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NEW MAMMALS FROM NORTH AND MIDDLE AMERICA.

BY E. A. GOLDMAN.

General comparison of museum material in connection with work in progress has revealed the existence of ten hitherto unrecognized subspecies of mammals representing various orders, families and genera. For the privilege of studying collections in their charge, and other courtesies I am much indebted to Dr. J. A. Allen and Mr. H. E. Anthony of the American Museum of Natural History, New York, and to Mr. Samuel Henshaw, Mr. Outram Bangs, Dr. Glover M. Allen, and Dr. Thomas Barbour of the Museum of Comparative Zoölogy, Cambridge, Massachusetts.

The new forms are described as follows:

***Didelphis marsupialis particeps*, subsp. nov.**

SAN MIGUEL ISLAND OPOSSUM.

Type from San Miguel Island, Panama. No. 8439, ♂ adult, Museum of Comparative Zoölogy (Bangs collection), collected by W. W. Brown, Jr., May 8, 1900. Original number 165.

General characters.—Similar in general to *Didelphis marsupialis etensis* as represented on adjacent mainland, and *Didelphis marsupialis colombica* of South America, but face less blackish and skull differing from both in structural details, especially the narrow braincase and posteriorly spreading zygomata.

Color.—*Type*: Muzzle yellowish; cheeks, middle of face and areas over eyes grayish brown; over fur on top and sides of head and over dorsum black, the under color pale yellowish; under side of neck and abdomen yellowish or buffy, tinged with black; orbital rings, ears, limbs, inguinal region and basal third of tail black; terminal two-thirds of tail (epidermis) yellowish.

Skull.—Rather small, short and broad in general dimensions with broad rostrum, narrow braincase and posteriorly expanded zygomata.

Similar to those of *D. m. etensis* of the adjacent mainland, and *D. m. colombica*, but zygomata narrower anteriorly, more abruptly turned outward posteriorly, the sides less nearly parallel; premaxillæ broader, but less extended posteriorly, the outer borders notched or indented near posterior tips; nasopremaxillary suture longer owing to shortening of premaxillæ; frontopremaxillary line of contact between nasal and lacrymals longer; rostrum similar to that of *D. m. columbica*, broader than that of *D. m. etensis*; molars slightly smaller than in mainland forms.

Measurements.—*Type*: Total length, 820; tail vertebræ, 405; hind foot, 64. An adult female topotype: 800; 410; 60. *Skull* (type): Greatest length, 102.5; zygomatic breadth, 58.2; breadth of rostrum in front of antorbital foramina, 20.3; postorbital constriction, 10.1; length of longest nasal, 49; length of nasopremaxillary suture, 10; length of nasomaxillary suture, 22.8; maxillary toothrow (back of last molar to front of canine), 44.5.

Remarks.—Like the other mammals of San Miguel Island this opossum is clearly allied to forms inhabiting the adjacent mainland. In contrast with the subspecies occupying Coiba Island the face is light in color. The differential cranial characters noted are rather slight, but apparently distinctive. The type and topotype are in the black phase.

Specimens examined.—Two, from the type locality.

***Marmosa mexicana savannarum*, subsp. nov.**

SAVANNA MARMOSA.

Type from Boqueron, Chiriqui, Panama. No. 18,915, ♂ subadult (molars slightly worn), American Museum of Natural History, collected by J. H. Batty, October 31, 1901. Original number 883.

General characters.—Allied to *Marmosa mexicana isthmica* and *Marmosa mexicana zeledoni*, but much smaller and paler than either; upperparts more ochraceous; fur on middle of throat and chest nearly pure white to roots, instead of light buffy as in *M. m. isthmica*.

Color.—*Type*: Upperparts between ochraceous—tawny and cinnamon-brown (Ridgway, 1912), darkest on top of head and over back, becoming more tawny on shoulders and outer sides of fore limbs, and lighter ochraceous-tawny on flanks and outer sides of hind limbs; chin, middle of throat, chest, and median line of abdomen nearly pure white to roots, rest of underparts near light ochraceous-buff; orbital areas black as usual in the group; feet (epidermis) yellowish, the hind feet clothed above with short whitish hairs; tail brownish, slightly darker above than below.

