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BATON ROUGE, LOUISIANA

THE DISTRIBUTIONAL STATUS OF SOME PERUVIAN MAMMALS

By ALFRED L. GARDNER¹

DURING the last ten years, field investigations conducted in Perú by the Louisiana State University Museum of Zoology have expanded our knowledge of the fauna of that country. To date, five species of mammals previously unknown to science have been described from among the mammals collected during that time (Gardner and Carter, 1972a; Gardner and O'Neill, 1971; Gardner and Patton, 1972; Musser and Gardner, 1974). Additional information from other mammals in these collections has already been published (Baker et al., 1972; Gardner, 1971a, 1971b; Gardner and Carter, 1972b; Gardner and O'Neill, 1969; Patton and Gardner, 1971, 1972; Warner et al., 1974). Recently, three other important accounts concerning Peruvian mammals have appeared (Grimwood, 1969; Tovar, 1971; Tuttle, 1970).

The information presented herein is based on 79 specimens of 23 species, including six species previously unrecorded from Perú, housed in the mammal collections of the Louisiana State University Museum of Zoology (LSUMZ) and the National Museum of Natural History (USNM). All linear dimensions of specimens are in millimeters and weights are in grams. The measurement "greatest length of skull" as used here included the incisors, but "condylobasal length" was measured from the anterior surface

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of the premaxillae to a line connecting the posterior surfaces of the occipital condyles. The dimensions "breadth across molars" and "breadth across canines" were measured across the cingula of the upper toothrows.

SPECIES ACCOUNTS

TONATIA BIDENS (Spix)

Specimens.—*Loreto*: Balta, Río Curanja, ca. 300 m, 2 males, 5 females (LSUMZ 14083-86 and 16443-45).

Measurements.—Mean and range of selected measurements of six specimens unless otherwise indicated: total length (N=7), 91.7 (89-95); tail (N=7), 19 (17-21); foot (N=7), 14.6 (14-16); ear (N=7), 30.6 (29-32); forearm (N=7), 55.6 (54.0-56.8); greatest length of skull, 27.4 (27.1-27.7); condylobasal length, 23.0 (22.8-23.4); palatal length, 11.7 (11.3-12.5); zygomatic breadth, 13.6 (13.3-14.2); postorbital constriction, 5.4 (5.2-5.4); mastoidal breadth, 12.5 (12.1-12.9); breadth of braincase, 10.5 (10.3-10.6); length of maxillary toothrow, 9.4 (9.2-9.6); weight, 24.7 (23-27).

Remarks.—The only *Tonatia bidens* previously recorded for Perú are the four reported from Largato, Río Ucayali, Departamento de Loreto, by Goodwin (1942:205). I collected three other species of *Tonatia* at Balta: the widespread *T. silvicola* (D'Orbigny) and the much less common *T. carrikeri* (J. A. Allen) and *T. brasiliensis* (Peters).

One male taken on 3 April had very small testes, whereas the testes of another caught on 22 July measured 2.5 x 4.5 mm. Two females were pregnant on 23 July, one with a very small embryo and the other with a 35-millimeter (near term) embryo. Two females collected on 3 April and a third taken on 23 July were neither pregnant nor lactating.

TONATIA CARRIKERI (J. A. Allen)

Specimens.—*Loreto*: Balta, Río Curanja, ca. 300 m, 2 females (LSUMZ 14076-77).

Measurements.—Selected measurements of the two females: total length, 79, 79; tail, 14, 13; foot, 14, 14; ear, 27, 28; forearm, 46.4, 47.6; greatest length of skull, 23.4, 24.2; condylobasal length, 19.4, 19.5; palatal length, 9.5, 9.2; zygomatic breadth, 10.3, 10.9; postorbital constriction, 3.5, 3.4; mastoidal breadth, 10.8, 12.0; breadth of braincase, 9.2, 9.4; breadth across

molars, 7.2, 7.4; breadth across canines, 4.4, 4.3; length of maxillary toothrow, 8.0, 8.1; weight, 17, 20.

Remarks.—Allen (1910:147) had seven specimens from Río Mocho, Venezuela, before him when he described this species. Another was reported by Husson (1962:89) from Surinam. The two from Balta, the first *T. carrikeri* recorded from Perú, increase the number of known specimens to 10.

