

AMERICAN MUSEUM NOVITATES

Number 139

Published by
THE AMERICAN MUSEUM OF NATURAL HISTORY
New York City

October 20, 1924

59.9(86.6)

PRELIMINARY REPORT ON ECUADOREAN MAMMALS. NO. 6.

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The following paper is the sixth¹ in a series of preliminary reports based upon extensive field work in Ecuador. Well over 5,000 specimens have been taken and a complete report on the entire known mammalian fauna of Ecuador is in process of preparation, a task requiring considerable time for its consummation because of the difficulties in securing adequate collections in the field and the present state of confusion existing in the taxonomy and nomenclature of such groups as *Oryzomys*, *Akodon*, etc. Especial efforts are being made to secure topotypes of species described from Ecuador.

Among the many interesting specimens collected by Mr. G. H. H. Tate in eastern Ecuador during the early part of 1924 is a good series of spiny mice. Five of this series are typical *Neacomys*, but there are six specimens of a very dark mouse fully as spiny as *Neacomys* but with a skull quite unlike that of any mouse I have previously seen. For this dark spiny mouse I propose the following new genus.

Scolomys, new genus (Cricetidae)

GENOTYPE.—*Scolomys melanops*, new species.

GENERAL CHARACTERS.—Quite similar superficially to *Neacomys* but with very distinct cranial differences.

DESCRIPTION.—A small mouse with pelage composed, as in *Neacomys*, of flattened spines interspersed with unmodified hairs; ears of moderate size; tail short, less than half of total length; fore and hind feet like those of *Neacomys*, thumb vestigial, with short broad nail. Mammary, 1 pectoral, 2 inguinal. Skull quite unlike that of *Neacomys*; rostrum very short; interorbital region broad, unbeaded; brain-case round and inflated; incisors slender, projecting forward; incisive foramina very short but wide, almost heart-shape in outline; interpterygoid notch very wide; posterior palate extending as a broad shelf beyond the last molars and with well-developed lateral pits, similar to those of *Oryzomys*; bullae rounded and inflated; zygomatic plate with nearly vertical anterior margin and very shallow anteorbital notch. Molars very small.

¹The previous reports appeared as follows: 'Preliminary Report on Ecuadorean Mammals. No. 1,' American Museum Novitates, No. 20, November 3, 1921; 'Preliminary Report on Ecuadorean Mammals. No. 2,' American Museum Novitates, No. 32, March 4, 1922; 'Preliminary Report on Ecuadorean Mammals. No. 3,' American Museum Novitates, No. 55, January 31, 1923; 'Preliminary Report on Ecuadorean Mammals. No. 4,' American Museum Novitates, No. 114, May 29, 1924, and 'Preliminary Report on Ecuadorean Mammals. No. 5,' American Museum Novitates, No. 120, June 21, 1924.

Scolomys melanops, new species

Figure 1, views B, C, D

TYPE.—No. 67524, Amer. Mus. Nat. Hist.; ♀ ad.; Mera, about 3800 feet elevation, eastern Ecuador; March 3, 1924; collector, G. H. H. Tate. The type is a skin and skull in good condition.

GENERAL CHARACTERS.—Resembling a small *Neacomys* externally, but very dark above and below; skull with short rostrum and procumbent incisors.

DESCRIPTION.—Pelage composed of flattened spines, mixed with unmodified hairs which are longer; a small patch on throat lacks the spines.

Color¹ above, an impression of sooty black flecked with wood brown, the black being on the tips of the spines, the brown on the long hairs; color below, neutral gray; color of sides passing insensibly from the gray of underparts to the darker upper parts. Pelage everywhere a neutral gray at base. Head colored like back;

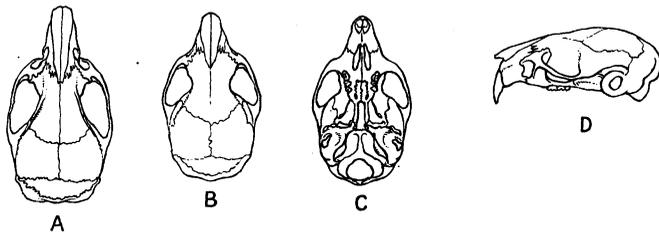


Fig. 1. A, dorsal view of *Neacomys spinosus*, No. 67525, A. M. N. H.; B, dorsal view of *Scolomys melanops*, No. 67522, A. M. N. H.; C, palatal view of *Scolomys melanops*; D, lateral view of *Scolomys melanops*.

