

**Article XXXVI.—REVISION OF THE *MELANOMYS* GROUP OF
AMERICAN MURIDÆ.**

BY J. A. ALLEN.

PLATE LXVIII.

The mammal collection of the American Museum of Natural History contains about 200 specimens of the vole-like mice commonly referred to the subgenus *Melanomys*, as at present recognized. About 40 of them are from Costa Rica and Nicaragua. The others are from western Colombia, north-western Ecuador, and the Santa Marta district of northeastern Colombia. In addition to these I have had a series of 24 specimens from the southern border of Panama, kindly loaned me for examination by Mr. Henry W. Henshaw, Chief of the United States Biological Survey; and 3 specimens from Chiriqui Province, Panama, and 15 from the Santa Marta district of Colombia, loaned me for examination by Mr. Samuel Henshaw, Director of the Museum of Comparative Zoölogy at Cambridge. I also had opportunity to examine in May last, at the British Museum, the types and topotype material of the four species of this group described by Tomes and Thomas, through the kindness of Mr. Oldfield Thomas, Curator of Mammals at the British Museum. I have thus had before me the types and topotype material of all the hitherto described forms of *Melanomys*, without which even the present tentative revision of the group could not have been attempted. The total number of specimens examined exceeds 250.

***Melanomys* Thomas.**

Zygodontomys BANGS, Bull. Mus. Comp. Zoöl., XXIX, No. 2, p. 37, April, 1902 (part). Referred to as a "distinct group in the genus *Zygodontomys*."

Zygodontomys ELLIOT, Mamm. Middle Amer. and West Indies, p. 252, 1904 (part).

Zygodontomys MILLER, Bull. 79, U. S. Nat. Mus., p. 177, 1912 (part).

Melanomys THOMAS, Ann. and Mag. Nat. Hist. (7), X, p. 248, Sept. 1902. Mentioned as a subgenus of *Oryzomys*, *Oryzomys phæopus* Thomas designated as type.

Melanomys THOMAS, Novitates Zool., X, p. 41, April, 1903. Here characterized as a subgenus of *Oryzomys*.

Melanomys TROUESSART, Cat. Mamm., Suppl., p. 422, 1904. Subgenus of *Oryzomys*.

Melanomys ALLEN, Bull. Amer. Mus. Nat. Hist., XXXI, p. 87, April 19, 1912. Its use as a full genus suggested.

Melanomys differs from typical *Oryzomys* (type, *O. palustris*) externally in the markedly different character of the pelage, coloration, nearly naked, scaly feet, and relatively short, naked tail; and cranially in its broad, short skull, the rostrum and palatal foramina being short and the interorbital region, braincase and palatal region very broad. These cranial features are the reverse of the same features in *Oryzomys*, in which the skull is long and narrow, the palatal foramina very long, and the interorbital region narrow. A character common to both groups is the similar pattern of the molariform teeth. *Melanomys* differs in a similar manner from *Zygodontomys* (type, *Z. cherriei*), with the added difference that the enamel pattern of the molariform teeth is radically different in the two groups.

Bangs stated in April, 1902 (*l. c.*): "The Vesper rats, related to *Z. chrysomelas*, of which there are several in South America, form quite a distinct group in the genus *Zygodontomys*, differing from the more typical members in their very dark coloration, reddish bellies, nearly naked, dusky feet and hands, with white nails, and in their wider skulls — especially wide between the orbits — with strongly marked, overhanging superciliary beading." This is the earliest and a very good characterization of the group.

Melanomys was first formally recognized and given status as a subgenus of *Oryzomys* a few months later by Thomas (Sept. 1902, *l. c.*), but his diagnosis of the group was not published till April, 1903 (*l. c.*). His first mention of *Melanomys* is a cross reference to the paper containing the characterization, which was delayed in publication. The name dates, however, from the first reference, where the type was duly designated. Thomas's later characterization is as follows: "But it must be confessed that though essentially *Oryzomys* in tooth structure, the *phoeopus-chrysomelas* group are very aberrant, as compared with normal *Oryzomys*, and I would suggest that a special subgenus should be formed for their reception. This might be called *Melanomys* from the general dark color of its members, and its characteristics would be the short tail and generally Akodont external form of the species, the strictly Oryzomyine molars, the broad-rounded brain-case, short muzzle and well-marked supra-orbital ridges. The type would be *Oryzomys (Melanomys) phoeopus* Thos. from Ecuador, to which *O. (M.) chrysomelas* is nearly allied."

Although *Melanomys* has little in common with the type of *Zygodontomys* that is not shared with other short-tailed South American mice, and many important features of difference, some authors still treat the two groups as even subgenerically indistinguishable (*cf.* Miller, *l. c.*).

Oryzomys, as currently recognized, includes nearly 200 species and subspecies and comprises a considerable number of fairly well circumscribed groups, some of which have already been set off as subgenera or genera.

It would be an obvious convenience to recognize them as full genera, since they are as well characterized as several other groups of American Muridæ which have recently been proposed and currently accepted as full genera. None of the subdivisions of the old genus *Oryzomys* is more sharply circumscribed or has a better foundation than *Melanomys*. (Cf. Plate LXVIII, Figs. 1 and 1a in comparison with the other figures of the same Plate.) In view of this fact it is treated in the present paper as a full genus.

The geographical range of *Melanomys*, as represented by the present material, extends from the highlands of Nicaragua south in the coastal and Andean regions of Colombia and Ecuador to northern Bolivia, and eastward in Colombia to the Bogota district, with an outlying species in the Sierra Nevada de Santa Marta region. They occur along the Pacific Coast of Colombia and Ecuador, and probably in Central America, down to sea-level and thence up to about 8000 feet in the mountain ranges of the interior. They appear to be restricted to forested areas.

As recently shown by Thomas (Ann. and Mag. Nat. Hist. (8), XI, p. 406, April, 1913), the nomenclature of some of the forms of *Melanomys* is considerably involved through the miss-identification for many years of Tomes's *Hesperomys caliginosus*. This species, until early in the present year, was supposed to be an *Akodon*, when Thomas found, on examination of the type skull, that it was "unquestionably an *Oryzomys*, and presumably identical with my [his] *O. phæopus*, the type of the subgenus *Melanomys*."

In 1891 a species of *Melanomys* from Costa Rica was provisionally referred by me, from an examination of skins only, to *Akodon caliginosus*; later, on the basis of other material comprising skulls as well as skins, it was found to be an *Oryzomys*. In 1899 I described a species of *Melanomys* from the Santa Marta region of Colombia and inadvertently referred it to *Akodon*, owing to its external resemblance to the supposed "*Akodon*" *caliginosus*, but the error was duly corrected by me in my next reference to the species in 1904.

The nomenclature of some of the other species of *Melanomys* is considered under the species involved.

List of Species and Subspecies, with the type localities.

Melanomys caliginosus caliginosus (Tomes). Esmeraldas (at sea-level), Ecuador (p. 537).

Melanomys caliginosus oroensis subsp. nov. Rio de Oro (alt. 1500 ft.), northwestern Ecuador (p. 538).

Melanomys affinis affinis (Allen). San José (near sea-level), southwestern Colombia (p. 539).

Melanomys affinis monticola subsp. nov. Gallera (alt. 5700 ft.), west slope of Western Andes, southwestern Colombia (p. 540).

Melanomys phæopus phæopus (Thomas). Pallatanga (alt. 7000 ft.), central Ecuador (p. 541).

Melanomys phæopus olivinus (Thomas). Zaruma (alt. about 3500 ft.), southern border of Ecuador (p. 543).

Melanomys phæopus vallicola subsp. nov. Rio Frio (alt. 3500 ft.), Cauca Valley, Colombia (p. 544).

Melanomys phæopus tolimensis subsp. nov. Rio Toché (alt. 6800 ft.), Tolima, (Central Andes), Colombia (p. 545).