Skull.—Much smaller and more slender, but in general structure essentially like that of *M. m. isthmica*.

Measurements.—*Type*: Total length, 267; tail vertebræ, 147; hind foot, 20. *Skull* (type): Greatest length, 32; condylobasal length, 30.8; width of braincase over audital bullæ, 11.4; zygomatic breadth, 16.7; nasals, 19.5x3.9; interorbital breadth, 5; palatal length, 17.8; upper molari-form toothrow, 12.1.

Remarks.—Contrasted with its geographic neighbors this small opossum is sufficiently distinguished by small size and pale coloration. The latter

character is shared with other mammals inhabiting the same generally open savanna region, and is evidently associated with environmental conditions.

On the assumption that the rufescent pigmy opossums of Middle America are referable to the Linnaean species "*murina*" this name was included by True in his "provisional List of the Mammals of North and Central America and the West Indian Islands,"* the animal being credited by him with a range from "Mexico to Brazil." The type region has since been fixed by Thomas as Surinam† and specimens regarded by him as cotypes are extant in the British Museum. Meanwhile numerous forms of the genus *Marmosa* have been described by various authors, most of which were treated as distinct species, but whose relationships are little known. Species apparently assignable to the same section of the genus inhabit Middle America, northern South America, and extend to some of the southern islands of the West Indies. The continental Middle American forms now known may confidently be referred to a single species which may prove to be typified by *murina* of Surinam; but until the Linnaean animal and other South American forms already named are better known it seems advisable to regard them as distinct.‡ These small opossums are not to be confused with the still smaller light gray members of the *Marmosa canescens* group which ranges in southern and western Mexico.

Specimens examined.—Total number, 5, all from southwestern Panama, as follows: Boqueron (type locality), 2§; Bugaba, 3||.

***Pecari angulatus bangsi*, ♀ subsp. nov.**

BANGS COLLARED PECCARY.

Type from Boca de Cupe, eastern Panama (altitude 250 feet). No. 179,976, ♂ (posterior molars slightly worn), U. S. National Museum (Biological Survey collection), collected by E. A. Goldman, June 19, 1912. Original number 21,790.

General characters.—Similar to *Pecari angulatus crusnigrum*, but general color decidedly paler, the black less predominant and lighter element of pelage grayish or very pale buffy instead of tawny as in *crusnigrum*; shoulder stripe obsolescent (a broad tawny band present in *crusnigrum*). General color similar to that of *Pecari torvus*, of Colombia, but shoulder stripe much less distinct, and dentition indicating rather distant relationship.

* Proc. U. S. Nat. Mus., VII (1884), 1885, p. 587.

† Proc. Zool. Soc. London, Mar., 1911, p. 144.

‡ On this basis Middle American forms may stand subspecifically as follows:

Marmosa mexicana mexicana Merriam Juquila, Oaxaca, Mexico.

Marmosa mexicana mayensis Osgood Izamal, Yucatan, Mexico.

Marmosa mexicana zeledoni Goldman Navarro, Costa Rica.

Marmosa mexicana isthmica Goldman Rio Indio, Canal Zone.

Marmosa mexicana savannarum Goldman Boqueron, Panama.

§ Collection Amer. Mus. Nat. Hist.

|| Collection Mus. Comp. Zool.

¶ Named for Mr. Outram Bangs, in recognition of his extensive work on the mammals of Panama.

Color.—*Type*: General body color coarsely mixed (grizzled) black and gray, the black most profuse along median line from top of head to rump and on middle of chest and abdomen; face more finely grizzled black and gray; limbs and feet black.

Skull.—About like that of *P. a. crusnigrum*, but rostrum rather slender and molariform tooththrows rather short; posterior molars rather small and short as in other Middle American forms.