All figures natural size.

ears of medium size, about half covered by longer pelage at base, terminal half sparsely haired, fuscous-black; hands and feet washed with neutral gray, digits whitish, thumb with broad flat nail, vestigial in character, proportions of digits as in *Neacomys*; tail short, less than length of head and body, finely haired and annulated, colored like back above, somewhat lighter below.

Skull quite dissimilar to that of *Neacomys*; rostrum very short; nasals tapering toward frontals, extending proximally beyond premaxillaries; zygomata roundly expanded, zygomatic plate with nearly vertical anterior margin and practically no anteorbital notch above; interorbital region relatively broad, sharp-edged but not beaded; brain-case evenly rounded and inflated; interparietal large; incisive foramina short and broad, the two forming a subcordate pattern; postpalatal notch very broad; palate extending considerably beyond the last molars, with a large oryzomine lateral pit on each side as well as several smaller ones; bullæ moderately inflated; incisors slender, light yellow in color, extending forward at an angle of about 83° with the plane of the molars; molars very small relatively, much smaller than in *Neacomys*, although the molar pattern appears to be rather alike in the two genera (on

¹All specific color terms are taken from Ridgway's 'Color Standards and Nomenclature,' 1912 edition.

skull of *Scolomys* with fresh, unworn molars is available and it is difficult to follow out the pattern on worn teeth); mandible with low coronoid process and broadly rounded angle; lower incisors slender, white.

MEASUREMENTS.—Taken in the flesh: total length, 158 mm.; length of head and body, 90; tail vertebræ, 68; hind foot (c.u.), 20. Greatest length of skull, 21.9; condylo-incisive length, 20; length of nasals, 7.6; zygomatic breadth, 12.8; inter-orbital breadth, 4.8; breadth of brain-case, 10.9; length of palate, from henselion to postpalatal notch, 9; incisive foramina, 3.7×2 ; length of diastema, 5.5; breadth of palate across first molar teeth, 4.6; length of upper molar tooth-row, 2.6; length of mandible, 14.5; length of mandibular tooth-row, 2.8.

Although *Scolomys* resembles *Neacomys* so closely in all external characters, aside from the very dark coloration, in skull characters the two genera are widely distinct. The short broad skull of *Scolomys*, with its wide nasals projecting well beyond the premaxillaries, its less elongate brain-case, its wide incisive foramina and interpterygoid fossa, its extended postpalatal shelf with lateral pits, and its minute molars should never be confused with the long skull of *Neacomys* and presents an appearance unlike any genus of cricetines I have seen as specimens or figured.

A considerable degree of individual variation is shown by the six specimens of *melanops* taken by Mr. Tate, mainly with respect to color. Some of them are much browner above but all have the dull gray underparts.

***Microxus latebricola*, new species**

TYPE.—No. 67506, Amer. Mus. Nat. Hist.; ♂ ad.; Hacienda San Francisco, east of Ambato, on Rio Cusutagua, elevation about 8000 feet, Ecuador; January 12, 1924; collector, G. H. H. Tate. The type is a skin in good condition with the skull somewhat broken although still affording all the essential characters.

GENERAL CHARACTERS.—A small species, with very narrow, sloping zygomatic plate; long slender rostrum, with nasals extending posteriorly beyond premaxillæ; pelage everywhere intense black.

DESCRIPTION.—Pelage above and below intense black; in certain lights an occasional long hair appears to have a silvery white tip; hands and feet dark but not as black as back; ears about as in *Akodon*, dark in color; tail about half of total length, dark like feet above (almost black), somewhat lighter below, the scattered hairs with silvery appearance.