Melanomys lomitensis sp. nov. Las Lomitas (alt. 5000 ft.), Western Andes (p. 545).

Melanomys obscurior (Thomas). Concordia (alt. about 3000 ft.), Medellin, Colombia (p. 546).

Melanomys buenavistæ sp. nov. Buenavista (alt. 4500 ft.), Eastern Andes, about 50 miles southeast of Bogota, Colombia (p. 547).

Melanomys chrysomelas (Allen). Suerre (alt. between 3000 and 4000 ft.), central Costa Rica (p. 547).

Melanomys idoneus (Goldman). Cerro Azul (alt. 2500 ft.), near the headwaters of the Chagres River, Panama (p. 548).

Melanomys columbianus (Allen). Manzanares (alt. 3000 ft.), Santa Marta district, northeastern Columbia (p. 550).

Leading features of the Species and Subspecies.

The 14 forms of *Melanomys* here recognized, while adhering closely to a general type, present a considerable range of differentiation in size, texture of pelage, coloration, and cranial characters.

Skull. The species may be separated into two groups on the basis of the length of the rostrum, namely, (1) narrow, long-nosed, (2) broad, short-nosed, with the ratio of the length of the toothrow to the length of the palatal foramina in group 1 as 95 to 100, and in group 2 as 109 to 100. Group 1 consists of *M. caliginosus caliginosus*, *M. c. oroensis*, *M. columbianus*, *M. chrysomelas*, and *M. buenavistæ*. Group 2 includes all of the other forms of the genus. In *caliginosus* the interorbital region is narrow (averaging 5.8 mm.), in *M. chrysomelas* wide (averaging 6.5 mm.), the two forms representing in this respect the extremes of the group.

M. buenavistæ stands by itself in the great breadth and exceptionally heavy build of the entire skull. The rostrum is short, but the nasals are long, owing to their unusual posterior extension, they terminating on a line with the middle of the orbits instead of at their anterior border as in all the other forms.

Size and proportions. The extremes in size are represented by *M. lomitensis*, with an average total length of 208 mm. and an average skull length of 25.5 mm., and *M. columbianus*, with the corresponding measure-

ments, respectively, 233 mm. and 30.3. The relative length of the tail varies in different forms — from 36 per cent. of the total length in *M. caliginosus* to 48 per cent. in *M. buenavistæ*.

Coloration and pelage. The upperparts in all the forms are dark brown suffused with yellowish or rufescent in general effect, dependent upon the color of the tips of the hairs and their relative abundance. In some forms the effect is ochraceous orange, or even chestnut, minutely varied with black; in others blackish varied with yellowish tipped hairs, giving to some extent an olivaceous effect. The coast forms are all strongly ochraceous or rufescent, through the abundance and length of the colored hair-tips; the interior forms are darker owing to much fewer of the hair-tips being colored, the colored portion at the same time more restricted. In *M. buenavistæ* and in some forms of *phæopus* the prevailing color is blackish, through the abundance of hairs wholly black and the shortness of the colored tips of the yellowish-tipped hairs.

The length of the pelage varies in a similar way geographically, the golden-colored coast forms having short pelage and the interior dark forms longer and softer pelage, the length of the coat on the back varying from 8 to 10 mm. in length in the coast forms to 12 to 14 or more in the interior forms of the Central and Eastern Andes.

***Melanomys caliginosus caliginosus* (Tomes).**

Plate LXVIII, Fig. 3.

Hesperomys caliginosus TOMES, Proc. Zool. Soc. London, 1860, p. 363. (“*Akodon*” *caliginosus* of various authors prior to 1913.)

Type locality “Eucador”; doubtless Esmeraldas (near sea-level), Ecuador. Type, “B. M. 7. 1. 1. 128. Coast of Eucador, Fraser. Skinned from spirit by Mr. Tomes” (from label in British Museum, in Mr. Thomas’s handwriting).

Upperparts brown washed with rather pale yellow and finely lined with black, especially along the middle of the back; underfur grayish plumbeous; hairs black basally, ringed subapically or apically with a pale tone of yellow and minutely tipped with black; sides less dark and more yellowish than the middle of the back; ventral surface with the pelage pale gray at base, tipped with pale buffy yellow, forming a heavy, conspicuous yellow wash; tail, ears, and feet dark brown, the tail naked, faintly lighter below than above.

Measurements (4 specimens). Total length, 212.5 (210–220); head and body, 135 (130–140); tail, 77.5 (70–80); hind foot (in skin, with claws), 26.9 (25–28). Three skulls, total length, 30.5 (30–31); zygomatic breadth, 15 (14.5–15.5); inter-orbital breadth, 5.8 (5.6–6); breadth of braincase, 12.4 (12–13); nasals, 11.9 (11.5–12); palatal foramina, 5 (4.7–5.5); upper toothrow, 4.3 (4.2–4.5).

As shown by Thomas (Ann. and Mag. Nat. Hist. (8), XI, p. 406, April, 1913), the type of Tomes's *Hesperomys caliginosus* is a species of *Melanomys* and not an *Akodon* as previously supposed. The type locality may be taken as Esmeraldas, for the following reasons: Tomes recorded two specimens of mice referable to the *Melanomys* group, one of them as *Hesperomys arvicoloides* Pictet, the other as *Hesperomys caliginosus* sp. nov. No definite locality was given for either of them but his paper was based on a collection of mammals from Ecuador made by Mr. L. Fraser.¹ The specimen referred to *Hesperomys arvicoloides* was later taken by Thomas as the type of his *Oryzomys phaeopus*,² and he gives the locality of the specimen as "Pallatanga, Ecuador. Coll. L. Fraser." In his description he says: "Palatine foramina just about the length of the molar series" — *i. e.*, "4.8" and "4.6" mm. respectively. In a series of specimens of *Melanomys* from Esmeraldas I find the length of the palatine foramina is 5 to 5.5 mm. and the molar series 4.5 mm. Other measurements of the skull, as the inter-orbital breadth, ratio of total length to zygomatic breadth, etc., show that the Pallatanga specimen belongs to a broader type of skull than that of the Esmeraldas form. It seems reasonable therefore to assume that my Esmeraldas series represents Tomes's *Hesperomys caliginosus* and not the Andean form named *phaeopus* by Thomas.

Melanomys caliginosus (Tomes), as here recognized, is represented by a series of 7 specimens from Esmeraldas and 1 from Chone, all but one fully adult. Four of the five skulls have the teeth greatly worn and therefore represent very old adults. The specimens were collected by Wm. B. Richardson, Oct. 28–Nov. 1, 1912.

The distinctive features in the skull in *caliginosus* are the unusual length of the rostrum and the very long palatal foramina, which considerably exceed the length of the maxillary toothrow, instead of being equal to or slightly shorter than the toothrow, as in all the other known forms of *Melanomys*.

***Melanomys caliginosus oroensis* subsp. nov.**

Type, No. 34380, ♀ ad., Rio de Oro (altitude about 1500 feet), Manavi Province, Ecuador, Jan. 13, 1913; coll. Wm. B. Richardson.

Similar in size and character of pelage to *Melanomys caliginosus caliginosus* but coloration much darker. Upperparts dusky brown, which is the prevailing color over the middle of the back, the hairs minutely tipped with ochraceous brown (Ridge-

¹ Notes on a third collection of Mammalia made by Mr. Fraser in Ecuador. By Robert F. Tomes. Proc. Zool. Soc. London, 1860, pp. 260–268.

² Ann. and Mag. Nat. Hist. (6), XIV, 1894, p. 355.

way, 1912), the terminal portion of the hairs less broadly tipped with ochraceous, which is also of a much paler tone (in some specimens decidedly yellow) than in *caliginosus*; ventral surface dull brownish gray, the hairs with a yellowish tipping, giving a buffy wash, duller and paler than in *caliginosus*.