Measurements.—*Type*: Total length, 890; tail vertebræ, 20; hind foot, 185. *Skull*: Greatest length, 218.2; condylobasal length, 186.2; zygomatic breadth, 98.9; interorbital breadth, 47.2; breadth across postorbital processes, 64.2; palatal length, 132.3; maxillary tooththrow, 59; mandibular tooththrow, 65.3; alveolar length of posterior upper molar, 13.7.

Remarks.—The Darian collared peccary differs markedly in appearance from the dark, richly colored animal inhabiting western Panama, but along with that form seems clearly assignable to the single species known to occur in Middle America. Except for the indistinct collar it is externally not very unlike *Pecari torvus* Bangs, of the Santa Marta region of northern Colombia, but the posterior upper molar is less elongated owing to the absence of prominently developed and apparently important elements behind the hypocone and metacone. The metaconule is also smaller.

Specimens examined.—Total number, 13, as follows: Canal Zone: Gatun, 2. Panama: Boca de Cupe (type locality), 1.

***Peromyscus eremicus papagensis*,* subsp. nov.**

PINACATE DESERT MOUSE.

Type from Pinacate Mountains, Sonora, Mexico. No. 210,698, ♀ adult, U. S. National Museum (Biological Survey collection), collected by Charles Sheldon in February, 1915.

General characters.—Similar in general to *Peromyscus eremicus eremicus* and *Peromyscus eremicus anthonyi*, but upperparts decidedly darker, the general tone vinaceous-buffy instead of ochraceous-buffy.

Color.—*Type* (fresh pelage): Upperparts vinaceous-buff, becoming somewhat tawny on flanks, the top of head and back strongly darkened by black hairs; underparts overlaid with white, the basal color plumbeous, except on chin and lips where the fur is pure white to roots; ears and orbital borders blackish; feet white; tail bicolor, blackish above, dull whitish below except near tip which is dark all around. *Young* (in first pelage): Upperparts near neutral gray, mixed with black.

Skull.—As in *P. e. anthonyi*.

Measurements.—*Type* (from dry skin): Total length, 196; tail vertebræ, 102; hind foot, 20.5. *Skull* (type): Greatest length, 25.5; zygomatic breadth, 13.3; interorbital breadth, 4; length of nasals, 8.9; length of anterior palatine foramina, 4.7; length of palatal bridge, 4.1; maxillary tooththrow, 3.8.

* From Papago, the name of the tribe of Indians inhabiting the general region of the type locality.

Remarks.—The tawny suffusion of the flanks is variable in the Pinacate desert mouse, some examples exhibiting more of this tone than others; but the dark vinaceous-buffy general coloration of the upperparts is constant in the series of specimens available and sufficiently distinguishes the animal from *P. e. anthonyi* which is widely distributed in the region to the eastward and southward. Although the two differ rather strikingly in color they seem identical in size and cranial details and it seems advisable to treat the present form as a subspecies. Its peculiar color is paralleled by that of *Neotoma albigula sheldoni* from the same region, these locally associated subspecies representing different subfamilies which have yielded to similar environmental conditions. It is noteworthy, however, that specimens of *Perognatus baileyi* Merriam taken at the same locality and at the same time present no appreciable departure from the typical form. The discovery of the Pinacate desert mouse is one of the results of three expeditions to Sonora conducted by the hunter-naturalist Mr. Sheldon, each of which has added materially to our knowledge of the mammals of that interesting region.

Specimens examined.—12, all from the type locality.

***Neotoma cinerea lucida*, subsp. nov.**

NEVADA BUSHY-TAILED WOOD RAT.

Type from Charleston Peak, Charleston Mountains, Nevada. No. 208,968, ♀ adult, U. S. National Museum (Biological Survey collection), collected by Luther J. Goldman, July 1, 1915. Original number 2282.

General characters.—Size smallest and color among the palest of the known forms of *Neotoma cinerea*. Most closely allied to *Neotoma cinerea cinerea*, but decidedly smaller and paler; skull differing in detail, but sphenopalatine vacuities absent as in *N. c. cinerea*. Similar in color to *N. c. arizonæ* and *N. c. rupicola*, but size smaller and skulls distinguished by absence of sphenopalatine vacuities present in those forms.