Skull with long, slender rostrum, the nasals extending beyond the premaxillæ in a deep V-shaped point; interorbital region narrower than in *Akodon mollis*; brain-case sub-globose and inflated; zygomatic plate very narrow, with practically no anteorbital notch above, gently sloping forward; incisive foramina wide and open, reaching just to anterior plane of first molar teeth; interpterygoid fossa forming a square-sided notch and lacking considerable of reaching to plane of last molars; bullæ large and inflated; dentition similar to that of *Akodon* but proportionally smaller.

MEASUREMENTS.—Taken in the flesh: total length, 163 mm.; head and body, 83; tail vertebræ, 80; hind foot (c.u.), 22. Greatest length of skull (approximately), 24.5; length of nasals, 9.5; zygomatic breadth (approximately), 12; interorbital breadth, 4.8; breadth of brain-case, 12; breadth of zygomatic plate, 1.3; incisive foramina, 4.6×2 ; length of upper molar series, 3.5; auditory bullæ, 5.4×3 ; length of mandible, 15; length of mandibular molar series, 3.6.

The intense black color of *latebricola* readily distinguishes it from any known species of *Microxus*. So unusual is the type in appearance that there are very good grounds for supposing that it may be a melanistic individual. Only one specimen of *latebricola* was taken, unfortunately, but this was secured in a dark, damp situation, in forest where logs and vegetation made many gloomy nooks and recesses, a fit environment for a dark-colored species. Also, the presence of an occasional silvery tipped hair amongst the longer pelage and the short light-colored hairs on the under side of the tail are an argument against considering the dark pattern to be melanism.

About the inclusion of this species in the genus *Microxus*, there can be no question. The very narrow zygomatic plate, the long slender rostrum, and the shorter incisive foramina of *latebricola* can not be matched in any species of *Akodon*. The zygomatic plate is about the same width as in *Microxus bogotensis*, noticeably narrower than in *M. torques*. *Microxus affinis* Allen, I suspect to be an *Akodon*; the skull of *affinis* is totally unlike that of *latebricola*.

***Comys melleus*, new species**

Oryzomys auriventer ALLEN, 1916, Bull. Amer. Mus. Nat. Hist., XXXV, p. 118, May 11, 1916.

TYPE.—No. 36560, Amer. Mus. Nat. Hist.; ♀ ad.; Zamora, eastern Ecuador, altitude about 3250 feet; October 25, 1913; collector, W. B. Richardson. The type is a skin and skull in fair condition.

GENERAL CHARACTERS.—A fair-sized species very similar in external appearance to *Oryzomys barbacoas* Allen, but with the short hind foot and the cranial characters of *Comys*.

DESCRIPTION.—Pelage moderately long and soft, everywhere slate-colored at the base and only the tips of the hairs colored. Color above, between Prout's brown and tawny-olive with some sprinkling of blackish hairs, especially along the dorsal region; color brightest and clearest along sides; top of head and muzzle washed with fuscous; cheeks colored like sides; ears of medium size, nearly naked, clove brown in color; hands and feet washed with olive brown; tail unicolor, clove brown, finely haired, not noticeably pencilled, about equal in length to head and body.

Underparts heavily washed with honey yellow to cream buff, the color being warmer where sides and underparts meet.

Skull quite oryzomine in general character but zygomatic plate with its anterior margin only slightly projecting beyond its anteorbital notch; supraorbital ridges

fairly well developed and divergent; brain-case elongate and not as inflated as in many species of the genus; incisive foramina occupying a little more than half the length of the anterior palate; post-palatal notch quite broad; dentition normal.

MEASUREMENTS.—As recorded by collector in the field: total length, 290 mm.; length of head and body, 140; tail vertebrae, 150; taken from the dried specimen; hind foot (c.u.), 28. Skull, greatest length, 33.5; condyloincisive length, 31; length of nasals, 10.7; zygomatic breadth, 17.8; breadth of brain-case, 13.7; least inter-orbital breadth, 5.5; length of upper molar tooth-row, 5.4; length of incisive foramina, 6; length of mandible, 21.4.