Measurements. Total length (type), 220; head and body, 120; tail, 100; hind foot, 27. Three adults, including the type: 210 (200–220); head and body, 120 (110–130); tail, 90 (80–100); hind foot, 26.3 (26–27). Skull (type), total length, 28; zygomatic breadth, 15.7; interorbital breadth, 5.8; breadth of braincase, 13; length of nasals, 11.4; palatal foramina, 5; upper tooththrow, 5. Another skull gives similar measurements.

Represented by 3 specimens, collected at an altitude of about 1500 feet on the Rio de Oro, Province of Manavi, Ecuador, Jan. 12, 13, 1913, by Wm. B. Richardson.

This form closely resembles true *caliginosus* in cranial characters, and also in external features except in its much darker coloration. Additional specimens may show that it is entitled to the rank of a distinct species.

A single specimen from the Rio de Oro, collected a little further inland and higher up the river, is referred to *M. phaeopus olivinus*, on account of its darker and more olivaceous coloration, and the very short palatal foramina, which are shorter than the maxillary tooththrow.

***Melanomys affinis affinis* Allen.**

Plate LXVII, Fig. 7.

Oryzomys (Melanomys) obscurior affinis ALLEN, Bull. Amer. Mus. Nat. Hist., XXXI, p. 88, April 19, 1912.

Type locality, San José, coast region of southwestern Colombia. Altitude about 200 feet.

Upperparts heavily washed with chestnut red, the colored portion of the hair-tips nearly concealing the darker pelage below; underparts strongly rufescent, concealing the plumbeous basal portion of the pelage, except in greatly worn specimens.

Measurements. Type,¹ total length, 225; head and body, 135; tail, 90; hind foot, 27. Six adult topotypes and the type (7 specimens) measure as follows: Total length, 216.4 (200–230); head and body, 123 (110–140); tail, 88 (80–95); hind foot (from dry skin, with claws), 27.3 (27–28).

Five skulls, adult but not aged, all from San José: total length, 28.9 (28–30.5); zygomatic breadth, 15.4 (15–15.8); interorbital breadth, 6.7 (6.3–7); breadth of braincase, 12.9 (12.5–13.1); length of nasals, 10.3 (10–10.5); length of palatal foramina, 4.4 (4.3–4.5); upper tooththrow, 5 (4.5–5.5).

¹ The measurements of the type given in the original description (*l. c.*), taken from the collector's measurements, prove on critical reexamination of the topotype series, to be obviously erroneous. The total length, given by the collector as 235 mm., should unquestionably be 225, and the length of the head and body should be consequently 135 instead of 145. The length of the hind foot in the dry skin is 27, and not 30, as given by the collector.

The *M. affinis* group differs from all the neighboring forms of *Melanomys* in its very dark coloration and longer and more reddish hair-tips. In cranial characters it differs from *caliginosus* and agrees with the other forms of *Melanomys* in its shorter and relatively broader skull, shorter rostrum and shorter palatal foramina. It is represented by the type series of 10 specimens from San José, 2 from Los Cisneros, 1 from Barbacoas, and 1 from Buenavista, all near the coast of southwestern Colombia, at altitudes ranging from sea-level to about 600 feet. I also refer provisionally to this form 2 specimens from Andagada (near Quibdo), a locality some 300 miles north of San José.

***Melanomys affinis monticola* subsp. nov.**

Oryzomys (Melanomys) obscurior ALLEN, Bull. Amer. Mus. Nat. Hist., XXXI, p. 87, April 19, 1912. (Not *Oryzomys phaeopus obscurior* Thomas.)

Type, No. 32392, ♂ ad., Gallera (altitude 5700 ft.), west slope of Western Andes, June 30, 1911; coll. Leo E. Miller.

Practically identical in external and cranial measurements with *M. affinis affinis* but markedly different in coloration, the hair-tips being yellower (less red) than in *affinis*. Upperparts dark brown heavily washed with orange-ochraceous, the orange-colored portion of the tips of the hairs being unusually long; underparts ochraceous tawny, the tips of the hairs, in unworn pelage, nearly concealing the basal gray; ears, feet, and tail dark brown, the latter nearly unicolor.

Measurements. Type, total length, 222; head and body, 123; tail, 99; hind foot, 26. Ten adults from Gallera: total length, 212.6 (206–226); head and body, 114 (105–126); tail, 97.2 (89–109); hind foot, 26.4 (26–28).

Skull (type), total length, 30; zygomatic breadth, 16; interorbital breadth, 7; breadth of braincase, 13; length of nasals, 10.2; length of palatal foramina, 4.5; upper toothrow, 4.3. Seven skulls, all from Gallera, total length, 28.5 (27.8–30); zygomatic breadth, 15.1 (15–16); interorbital breadth, 6.6 (6.2–7); breadth of braincase, 12.7 (12.3–13); length of nasals, 10 (all 10 except type, which is 10.2); palatal foramina, 4.4 (4.2–4.5); upper toothrow, 4.5 (4.3–4.8). The type is an old specimen with much worn teeth, and the largest of the series in cranial measurements and nearly the largest in external measurements, although several of the others have worn teeth.

Represented by 29 specimens from Gallera (alt. 5700 ft.) and 7 from Cocal (alt. 4000 ft.). These localities are both on the western slope of the Western Andes; they are separated from the nearby localities at which collections of *Melanomys* were made on the eastern slope of the same range (La Florida and Munchique,¹ alt. 7000 ft.) by the paramo (alt. 10,000 ft.) which

¹ In my former paper (*l. c.*, p. 72) these localities are erroneously stated to be on the western slope; later information shows that La Florida and Munchique are both on the eastern slope.

here forms the crest of the range and constitutes a barrier to the forms of *Melanomys*, no specimens of which have been taken in this part of the Western Andes at altitudes higher than 8000 feet. The localities above mentioned as situated on the two sides of the range are only about 20 miles apart, in a direct line, yet they furnish two of the most unlike forms of the whole *Melanomys* group as represented in western Colombia.

Subspecies *monticola* differs from typical *affinis* in the colored portion of the tips of the hairs being much longer and much brighter in color on both dorsal and ventral surfaces, the reddish tone in *affinis* being replaced by orange in *monticola*. It differs from the *M. phæopus* group (as here recognized), from the east slope localities (La Florida, Munchique, and other points in the Western and Central ranges), in (1) the character of the pelage, which is much longer and softer in all the *phæopus* forms, and (2) in coloration, which is much darker, with the colored tips of the hairs shorter, paler and more varied with black.

***Melanomys phæopus phæopus* (Thomas).**

Plate LXVIII, Fig. 2.

Hesperomys arvicoloides TOMES, Proc. Zool. Soc. London, 1860, p. 262. Ecuador, Fraser Coll.

Oryzomys phæopus THOMAS, Ann. and Mag. Nat. Hist. (6), XIV, p. 355, Nov. 1894. Same specimen as above.

Oryzomys (Melanomys) phæopus ALLEN, Bull. Amer. Mus. Nat. Hist., XXXI, p. 87, April 19, 1912 (part).

Oryzomys (Melanomys) caliginosus LÖNNBERG, Arkiv för Zool., VIII, No. 16, p. 27, July 12, 1913. Gualea, Ecuador.

Type locality, Pallatanga, Ecuador, west slope of the Andes, altitude about 7000 feet.

Two specimens from Gualea, at the same elevation on the west slope of the Ecuadorian Andes as Pallatanga, but about 125 miles north of Pallatanga, are here presumed to represent *phæopus*, the type of which was examined by me at the British Museum in May of this year. My notes then made indicate its close resemblance to my series of specimens from Munchique and La Florida, from the Western Andes, some of which I noted as being practically indistinguishable externally from *O. phæopus olivinus* Thomas, from southern Ecuador. Unfortunately I omitted to make a critical comparison of the skulls from these various localities. I now find that in cranial as well as in external characters the specimens from Gualea are practically indistinguishable from those from the above-mentioned Colombian localities.