These females were neither pregnant nor lactating when captured on 21 and 23 July.

TONATIA BRASILIENSIS (Peters)

Specimens.—*Junin*: ca. 32 km. N Satipo (km. 38 on La Merced-Satipo road), Río Perené, 1 male (USNM 507167). *Loreto*: Balta, Río Curanja, ca. 300 m, 1 male (LSUMZ 16440).

Measurements.—Measurements of Satipo and Balta specimens, respectively: total length, 68, 63; tail, 11, 11; foot, 11, 12; ear, 23, 22; tragus, 9, 10; forearm, 37.5, 38.0; greatest length of skull, 21.2, 20.9; condylobasal length, 17.4, 17.3; palatal length, 8.5, 8.2; zygomatic breadth, 10.0, 9.5; postorbital constriction, 3.6, 3.2; mastoidal breadth, 9.7, 9.5; breadth of braincase, 8.6, 8.3; breadth across molars, 6.5, 6.1; breadth across canines, 4.6, 4.0; length of maxillary toothrow, 7.2, 7.1; weight, 12, 11.

Remarks.—The taxonomy of *Tonatia* is poorly understood. At present, there are three species of small *Tonatia* recognized: *T. brasiliensis* (Peters), *T. venezuelae* (Lyon), and *T. minuta* Goodwin (= *T. nicaraguae*, Goodwin, 1942). Charles O. Handley, Jr., has suggested (personal communication), that all small *Tonatia* represent a single species (*T. brasiliensis*). If Handley is correct, the six specimens of *T. minuta* (including the holotype) described by Goodwin (1942:206) represent an earlier Peruvian record for *T. brasiliensis*. While Goodwin gave the type locality as Boca Curaray, Ecuador, this locality is actually in the Departamento de Loreto, Perú, where the Río Curaray empties into the Río Napo (near 02°26'S, 74°04'W).

The testes of the male taken 20 November near Satipo were not enlarged; those of the Balta specimen measured 3 x 2 mm on 25 March.

PHYLLOSTOMUS DISCOLOR (Wagner)

Specimen.—*Loreto*: Yarinacocha, ca. 150 m, 1 male (LSUMZ 12476).

Measurements.—Total length, 92; tail, 11; foot, 13; ear, 20; forearm,

58.5; greatest length of skull, 29.6; condylobasal length, 26.1; palatal length, 13.0; zygomatic breadth, 15.4; postorbital constriction, 6.8; mastoid breadth, 14.6; breadth of braincase, 12.4; breadth across molars, 9.5; breadth across canines, 7.1; length of maxillary tooththrow, 9.6; length of mandibular tooththrow, 10.9; weight, 36.

Remarks.—Tuttle (1970:81) pointed out that there were no specimens of *P. discolor* from Perú up to the time of his report despite the inclusion of Perú within the range of the species by Cabrera (1958:67) and more recent authors.

The first report of Peruvian specimens appears to be by Valdez (1970:56), who listed a female from Tingo María, Departamento de Huánuco, and two males from 11 mi. SE Pucallpa, Departamento de Loreto.

PHYLLODERMA STENOPS Peters

Specimen.—Ayacucho: Yuraccyacu, ca. 2,600 m, 1 female (LSUMZ 16461).

Measurements.—Total length, 134; tail, 22; foot, 22; ear, 27; forearm, 79.8; greatest length of skull, 32.6; condylobasal length, 28.4; palatal length, 14.8; zygomatic breadth, 16.0; postorbital constriction, 8.9; mastoid breadth, 14.5; breadth of braincase, 12.8; breadth across molars, 10.4; breadth across canines, 6.7; length of maxillary tooththrow, 10.9; length of mandibular tooththrow, 12.1.

Remarks.—This specimen, the first *P. stenops* to be recorded from Perú, was mist-netted in a small clearing in the cloud forest at Yuraccyacu.

Until 1962, the known South American distribution of *P. stenops* (the Middle American *P. septentrionalis* Goodwin is a synonym) was in French Guiana (Husson, 1962:111). Since then the species has been recorded from Trinidad (Goodwin and Greenhall, 1964:5), Guyana and Brazil (Hill, 1964:566), Venezuela (Ojasti, 1966:92), Colombia (Marinkelle and Cadena, 1972:52), and now Perú.

This female was neither pregnant nor lactating on 20 May.