Color.—Upperparts between light buff and light ochraceous-buff, rather sparingly lined over top of head and back with black-tipped hairs; middle of face, sides of muzzle, cheeks and outer sides of limbs buffy grayish; underparts and feet white; ears clothed with mixed grayish and pale brownish hairs; tail grayish above, white below, except near base, which is more or less distinctly buffy all around. *Young* (in first pelage): Upperparts near pallid neutral gray, the back somewhat darkened by black-tipped hairs; tail very pale grayish above, edged with pure white.

Skull.—Decidedly smaller than those of the other forms of *N. cinerea*, with zygomata relatively broader anteriorly and narrower posteriorly, the sides therefore more nearly parallel; frontal region flatter, less depressed along median line; sphenopalatine vacuities absent as in *N. c. cinerea*.

Measurements.—*Type*: Total length, 324; tail vertebræ, 131; hind foot, 39. Average of three adult females, including type: 335 (324–352); 134 (130–141); 39.5 (39–40). *Skull* (type): Greatest length, 45.4; zygomatic breadth, 24; interorbital breadth, 5.5; length of nasals, 17.6; length of anterior palatine foramina, 9.9; length of palatal bridge, 7.9; maxillary toothrow, 9.1.

Remarks.—In small size and pale coloration, as well as cranial details, this bushy tailed woodrat contrasts strongly with *N. c. cinerea*, which includes the greater part of Nevada in its wide range. While adults are similar to *N. c. arizonæ* and *N. c. rupicola* in color, the young are much grayer and the cranial characters pointed out are distinctive. The audital bullæ are normally developed, not relatively enlarged as in the geographic neighbor, *N. c. arizonæ*. Like that of *N. c. arizonæ* the tail is reduced in bushy amplitude in comparison with the more northern subspecies.

Specimens examined.—Five, all from the type locality.

***Perodipus ordii luteolus*, subsp. nov.**

WYOMING KANGAROO RAT.

Type from Casper, Wyoming. No. 160,408, ♂ adult, U. S. National Museum (Biological Survey collection), collected by Merritt Cary, September 2, 1909. Original number 1690.

General characters.—A large, pallid, long-tailed subspecies with moderately developed maxillary arches, and mastoid and audital bullæ. Most closely allied to *Perodipus ordii richardsoni*, but general external dimensions greater; tail and hind foot longer; color paler; skull differing especially in reduction of maxillary arches. Closely resembling *Perodipus ordii longipes* in general size and color, but mastoid and audital bullæ much smaller.

Color.—*Fresh pelage* (September): Upperparts in general varying shades between light buff and light ochraceous-buff (Ridgway, 1912), purest on cheeks, shoulders and sides, inconspicuously lined with black over top of head and back; underparts, supraorbital and postauricular spots, forelimbs, upper surface of hind feet, sides of tail and the usual hip stripes pure white; top of nose, base of longer vibrissæ, narrow orbital rings, inner surface of ears, plantar surface of hind feet, and upper and under sides of tail more or less distinctly blackish. *Worn pelage*: Upperparts slightly darker, more ochraceous-buffy and dusky markings faded. *Young* (in first pelage): About like adults but dark markings, especially crested tip of tail, more distinctly blackish.

Skull.—General size and form much as in *P. o. richardsoni*, but maxillary arches less developed between lachrymals and jugals, the posterior angle less prominent; interparietal and superior surface of supraoccipital less depressed; braincase tending toward greater inflation and consequent expansion of the frontal region; mastoid and audital bullæ about as in *richardsoni*. Similar in size to that of *P. o. longipes*, but mastoid and audital bullæ decidedly smaller.

Measurements.—*Type*: Greatest length, 272; tail vertebræ, 154; hind foot, 42. Average of three adults, including type, from type locality: 263 (258–272); 150 (147–154); 41.5 (41–42). *Skull* (type): Greatest length on median line, 38.1; greatest breadth (between outer sides of audital bullæ), 24.3; breadth across maxillary arches, 21.2; least width of supraoccipital (near interparietal), 2.8; maxillary toothrow, 4.8.