The original description of *phaeopus* proves to be not very distinctive; in the absence, however, of the type and of any topotypes it seems desirable to reproduce here its essential parts.

"... Color above coarsely grizzled fulvous and black, the general tone near Ridgway's 'vandyke-brown,' scarcely paler or clearer on sides. Whole of under surface dirty buff, the hairs pale plumbeous basally, dull buff terminally; line of demarcation not sharply defined.... Ears short, thinly haired, scarcely darker than the general colour of the head. Upper surfaces of metacarpals and metatarsals well clothed with dark brown hairs; digits more thinly clothed and rather paler. Tail comparatively short, very finely haired, in fact almost naked; brown above, paler below, but the difference not conspicuous.

"Skull somewhat like that of *O. laticeps*, but smaller and with a shorter muzzle. Interorbital region convex, broad, its edges with a fine supraorbital bead. Palatine foramina just about the length of the upper molar series. Coronoid processes of lower jaw long, well hooked backwards.

"Dimensions of the type (a male in skin): Head and body 112 millim.; tail 98; hind foot (moistened) 24; ear (shrunk) 14; heel to front of last foot-pad 11.5.

"Skull: back of interparietal to nasal tip 28.6, greatest breadth 15; nasals 12×3.6 ; interorbital breadth 5.5; interparietal $2.7 \times$ (c.) 8; length of outer wall of infraorbital foramen 3; palate length from henselion 13.2; diastema 7.7; palatine foramina 4.8×2.1 ; upper molar series 4.6. Lower jaw: condyle to incisor-tip 18.5; height of ramus below m_1 4.1.

"Hab. Pallatanga, Ecuador. Coll. L. Fraser.

"Type: B. M. 59.11.1.9.

"This species is based on a specimen marked in Mr. Tomes's handwriting '*Hesperomys arvicoloides*, Pictet', and is therefore evidently not his own *H. caliginosus*, with whose description externally it somewhat agrees. There are also, as Mr. Allen has pointed out,¹ other reasons for thinking *H. caliginosus* to have been an *Acodon*, an opinion on which I based my original determination of the specimens in Messrs. Stolzmann and Jelski's collections." — *Thomas, l. c.*

To this subspecies are referred the following specimens from Munchique, La Palma, and La Florida, on the eastern slope of the Western Andes, and from Miraflores, San Agustin, Andalucia, and La Palma in the southern part of the Central Andes. The series from these several localities are indistinguishable in size, proportions and coloration, and also in cranial characters. Following is a list of the specimens examined:

Munchique (alt. 6000-8325 ft.), 7 specimens, nearly all fully adult, May 28-June 9 (Miller). Total length (6 specimens), 220 (212-231); head and body, 116 (110-124); tail, 104.4 (94-111); hind foot (with claws), 27.6 (27-28). The skulls of these specimens are mostly broken; two of them measure, total length, 28 (27-29); zygomatic breadth (one skull), 16; interorbital breadth, 5.5 (5.2-5.8); breadth of braincase, 13 (13-13); length of nasals, 9.75 (9.5-10); length of palatal foramina, 4.4 (4-4.8); upper toothrow, 4.75 (4-4.8).

¹ "Bull. Am. Mus. N. H. iii. p. 210 (1891)."

La Florida (alt. 7700 ft.), July 6-9 (Miller), 7 specimens, of which only one is fully adult.

La Palma (alt. 5500 ft.), 7 specimens, only 4 adult, April 30-May 4 (Miller). The adults agree in measurements, both external and cranial, with the Munchique series.

Miraflores (alt. 6200 ft.), 4 specimens, all adults, April 27-May 1 (Richardson). The external measurements are untrustworthy. The 4 skulls measure, total length, 28 (26.5-30); zygomatic breadth, 15 (14.5-15.5); interorbital breadth, 6.3 (6-6.5); breadth of braincase, 12.7 (12.3-13); nasals, 10.2 (10-11); palatal foramina, 4.5 (4.2-5); upper toothrow, 4.6 (4.5-4.7).

Andalucia (alt. 7000 ft.), 13 specimens, 7 adult, June 1, 2 (Miller). The 7 adults measure, total length, 211 (205-220); head and body, 112 (105-123); tail, 99 (90-105); hind foot, 25.2 (25-27). Five adult skulls, total length, 29.2 (29-29.5); zygomatic breadth, 15.8 (15.5-16); interorbital breadth, 5.5 (5.3-5.8); breadth of braincase, 13 (13-13); length of nasals, 10.3 (10-11.3); palatal foramina, 4.5 (4.1-5); upper toothrow, 4.8 (4.7-5). The series of measured skulls averages slightly younger than the Munchique series.

La Candela (alt. 5500 ft.), 1 specimen, young adult, May 11 (Miller). Like the Andalucia specimens.

San Agustin (alt. 5000 ft.), 3 specimens, 2 adult and 1 young, April 11, 15 (Miller). Not distinguishable from the Andalucia series.

Gualea, Ecuador (alt. 7000 ft.), 2 specimens, adult, June 20, 21 (Richardson). Apparently not distinguishable from the above-listed specimens from 100 to 150 miles further north in Colombia.

The range of *M. phæopus phæopus* extends in the mountain ranges, at altitudes of from about 5000 to 8000 feet, from Munchique in the Western Andes and from Miraflores in the Central Andes of Colombia south to at least Pallatanga in Central Ecuador the three northern ranges of the Andes being practically confluent near the southern border of Colombia.

***Melanomys phæopus olivinus* (Thomas).**

Oryzomys phæopus olivinus THOMAS, Ann. and Mag. Nat. His. (7), X, p. 247, Sept. 1902.

Type locality, Zaruma, southern Ecuador. Altitude, 1000 metres.

No authentic specimens of this form are at this writing available for examination, but in May of the present year I had opportunity to compare at the British Museum the type and the seven topotypes on which this subspecies was founded with my series of *Melanomys* from various localities in southwestern Colombia. It was quite easy to match specimens of *olivinus* with individual specimens in the Munchique, La Florida and Miraflores series, and the average difference in coloration was not marked.

The original description of *olivinus* is as follows:

"Similar to the typical form in all essential respects, but instead of the dark umber-brown of true *phaeopus*, the general colour is grizzled olivaceous or bistre, almost as in the common Akodons of this region. Feet dark grey, not so blackish as in *phaeopus*.

"Skull and teeth as in true *phaeopus*.

"Dimensions of the type (measured in the flesh): — Head and body 135 millim.; tail (imperfect); hind foot (s. u.) 25; ear 16. Of another specimen with perfect tail — head and body 132; tail 90; hind foot 25; ear 16.

"Skull: greatest length 30.5, basilar length 23.7; greatest breadth 16; nasals, length 11.8; interorbital breadth 5.9; palate length 13; palatal foramina 5.6×2.2 ; length of upper molar series 4.8.

"Hab. Zaruma, Southern Ecuador. Alt. 1000 metres.

"Type. Old female. B. M. no. 0.2.9.44. Original number 380. Collected 14th June, 1899, by P. O. Simons. Eight specimens." — *Thomas, l. c.*

The following measurements are inscribed on the labels of 7 of the original specimens taken by the collector, Mr. P. O. Simons: Total length, 211 (200–225); head and body, 125 (117–134); tail, 86.3 (70–95); hind foot (without claws), 25.3 (24–27); ear, 17 (16–19).

This form is not strongly differentiated from the more northern subspecies of the *phaeopus* group; the tips of the hairs are rather paler, resulting in a more olivaceous general effect in the coloration of the upperparts. There is no essential difference in external measurements.¹

I refer to this subspecies a single specimen from Rio de Oro, Province of Manavi, Ecuador. It differs from the *oroensis* series from Rio de Oro in its much darker, more olivaceous coloration and in much shorter palatal foramina.

Melanomys phaeopus vallicola subsp. nov.