LONCHOPHYLLA HESPERIA G. M. Allen

Specimen.—Cajamarca: 9 km S Jaen, 1 female (LSUMZ 14121).

Measurements.—Selected measurements of the female followed by my

measurements of the male (USNM 283177) reported on by Tuttle (1970): total length, 75, —; tail, 7, —; foot, 15, 9.7 (dry); ear, 10, —; forearm, 38.8, 37.5; greatest length of skull, 26.7, —; condylobasal length, 26.1, —; palatal length, 14.7, —; zygomatic breadth, 10.1, 10.0; postorbital constriction, 4.9, 4.9; mastoid breadth, 10.0, 9.7; breadth of braincase, 9.5, 9.2; breadth across molars, 5.8, 5.8; breadth across canines, 4.3, 4.2; length of maxillary tooththrow, 8.5, 8.6.

Remarks.—This female is the fifth known specimen of this species. *Lonchophylla hesperia* was long known only from the three specimens from Zorritos, Departamento de Tumbes, that Allen (1908:35) had at hand when he described the species. The fourth (USNM 283177, measurements given above) was originally reported by Tuttle (1970:67) as "from an unspecified locality in the Departamento de la Libertad . . ." According to USNM catalogue information, the specimen was collected at Trujillo. The LSUMZ specimen was collected at an elevation near 740 meters in desert (rain shadow) habitat (Bosque Seco Subtropical, Tosi, 1960) in the Río Marañón drainage system and is the first to be reported on the eastern slope of the Andes. Zorritos and Trujillo are at sea level on the Pacific coast.

LONCHOPHYLLA ROBUSTA Miller

Specimen.—Junín: 3.2 km N Vitoc, Río Tulumayo, ca. 850 m, 1 male (USNM 507172).

Measurements.—Total length, 66; foot, 10; ear, 17; forearm, 47.0; greatest length of skull, 27.7; condylobasal length, 26.5; palatal length, 15.4; zygomatic breadth, 11.0; postorbital constriction, 5.0; mastoid breadth, 11.4; breadth of braincase, 10.2; breadth across molars, 6.7; breadth across canines, 4.7; length of maxillary tooththrow, 10.1; weight, 21.

Remarks.—This is the third specimen reported from Perú. Tuttle (1970:68) mentioned one specimen from San Juan, Departamento de Pasco and another from San Ramón. The latter is about 9 kilometers north of the locality where the specimen reported on herein was taken. This male lacks both a tail and a fringe of hair along the trailing edge of the interfemoral membrane but otherwise compares favorably in all the characteristics outlined by Tuttle from his material.

The palatal length of 7.8 mm given by Tuttle (p. 68) for the female (USNM 364347) from San Juan is incorrect, as this measurement is 15.9

millimeters. Also, the latitudes he gave for his collecting sites (pp. 81-82) were stated as North instead of South.

LONCHOPHYLLA THOMASI J. A. Allen

Specimens.—*Loreto*: Balta, Río Curanja, ca. 300 m, 6 males, 6 females (LSUMZ 12096-102, 14119-20, and 16486-88).

Measurements.—Mean and range for 12 adults unless otherwise noted: total length, 57 (53-60); tail, 7.3 (6.0-11.0); hind foot, 8.3 (8.0-9.0); ear, 13.8 (13.0-15.0); forearm (N=11), 31.9 (29.9-33.8); greatest length of skull, 20.8 (20.3-21.1); condylobasal length, 19.1 (18.7-19.6); palatal length, 11.0 (10.3-11.4); postorbital constriction, 4.2 (4.0-4.4); zygomatic breadth, 8.7 (8.3-9.0); breadth of braincase, 8.2 (7.9-8.6); length of maxillary tooththrow, 6.6 (6.3-6.9); weight (N=11), 6.8 (5.7-8.0).

Remarks.—In addition to the holotype from Ciudad Bolívar, Venezuela (Allen, 1904:230), *Lonchophylla thomasi* is known from three specimens from Surinam (Husson, 1962:143), one from Guyana (Hill, 1964:567), three from French Guiana (Brosset and Dubost, 1967:585), one from Panamá (Handley, 1966:763), and the specimens reported on herein, which are the first recorded from Perú. Baker (1973:39) gave the karyotype of *L. thomasi* but nowhere mentioned the extent or source of his material.

