

head and $1\frac{3}{4}$ in the interocular width; the width of the mouth equals about half that of the head; two pairs of barbels, the first $\frac{2}{5}$ the diameter of the eye, the second $\frac{3}{4}$ or $\frac{3}{4}$. Small pearl-like excrescences on the sides and top of the head. Dorsal III 9; third ray feeble, smooth; longest ray $\frac{3}{4}$ the length of the head. Anal II 6; longest ray $\frac{2}{3}$ or $\frac{3}{4}$ length of head, not reaching the root of the caudal. Pectoral pointed, a little shorter than the head, not reaching the ventral, which is inserted under the first rays of the dorsal. Caudal forked. Caudal peduncle nearly twice as long as deep. Scales longitudinally striated, 35-36 $\frac{5\frac{1}{2}}{5\frac{1}{2}}$, $2\frac{1}{2}$ between the lateral line and the root of the ventral. Steel-grey above, silvery beneath; an indistinct darker lateral band.

Total length 120 millim.

Both these species are related to the Moroccan *Barbus* described by Dr. Günther as *B. Fritschii* and *B. Rothschildi*; but as they have a perfectly trenchant edge to the lower jaw, covered with a thin horny layer, they strictly belong to *Capoëta*, whatever the value of this systematic division may be. They differ besides from both the above-named *Barbus* in the more feeble third dorsal ray and the shorter barbels.

The new fishes were obtained, together with examples of *Barbus callensis*, C. & V., and *B. nasus*, Gthr., in the Atlas Mountains, in a stream running into the Wad N'fys at a place called Tsigadir-el-hor; the water in which they live is slightly salt. They have been presented to the British Museum by Mr. E. G. B. Meade-Waldo.

XXIV.—On Mammals from Cochabamba, Bolivia, and the Region north of that place. By OLDFIELD THOMAS, F.R.S.

MR. PERRY O. SIMONS, who has been collecting mammals all down the Andean region for the last three years, and whose success is evidenced by the many novelties described in the 'Annals,' made in March to July 1901 a collection (1) at and near Cochabamba, Bolivia, (2) on the high paramos north of that town, and (3) on the Amazonian lowlands of Yungas, just north of these again. This collection contains so large a proportion of novelties and is from so little known a country that I have thought it advisable to give a list of all the mammals sent, instead of only picking out the novelties for description as heretofore.

The localities at which the collection was made were as follows, the positions and altitudes being taken from Mr. Simons's sketch-map of the district:—

Tapacari (3000 m.), Paratani (2500 m.), and Cochabamba (2400 m.), in the Cochabamba Valley and on the higher ground westward of the town.

Alisuni (2600 m.), Choro (3500 m.), and Choquecamate (4000 m.), on the high paramos north and north-west of Cochabamba, surrounding on the west and south the sources of the Rio Securé, which flows northward to join the Mamoré and ultimately the Amazon.

Charuplaya (1300 m.), on the Securé, just north of 16° S., comparatively low, with an Amazonian fauna.

1. *Myotis* sp.

♀. Paratani, 2600 m. 9th April, 1901.

Allied to *M. ruber*, Geoff.

Mr. Simons labels all the bats with the native name of "Chini," in addition to the usual Spanish word "Murcielago."

2. *Vespertilio* sp.

♂. Choro, 3600 m. 8th May, 1901.

V. Hilairei group.

3. *Desmodus rotundus*, Geoff.

4 ♂, 4 ♀. Paratani, 2600 m. 5th to 9th April, 1901.

4. *Speothos venaticus*, Lund.

♂ ♀. Rio Blanco, Charuplaya, 1300 m. 27th June, 1901.

All immature.

"Four of them came trotting by my camp at Rio Blanco about 9 A.M. One got into the jungle while I was shooting the others, and ran away barking like a dog."—*P. O. S.*

5. *Conepatus chorensis*, sp. n.

1 ♂ and an odd ♂ skull, 3 ♀. Choro, 3500 m. 10th May to 27th July, 1901.

