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PRELIMINARY REPORT ON ECUADOREAN MAMMALS. NO. 3

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This is the third paper of a series based upon mammals collected in Ecuador.¹ The field work in Ecuador which has produced the collections that serve as the basis of these preliminary reports was begun in 1920 and has been carried on during part of 1921 and 1922. An expedition is at present in Ecuador visiting regions hitherto unrepresented in the Museum collections. Eventually it is expected that sufficient material will be brought together to justify an extended report on the mammals of this republic. The following new forms have been disclosed by studies of the specimens already at hand.

In making the necessary comparisons with the Ecuadorean series, I have been greatly assisted by the loan of material from the United States National Museum, the Field Museum of Natural History, and the Academy of Natural Sciences of Philadelphia.

Cænolestes tatei, new species

TYPE.—No. 61860, Amer. Mus. Nat. Hist.; ♀ ad.; Molleturo, Provincia del Azuay, 7600 feet, Western Andes; June 11, 1922; collector, G. H. H. Tate. The type is a skin and skull with trunk skeleton, in fair condition, the skin having slipped to some extent on the abdomen.

GENERAL CHARACTERS.—Similar to *fuliginosus*, and smaller than *caniventer*; darker in color than either.

DESCRIPTION.—

Color above, everywhere practically unicolor, the soft fur plumbeous black for most of its length and only the extreme tip touched with color, which is near bone-brown (Ridgway); hands paler than color of upperparts; feet dark like back; tail above and below very much like back; ears practically naked, bone-brown.

Color below, lighter than above, hairs tipped with benzo brown; color transition from upper to lower parts very gradual.

Skull essentially as in *fuliginosus*; canine single-rooted; second incisor with shallow posterior notch; third incisor with cutting edge practically continuous; first and second premolars subequal.

MEASUREMENTS.—Taken in the flesh: total length, 213 mm.; tail vertebrae, 117; hind foot, 22. Skull, greatest length, 28.8 (29.7,² 31.4³); length of nasals, 13.8 (12.7,

¹For first and second papers, see 'Preliminary Report on Ecuadorean Mammals. No. 1,' American Museum Novitates, No. 20, November 3, 1921, and 'Preliminary Report on Ecuadorean Mammals. No. 2,' American Museum Novitates, No. 32, March 4, 1922.

²Measurement of skull of *Cænolestes fuliginosus*, ♀, No. 12742, Acad. Nat. Sci. Philadelphia, Mt. Pichincha, Ecuador.

³Measurements of skull of *Cænolestes caniventer*, ♀, No. 47176, Cordillera de Chilla, Ecuador.

15); zygomatic breadth, 13.2 (13.9, 14.2); interorbital breadth, 7.2 (7.5, 7.8); length entire upper toothrow, 15.1 (16, 17.3); length of upper molar series from pm^3 to M^4 , 6.6 (6.7, 7.3); greatest breadth of palate, across outside margins of molar series, 7.3 (7.6, 7.7.).

Cænolestes tatei is easily distinguishable from either *fuliginosus* or *caniventer* by its darker coloration. In this respect it comes closest to *fuliginosus*, and another point of resemblance is shown by the soft, lax character of the fur in both of these forms, while the fur of *caniventer* is noticeably harsher. The differentiation of color between upper and lower parts of *tatei* is but slight, a greater degree being shown by *fuliginosus* but the greatest, amounting to a conspicuous difference, being evident in *caniventer*.

There are apparently no marked skull differences to distinguish *tatei* from *fuliginosus*. The character of the notched second incisor deserves special comment, as this feature is quite evident in *tatei*. That the condition of the cutting edges of the broad second and third upper incisors may prove to be a character of considerable diagnostic value is strongly hinted by the series of skulls of *Cænolestes* now before me. A series of eight skulls of *caniventer* show second and third incisors very distinctly notched, while skulls of *fuliginosus* and *obscurus* have only the second incisors notched in *fuliginosus* and no incisors notched in *obscurus*. *C. tatei* presents a condition more or less intermediate between the two extremes represented by *caniventer* and *obscurus*. Dr. W. H. Osgood, in his important monograph of *Cænolestes*, makes no mention of notches in the cutting edge of the second and third upper incisors, so it is presumed that his series of *obscurus* lacked this character.