Pirlot (1968) reported a male *Lonchophylla concava* from Indiana, Río Amazonas, Departamento de Loreto. Tuttle (1970:68) followed Handley (1966:763) in treating *L. concava* Goldman as a synonym of *L. mordax* Thomas when he cited Pirlot's record. However, Pirlot's (1968:92) description is rather vague and the forearm measurement he gives (32.5 mm) falls within the range of forearm measurements of the Balta specimens reported above and is smaller than the forearms of 18 *L. mordax* (33.8-36.7 mm) from Barra, Bahia, Brazil, measured by Sanborn (1941:375). Therefore, Pirlot's *L. concava* may actually be a *L. thomasi*.

Exceeded in numbers only by *Glossophaga soricina*, *L. thomasi* was one of the commonest glossophagines encountered at Balta. However, it was taken only in banana groves along the river. Nets placed in other locations and habitats, including banana groves on ridges and hilltops away from the river, did not capture this species.

ANOURA BREVIROSTRUM Carter

Specimen.—*Huánuco*: on trail to Hda. Paty below Carpish Pass, eastern

slope Cordillera Carpish, ca. 7,200 ft. (2,196 m), 1 male (LSUMZ 17941).

Measurements.—Total length, 61; foot, 11; ear, 14; forearm, 40.2; greatest length of skull, 23.4; condylobasal length, 22.6; palatal length, 11.6; zygomatic breadth, 10.2; postorbital constriction, 4.9; mastoidal breadth, 10.0; breadth of braincase, 9.4; breadth across molars, 5.7; breadth across canines, 4.8; length of maxillary tooththrow, 8.0; weight, 15.

Remarks.—Carter (1968) cited four specimens from Perú and one from Gramales, Departamento de Santander, Colombia. This *A. brevirostrum*, the fifth reported from Perú, is only the sixth specimen known. All Peruvian records are from the Departamento de Huánuco at elevations from about 600 m in the Cordillera Azul to nearly 2,200 m in the Cordillera Carpish.

LICHONYCTERIS OBSCURA Thomas

Specimen.—*Loreto*: Yarinacocha, ca. 150 m, 1 female (LSUMZ 12107).

Measurements.—Selected measurements of the Yarinacocha female followed by my measurements of the San Juan female (USNM 364348) cited by Tuttle (1970:69): total length, 63, —; tail, 10, —; foot, 9, 7.8 (dry); ear, 12, —; forearm, 35.5, 32.3; greatest length of skull, 19.3, 18.6; condylobasal length, 18.4, 17.9; palatal length, 10.8, 10.0; zygomatic breadth, 8.6, 8.4; least interorbital breadth, 4.1, 3.8; mastoidal breadth, 8.2, 8.0; breadth of braincase, 8.3, 8.2; breadth across molars, 4.4, 4.3; breadth across canines, 4.1, 3.9; length of maxillary tooththrow, 6.5, 5.9; weight, 8.1, —.

Remarks.—Tuttle (1970:69) reported the first specimen of this species from Perú and the female from Yarinacocha is the second. Upon direct comparison with Costa Rican material and with the holotype of *Lichonycteris degener* Miller, the Peruvian specimens more closely resemble the latter. However, the dental features used by Miller (1931:411) to distinguish *L. degener* from *L. obscura* are occasionally seen in the latter and I suggest that the two names represent the same species.

STURNIRA MAGNA de la Torre

Specimens.—*Ayacucho*: Huanhuachayo, ca. 1,660 m, 1 male, 3 females (LSUMZ 15681 and 16516-18).

Measurements.—Mean and range for one male and three females: total length, 88.0 (84-93); foot, 15.3 (14-17); ear, 21.8 (21-22); forearm, 58.1

(56.4-60.5); greatest length of skull, 29.2 (28.6-29.6); condylobasal length, 25.3 (24.8-25.6); palatal length, 12.0 (11.7-12.4); zygomatic breadth, 16.9 (16.6-17.2); postorbital constriction, 7.0 (6.8-7.1); mastoidal breadth, 15.1 (14.9-15.5); breadth of braincase, 12.3 (12.1-12.5); breadth across molars, 9.5 (9.1-9.9); breadth across canines, 8.0 (7.8-8.3); length of maxillary tooththrow, 7.8 (7.6-8.0); weight, 43.1 (41.0-44.5).