Remarks.—The range of this subspecies includes Wyoming, southeastern

Montana and the upper part of the Green River Valley in northwestern Colorado. It is a rather well-marked geographic race of *Perodipus ordii* requiring close comparison only with subspecies *P. o. richardsoni*. The species to which it belongs occupies a great area in western North America from southern Washington, Idaho, and Montana southward including much of the Mexican plateau region. Differentiation of the various northern subspecific divisions is due to isolation and varying environmental conditions on the plains and in the valleys along both the eastern and western slopes of the Rocky Mountains. The material now available indicates nearly every stage of intergradation between several forms and the close agreement of the others in essential characters amply justifies their assignment to a single species.* The range of *P. o. luteolus* extends across to the headwaters of Green River and is approached by those of *P. o. columbianus*, *P. o. utahensis*, and *P. o. longipes* in the valleys of the western slope of the Rocky Mountains, but physical features near the continental divide appear to be insurmountable barriers.

***Dasyprocta punctata nuchalis*, subsp. nov.**

BLACK-NAPED AGOUTI,

Type from Divala, Chiriqui, Panama. No. 10,081, ♀ adult, Museum of Comparative Zoölogy (Bangs collection), collected by W. W. Brown, Jr., November 30, 1900. Original number 17.

General characters.—Allied to *Dasyprocta punctata isthmica* and *Dasyprocta punctata dariensis*, but strikingly different in color from either, the nape distinctly blackish in contrast with shoulders, instead of nearly concolor with them, and underparts much more yellowish than in the other Panama forms. Pelage of back and rump without buffy basal rings or bands.

Color.—Top of head and nape strongly blackish, the nape nearly pure black; sides of neck and shoulders, anterior part of back and sides coarsely mixed black and varying shades near ochraceous-buff or ochraceous-orange (Ridgway, 1912); posterior part of back distinctly tawny, paling rather abruptly to warm buff on rump; long hairs of rump dusky below buffy tips; underparts in general warm buff, this color nearly pure and reaching to roots of fur on inner sides of limbs and median line of abdomen, but darkened on throat, chest, and sides of abdomen where the dusky basal color shows through; feet blackish.

Skull.—About as in *D. p. isthmica* and *D. p. dariensis*.

Measurements.—*Type*: Total length, 570; tail vertebræ, 20; hind foot,

* *Perodipus ordii* will therefore stand subspecifically as follows:

<i>Perodipus ordii ordii</i> (Woodhouse)	El Paso, Texas.
<i>Perodipus ordii columbianus</i> Merriam	Umatilla, Oregon.
<i>Perodipus ordii utahensis</i> Merriam	Ogden, Utah.
<i>Perodipus ordii chapmani</i> (Mearns)	Fort Verde, Arizona.
<i>Perodipus ordii montanus</i> (Baird)	Fort Garland, Colorado.
<i>Perodipus ordii longipes</i> Merriam	Echo Cliffs, Arizona.
<i>Perodipus ordii luteolus</i> Goldman	Casper, Wyoming.
<i>Perodipus ordii richardsoni</i> (Allen)	Beaver River, Oklahoma.
<i>Perodipus ordii palmeri</i> (Allen)	San Luis Potosi, Mexico.

125. An adult male and female from Bugaba, respectively: Total length, 550-600; hind foot, 120-125. *Skull*: Greatest length, 105; condylobasal length, 95; zygomatic breadth, 46.9; length of nasals, 39.3; interorbital breadth, 29.4; palatal length, 52; maxillary toothrow, 19.2.

Remarks.—The agouti inhabiting the savanna region near the Pacific coast of southwestern Panama is a handsome subspecies readily distinguished from its geographic neighbors by the contrasting colors of the upperparts. The black nape, tawny back and buffy rump present a color combination unusual in the group.

Specimens examined.—Total number, 5, all from Panama as follows: Bugaba, 2; Divala (type locality), 3.

