaginous projection extending into posterolateral border of uropatagium; brain case lower, less globate, teeth smaller than in *tricolor*. Depth of brain case from auditory meatus in the type specimen of *T. discifera major* Miller is 6.5 mm. This form has been recorded by Sanborn (Ann. Carnegie Mus., vol. 21, p. 180, 1932) from Río Negro, Boyacá, in the interior of Colombia. A skull only, "probably from Bonda," is referred to *T. discifera major* by the same author (*loc. cit.*).

MYOTIS NIGRICANS NIGRICANS Schinz

Vesp[ertilio] nigricans Schinz ("P. Max."), Das Thierreich, vol. 1, p. 179, 1821.

Myotis nigricans, Bangs, Proc. New England Zool. Club, vol. 1, p. 102, 1900 (Santa Marta; Palomino).—Allen, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 94, 1900 (Bonda).

Myotis bondae Allen, Bull. Amer. Mus. Nat. Hist., vol. 33, p. 384, 1914 (Bonda, type locality).

Myotis nigricans nigricans, Miller and Allen, U. S. Nat. Mus. Bull. 144, p. 177, 1928 (Bonda; Palomino; Santa Marta; revision).—Sanborn, Ann. Carnegie Mus., vol. 21, p. 180, 1932 (Aguachica).

Type locality.—Fazenda de Aga, near Rio Iritiba, Espirito Santo, Brazil (see Wied-Neuwied, Beiträge Naturg. Brasil., vol. 2, p. 268, 1826).

Specimens collected.—Twenty-four. Norosí, Bolívar, 10 males (in alcohol), 5 females (in alcohol); La Gloria, Río Magdalena, 5 males (in alcohol), 4 females (in alcohol).

EPTESICUS BRASILIENSIS ANDINUS Allen

Eptesicus andinus Allen, Bull. Amer. Mus. Nat. Hist., vol. 33, p. 382, 1914.

Type locality.—Valle de Las Papas, Huila, Colombia; altitude, 10,000 feet.

Specimens collected.—One. Sierra Negra, Sierra de Perijá, 1 female.

Remarks.—The individual agrees specifically with a representative of true *brasiliensis* from Rio de Janeiro. Its forearm, 43.6 mm. in the dry skin, is slightly larger than that of the type of *andinus* Allen and slightly smaller than that of the type of *chiriquinus* Thomas. It is doubtful whether the latter can be separated even subspecifically from *andinus*. The more northern *propinquus* Peters is a smaller race of *brasiliensis*.

RHOGEESSA TUMIDA H. Allen

Rhogeessa tumida H. ALLEN, Proc. Acad. Nat. Sci. Philadelphia, 1866, p. 286.

Type locality.—Mirador, Veracruz, México.

Specimens collected.—Two. Colonia Agrícola de Caracolicito, 1 male (in alcohol); Río Guaimaral, 1 male.

Measurements.—Head and body, 39; tail, 29; hind foot, 7; ear, 11; forearm, 28.1 (of the male in alcohol, 28.3).

Remarks.—The skull of the specimen prepared as a skin has been lost. The type and a topotype of *R. minutilla* Miller, from Margarita Island, Venezuela, are smaller and paler but appear to be only subspecifically distinct from *tumida*. Judged by the original description, *R. io* Thomas, from Valencia, Venezuela, is questionably separable. even as a subspecies, from typical *tumida*.

LASIURUS CINEREUS PALLESCENS Peters

Atalapha pallescens PETERS, Monatsb. Akad. Wiss. Berlin, 1870, p. 910.

Lasiurus pallescens, ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 94, 1900 (Bonda).

Type locality.—Sierra de Mérida, Venezuela.

CYNOMOPS PLANIROSTRIS PLANIROSTRIS Peters

Molossus planirostris PETERS, Monatsb. Akad. Wiss. Berlin, 1865, p. 575 footnote.

Cynomops planirostris paranus, SANBORN (*nec* Thomas), Publ. Field Mus. Nat. Hist., zool. ser., vol. 27, p. 386, 1941 (Cúcuta, Norte de Santander).

Type locality.—British Guiana (restricted by Miller, U. S. Nat. Mus. Bull. 79, p. 399, 1912).

TADARIDA MOLOSSA Pallas

V[espertilio] Molossus PALLAS, Miscellanea zoologica, p. 49, 1767; Spicilegia zoologica, fasc. 3, p. 8, pl. 4, fig. 11 (skull), 1767.

Nyctinomus macrotis GRAY, Ann. Mag. Nat. Hist., vol. 4, p. 5, pl. 1, fig. 3, 1840 (type locality, Cuba).

Promops affinis ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 91, 1900 (type locality, "Taguaga"=Taganga).

Nyctinomus molossus, MILLER, Proc. U. S. Nat. Mus., vol. 46, p. 86 and footnote 4, 1913 (taxonomic history).

Tadarida macrotis, SHAMEL, Proc. U. S. Nat. Mus., vol. 78, p. 15, 1931 ("Tagauga"=Taganga; *Promops affinis* Allen, a synonym; revision).—SANBORN, Ann. Carnegie Mus., vol. 21, p. 182, 1932 ("Taguaga"=Taganga).

Type locality.—"America"; according to Miller (*op. cit.*), "not improbably from Surinam."