Remarks.—These specimens extend the known distribution of *S. magna* southward to the Departamento de Ayacucho. De la Torre (1966:267) based his description of the species on nine specimens: five (including the holotype) from Santa Cecilia, Río Maniti, near Iquitos, Departamento de Loreto, three from San Pablo, and one from San Juan, Departamento de Pasco. Tuttle (1970:71) recorded two from San Pablo and another from San Juan; however, these are the same specimens cited by de la Torre. Davis (1975:262) reported still another *S. magna* from Mishana, Río Nanay, 34 km. WSW Iquitos, Departamento de Loreto. Huanhuachayo, at about 1,660 meters, is considerably higher than the other four localities (all under 300 meters). The only other specimen that I am aware of is from Limoncocha, Ecuador (Baker, 1974:137). The Peruvian and Ecuadorian specimens are all from the eastern slope of the Andes or adjacent lowlands.

The Huanhuachayo specimens were mist-netted in open forest. Other species of *Sturnira* collected at this locality include *S. erythromos*, *S. lilium*, *S. ludovici*, *S. bidens*, and *S. nana*.

The testes of the male captured on 8 May, measured 7 x 5 mm; one female was lactating on 10 May. The other two females taken on 6 May and 14 July bore no visible signs of reproductive activity.

VAMPYROPS BRACHYCEPHALUS Rouk and Carter

Specimens.—*Loreto*: Yarinacocha, ca. 150 m, 2 males, 4 females (LSUMZ 12179, 14219-21, 14256, and 16570); Balta, Río Curanja, ca. 300 m, 3 males, 4 females (LSUMZ 12165-68, 12173-74, and 14222).

Remarks.—These specimens, overlooked in a review of Peruvian *Vampyrops* (Gardner and Carter, 1972b), were taken in mist nets together with *V. helleri*.

VAMPYRESSA MELISSA Thomas

Specimens.—*Ayacucho*: San José, Río Santa Rosa, ca. 1,000 m, 1 female

(LSUMZ 16580); Huanhuachayo, ca. 1,660 m, 1 male, 2 females (LSUMZ 16581-83).

Measurements.—Mean and range of four specimens unless otherwise noted: total length, 59.5 (57-61); foot, 9.5 (9-10); ear, 17 (all); forearm, 38.7 (37.7-39.5); greatest length of skull (N=3), 22.2 (22.0-22.4); condylobasal length, 20.4 (20.2-20.6); palatal length, 10.4 (10.1-10.7); zygomatic breadth, 13.4 (13.0-13.6); postorbital constriction, 5.4 (5.0-5.7); breadth of braincase, 9.4 (9.2-9.6); breadth across molars, 9.6 (9.4-9.6); length of maxillary tooththrow, 7.2 (7.0-7.3); weight, 13.6 (12.5-15.0).

Remarks.—These are the first of this species to be reported since Thomas' (1926b:157) description of the holotype from Puca Tambo, Departamento de San Martín, Perú. The female from San José was taken in a mist net placed above a foot bridge across the Río Santa Rosa. The Huanhuachayo specimens were netted at the edge of a small clearing.

The testes of the male were small (2 x 1 mm) on 6 May; the females were neither pregnant nor lactating on 3, 6, or 8 May.

CHIRODERMA TRINITATUM Goodwin

Specimens.—*Ayacucho*: Hacienda Luisiana, Río Apurímac, ca. 900 m, 1 male, 4 females (LSUMZ 16573-77); San José, Río Santa Rosa, ca. 1,000 m, 2 females (LSUMZ 16578-79). *Loreto*: Balta, Río Curanja, ca. 300 m, 1 male (LSUMZ 14232).

Measurements.—Mean and range for 2 males and 6 females, unless otherwise noted: total length, 61.9 (57-65); foot, 10.6 (10-11); ear, 17.5 (15-19); forearm, 41.9 (39.9-43.1); greatest length of skull, 23.0 (21.9-23.8); condylobasal length, 20.4 (19.3-21.0); palatal length, 11.8 (10.8-12.6); zygomatic breadth, 13.9 (13.0-14.5); postorbital constriction, 5.4 (5.2-5.6); mastoidal breadth, 11.3 (10.9-11.9); breadth across molars, 10.1 (9.7-10.5); breadth across canines, 5.1 (4.9-5.2); length of maxillary tooththrow, 7.7 (7.5-7.8); weight (N=6), 17.5 (15.0-19.0).