The discovery of a new species of *Cænolestes* at a locality between the known ranges of *fuliginosus* and *caniventer* is most interesting and demonstrates the need of systematic collecting before it can be said that much is known of the genus. The altitude of Molleturo, 7600 feet, an elevation much below that of the Pichincha region, from whence most of the specimens of *fuliginosus* have come, probably explains the differentiation shown by the new species. Molleturo is on the western flank of the Western Andes, in a belt of heavy rainfall, a densely forested slope, and the environmental conditions are quite distinct from the high paramo uplands about Pichincha.

It is also of interest to note that a series of three *Cænolestes* were taken at Molleturo, two of them apparently *caniventer*, although rather dark in color and only one of the quite distinct *tatei* pattern.

I take pleasure in naming this new form in honor of Mr. G. H. H. Tate, who collected it. The activities of Mr. Tate as a mammal collec-

tor for the American Museum have resulted in the acquisition of some hundreds of specimens and the capture of this recent series of *Cænolestes* is one of the results of his energy.

***Thomasomys hudsoni*, new species**

Fig. 1, A and B, natural size

TYPE.—No. 47690, Amer. Mus. Nat. Hist.; ♂ ad.; Bestion, Provincia del Azuay, 10,100 feet, Ecuador; January 13, 1921; collector H. E. Anthony. The type is a skin and skull, both in good condition.

GENERAL CHARACTERS.—Similar to *gracilis* Thomas in general superficial characters but having a peculiarly shaped nasal region which differs from that of any hitherto described *Thomasomys*.

DESCRIPTION.—

Color above, between Dresden-brown and mummy-brown, darkest along dorsal area; fur long and soft; hands and feet hair-brown, the claws surrounded by short whitish hairs; tail long and slender, colored like feet, unicolor, sparsely clothed with fine hairs.

Color below, warm buff, no line of demarcation where color of upperparts merges into that of lower parts. Hairs above and below with plumbeous black bases.

Skull normal in all respects except through frontal and nasal region; frontals somewhat inflated, nasals slightly concave in dorsal outline and rounded to form a slender, subcylindrical tube; incisive foramina not quite extending to plane of first molar teeth; bullæ of medium size, inflated.

MEASUREMENTS—Taken in the flesh: total length, 213 mm.; tail vertebræ, 120; hind foot, 23. Skull, greatest length, 25.2 (24.5)¹; length of nasals, 8.7 (8.3); zygomatic breadth, 13.3 (13.1); breadth of braincase, 12.1 (12); interorbital breadth, 4.2 (3.7); length of incisive foramina, 4.4 (4.6); length of upper molar series, 3.5 (3.7).

The skin of *hudsoni* may be closely matched by a specimen of *gracilis*, No. 194786, U. S. N. M., Torontoy, Peru, the two being almost identical in color, above and below, although two other specimens of the Heller collection, from Lucma, are much brighter colored. The best basis of separation is the peculiar tube-like character of the nasals of *hudsoni* and their concave, "dished-in" appearance when viewed in profile. Each of the three skulls of *gracilis* now before me present flattened nasals, with a longitudinal depression extending along the basal three-quarters of their length, and show none of the lateral convexity so obvious in *hudsoni*. However, the closest relationships of *hudsoni* are evidently with *gracilis*, and the new form needs no detailed comparison with other species of *Thomasomys*.

Out of a series of eighteen *Thomasomys* collected at Bestion, only one proves to be *hudsoni*, all of the remainder being *bæops* (?). Bestion

¹Skull of *Thomasomys gracilis*, No. 194812, U. S. N. M., ♂, Lucma, Peru.

is in the south temperate zone but almost at the upper limit of forest. Most of the locality is comprised of rolling grassy meadows with scrub trees on some of the ridges and with thickets of brush on some of the slopes.

This species is named for Mr. W. C. Hudson, who at the time the expedition was at Bestion was camped along the Rio Shingata and in charge of exploration work for the South American Development Company. Mr. Hudson rendered great service to members of the party and will be long remembered as a most generous host.

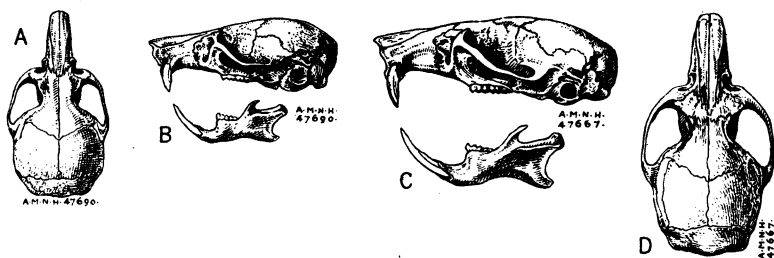


Fig. 1. Skulls of *Thomasomys*
A, B. *Thomasomys hudsoni*, type.
C, D. *Thomasomys caudivarius*, topotype.