Dasyprocta punctata richmondi*, subsp. nov.

RICHMOND'S AGOUTI.

Type from Escondido River, 50 miles above Bluefields, Nicaragua. No. 51,333, ♀ adult, U. S. National Museum (Biological Survey collection), collected by C. W. Richmond, November 16, 1892. Original number 156.

General characters.—A dark, richly colored form with concolor back and rump, and pelage banded or ringed to base. Similar in general to *Dasyprocta punctata yucatanica* and *Dasyprocta punctata isthmica*, but darker than the former and more rufescent than either.

Color.—Upperparts in general varying from rich tawny to near burnt sienna (Ridgway, 1912), coarsely mixed with black, the tawny or rufescent element predominating especially over back and rump; underparts in general overlaid with varying shades from warm-buff to ochraceous-buff, except along median line of abdomen, where the buffy color extends to roots of hairs; feet black.

Skull.—Similar in size to that of *D. p. isthmica*, but rostrum narrower; sphenopalatine vacuities usually larger; audital bullæ more inflated anteriorly. Closely resembling that of *D. p. yucatanica*, but audital bullæ usually smaller and less fully inflated.

Measurements.—*Type*: Total length, 490; tail vertebrae, 35; hind foot, 123. *Skull*: Greatest length, 110.7; condylobasal length, 101.4; zygomatic breadth, 49.4; nasals, 44.4; interorbital breadth, 28.4; palatal length, 57.4; maxillary toothrow, 17.9.

Remarks.—*Dasyprocta punctata* was originally assigned to South America, but according to Alston† the specimens forming the basis of Gray's‡ short account were collected by Commanders Belcher and Kellett "probably on the west coast of Costa Rica or Nicaragua." Since Belcher's ship "Sulphur" made protracted visits to Realejo and vicinity in 1837, 1838 and 1839, but touched very briefly at other points on the Middle American coast the type region of *D. punctata* is most probably western Nicaragua. In *D. p. richmondi* the hairs of the back are ringed or banded to the base in accordance with Gray's description of the typi-

* Named for the collector, Dr. Charles W. Richmond, now Assistant Curator of Birds, U. S. National Museum.

† Biologia Centrali-Americana (Mammalia), 1879-1882, p. 172.

‡ Ann. Mag. Nat. Hist., X, p. 264, Dec., 1842.

cal form, but the "greenish yellow" color ascribed to the latter obviously could not apply to *richmondi*, which is characterized by intensely rufescent tones.

Specimens examined.—Total number, 21, as follows:

Costa Rica: San Juan, 1; Talamanca (probably near Sipurio), 5.

Nicaragua: Escondido River (type locality), 3 skins and skulls, and 12 additional skulls.

***Vampyrus spectrum nelsoni*, subsp. nov.**

NELSON'S FALSE VAMPIRE.

Type from Coatzacoalcos, Vera Cruz, Mexico. No. 78,127, ♂ adult, U. S. National Museum (Biological Survey collection), collected by E. W. Nelson, May 14, 1896. Original number 9579.

General characters.—Similar to *Vampyrus spectrum spectrum*, but smaller; forearm shorter; skull differing in detail, especially the reduction of hypocone of posterior upper premolar.

Color.—Type in alcohol: General color of fur rusty-brownish, and not obviously different from that of *V. s. spectrum*.

Skull.—Rather decidedly smaller than that of *V. s. spectrum*; zygomata less abruptly spreading posteriorly, the sides more nearly parallel; hypocone of posterior upper molar less developed, the projecting shelf-like border less extended antero-posteriorly; large upper molars with posterior borders less deeply emarginate.

Measurements.—*Type*: Forearm, 106.9; tibia, 53.5; foot with claws, 31 (without claws, 25). *Skull* (type): Greatest length, 51; zygomatic breadth, 23.6; width of braincase at constriction over audital bullæ, 18; width of rostrum over anterior premolars, 8.1; width of palate at back of posterior molars, 4.8; maxillary toothrow (front of canine to back of posterior molar), 20.2; mandibular toothrow (front of canine to back of posterior molar), 22.4.