Remarks.—*Chiroderma trinitatum* was previously known from Perú only on the basis of the four specimens reported on by Tuttle (1970:73) and the six listed by Davis (1975:262). All specimens reported on herein were taken in mist nets placed in disturbed habitats such as clearings around houses and fruit groves.

ARTIBEUS CONCOLOR Peters

Specimen.—*Loreto*: Balta, Río Curanja, ca. 300 m, 1 male (LSUMZ 12189).

Measurements.—Total length, 64; foot, 11; ear, 19; forearm, 45.8; greatest length of skull, 21.9; condylobasal length, 19.1; palatal length, 9.5; zygomatic breadth, 13.0; postorbital constriction, 5.5; mastoidal breadth, 11.6; breadth of braincase, 9.8; breadth across molars, 9.1; breadth across canines, 6.0; length of maxillary tooththrow, 7.5; length of mandibular tooththrow, 7.7; weight, 20.0.

Remarks.—This is the first record of *A. concolor* from Perú and brings the total number of known specimens to 14. The species is now known to occur in Perú, Brazil, Surinam, Guyana, Venezuela, and Colombia (Husson, 1962:178; Hill, 1964:570; Barriga, 1965:244; Linares, 1969:39).

ENCHISTHENES HARTII (Thomas)

Specimen.—*Junín*: 3.2 km N Vitoc, Río Tulumayo, ca. 850 m, 1 female (USNM 507202).

Measurements.—Total length, 55; foot, 11; ear, 18; forearm, 39.0; greatest length of skull, 20.5; condylobasal length, 18.4; palatal length, 9.1; zygomatic breadth, 11.9; postorbital constriction, 5.8; mastoidal breadth, 10.4; breadth of braincase, 9.5; breadth across molars, 8.3; breadth across canines, 5.3; length of maxillary tooththrow, 6.8; weight, 13.

Remarks.—This is the first *E. bartii* recorded from Perú. The species is known elsewhere in South America from Trinidad, Venezuela, Colombia, and Ecuador. The presence of *Enchisthenes* in Ecuador is attested by a large number of skulls from owl pellets gathered in southern Ecuador (*vide* Goodwin, 1940:3).

This female, collected 15 November, was neither pregnant nor lactating.

THYROPTERA TRICOLOR Spix

Specimens.—*Loreto*: Balta, Río Curanja, ca. 300 m, 2 males (LSUMZ 12248 and 16619).

Measurements.—Selected measurements of LSUMZ 12248 and 16619, respectively: total length, 75.0, 71.0; tail, 32.0, 28.0; foot, 6.0, 5.0; ear, 12.0, 12.0; forearm, 36.5, 37.5; greatest length of skull, 14.9, 15.1;

condylobasal length, 13.5, 13.5; palatal length, 7.1, 7.1; zygomatic breadth, 7.4, 7.7; postorbital constriction, 2.7, 2.7; mastoidal breadth, 7.1, 7.2; breadth across molars, 5.3, 5.4; breadth across canines, 3.1, 3.1; length of maxillary tooththrow, 6.0, 6.0; weight, 4.0, 4.0.

Remarks.—Sanborn (1951:11) reported specimens of this species, the first for Perú, from Hacienda Cadena, Balceadero, and Huajyumbe—localities in the Distrito de Marcapata, Departamento de Cuzco. Tuttle (1970:76) cited an additional specimen from San Juan, Departamento de Pasco.

The *T. tricolor* from Balta were mist-netted, one over a forest trail and the other next to a house in the village. This species is undoubtedly widely distributed in the tropical lowlands of Perú. *Thyroptera* are difficult to capture in mist nets, however; and their presence is more easily revealed by search in their day roosts in suitable habitats (Findley and Wilson, 1974).

LASIURUS EGA Gervais

Specimens.—*Loreto*: Balta, Río Curanja, ca. 300 m, 2 males, 1 female (LSUMZ 14314-16).