There are four specimens of *melleus* in the museum collection, all taken at Zamora. They were identified as *Oryzomys auriventer* in 1916, at which time no typical *auriventer* and but few specimens of *Æcomys* were in the American Museum. I sent one of these specimens to the British Museum, where Mr. Oldfield Thomas very kindly compared it with *auriventer* and confirmed my doubts as to the identification. It is apparently not conspecific with any *Æcomys* which Mr. Thomas has described. The field work of the past season has brought to the museum a splendid series of typical *Oryzomys auriventer*, as well as a number of specimens of *Æcomys*.

Æcomys melleus is very close, genetically, to the border line between *Æcomys* and *Oryzomys*. Superficially it looks very much like *Oryzomys barbacoas*, and only the short hind foot is suggestive of *Æcomys*. Had this character not been supported by the non-projecting zygomatic plate, *melleus* could scarcely have been associated in the same genus as *latimanus* and *bicolor*, which are so well set apart from *Oryzomys*.

This new species is quite distinct from any *Æcomys* I have seen and may be known by the warm color of its underparts and the proportions of its skull.

***Thomasomys cinnameus*, new species**

TYPE.—No. 67401, Amer. Mus. Nat. Hist., ♀ ad.; Hacienda San Francisco, east of Ambato, central Ecuador, elevation 8000 feet; January 15, 1924; collector, G. H. H. Tate. The type is a skin with skull, trunk preserved in alcohol, in good condition.

GENERAL CHARACTERS.—A richly colored species, related to *gracilis* of Thomas but larger; hind foot very slender.

DESCRIPTION.—Pelage fairly long, about 11 mm. on back, very soft and silken, everywhere plumbeous black basally with only extreme tip of each hair colored.

Color above, between cinnamon-brown and Brussels brown, sides clay color; almost no black-tipped hairs, so that color of upperparts is unusually clear, shading very gradually from the faintly darker dorsal region into the brighter color of sides and by imperceptible transition to the cinnamon-buff of the underparts; ears half hidden in fur, tips thinly haired, clove brown; hands and feet above and tail, which is unicolor, clove brown; tail a third longer than head and body, well annulated, very thinly haired; hind feet very slender and delicately proportioned.

Skull similar in its proportions to that of *gracilis*; rostrum long and slender; interorbital region narrow; brain-case sub-globose, inflated; zygomatic plate rather narrow, anterior margin a straight line nearly vertical to palate, anteorbital notch of zygomatic plate almost obsolete; incisive foramina long, occupying about $\frac{5}{6}$ of the anterior palate and reaching to the plane of first molars; interpterygoid fossa broad; bullæ small; dentition normal.

MEASUREMENTS.—Taken in the flesh: total length, 210 mm.; head and body, 90; tail vertebræ, 120; hind foot (c.u.), 24. Greatest length of skull, 26.4 (*gracilis*, No. 194801, U. S. Nat. Mus., ♀, paratype, 25.4); condylo-incisive length, 23.7 (23.); length of nasals, 9.3 (8.5); interorbital breadth, 4 (3.7); breadth of brain-case, 12.7 (12); breadth of zygomatic plate, 1.4 (1.5); incisive foramina, 5×1.8 (4.8×1.7); length of upper molar series, 4 (3.5); length of mandible, 16.2 (16.4); length of mandibular molar series, 4.2 (3.9).

Thomasomys cinnameus resembles *hudsoni* Anthony but appears to be most nearly related to *gracilis* of Thomas, the structure of the skull in general and of the zygomatic plate in particular, the slender hind foot and the color pattern being points in common. *T. cinnameus* is quite distinct, specifically, from *gracilis*. It is larger, more handsomely colored, and has a wider interpterygoid fossa and smaller bullæ.

Thomasomys hudsoni is different in color, in size of incisive foramina, in its peculiar rostrum and in larger bullæ, when compared with *cinnameus*, although a rather close relationship is implied otherwise.

Only a single adult specimen of *cinnameus* was taken,¹ although a fair series of *Thomasomys bæops* was collected at the same spot, and the new form would seem to be rather rare considering the amount of trapping which has been done.

***Thomasomys rhoadsi fumeus*, new subspecies**

TYPE.—No. 67537, Amer. Mus. Nat. Hist., ♀ ad.; Hacienda San Francisco, east of Ambato, central Ecuador, elevation about 8000 feet; January 14, 1924; collector, G. H. H. Tate. The type is a skin and skull in good condition.