Remarks.—*Vampyrus spectrum*, the largest of American bats, was assigned by Linnæus to South America, but is now known to range north into the West Indies and Middle America. Two specimens from Trinidad, kindly loaned by the American Museum of Natural History, are assumed to be nearly typical of *V. spectrum* of Surinam* and have been used for comparison. On the basis of this material examples from Middle America are referred to *V. s. nelsoni* which, however, apparently reaches its greatest divergence from the South American form in Mexico. Specimens from Nicaragua and Panama, as might be expected for geographic reasons, are somewhat intermediate in general characters including size. In the posterior excavation of the large upper molars, they approximate the typical subspecies, but in the reduction of the hypocones of the posterior upper premolars agree closely with the type. In one of the Trinidad examples of *V. s. spectrum* an additional small upper premolar is present on one side at the postero-external base of the canine.

Vampyrus spectrum appears to be a rare species, at least in Middle

* Type region fixed by Thomas, Proc. Zool. Soc. London, Mar., 1911, p. 130.

America, comparatively few specimens having found their way into museum collections. The type of the new form here described flew one evening through the open door of the American Consulate at Coatzacoalcos where Mr. Nelson happened to be sitting, and was secured by him. The curiosity of the people was aroused by its capture, but none of those questioned had ever seen such a bat, and no other examples were met with by us in the course of our work in tropical Mexico.

Specimens examined.—Total number, 4, as follows:

Mexico: Coatzacoalcos (type locality), 1.

Nicaragua: Chinandega, 1.

Panama: Boqueron, 2.

***Sturnira lilium parvidens*, subsp. nov.**

NORTHERN YELLOW-SHOULDERED BAT.

Type from Papayo (about 25 miles northwest of Acapulco), Guerrero, Mexico. No. 126,555, ♀ adult, U. S. National Museum (Biological Survey collection), collected by E. W. Nelson and E. A. Goldman, April 17, 1903. Original number 16,313.

General characters.—Similar in general to *Sturnira lilium lilium* of Paraguay, but forearm and tibia usually shorter; skull similar in length but narrower, with smaller molariform teeth.

Color.—Within the range of individual variation exhibited by examples of *S. l. lilium*; upperparts in the type (dry skin) overlaid with cinnamon-brown, the basal color of the fur near clay color; underparts tawny-olive. A younger example is drab brownish above and below.

Skull.—About like that of *S. l. lilium* in length, but narrower throughout; incisive foramina less widely open; molariform teeth smaller, the reduction in size mainly in transverse extent.

Measurements.—*Type*: Forearm, 41.9; tibia, 14.2; foot (calcaneum to end of claw), 13.3 (without claw), 12. *Skull* (type): Greatest length, 23.4; breadth of braincase (across paroccipital processes), 11.6; inter-orbital breadth, 6; maxillary tooththrow (front of canine to back of posterior molar), 6.6; mandibular tooththrow, 7.9; distance between outer sides of canines at cingulum, 5.9.

Remarks.—*Sturnira lilium*, undivided subspecifically, has been accorded a geographic range from Paraguay to Mexico, but comparison of Mexican material with 24 examples from Villa Rica and Sapucay, Paraguay, reveals the existence of a well-marked northern race. The forearm is shorter in most of the specimens available of the Mexican form, but in two from Mirador it is as long as in some of the Paraguayan examples. Characters more obviously distinguishing the Mexican form are the narrowness of the skull and molariform teeth. The skull of the specimen from La Tuxpana, Campeche, appears abnormally small (greatest length, 20.1) for a form of *S. lilium* and may represent that of a distinct species.

Specimens examined.—Total number, 6, as follows:

Campeche: La Tuxpana, 1.

Guerrero: Papayo (type locality), 1.

Vera Cruz: Mirador, 4.



Goldman, Edward Alphonso. 1917. "New mammals from North and Middle America." *Proceedings of the Biological Society of Washington* 30, 107–116.

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