***Thomasomys caudivarius*, new species**

Fig. 1, C and D, natural size

TYPE.—No. 47668, Amer. Mus. Nat. Hist.; ♂ ad.; Taraguacocha, Cordillera de Chilla, 10,750 feet, Provincia del Oro, Ecuador; August 23, 1920; collector H. E. Anthony. The type is a skin and skull, both in good condition.

GENERAL CHARACTERS.—A good sized species of the *cinereus* group, soft-haired, near mummy-brown of Ridgway above, tip of tail white.

DESCRIPTION.—

Color above, between mummy-brown and clove-brown, only the extreme tips of the hairs colored, the rest of the hair being plumbeous black to the base; somewhat lighter in color along the sides; hands and feet approaching color of upperparts but lighter; tail practically as dark below as above, mouse-gray proximally, hairs short but abundant, the annulations of the tail very conspicuous, terminal fifth of tail clear white; short tufts of glistening white hairs on bases of claws of feet.

Color below, everywhere near chamois, but with the dark bases of the hairs showing through to give much darker impression.

Skull similar to that of *cinereus*, nasals well expanded anteriorly, interorbital region rounded without beading of any sort; a small median depression just at nasal suture; braincase less inflated than in *cinereus*; incisive foramina and interpterygoid fossa scarcely extending to planes of anterior and posterior molars respectively; bullae small, elongate, showing very little inflation.

MEASUREMENTS.—Taken in the flesh: total length, 275 mm.; tail vertebrae, 161; hind foot, 30. Skull, greatest length, 31.9 (32.2)¹; length of nasals, 11.3 (12.7); zygomatic breadth, 16.9 (16); interorbital breadth, 5.2 (5.5); breadth of braincase, 14.2 (15.1); length incisive foramina, 6 (6.3); length of upper molar series, 5.1 (5.3); dimensions of auditory bulla, 5.4×4 (5.9×4.6).

T. caudivarius is separable on the basis of color alone from *cinereus*, *ischyrus*, *laniger*, *paramorum*, and *hylophilus*, the species of *Thomasomys* which by their pattern of coloration, character of fur, and size appear to be most nearly related to the new form. There are available for comparison fourteen specimens of *caudivarius*, all topotypes, of different ages, so that individual variation need not be an uncertain quantity. The series is quite uniform and none of them shows the brighter shades of brown seen in the species just listed. The character of the white-tipped tail appears to be of diagnostic value but is variable in its extent. The amount of white shown ranges from a conspicuous tip, almost one-quarter of the total length of the tail, to a white terminal pencil.

The cranial characters bear out the differences shown superficially, for *caudivarius* has very small bullae and they are elongate, with very little inflation.

Thomasomys hylophilus Osgood, from the Paramo de Tama, Venezuela and Colombia, is a close relative of *caudivarius* and, like it, has a white-tipped tail. Aside from the more pronounced olivaceous appearance of *caudivarius*, there is a noticeable difference in the hind feet of the two species. *T. caudivarius* has a longer and broader foot than *hylophilus*, but the identity in skull structure indicates that the two species are rather closely related. Geographically, they are separated by the breadth of the Andean system, since *hylophilus* is found on the eastern slopes of the Andes, *caudivarius* on the Western Andes.

T. cinereiventer is much larger than *caudivarius*, with much larger bullae, but externally the two species are much alike in coloration.

Most of the type series of *caudivarius* were taken along a small mountain brook which flowed down a steep narrow valley. The sides of the valley were densely covered with thick shrubbery and low stunted trees. Along the same stream, another species of *Thomasomys*, of smaller size, probably *T. baops* Thomas, was common, the same trap perhaps taking the two species on alternate nights. *Thomasomys auricularis* (a new species described hereafter) was caught in this same locality, making three distinct species of the genus for that region. *T. caudivarius* was also taken out on the open paramo where there were no trees but an abundance of low shrubbery.

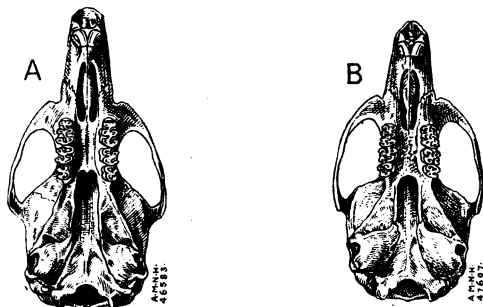
¹Skull of *Thomasomys cinereus*, No. 19807, Field Museum, ♂ ad., from Mts. E. of Balsas, Peru.