Plate LXVIII, Fig. 10.

Type, No. 32903, ♂ ad., Rio Frio (altitude 3500 feet), Cauca Valley, Colombia, Nov. 27, 1911; coll. Leo E. Miller.

Similar in coloration and pelage to *M. lomitis* but size smaller, particularly in external measurements.

Type, upperparts nearly as in *M. lomitis* but rather paler; underparts much paler, less heavily washed with ochraceous tawny; feet and tail brown, less dark than in the other forms.

Measurements. Type, total length, 193; head and body, 114; tail, 79; hind foot, 25. Ten adult topotypes, total length, 194.6 (179–204); head and body, 109.5 (100–117); tail, 86.1 (79–91); hind foot, 24.8 (24–25).

¹ The most important measurement for general size is the total length, based, in the present instance, on the length of head and body added to length of tail. The two last-mentioned dimensions depend upon the method of measuring employed by the collector, and vary more or less with different collectors. Such measurements are strictly comparable only when made by the same collector. Hence the need of adding together the head-and-body measurements and the tail-length to obtain a standard total length.

Skull (type) total length, 27; zygomatic breadth, 14.6; interorbital breadth, 5.6; breadth of braincase, 12; length of nasals, 10.5; length of palatal foramina, 4.2; length of upper toothrow, 4.6. Ten adult topotypes, total length, 27.8 (27-29); zygomatic breadth, 14.7 (14-15.6); interorbital breadth, 5.7 (5.3-6); breadth of braincase, 12.2 (12-13); nasals, 9.9 (9-10.5); palatal foramina, 4.3 (4-5); upper toothrow, 4.4 (4-5).

Represented by 24 specimens, all from Rio Frio, Nov. 24-29 (Miller). About one half are fully adult with more or less worn teeth, the others young adult with the teeth unworn.

This subspecies is closely related to *M. phaeopus obscurior*, but differs from it in much smaller size and paler coloration, especially of the lower parts.

***Melanomys phaeopus tolimensis* subsp. nov.**

Type, No. 32976, ♂ ad., Rio Toché (altitude 6800 feet), Tolima Province, Colombia, Oct. 24, 1911; coll. Leo E. Miller.

Similar in pelage and coloration to *M. phaeopus*, but larger and darker, with the tips of the hairs paler and the general effect less yellow; underparts paler and yellower; feet, ears, and tail dark brown.

Measurements. Total length (type), 202; head and body, 117; tail, 85; hind foot, 26.5. Four adults (including type), total length, 213 (202-222); head and body, 118 (112-123); tail, 95 (85-102); hind foot, 25.7 (25-27).

Skull (type), total length, 30; zygomatic breadth, 16; interorbital breadth, 5.6; breadth of braincase, 13.3; length of nasals, 10; palatal foramina, 4.8; upper toothrow, 4.8. The type is the only specimen which has a skull.

The type is an adult male with worn teeth, but with a short tail (10 mm. below the average). Represented by 5 specimens, 4 of which are adult, the other a young adult; all are from the same locality as the type.

This subspecies most resembles the Andalucia and other Huila specimens here referred to true *phaeopus*, from which it differs as above indicated. It differs from *M. buenavistæ* in somewhat smaller size, narrower and less massive skull, shorter nasals, and in yellower ventral surface and less dark upperparts.

***Melanomys lomitensis* sp. nov.**

Plate LXVIII, Fig. 9.

Type, No. 32214, ♂ ad., Las Lomitas (altitude 5000 feet), Western Andes, Colombia; coll. W. B. Richardson.

Smallest of the known forms of the genus. Upperparts ochraceous tawny minutely varied with black; underparts yellowish tawny; ears black, feet rusty brown, tail dark brown, unicolor.

Measurements. Type, total length, 210; head and body, 120; tail, 90; hind foot, 26. Skull, total length, 25; zygomatic breadth, 14; interorbital breadth, 5;

breadth of braincase, 13; length of nasals, 9; length of palatal foramina, 4.2; length of upper tooththrow, 4.5.

Four adult topotypes, total length, 208 (200–222); head and body, 118 (110–132); tail, 90 (90–90); hind foot, 25.3 (25–27). The skulls confirm the small size indicated by the external measurements, 3 old skulls measuring, total length, 25.5 (25–26.2); zygomatic breadth, 14 (14–14); interorbital breadth, 5.2 (5–5.3); breadth of braincase, 12.8 (12.5–13); length of nasals, 9.2 (9–10); length of palatal foramina, 4.5 (4.2–5); length of upper tooththrow, 4.6 (4.5–4.8).

This is by far the smallest known form of the genus *Melanomys*, and is further characterized by its very short rostrum and exceptionally short nasals. In coloration and character of pelage it belongs to the group of coast forms and not to the interior or *phaeopus* group. It is nearest in size to *M. phaeopus vallicola*, but differs from it widely in cranial characters.

***Melanomys obscurior* (Thomas).**

Oryzomys phaeopus obscurior THOMAS, Ann. and Mag. Nat. Hist. (6), XIV, p. 356, Nov. 1894.

Type locality, Concordia, Medellin, Colombia, in the northern part of the Western Andes. Altitude about 3000 feet.

Based on a single specimen, not fully mature, with the skull and tail imperfect, described as follows:

"Similar to the typical variety in most essential respects, but the feet are shorter and more delicate, and the color is much darker throughout, especially on the posterior back, where the fur is practically black, only relieved by a few yellow-tipped hairs. Upper surface of hands and feet, and tail, both above and below, brownish black. Fifth hind toe only reaching to the base of the first phalanx of the fourth.

"The muzzle of the skull is even shorter than in the typical form; but this may be due to the fact that the type of *phaeopus* is a very aged specimen, while that of *obscurior* is only just adult.

"Dimensions of the type (in skin): — Head and body 111 millim.; tail (imperfect at tip) 89+?; hind foot (moistened) 22.4; heel to front of last foot-pad 9.5.

"Skull: bregma (back corner of frontals) to nasal tip 19; greatest breadth (c) 15; nasals 10.5×3.4 ; interorbital breadth 5.9; palate length from henselion 12.2; diastema 7.4; palatine foramina 4.5×2.1 ; upper molar series 4.5. Lower jaw: condyle to incisor-tip 18; height of ramus below m_1 3.7.

"Hab. Concordia, Medellin, Colombia. Coll. J. K. Salmon.

"Type: B. M. 73.11.5.5." — Thomas, l. c.

The type is decidedly more fulvous than the majority of specimens here referred to the *phaeopus* group. I have at present no specimens that satisfactorily agree with it. It resembles *M. lomitensis* in coloration, but is much larger, with relatively much longer nasals and rostrum. The examination of a good series of topotypes will be necessary before the status and relationships of this form can be satisfactorily established.

The name *obscurior* has had a wide application (at least on museum labels), having been used for specimens from Santa Marta (see below under *M. columbianus*), Bogota, and various localities in northern Ecuador.

***Melanomys buenavistæ* sp. nov.**

Plate LXVIII, Fig. 8.

Type, No. 34567, ♂ ad., Buenavista (altitude 4500 feet), Eastern Andes, about 50 miles, in a straight line, southeast of Bogota, Colombia; coll. G. M. O'Connell.

Size large, color very dark, pelage long and soft. Upperparts (type) grizzled yellowish (about ochraceous-buff of Ridgway, 1912) and black in about equal proportions, part of the hairs being tipped with yellowish and part with black, black prevailing on the back and ochraceous buff on the sides; underparts with the hairs plumbeous at base with long dull pale tawny tips; ears, feet, and tail dark brown.