Measurements.—Mean and range for three specimens: total length, 118.0 (115-122); tail, 54.0 (52-57); foot, 8.0 (all); ear, 16.6 (16-18); forearm, 46.6 (44.8-47.7); greatest length of skull, 16.1 (16.1-16.2); condylobasal length, 14.8 (14.6-15.1); zygomatic breadth, 11.1 (10.9-11.3); postorbital constriction, 4.8 (4.6-4.9); mastoidal breadth, 8.9 (8.7-9.0); breadth of braincase, 8.4 (8.4-8.5); breadth across molars, 7.5 (7.1-7.7); breadth across canines, 6.1 (6.0-6.3); length of maxillary tooththrow, 5.6 (5.4-5.8); weight, 15.3 (14.0-17.0).

Remarks.—Pirlot (1968:93) tentatively identified two immature bats from Puerto Indiana, Río Amazonas, Departamento de Loreto as this species. Tuttle (1970:79) suggested that while Pirlot's specimens are probably *L. ega* they could be *L. borealis*. The three Balta specimens were captured in mist nets placed between houses on the bank above the river.

LASIURUS CINEREUS (Palisot de Beauvois)

Specimens.—*Huánuco*: Zapatogocha, ENE Acomayo (Acomayo=09°47'S, 76°03'W), Cordillera Carpish, ca. 3,300 m, 1 male (LSUMZ 17900). *Ayacucho*: San José, Río Santa Rosa, ca. 1,000 m, 1 female (LSUMZ 16637).

Measurements.—Selected measurements of the male followed by those of

the female: total length, 122, 135; tail, 52, 61; foot, 12, 11; ear, 16, 17; forearm, 50.1, 52.5; greatest length of skull, 15.8, 16.5; condylobasal length, 14.9, 16.1; zygomatic breadth, 11.0, 11.6; postorbital constriction, 5.3, 5.5; breadth of braincase, 8.9, 8.7; breadth across molars, 7.6, 8.2; length of maxillary toothrow, 5.6, 5.9; weight, 17, 17.

Remarks.—These are the second and third specimens to be recorded from Perú. The first was from Limapunco, near Marcapata, Departamento de Cuzco, about 7,900 ft. (Sanborn, 1953:2). The South American subspecies is *L. c. villosissimus* (Geoffroy).

The male had small testes (3.5 x 2 mm) on 18 June; the female was neither lactating nor pregnant on 1 May.

SAGUINUS IMPERATOR (Goeldi)

Specimens.—*Loreto*: Balta, Río Curanja, ca. 300 m, 4 males, 4 females (LSUMZ 9266, 12299, 12621-22, 14346-48, and 16652).

Measurements.—Mean and range for seven adults unless otherwise noted: total length (N=6), 607.5 (592-630); tail (N=6), 371.0 (357-390); hind foot (N=6), 69.6 (68-72); ear (N=6), 26.6 (24-29); greatest length of skull, 52.2 (50.1-53.9); condylobasal length, 38.9 (36.6-40.5); zygomatic breadth, 33.8 (32.6-35.0); interorbital breadth, 27.1 (26.4-28.3); mastoidal breadth, 28.2 (27.4-28.8); breadth across molars, 16.6 (16.0-17.1); length of maxillary toothrow, 12.7 (11.9-13.1).

Remarks.—Emperor marmosets were common in the vicinity of Balta, where they inhabited the vine-tangled lower canopy of the forest. Occasionally they were seen in the upper canopy and in the crowns of emergent trees. This species is the only *Saguinus* in the Río Curanja region, and local traders reported seeing them farther to the southwest, all within the northwestern watershed of the Río Alto Purús in Perú. This zone lies immediately beyond the southwest tip of the "unexplored" region and within the range of *Saguinus fuscicollis* as mapped by Hershkovitz (1966:382).

Ceballos (1963) was the first to report *S. imperator* from Perú. In addition to citing four specimens in his personal collection (ICB) from Boca Quebrada Juarez, Departamento Madre de Diós, he reported on three in the Museo de Historia Natural "Javier Prado." Of the latter, one is a mounted specimen whose label reads Valle de Marcapata, Cuzco, though it actually came from the Río Amigos, Madre de Diós (*vide* Ceballos, 1963:298). The

other two are skins without data, but which Ceballos believed were collected somewhere in the lowlands of eastern Perú.

THOMASOMYS TACZANOWSKII (Thomas)

Specimens.—*Ayacucho*: Yuraccyacu, 2,600 m, 1 male, 1 female (LSUMZ 16735-36).