Remarks.—Miller's statement (evidently overlooked by Shamel, *op. cit.*) that "the name *Nyctinomus molossus* (Pallas) should be applied to the '*macrotis*' of northern South America" is correct. As Shamel combines the northern South American and Antillean bats under the name *macrotis*, the prior name *molossa* is used here. Presumably the name *T. molossa* must apply also to Shamel's "*macrotis*"

recorded (*op. cit.*, p. 16) from "Mexico, Arizona, California, and Iowa," as well as from the other localities he listed.

EUMOPS ABRASUS MILLERI Allen

Promops milleri ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 13, p. 92, 1900.

Eumops abrasus milleri, SANBORN, Ann. Carnegie Mus., vol. 21, p. 182, 1932 (Don Diego).—SANBORN, Journ. Mamm., vol. 13, p. 352, 1932 (Don Diego; revision).

Type locality.—Guayabamba (=Santa Rosa de Huayabamba), San Martín, Peru.

Specimens collected.—Three. Norosí, Bolívar, 3 females.

Measurements.—Head and body, 80, 82, 78; tail, 46, 46, 48; hind foot, 13, 13, 14; ear, 22, 22, 22; forearm, 57.2, 59.4, 60.6; greatest length of skull, –, 24.6, 23.6; condylobasal length, –, 22.4, 22.6; interorbital constriction, 4.6, 4.4, 4.3; width of brain case, –, 10.8, 10.7; upper tooth row (I – M^3), 10.1, 10.6, 9.8; distance across canines, 6.0, 6.0, 5.5; distance across third upper molars. 9.7, 9.6, 9.4.

EUMOPS GLAUCINUS Wagner

Dysopes glaucinus WAGNER, Wiegmann's Arch. Naturg., Jahrg. 9, vol. 1, p. 368, 1843.

Promops glaucinus, ALLEN, Bull. Amer. Mus. Nat. Hist., vol. 20, p. 457, 1904 (Santa Marta).

Eumops glaucinus, SANBORN, Journ. Mamm., vol. 13, p. 353, 1932 (Santa Marta; revision).

Type locality.—Cuyabá, Matto Grosso, Brazil.

MOLOSSUS MAJOR MAJOR Kerr

V[espertilio] Mol[ossus] major KERR, Animal Kingdom, p. 97, 1792.

Molossus major, MILLER, Proc. U. S. Nat. Mus., vol. 46, pp. 85–86, 90, 1913 (Dominica, Trinidad, Venezuela).

[?] *Molossus crassicaudatus*, SANBORN (*nec* Geoffroy), Ann. Carnegie Mus., vol. 21, p. 183, 1932 (Jaraquiel; El Tambor, Santander).

Type locality.—La Martinique, Lesser Antilles, West Indies.

Specimens collected.—Eight. Aguas Blancas, near Valencia, 2 males, 6 females (1 in alcohol).

Measurements.—Head and body, 58–63; tail, 36–40; hind foot, 9–11; ear, 9–14; forearm, 36.8–38.7; greatest length of skull, 16.4–17.8; zygomatic breadth, 9.6–10.6; width of brain case, 8.7–8.8; maxillary tooth row (C–M^3), 6.0–6.4; distance across upper canines, 4.2–4.6.

Remarks.—In his revision of the genus *Molossus*, Miller (*op. cit.*) found it expedient to treat as separate species all named forms recognizably distinct. These were arranged into species groups according to size. The *rufus* group included the large members of the genus with greatest breadth across the upper canines 5 mm. or more. The smaller species, with greatest breadth across the canines less than 5 mm., were subdivided into the *currentium*, the *pygmaeus*,

and the *obscurus* groups. Small and overlapping size differences combined with minor color differences were indicated for distinguishing each of these three divisions of small species. Additional material shows that the variation in size and color among these small species with distance across canines less than 5 mm. is even greater than had been supposed by Miller. Differences in color, especially, appear to represent nothing more than tonal variations in the light and dark phases of the same species. Sanborn (*op. cit.*) found, in agreement with earlier authors, that *currentium* and *obscurus* are conspecific. This conclusion combines, in effect, Miller's three groups of small molossids. The present series from northern Colombia shows extremes in cranial and external measurements that grade into the larger *obscurus* on the one hand and the smaller *pygmaeus* on the other. The series averages larger in size than insular forms of *major*, the oldest name available for most of the members of Miller's groups of small forms. As Miller records specimens of *major* from Venezuela with which the present series agrees, this may be the name adopted for the small northern Colombian *Molossus*. Further comparisons of the northern Colombian bats show them to be practically indistinguishable from pale phase individuals from Ecuador (Guayaquil and Santa Rosa) and northwestern Peru (Piura) indentified by Miller (*op. cit.*, p. 92) as *pygmaeus*. Apparently a smiliar bat from the same region was described later by Allen as *M. daulensis*. It appears that in addition to *obscurus*, *pygmaeus*, *currentium*, and *crassicaudatus* the specific synonyms of *major* may include *daulensis*, *coibensis*, and *aztecus*. Pending a revision of the genus, these names should be conserved, at least provisionally, as subspecies of *Molossus major*. The width of the brain case given for the type of *M. burnsi* Thomas does not now appear to be too excessive for the group. *M. bondae* Allen, regarded by Miller as one of the small groups of *Molossus*, was first described as larger than any of them.

MOLOSSUS BONDAE Allen

Molossus bondae Allen, Bull. Amer. Mus. Nat. Hist., vol. 20, p. 28, 1904.—Miller, Proc. U. S. Nat. Mus., vol. 46, p. 89, 1913 (revision, no Colombian specimens examined).

Type locality.—Bonda, Río Manzanares, 7 miles east of Santa Marta, Magdalena, Colombia.

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