Measurements. Total length (type), 223; head and body, 117; tail, 106; hind foot, 27. Four adult topotypes, total length, 220 (209–224); head and body, 110 (100–120); tail, 105 (103–106); hind foot, 28 (27–29). Skull (type), total length, 31; zygomatic breadth, 17; interorbital breadth, 6; breadth of braincase, 13.5; length of nasals, 11.5; length of palatal foramina, 4.8; length of upper toothrow, 4.8. Five adult topotype skulls, total length, 31 (2 skulls only); zygomatic breadth, 16.8 (16.5–17); interorbital breadth, 6 (6–6); braincase, 13 (13–13.2); nasals, 11.9 (11.5–12); palatal foramina, 4.9 (4.6–5); upper toothrow, 4.5 (4.3–5).

This species is distinguishable from the *phaeopus* group by its large size, shown especially by the skull, which is massive and heavy in comparison with the skull of any form of *phaeopus*, and also in its dark coloration and longer, softer pelage. It differs from *chrysomelas*, *idoneus*, and *columbianus*, in its dark coloration, long pelage, and in certain features of the skull, as noted below under *columbianus*.

***Melanomys chrysomelas* (Allen).**

Plate LXVIII, Fig. 5.

Hesperomys (Habothrix) caliginosus ALLEN, Bull. Amer. Mus. Nat. Hist., III, p. 210, April 17, 1891. (Provisionally and erroneously referred to *Hesperomys caliginosus* Tomes. Only skins available for examination.)

Oryzomys chrysomelas ALLEN, Bull. Amer. Mus. Nat. Hist., IX, p. 37, March 11, 1897.

Oryzomys (Melanomys) chrysomelas ALLEN, Bull. Amer. Mus. Nat. Hist., XXIV, p. 654, Oct. 13, 1908 (Nicaragua); *ibid.*, XXVIII, p. 98, April 30, 1910. (Nicaragua, various localities.)

Zogodontomys chrysomelas BANGS, Bull. Mus. Comp. Zool., XXIX, p. 37, April, 1902 (Chiriqui).

Zygodontomys chrysomelas ELLIOT, Mamm. Middle Amer. and West Indies, 1904, p. 253.

Oryzomys (Zygodontomys) chrysomelas MILLER, Bull. 79, U. S. Nat. Mus., p. 178, 1912.

Type locality, Suerre, Costa Rica, probably not far from San José; altitude probably between 3000 and 4000 feet.

Upper parts very dark brown, the hairs conspicuously tipped with yellowish rufous, sides brighter and more rufous than the back; underparts with the long tips of the hairs yellowish brown, quite concealing the plumbeous basal portion of the pelage; ears black; feet and tail dark brownish black, the tail not appreciably lighter below. (For measurements and comparison with *M. idoneus*, see under *idoneus*.)

This species was based originally on 4 specimens from Suerre and 1 from San Carlos, the Suerre specimens being all young adults, with the teeth unworn and the skulls not fully grown. They agree perfectly with Chiriqui and Nicaragua specimens of corresponding age. The range of *chrysomelas* may be given therefore as approximately from Bogado, Chiriqui Province, Panama, north to northern Nicaragua. The three Bogado specimens were taken at 600 feet elevation. The Nicaragua localities range in altitude from 700 to 2000 feet, and are distributed from the western edge of the east coast lowlands to Chinandega on the Pacific coast. The ten Nicaragua localities from which specimens have been received are mostly on the eastern slope of the eastern highlands, but the species presumably occurs at all suitable localities below 3000 feet throughout Nicaragua. None were received from the north central highlands, where collections were made at several localities at altitudes of 3000 to 5000 feet.

Melanomys idoneus (Goldman).

Plate LXVIII, Fig. 4.

Oryzomys idoneus GOLDMAN, Smiths. Miscel. Coll., LVI, No. 36, p. 5, Feb. 19, 1912; MILLER, Bull. 70, U. S. Nat. Mus., p. 176, 1912 (ex Goldman).

Type locality, Cerro Azul (altitude 2500 feet), near the headwaters of the Chagres River, Panama.

"Upper parts cinnamon-rufous evenly mixed with black, becoming somewhat paler [less black] along flanks; outer side of limbs dark brownish cinnamon; under parts dark tawny ochraceous, the under color showing through; feet and tail thinly haired, the hairs and epidermis black....

"Measurements.—Type: Total length, 218 mm.; tail vertebrae, 88; hind foot, 30. Skull (type): Greatest length, 31.5; condylobasal length, 29.5; zygomatic breadth, 17.5; nasals, 12.5; interorbital breadth, 6.5; interparietal, 8.7 × 2.5; incisive foramina, 4.8; length of palatal bridge, 6.5; maxillary toothrow, 4.8." — Goldman, orig. descrip., l. c.

This species was originally described from a single specimen, an adult female with well-worn teeth. Later a series of 24 specimens was taken at Cana (altitude 2000 feet), in the mountains of eastern Panama. These have been kindly loaned to me for examination in the present connection by Mr. H. W. Henshaw, Chief of the Biological Survey, and were collected by Mr. Goldman. This series shows that the type chanced to be much above average size in both external and cranial measurements.

Ten fully adult specimens, the type and 9 selected at random from the Cana series, give the following measurements: Total length, 210.7 (193–227); head and body, 122.3 (113–130); tail, 88.4 (76–99); hind foot, 27 (25–30). The skulls of the same specimens measure: Total length, 29.7 (28.8–31); zygomatic breadth, 15.9 (15.2–17); interorbital breadth, 6 (5.7–6.3); breadth of braincase, 13 (12.4–13.5); length of nasals, 11.1 (10.5–12.2); palatal foramina, 4.6 (4.2–5); length of upper toothrow, 4.7 (4.4–5).

Comparison with *M. chrysomelas*: The type series of *M. chrysomelas* is without field measurements, and the skins are poorly prepared. They appear to represent a smaller form than *idoneus*, and this impression is confirmed by the skulls. Three of the Suerre specimens (topotypes) are young adults, the other has the teeth slightly worn. These may be compared with 5 skulls of *idoneus* of corresponding age:

M. chrysomelas, 3 skulls: Total length, 26.8 (26.3–27); zygomatic breadth, 13.9 (13–14.4); interorbital breadth, 6.3 (6–6.7); breadth of braincase, 12.3 (12–12.6); nasals, 9.4 (9–9.6); palatal foramina, 4.4 (4.1–4.8); upper toothrow, 4.43 (4.3–4.6).

M. idoneus, 5 skulls strictly comparable in age with the above: Total length, 27.2 (26.8–28.2); zygomatic breadth, 14.4 (13.5–15.9); interorbital breadth, 5.9 (5.7–6); braincase, 12.6 (12.3–13); nasals, 9.75 (9.6–10.1); palatal foramina, 4.5 (4–4.8); upper toothrow, 4.54 (4.4–4.7).

A comparison of 7 adults of *chrysomelas* from Nicaragua with 10 adults of *idoneus* further confirms the difference in size between the two species and also shows marked difference in the breadth of the interorbital region, which is relatively much broader in *chrysomelas* than in *idoneus*. The dentition is weaker in *chrysomelas*, the molariform teeth are much narrower, and the maxillary series more nearly parallel than in *idoneus*.

External measurements, 7 adult specimens of *chrysomelas*: Total length, 204.2 (190–220); head and body, 113 (110–130); tail, 91.4 (80–100); hind foot (from skin), 25.3 (24–28).

External measurements, 10 adult specimens of *idoneus*: Total length, 210.7 (193–227); head and body, 122.3 (115–130); tail, 88.4 (76–99); hind foot, 27 (25–30). (The discrepancy between the head-and-body and tail measurements in the two series is beyond doubt due largely to different methods of taking these two measurements.)

Cranial measurements of the same 7 adult specimens of *chrysomelas*: Total length, 28.3 (27–29.5); zygomatic breadth, 15.2 (14.6–16.5); interorbital breadth, 6.5

(6.2-7); braincase, 12.5 (12-13); nasals, 10.5 (10-11); palatal foramina, 4.9 (4.6-5.2); upper tooththrow, 4.5 (4.2-4.7).