GENERAL CHARACTERS.—Slightly smaller than typical *rhoadsi*, with shorter hind foot, grayer pelage, and differently shaped zygomatic plate.

DESCRIPTION.—Pelage everywhere plumbeous black from base almost to tip. Color above, a mixture of dusky neutral gray and pale neutral gray, darkest along back; hands and feet lightly washed with hair brown; tail less than half of total length, very thinly haired, the annulations conspicuous, in coloration matching the hind foot, unicolor. Color below, pale neutral gray, darkened by basal color of pelage showing through.

Skull resembling that of typical *rhoadsi* but the anterior margin of the zygomatic plate is less convex and more nearly vertical, the interpterygoid fossa is narrower and the bullæ average smaller.

¹An immature female, caught at Hacienda San Francisco, may prove to be *cinnameus*.

MEASUREMENTS.—Taken in the flesh: total length, 220 (*rhoadsi*,¹ 256); head and body, 115 (139); tail vertebrae, 105 (117); hind foot (c. u.), 27 (30). Greatest length of skull, 30.7 (31.8)²; condylo-incisive length, 28.3 (29.5); length of nasals, 11.7 (13); zygomatic breadth, 15.2 (16); interorbital breadth, 5.3 (5.3); breadth of brain-case, 13.3 (14); length of upper molar series, 4.6 (5.4); length of mandible, 19 (20.5); length of mandibular tooth-row, 5 (5.8).

There are fourteen skins and skulls in the series of *fumeus*, all from the type locality. This series is quite uniformly distinct from a large series of typical *rhoadsi*, the skins being much cooler in coloration and only in one or two instances showing a trace of the warmer brown which suffuses the underparts and sides of *rhoadsi*; the size difference between the two forms, while slight, appears to be constant. The shape of the zygomatic plate constitutes perhaps the best character of separation. In *fumeus* the anterior margin of the plate is an almost straight line, nearly vertical to the plane of the molars; in typical *rhoadsi* this margin is always more or less convex and noticeably sloping forward, oblique to the molar plane.

The relationships of *fumeus* being obviously with *rhoadsi*, it requires no detailed comparison with the other dark-colored, short-tailed *Thomomys*, although there is an apparent superficial resemblance to *cinereus*.

***Oryzomys balneator hesperus*, new subspecies**

TYPE.—No. 47583, Amer. Mus. Nat. Hist.; ♂ ad.; El Chiral, Western Andes, Provincia del Oro, Ecuador, elevation 5350 feet; July 22, 1920; collector, H. E. Anthony. The type is a skin and skull in good condition.

GENERAL CHARACTERS.—Quite similar to *balneator* but averaging whiter below and with a more or less extensive patch of hair white to the base on throat or chest.

DESCRIPTION.—Color above, between Prout's brown and mummy brown with some admixture of black hairs along dorsal region where the color is darker; sides a clearer brown; ears small, thinly haired, fuscous black; hands and feet clay color to soiled whitish; tail about $\frac{5}{8}$ length of head and body, clove brown above, somewhat lighter below; color of underparts, ivory yellow on extreme tips of hairs, the dark color of the bases of the hairs showing through; a small spot on throat and extending down onto chest, ivory white to base of pelage; pelage above and below, except for spot just mentioned, plumbeous black at base.

Skull not differing appreciably from that of typical *balneator*.

MEASUREMENTS.—Taken in the flesh: total length, 221 mm.; length of head and body, 94; tail vertebrae, 127; hind foot (c.u.), 27. Greatest length of skull, 24.5; condylo-incisive length, 22.5; length of nasals, 8.9; zygomatic breadth, 12.9; interorbital breadth, 4.5; breadth of brain-case, 11.2; length of incisive foramina, 3.8; length of upper molar series, 3.2; length of mandible, 15; length of mandibular molar series, 3.3.

¹No. 66258, topotype, from Mt. Pichincha.

²No. 66257, topotype of *rhoadsi*, from Mt. Pichincha.