Thomasomys auricularis, new species

Fig. 2, B, natural size

TYPE.—No. 47697, Amer. Mus. Nat. Hist.; ♂ ad.; Taraguacocha, on trail from Zaruma to Zaraguro, altitude 10,250 feet, Cordillera de Chilla, Provincia del Oro, Ecuador; August 26, 1920; collector, H. E. Anthony. The type is a skin and skull, both in good condition.

GENERAL CHARACTERS.—A large species, almost equal in size to *aureus* which it resembles superficially, but with light-colored feet, an ochraceous auricular patch, and with auditory bullæ much larger than in *aureus* (see Fig. 2, A).

Fig. 2. Skulls of *Thomasomys*

- A. *Thomasomys aureus*, Pichincha, Ecuador
B. *Thomasomys auricularis*, type.

DESCRIPTION.—

Color above, tawny olive (Ridgway), closely sprinkled with blackish hairs, more especially along midline of back, flanks and sides more strongly tawny; head, lighter in tone than back, buffy brown; a small but conspicuous postauricular tuft of hair ochraceous buff in color; ears dark in color, scantily haired; hands and feet cream-buff above; tail unicolor, hair-brown.

Color below, pinkish buff, the color rather more intense over pectoral area; no line of demarcation in color between sides and underparts; hairs everywhere on body plumbeous black at base.

Skull large and strongly built but smaller than in *aureus*; nasals slender, expanded anteriorly; interorbital region rounded but with a long, shallow median depression; braincase not as inflated as in *aureus*; toothrows normal; incisive foramina long and extending backward just beyond anterior margin of toothrow; interpterygoid fossa not reaching beyond posterior border of last molars; bullæ large and inflated, much larger than in *aureus* or *pratensis*.

MEASUREMENTS.—Taken in the flesh: total length, 345 mm.; tail vertebrae, 190; hind foot, 32. Skull, greatest length, 37.1 (38.8¹, 41.1²); length of nasals, 13.4 (14.1, 14.8); zygomatic breadth, 19.7 (20.4, 21.3); interorbital breadth, 4.4 (5.4, 4.4); length of upper molar series, 6.6 (7.7, 7.5); length of diastema, 8.8 (9.6, 10); length of incisive foramina, 7.7 (7.9, 8); dimensions of bulla, 7.3×6.1 (6.5×4.9, 6.7×5).

¹Skull of *Thomasomys aureus*, No. 46605, A. M. N. H., ♂, Pichincha, Ecuador.

²Skull of *Thomasomys aureus*, No. 194818, U. S. N. M., ♀, Torontoy, Peru.

Thomasomys auricularis is well characterized by its brightly colored postauricular patches and by the large, inflated auditory bullæ. With a very large series of *aureus* before me, most of them from Mt. Pichincha and the Quito region, but including also two specimens from Torontoy, Peru, kindly loaned me by the United States National Museum, I am unable to find any specimens even approaching *auricularis* in size of bullæ. Furthermore, the bullæ of the new species show a degree of inflation that indicates a very distinct separation from the *aureus* stock. While superficially *auricularis* appears to be readily distinguishable from *aureus*, on the other hand, *aureus* is such a variable species that occasionally a specimen is found which resembles *auricularis* in general coloration. However, the presence of a well-developed, ochraceous-buff tuft of hairs behind the ear is not noted in the series of *aureus* now available. *Thomasomys prætor* and *T. popayanus* resemble *auricularis* to about the same degree as does *aureus* and differ from it in the same characters. *Thomasomys aureus altorum* Allen, which I believe further investigation will show to be a synonym of *aureus*, is readily separable upon the basis of the characters given above. *Thomasomys nicefori* Thomas I have not seen but, as its affinities are apparently with *aureus*, and no mention is made of inflated bullæ, I feel that it cannot affect the validity of the species here described.

The type and only specimen of *auricularis* was taken on the bank of a small mountain stream in the Cordillera de Chilla, a short range which extends eastward from the main Western Cordillera. Specimens of *Thomasomys* taken at no great distance from here, in the Western Cordillera at El Chiral, appear, at this time, to be typical *aureus*. The animal was captured in thick forest growth within the limits of the south temperate zone. The same trap line yielded two specimens of *Cznolestes caniventer*.