Cranial measurements of the same 10 adult specimens of *idoneus*: Total length, 29.7 (28.8-31); zygomatic breadth, 15.9 (15.2-17); interorbital breadth, 6 (5.7-6.3); braincase, 13 (12-4-13.5); nasals, 11.1 (10.5-12.2); palatal foramina, 4.6 (4.2-5); upper tooththrow, 4.7 (4.4-5).

In coloration *idoneus* is paler (decidedly yellower and less rufous) than *chrysomelas*, and somewhat larger in both external and cranial measurements. The skull is not only shorter (*cf.* above measurements of skulls of both young adults and middle-aged and old adults of both forms) but is absolutely (as well as relatively) broader interorbitally in *chrysomelas* than in *idoneus*. Also, as stated above, the dentition is much heavier in *idoneus*, and the maxillary tooththrows are slightly more convergent posteriorly.

Melanomys columbianus (Allen).

Plate LXVIII, Fig. 6.

Akodon columbianus ALLEN, Bull. Amer. Mus. Nat. Hist., XII, p. 203, Oct. 20, 1899.

Oryzomys (*Zygodontomys*) *phæopus obscurior* BANGS, Proc. New England Zool. Soc., I, p. 95, Feb. 23, 1900.

Oryzomys (*Melanomys*) *columbianus* ALLEN, Bull. Amer. Mus. Nat. Hist., XX, pp. 437, 440, Nov. 28, 1904.

Type locality, Manzanares, Santa Marta District, Colombia. Altitude 3000 feet.

Known only from the Santa Marta region of eastern Colombia, at altitudes of 3000 to 8000 feet.

Upperparts dark brown minutely grizzled with ochraceous and black, with a mid-dorsal band much darker than the sides; under parts tawny, through which the plumbeous underfur is more or less visible; ears black, feet and tail brownish black; tail practically naked, the short hairs between the scales not concealing the annulations, as in all the forms of the genus.

Measurements. Type, total length, 230; head and body, 128; tail, 102; hind foot, 27. Skull, total length, 30; zygomatic breadth, 16; interorbital breadth, 6.5; breadth of braincase, 13; length of nasals, 10.5; length of palatal foramina, 4.6; length of upper tooththrow, 4.8.

Ten adults from Pueblo Viejo (altitude 8000 feet), Santa Marta, Colombia; field measurements made by the collector, W. W. Brown, Jr.: Total length, 232.7 (220-240); head and body, 137.2 (125-145); tail, 94.5 (80-100); hind foot, 26.4 (25-28). The skulls of the same specimens measure: Total length, 30.3 (29.5-31.2); zygomatic breadth, 16 (15.5-16.7); interorbital breadth, 5.74 (5.5-6); breadth of braincase, 13.25 (13-13.8); length of nasals, 11.3 (10.9-12); palatal foramina, 4.8 (4.6-5); length of upper tooththrow, 4.7 (4.5-4.9).

The type and topotypes of *M. columbianus* are all young adults, obviously not full-grown. They were collected at Manzanares, at an altitude of 3000 feet.

Mr. W. W. Brown collected for Messrs. A. E. and O. Bangs, in 1898, a series of "Ninety specimens, of all ages and every season, from Pueblo Viejo, San Miguel, Palomina, Chirua, and La Concepcion,—3000 to 8000 feet altitude," and recorded by Bangs (*l. c.*) as "*Oryzomys (Zygodontomys) phæopus obscurior* Thomas." Through the kindness of the Director of the Museum of Comparative Zoölogy, Mr. Samuel Henshaw, I have before me for study 15 of these specimens, all fully adult; the 10 of which measurements are given above are all from Pueblo Viejo, altitude 8000 feet. Others of the series are from La Concepcion, at an altitude of 3000 feet, and are practically topotypes of the species.

Melanomys columbianus proves to be the largest known form of the *Melanomys* group, being much larger than either *M. chrysomelas* or *M. idoneus*, and rather larger than *M. buenavistæ*, from which latter it differs radically in coloration. It is also yellower and less dark than the Central American forms, differing from *idoneus* in the greater length and paler tint of the hair-tips of the upper parts, and from *chrysomelas* in lacking the reddish cast of that species. Not only is the general coloration of the pelage of a light tone, but the feet and tail are much paler (more brownish) than in any other form.

While resembling '*M. phæopus obscurior*' in color, *obscurior* and *columbianus* represent nearly the extremes in size of the whole *Melanomys* group, and therefore, taking into account other differences that separate them, they cannot be considered as having any close relationship.

M. columbianus is restricted to the 'semi-insular' Santa Marta region¹ of eastern Colombia, where it occurs from about 3000 feet up to 8000 feet in the Sierra Nevada de Santa Marta. Mr. Brown, and especially Mr. Smith's collectors, collected extensively in the low country, from sea-level up to the base of the mountains, but obtained no specimens of *Melanomys* below an altitude of about 3000 feet, nor is any form of the genus known to occur to the eastward of the Andes from the Bogota region northwest to Panama.

When first described (in 1899) this species was erroneously referred to *Akodon*, the standard of comparison being *Hesperomys caliginosus* Tomes, then supposed to be a true *Akodon*, but since found to be an *Oryzomys* of the subgenus *Melanomys* (*c. f. antea*, p. 535). This error was corrected in my second reference to the species (*l. c.*, 1904), as follows: "A reëxamination of these specimens [the type series] shows that the original reference of this species to *Akodon* was erroneous. While *Akodont* in many features, it is

¹ See the description of this region by Herbert H. Smith in Volume XX (1904) of this Bulletin, pp. 408-414.

better referred to *Oryzomys*, as a member of Thomas's subgenus *Melanomys*, proposed for *O. phæopus* and its near allies."¹

In February, 1900, Bangs (*l. c.*) recorded this species as *Oryzomys phæopus obscurior* Thomas, on the basis of Thomas's opinion (founded on specimens sent to him by Bangs for identification) that they were referable to his *obscurior*. Bangs also (naturally) failed to recognize the relation of his specimens to my "*Akodon*" *columbianus*, comparing them instead with my *Oryzomys sanctæmartæ*, which is a true *Oryzomys* with no close relationship to the *Melanomys* group. He also referred the species to the *Zygodontomys* group, where it does not belong; but *Melanomys* had not then been proposed for this group of mice.

¹ Apparently this correction was unknown to Goldman when in 1912, in describing his *Oryzomys idoneus*, he referred to "*Akodon columbianus* Allen" and its relationships.

Measurements of Species and Subspecies of *Melanomys*.

	External Measurements						Cranial Measurements						
	Numb. of specimens	Total length	Head and body	Tail	Hind foot	Numb. of specimens	Greatest length	Zygom. breadth	Interorb. breadth	Breadth of brain-case	Length of nasals	Length of pal. foram.	Length of upper toothrow
<i>M. cal. caliginosus</i>	4	220	140	80	28	3	31	15.5	6.6	13	12	5.5	4.5
		210	130	70	25		30	14.5	5	12	11.5	4.7	4.2
		212.5	135	77.5	26.9		30.5	15	5.8	12.4	11.9	5	4.3
<i>M. cal. oroensis</i>	3	220	130	100	27	3	—	—	5.9	—	11.7	5	5
		200	110	80	26		—	—	5.7	—	11	5	4.5
		210	120	90	26.3		28	15.7	5.8	13	11.4	5	4.7
<i>M. affinis affinis</i>	7	230	130	95	28	5	30.5	15.8	7	13.1	10.5	4.5	5.5
		200	110	80	27		28	15	6.3	12.5	10	4.2	4.5
		216.4	123	88	27.3		28.9	15.4	6.7	12.9	10.3	4.4	5
<i>M. affinis monticola</i>	10	226	126	109	28	7	30	16	7	13	10.2	4.5	4.8
		206	105	89	26		27.8	15	6.2	12.3	10	4.2	4.3
		212.6	114	97.2	26.4		28.5	15.1	6.6	12.7	10	4.4	4.5
<i>M. phaeopus phaeopus</i>	6	231	124	111	28	2	29	—	5.8	13	10	4.8	4.8
		212	110	94	27		27	—	5.2	13	9.5	4	4
		220	116	104.4	27.6		28	16	5.5	13	9.7	4.4	4.75
<i>M. phaeopus olivinus</i>	7	225	134	95	27 ¹	—	—	—	—	—	—	—	—
		200	117	70	24		—	—	—	—	—	—	—
		211	125	86.3	25.3		—	—	—	—	—	—	—

¹ Hind foot without claws.