Oryzomys balneator hesperus is a western representative of typical *balneator*, from which it differs mainly in slight, but fairly constant, color differences. There are some twenty specimens of *hesperus* in the collection taken at El Chiral and adjacent collecting sites. The series averages lighter below than six specimens of typical *balneator* trapped at Mirador (type locality) and points nearby. The underparts of typical *balneator* are washed with buffy and lack the pectoral patch of ivory yellow hairs. This patch is developed to varying degrees in *hesperus*, being quite conspicuous in many individuals, occasionally so reduced or undeveloped that it is necessary to part the pelage when the white bases of the hairs disclose the presence of this character.

The range of *hesperus* appears to be rather widely separated from that of typical *balneator*; that is, the extensive interandean plateau, unsuited to this species, separates the two forms. On the basis of the collecting which has been done this type of distribution is unusual for *Oryzomys*. *Hesperus* has been taken only in the Western Andes of southern Ecuador, and in the Cordillera de Chilla, a spur of this range; although we have trapped in many places apparently suited to it and where its associates, *Oryzomys albigularis*, *Thomasomys aureus*, and *Sciurus hoffmanni*, have been taken, we have failed to extend this range.

***Sturnira ludovici*, new species**

TYPE.—No. 67328, Amer. Mus. Nat. Hist.; ♂ ad.; "near Gualea, elevation about 4000 feet," northwestern Ecuador; April 1924; collected by a native and presented by Mr. Ludovic Söderström. The type is a skin and skull in fair condition.

GENERAL CHARACTERS.—Similar to *lilium* but larger externally and with larger skull; upper tooth-row less roundly horse-shoe shaped; epaulettes on male decidedly reddish.

DESCRIPTION.—Color of head and crown, drab to clove brown, the darker color at the tips of hairs, the lighter color showing through from the base; rest of body, above, verona brown to mikado brown on terminal half of each hair, basally light drab; epaulettes (males) composed of coarser hairs colored mahogany red; fur extending along shoulders and humerus, and the extensively furred interfemoral membrane colored like crown; ear and nose-leaf apparently normal for the genus; color below, light drab to army brown, the color brightest along sides and on inguinal region; membranes fuscous-black.

Skull rather elongate, rostrum subrectangular in cross-section; upper dentition not arranged in well-defined horse-shoe shape, but in nearly straight, slightly diverging rows, in contrast to the symmetrically curved tooth-rows of *lilium*; tooth-rows considerably longer than those of *lilium*; first upper molar with a shallow internal cingulum on the metacone (absent in *lilium*); first lower molar lacking entoconid (present in *lilium*); cutting edges of lower incisors entire (these teeth well worn in type skull) in contrast to trilobed edges in *lilium*.

MEASUREMENTS.—Taken from dry skin: total length, about 77 mm.; metacarpal of third finger, 44; of fourth finger, 44; of fifth finger, 46; hind foot (c.u.), about 15. Greatest length of skull, 25; condylo-incisive length, 23.7; zygomatic breadth, 14; least interorbital breadth, 6.3; length of mandible, 15.5; mastoid breadth, 12.4; length of upper tooth-row, I-m³, 8.4; greatest breadth of palate, across molars, 8.4.

Two specimens of *ludovici* were donated by Mr. Söderström, of which the type is rather the more brightly colored. There are available for comparison specimens of *lilium* from Paraguay, from eastern Ecuador, from Colombia, from Venezuela and from Mexico, twelve specimens in all. None of these have the bright reddish epaulettes and none are as large as *ludovici*. The color of the shoulder patches is probably a variable feature, as is indicated by the material at hand, but the warm tone of the entire pelage of *ludovici* is unapproached by any specimen of *lilium*.

I have searched early literature with the thought that perhaps the Gualea specimens represent *erythromos* Tschudi, or *chilense* Gervais, described as having reddish epaulettes, but apparently this new form is noticeably larger than any of the long list of species placed in the synonymy of *lilium*. The description of *lilium* given by Dobson, 'Catalogue of Chiroptera in British Museum,' page 539, 1787, states that males of this species have considerable reddish in the pelage, although none of the specimens of *lilium* in our collection are of this type. However, the larger size of *ludovici*, the shape of the tooth-rows and the detailed differences in the dentition between *ludovici* and *lilium* render the supposed color difference of little fundamental importance.