***Ichthyomys orientalis*, new species**

TYPE.—No. 62382, Amer. Mus. Nat. Hist.; ♀ (?) ad.; near Rio Napo, altitude, 3000 feet, Eastern Ecuador; September 15, 1921; collector, Ludovic Soderstrom. The type is a native-made skin and skull, both in fair condition.

GENERAL CHARACTERS.—A very large species, with highly developed aquatic specializations and sharply bicolored tail.

DESCRIPTION.—

Color above, grizzled black and buff with dark plumbeous tone of underfur showing through, the pelage composed of long, hard, glistening guard hairs and soft, short, woolly underfur; color below, dirty whitish.

Ears like back on upper half, whitish basally; forefeet dusky to digits, then whitish; hind feet near light drab, sparsely haired above, but with heavy marginal fringe of stiff, white hairs; feet broad and web-like; tail like back above, like underparts below, with clear-cut line of demarcation.

Skull large and strongly built, with flaring zygomata and moderate interorbital constriction.

MEASUREMENTS.—Taken from dried skin: total length, 390 mm.; tail vertebrae, 185; hind foot, 38.7. Skull, greatest length, 35.6 (34)¹; greatest breadth (zygomatic breadth), 17.5 (16); length of nasals, 11.5 (11); least interorbital breadth, 4.2 (5); length of palate, 18.2 (17.3); length of diastema, 8.4 (8.9); length of incisive foramina, 6.7 (6.5); length of upper molar series, 4.3 (4.4).

Ichthyomys orientalis needs detailed comparison with only one other species of the genus, namely, *stolzmanni*, none of the other fish-eating rats having a sharply bicolored tail. *I. orientalis* is about the same size as *tweedii*, the tail of which is unicolor, without any white, but an additional character of separation is seen in the hind feet. *I. tweedii* has a highly specialized hind foot but the foot of *orientalis* is even wider and is more heavily fringed with swimming hairs.

In the collections of the American Museum there is a specimen identified as *Ichthyomys stolzmanni*, collected by O. T. Baron at Cajabamba, Peru, in 1895. I suspect that this specimen will prove to be misidentified and probably an undescribed species. I have therefore based comparisons of *orientalis* and *stolzmanni* upon the type description of Thomas, *loc. cit.* *I. orientalis* appears to differ from *stolzmanni* in slightly larger size, coloration less brown, darker forefeet, smaller ears, more flaring zygomata, and greater interorbital constriction.

The type of *orientalis* is a gift to the American Museum from Mr. Ludovic Soderstrom of Quito, who received it from a native collector. Mr. Soderstrom has been particularly successful in collecting specimens of this rare group, and most of these rats in the collections of the different museums have passed through his hands. The type specimens of *Ichthyomys soderstromi*, *Anatomys leander*, *Neusticomys monticolus*, and now *Ichthyomys orientalis*, were all secured by Mr. Soderstrom, whose contributions to Natural Science have shown him to be unusually gifted as a collector.

The label attached to the type of *orientalis* is marked male, but the presence of well-developed mammae, upon inspection of the skin, has caused me to indicate it as a female.

¹Measurements in parentheses are those of the type of *Ichthyomys stolzmanni* Thomas, Proc. Zool. Soc., 1893, p. 340.

SYLVILAGUS

The series of *Sylvilagus* brought from Ecuador by the American Museum expeditions number some twenty-five adult specimens and show the presence of at least three well-differentiated groups there. The *Sylvilagus andinus* group is sufficiently characterized by its sober coloration, inconspicuous nape patch, and grayish underparts, to form a logical assemblage of forms, while the habitat of *andinus*, its subspecies and related species, appears to be the elevated, grassy paramos; at least this has been the case throughout the collecting done in Ecuador. A second group is typified by *daulensis*, a dark, richly ochraceous species inhabiting the forested lowlands of the Guayas basin. The third group has been taken in the subtropical and south temperate forests, from 6000 to 9000 feet elevation. These specimens are marked in more contrasting colors than the *andinus* group, but are not nearly so ochraceous as *daulensis*. Between the first and third groups just enumerated there exist about the same superficial differences as may be noted between *Sylvilagus bachmani* and *S. auduboni* of the United States, *andinus* corresponding to *bachmani*, the third Ecuadorean group to *auduboni*.

I have been unable to find any described species of South American *Sylvilagus* corresponding to the Ecuador specimens of this third group and consequently two forms are here described. Unfortunately, the American Museum collections are weak in Neotropical Leporidae and hence lack good comparative material representing *brasiliensis*. Subspecies of *brasiliensis* have been described as ranging into the eastern Andes from Peru to Colombia but I feel certain that the two new forms under consideration can have little in common with them, because the Ecuador material is all from the western Andes.