Measurements.—Selected measurements of the male followed by those of the female: total length, 206.0, 248.0; tail, 124.0, 144.0; hind foot, 25.0, 25.0; ear, 21.0, 21.0; greatest length of skull, 27.5, 30.0; condylobasal length, 24.6, 27.7; zygomatic breadth, 14.3, 15.6; interorbital breadth, 4.2, 4.3; mastoidal breadth, 12.1, 13.3; alveolar length of maxillary toothrow, 4.7, 5.1; alveolar length of mandibular toothrow, 5.0, 5.3; weight, 23, —.

Remarks.—Thomas (1882:109) based his description of *T. taczanowskii* on an adult female and an immature male from Tambillo, Departamento de Cajamarca. At the same time, he tentatively included within this species a second immature from Cutervo, Departamento de Cajamarca. The only other reported specimen is that provisionally identified as this species by Thomas (1921:236) from the Ocobamba Valley, Departamento de Cuzco.

THOMASOMYS NOTATUS Thomas

Specimens.—*Huánuco*: Eastern slope of the Cordillera Carpish, ca. 2,400 m, 1 male, 1 female (LSUMZ 14367-68).

Measurements.—Selected measurements of the male and female, respectively: total length, 219, 221; tail, 116, 121; hind foot, 25, 25; ear, 18, 18; greatest length of skull, 30.0, 29.0; condylobasal length, 27.6, 27.0; zygomatic breadth, 15.8, 15.5; interorbital breadth, 4.0, 4.2; mastoidal breadth, 12.2, 12.3; alveolar length of maxillary toothrow, 4.5, 4.2; alveolar length of mandibular toothrow, 4.8, 4.7; weight, 35, 31.

Remarks.—The *T. notatus* from the Cordillera Carpish bring the number of known specimens to ten and are from a locality geographically midway between the regions from which specimens had been reported previously. In 1921, Thomas elaborated on his original description of *T. notatus* (1917:2) and listed six specimens from Torontoy (including the holotype, USNM 194548) and one from Machu Picchu, both localities in the Departamento de Cuzco. The only other specimen known is that reported by Thomas (1926a:614) from Tambo Jenes, Departamento de Amazonas.

PROCYON CANCRIVORUS (Cuvier)

Specimen.—*Loreto*: Balta, Río Curanja, ca. 300 m, 1 female (LSUMZ 14443).

Measurements.—Total length, 835; tail, 295; hind foot, 148; ear, 59; greatest length of skull, 128.1; condylobasal length, 120.0; zygomatic breadth, 79.0; least interorbital breadth, 25.4; postorbital breadth, 30.1; least breadth of palatal shelf, 19.3; alveolar length of maxillary toothrow, 47.7; length of upper carnassial (PM⁴), 10.9; width of upper carnassial (PM⁴), 11.9; weight, 5 kilos.

Remarks.—This specimen confirms the presence of raccoons along the Río Curanja in eastern Perú (see Grimwood, 1969:46). Grimwood cited the only other specimen of which I am aware—a skin in the possession of the Servicio Forestal y de Caza, Pucallpa. According to Grimwood, there are two populations of *Procyon* in Perú: a northwestern population in the Departamento de Tumbes, abundant in the mangrove swamps but also found in the valley of the Río Tumbes, and an Amazon population whose distribution is poorly known. Raccoon sign was abundant in the vicinity of the Cashinahua Village of Balta in 1966, 1968, and 1971. I have also seen raccoon tracks along the Río Apurimac at Hacienda Luisiana, Departamento de Ayacucho, and Grimwood mentioned a report of tracks seen along the Río Manú, Departamento de Madre de Diós.

Neither Cabrera (1958) nor Soukup (1961) mentioned *Procyon* as occurring in Perú. Apparently, Peruvian raccoons have been almost unknown to science despite their widespread occurrence in that country. I was surprised to learn that some Cashinahua men were not familiar with raccoons, although all the women knew the animals. Most of the men who recognized the raccoon said they had seen them only when, as children, they had accompanied women in gathering clay, washing clothes, or poisoning fish along forest streams. Typical hunting behavior of Cashinahua men is to scan the forest canopy constantly in search of monkeys and large birds and to travel away from edges of streams so as to avoid the thicker understory vegetation. Therefore, they are less likely to encounter raccoons that might be active during the day.

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