Measurements of Species and Subspecies of *Melomys*. (Continued.)

External Measurements.						Cranial Measurements.							
	Numb. of specimens	Total length	Head and body	Tail	Hind foot	Numb. of specimens	Greatest length	Zygom. breadth	Interorb. breadth	Breadth of brain-case	Length of nasals	Length of pal. foram.	Length of upper tooth-row
<i>M. lomitenis</i>	4	222	132	90	27	3	26.2	14	5.3	13	10	5	4.8
		200	110	90	25		25	14	5	12.5	9	4.2	4.5
		208	118	90	25.3		25.5	14	5.2	12.8	9.2	4.5	4.6
	10	204	117	91	25	10	29	15.6	6	13	10.5	5	5
<i>M. phaeopus vallicola</i>		179	100	79	24		27	14	5.3	12	9	4	4
		194.6	109.5	86	24.8		27.8	14.7	5.7	12.2	9.9	4.3	4.4
	5	224	120	106	29	5	—	17	6	13.2	12	5	5
		209	100	103	27		—	16.5	6	13	11.5	4.6	4.3
<i>M. chrysomelas</i>		220	110	105	28		31	16.8	6	13	11.9	4.9	4.5
	7	220	130	100	28	7	29.5	16.5	7	13	11	5.2	4.7
		190	110	80	24		27	14.6	6.2	12	10	4.6	4.2
		204.2	113	91.4	25.3		28.3	15.2	6.5	12.5	10.5	4.9	4.5
<i>M. idoneus</i>	10	227	130	99	30	10	31	17	6.3	13.5	12.2	5	5
		193	113	76	25		28.8	15.2	5.7	12.4	10.5	4.2	4.4
		210.7	122.3	88.4	27		29.7	15.9	6	13	11.1	4.6	4.7
		245	145	100	28	10	31.2	16.7	6	13.8	12	5	4.9
<i>M. columbianus</i>		220	125	80	25		29.5	15.5	5.5	13	10.9	4.6	4.5
		232.7	137	94.5	26.4		30.3	16	5.74	13.3	11.3	4.8	4.7

EXPLANATION OF PLATE LXVIII.

Figures all $\frac{7}{8}$ nat. size.

Figs. 1 and 1a. *Oryzomys palustris palustris* (type of *Oryzomys*), No. 13849 Am. Mus., ♂ ad., Lake Drummond, Va.

Figs. 2 and 2a. *Melanomys phæopus phæopus* (type of *Melanomys*), No. 36251 Am. Mus., ♂ ad., Gualea, Ecuador.

Figs. 3 and 3a. *Melanomys caliginosus caliginosus*, No. 33220 Am. Mus., ♂ ad., Esmeraldas, Ecuador.

Figs. 4 and 4a. *Melanomys idoneus*, No. 171106 U. S. Nat. Mus., type, ♀ ad., Cerro Azul, Panama.

Figs. 5 and 5a. *Melanomys chrysomelas*, No. 9076 Am. Mus., type, ♀ juv. (not fully grown), Suerre, Costa Rica.

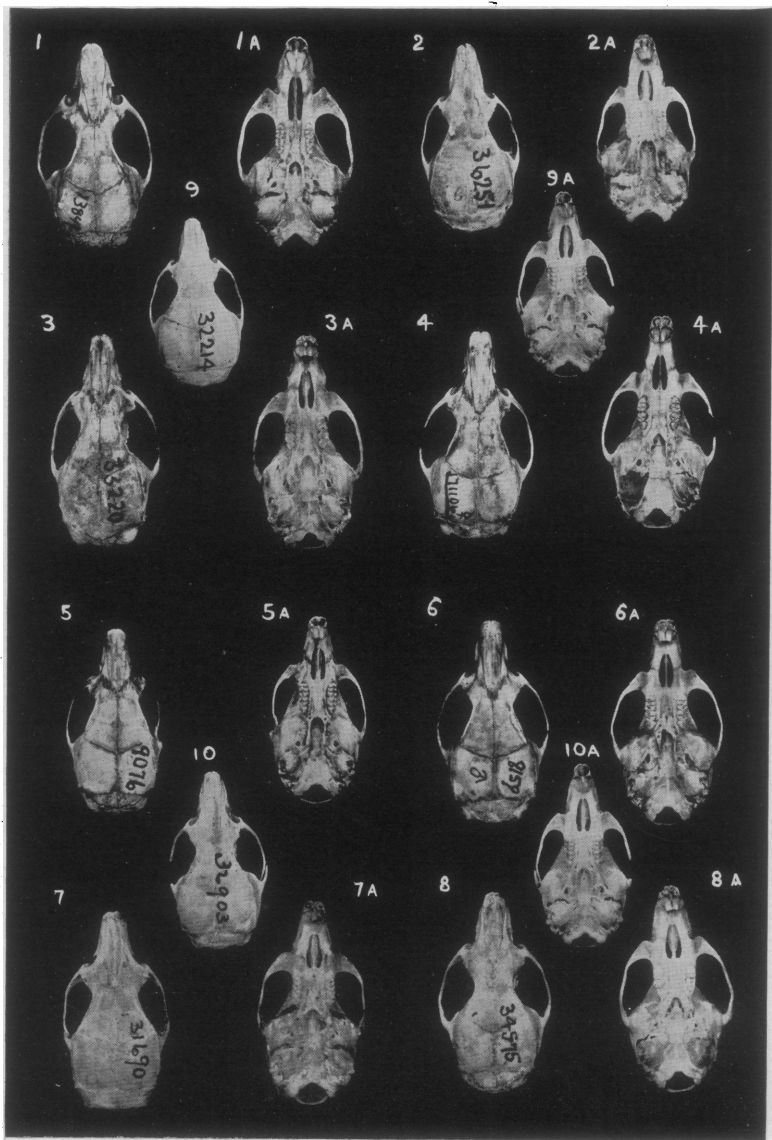
Figs. 6 and 6a. *Melanomys columbianus*, No. 8159, Bangs Coll., Mus. Comp. Zoöl., ♂ ad., Pueblo Viejo, Santa Marta, Colombia.

Figs. 7 and 7a. *Melanomys affinis affinis*, No. 31690 Am. Mus., ♂ ad., San José, southwestern Colombia.

Figs. 8 and 8a. *Melanomys buenavistæ*, No. 34575 Am. Mus., ♂ ad., type, Buenavista, 50 miles southeast of Bogota, Colombia.

Figs. 9 and 9a. *Melanomys lomitenis*, No. 32214 Am. Mus., ♂ ad., type, Las Lomitas, Western Andes.

Figs. 10 and 10a. *Melanomys phæopus vallicola*, No. 32903, ♂ ad., type, Rio Frio, upper Cauca Valley, Colombia.



1, 1a, *Oryzomys palustris palustris*.
 2, 2a, *Melanomys phaeopus phaeopus*.
 3, 3a, " *cal. caliginosus*.
 4, 4a, " *idoneus*.
 5, 5a, " *chrysomelas*.

6, 6a, *Melanomys columbianus*.
 7, 7a, " *affinis affinis*.
 8, 8a, " *buenavistæ*.
 9, 9a, " *lomitensis*.
 10, 10a, " *phaeopus vallicola*.