***Sylvilagus kelloggi*, new species**

Fig. 3, C and E

TYPE.—No. 60515, Amer. Mus. Nat. Hist.; ♂ ad.; Guachanamá, Provincia de Loja, 9050 feet, Ecuador; October 8, 1920; collector, H. E. Anthony. The type is a skin and skull, both in good condition.

GENERAL CHARACTERS.—A good-sized species, with contrasted head markings and whitish underparts.

DESCRIPTION.—

Color above, grizzled cream-buff and black, the individual hairs tricolored, being plumbeous black at base, banded with about five millimeters of cream-buff and tipped with black; black heaviest along the back, sides clearer; crown, from nose to base of ears, cinnamon ticked with black; patch at nostrils and narrow superciliary band cream-buff; cheeks like sides, heavily lined with black; nape, clear cinnamon, extending about as far as the laid-back ears; ears, externally, bister; hands and feet, above,

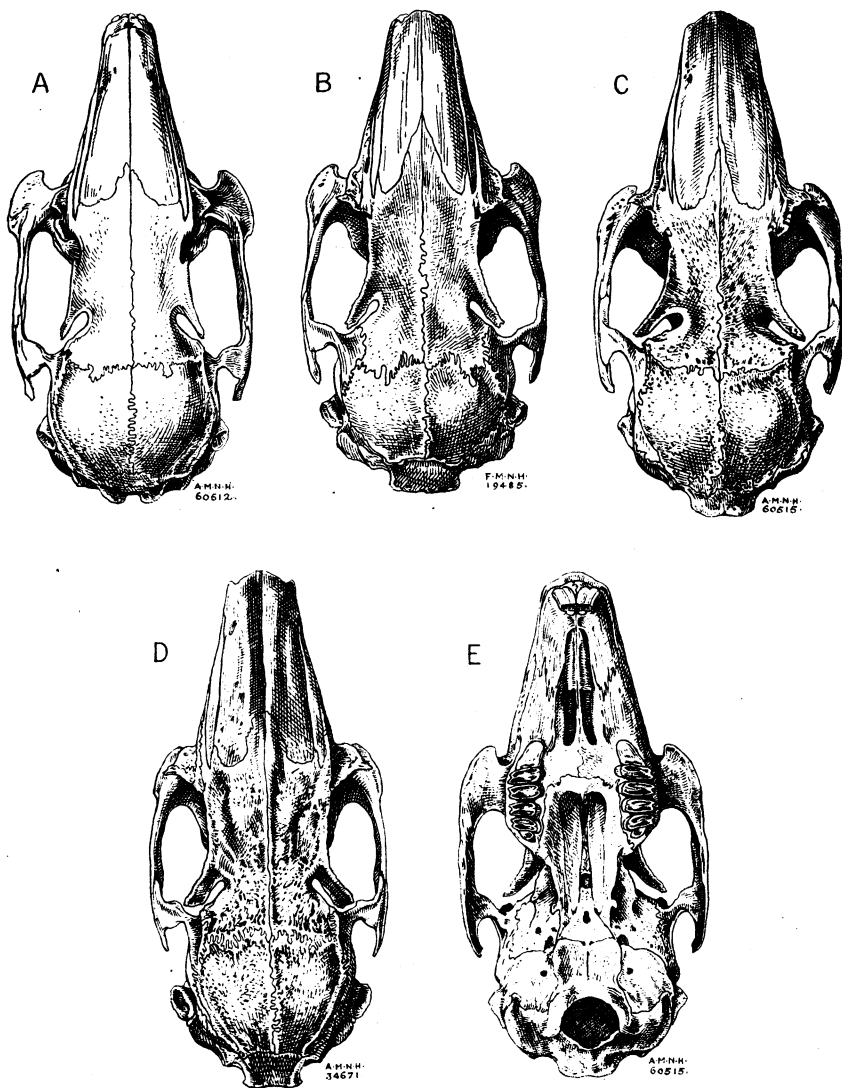


Fig. 3. Skulls of *Sylvilagus*

- A. *Sylvilagus andinus canarius*, Taraguacocha, Ecuador.
- B. *Sylvilagus desfilippi*, Myobamba, Peru.
- C, E. *Sylvilagus kelloggi*, type.
- D. *Sylvilagus daulensis*, type.

Figures natural size.

between cinnamon and cinnamon-buff; underparts practically clear white; throat patch cinnamon-buff; tail small and inconspicuous.

Skull moderately convex from parietals to end of nasals; nasals bowed distally; postorbital process on frontal long, slender and almost coalesced with short process from frontal and parietal; anteriorly the supraorbital margin of the frontal is practically entire, with only a very shallow notch; auditory bullæ normal, moderately inflated.

MEASUREMENTS.—Taken in the flesh: total length, 355 mm.; tail vertebrae, 25; hind foot, 82. Skull, greatest length, 67.1; length of nasals, 23.2; zygomatic breadth, 33; interorbital breadth, 13.2; breadth of braincase, 24.2; length of incisive foramina, 16.5; breadth of palatal bridge, 6.5; alveolar length of upper molar series, 12.5.

Besides the type, two other specimens were shot at Guachanamá on the same day, all three specimens agreeing quite well in coloration, the variable features being the amount of black on the back and the clearness of the white underparts, the general average of the light-colored underparts being nearer ivory-yellow than pure white. This species was also taken at El Paso, Provincia del Azuay, elevation about 8500–9000 feet.

Sylvilagus kelloggi may be easily distinguished from any other Ecuadorean *Sylvilagus* by its general color pattern, by the well-developed postorbital processes (in one of the Guachanamá series the postorbital process on the right has coalesced with a process coming off the fronto-parietal suture) and by the absence of a deep notch in the anterior border of the frontal. Skulls of *kelloggi* present a deeply pitted area along the posterior half, on the frontal, parietal, interparietal and occipital elements, a condition which appears to be not at all so noticeable in skulls of *andinus*, absent in *defilippi*, but well developed in *daulensis* (see Fig. 3).

Sylvilagus defilippi, described from Quijos, Ecuador, ranges along the eastern slope of the eastern Andes and could not possibly be identical with any *Sylvilagus* along the western Andes. A specimen identified by Dr. W. H. Osgood as *defilippi* and taken at Myobamba, Peru, has been kindly loaned to me for comparison (Fig. 3, B). While obviously distinct from *kelloggi*, notably in the characters of smooth, unpitted braincase, and less well-developed postorbital processes, there is however enough resemblance to cause me to believe that possibly the two forms are local representatives of a well-marked group analogous to the *andinus* group.

This handsome species is named for Mr. L. O. Kellogg, of the South American Development Company, Portovelo, Ecuador. Mr. Kellogg has displayed a keen interest in the work of the American Museum in

Ecuador, and during 1920 and 1921, when Portovelo was the headquarters for a museum expedition, he assisted in numerous helpful and thoughtful ways.

Sylvilagus chillæ, new species

TYPE.—No. 60511, Amer. Mus. Nat. Hist.; ♀ ad.; trail from Salvias to Zaraguro, 6600 feet, Provincia del Oro, Cordillera de Chilla, Ecuador; August 29, 1920; collector, H. E. Anthony. The type is a skin and skull, the skin in good condition but the skull badly shattered and presenting only the superior elements in condition for comparison.

GENERAL CHARACTERS.—Very similar to *kelloggi* but much darker above and with broader frontal region.

DESCRIPTION.—

Color above predominately black, the hairs tricolored, plumbeous black at base, banded with warm buff, tipped with black; sides and flanks only slightly lighter in appearance than back; crown, from nose to base of ears, tawny sprinkled with black; nuchal patch small, tawny; conspicuous nostril patches, spot in front of eye, and spot just above and behind eye, between cream-color and cream-buff; cheeks, cream-buff densely sprinkled with black; ears bister; upper surfaces of hands and feet, between cinnamon and cinnamon-buff; color, below, ivory-yellow to pinkish buff; throat patch, cinnamon-buff.

Skull essentially like that of *kelloggi* but with very broad interorbital region, short, broad nasals, flat profile from parietals to end of nasals, margin of frontal continuous anteriorly to lacrymal without any conspicuous supraorbital notch.

MEASUREMENTS.—Taken in the flesh: total length, 382 mm.; hind foot, 81. Skull, length of nasals, 25.7; zygomatic breadth, 34; interorbital breadth, 16.3; alveolar length of upper molar series, 14.

Sylvilagus chillæ is a forest-dwelling form and was taken in the subtropical jungle along the southwestern flank of the Cordillera de Chilla. This forest lies in a belt of heavy rainfall and it is doubtless due to this fact that *chillæ* is such a dark, richly colored form. It may be immediately distinguished from the other rabbits of the Ecuadorean Andes by its superficial appearance, and its skull characters bear out the distinction. The closest relative of *chillæ* would appear to be *kelloggi*, and more abundant material may bring to light intergrades which will necessitate making *chillæ* a subspecies of *kelloggi*. Geographically, the facts hint strongly that *kelloggi* may represent, in the temperate, more depauperate forest, the same full species of which *chillæ* may be the representative in the subtropical, heavy forest. On the basis of the material available, the gap between *chillæ* and *kelloggi* seems, however, to be rather too great to allow such a linking up of the two forms.

The type and topotype of *chillæ* were shot at night, under the jacklight, when they came out of the heavy vegetation to feed about

the edges of a small clearing or "llano." Because of the dense cover in which these rabbits live, it would be almost impossible to shoot one under ordinary circumstances during the day.

***Lonchorhina occidentalis*, new species**

Fig. 4, B, natural size

TYPE.—No. 62101, Amer. Mus. Nat. Hist.; ♂ ad.; Puente de Chimbo, Provincia del Guayas, Ecuador, altitude 1200 feet; September 7, 1922; collector, G. H. H. Tate. The type is a skin and skull, both in fair condition.

GENERAL CHARACTERS.—A large-eared bat, with very tall tragus, wide interfemoral membrane and conspicuous whitish blotches on tips of wings.

DESCRIPTION.—

Color of fur above, uniform chestnut-brown; below cinnamon-brown; all membranes blackish, with the exception of irregular blotches of ivory-yellow on posterior margin of wings near tips, and, less extensively, on more proximal portions of wing margin.

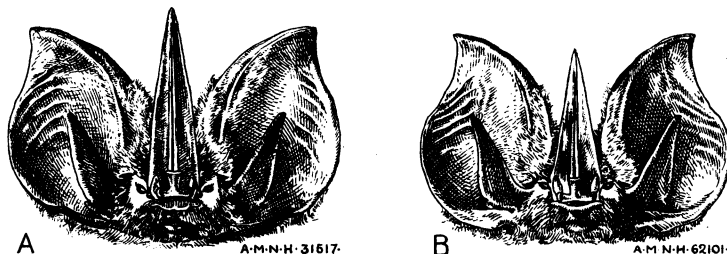


Fig. 4. Face and head of *Lonchorhina*.

- A. *Lonchorhina aurita*, San Esteban, Venezuela.
B. *Lonchorhina occidentalis*, type.

Ears very large and broad but not as tall as in *Lonchorhina aurita*; five transverse plications on posterior half of ear conch; tragus very tall and slender; nose-leaf, while not as tall as in *aurita*, very high and reaching almost to tips of ears, sparsely haired basally.

Wings large and broad, naked everywhere, but fur of body extending along forearm about midway; interfemoral membrane very extensive and supported by well-developed calcaria and long tail which extends to extreme tip of membrane.

Skull normal for the genus and very similar to that of *aurita*.

MEASUREMENTS.—Taken in the flesh: total length, 110 mm.; tail vertebrae, 51; hind foot, 15; taken from the dry skin; length of forearm, 48.7 (*aurita*, three specimens, 51.7, 51.3, 50.9); height of ear from notch, 25.5 (*aurita*, 29.3); height of tragus, 11.6 (14.4); height of nose-leaf, 18.2 (21.7). Skull, greatest length, 20; zygomatic breadth, 11; mastoid breadth, 10.4; interorbital breadth, 4.8; length upper toothrow, C-M³, 6.8.

As far as I can ascertain, only one species of *Lonchorhina* has been described, *Lonchorhina aurita*. The geographical range of this form, as known, is the West Indies and the northern corner of South America.

Specimens are rare in collections. Fortunately, the American Museum has a series of three collected by Mr. Carriker at San Esteban, Venezuela. These three specimens all agree in quite uniform coloration, show no traces of whitish wing-markings, and have the nose-leaf equal to or slightly exceeding the ears in height (Fig. 4, A).

The *Lonchorhina* here described displays all of the well-marked characters which distinguish the genus and superficially appears to be very similar to *aurita*. The whitish wing-blotching, which is the most immediate external character of separation, does not have the appearance of being an individual or fortuitous marking because both wings are blotched in the same area, although not closely symmetrical. However, the specific identity of *occidentalis* does not rest entirely upon the wing markings, and the additional characters of shorter nose-leaf, lower ears, slightly shorter forearm, and blacker ears and wing membranes demonstrate the presence in Ecuador of a hitherto unknown species of *Lonchorhina*. Probably *occidentalis* is the western representative of the genus and the specific name is based upon this assumption.