Size rather less than *C. arequipæ*, but tail slightly longer. Fur long, thick, and close. Hairs of nape directed backwards, not reversed. White connecting-stripe on crown $\frac{1}{2}$ to $\frac{3}{4}$ inch broad. White longitudinal bands well developed, about 1 to $1\frac{1}{2}$ inch broad where broadest, reaching back

about to the commencement of the lumbar region; neither so broad nor so long as in *C. arequipæ*, much more developed than in *C. inca*; median black hair on nape and fore back averaging 1-1½ inch in breadth. Tail very thick and bushy, wholly black proximally, profusely mixed terminally with white hairs, the latter attaining to 130 millim. in length, the black ones about 90 millim.

Skull slightly shorter than in *C. arequipæ*; bony palate continued further behind molars than usual. Upper molar small; lower carnassial short and squat.

Dimensions of four specimens (measured in the flesh):—

	♂.	♀.	♀.	♀.
	mm.	mm.	mm.	mm.
Head and body	420	410	390	345
Tail	235	235	200	210
Hind foot, s. u.*	65	68	64	60
Ear	29	27	26	26

Skull (of type): length from convexity above foramen magnum to gnathion 78; basilar length 66; greatest breadth 49; interorbital breadth 23·5; intertemporal breadth 20; mastoid breadth 40·5; palate length from gnathion 34·5; upper molar 10† × 7·8.

The first measurement in the other skulls is: (♂) 77, (♀) 72·7, 72·4, and 70.

In an old male *C. arequipæ* it is 83, and in the type (immature) it is 78.

Hab. as above.

Type. Adult ♂. Original number 1495. Collected 10th July, 1901.

"Native names 'Zorrino' and 'Anutuya.'"—*P. O. S.*

The four specimens of this skunk are perfectly alike *inter se*, and all differ from *C. arequipæ* by their rather smaller size, longer tails, and the less extension of the dorsal white backwards. *C. inca*, on the other hand, has much less white again than *C. chorensis*.

The proper treatment of these skunks is a matter of great difficulty, for while each local set are very constant and have a distinct facies of their own, there can be no doubt that further material will show some of them to intergrade, widely as the extremes differ from each other. Describing them as

* The cum ungue measurement is 8-9 millim. greater.

† The first of these two measurements is the greatest diameter taken in an oblique line from the antero-external to the postero-internal corner, the second a line at right angles to the first from the antero-internal convexity to the little concavity on the posterior border.

subspecies is as yet not practicable, owing to the impossibility of deciding to which older known form each should be allocated. Those I have described all unquestionably need names, binomial or trinomial, and in the presence of the above difficulty I think it better merely to use specific names without attempting now to define which of them will ultimately go together as subspecies.

6. *Conepatus porcinus* *, sp. n.

♂. Original number 1422. Cochabamba, 2600 m. 20th April, 1901.

Size small, form rather slender. Fur comparatively short, thin, and fine, though not so much so as in *C. zorrino* †; long hairs of back about 45–47 millim. in length. Hairs of neck, from withers to occiput, directed forwards from a whorl situated behind the shoulder. White connecting-band and white longitudinal stripes only about $\frac{1}{2}$ – $\frac{3}{4}$ inch broad, except just at the whorl, where they are about $1\frac{1}{2}$ inch; behind the stripes extend narrowly on to the rump, but not on to the tail. Tail short and narrow, with longer white hairs only at its tip; the latter just over 100 millim. long, the black ones about 80 millim.

Skull small and narrow; palate little continued behind molars, molars very large as compared with those of the larger animal *C. chorensis*.

Dimensions of the type (an adult but not aged male):—

Head and body 310 millim.; tail 225; hind foot (s. u.) “65” ‡; ear 25.

Skull: length in middle line 70; basilar length 60; zygomatic breadth 43; intertemporal breadth 17·5; mastoid breadth 38; palate length from gnathion 30·5; upper molar $10\cdot1 \times 8\cdot2$.

Hab. and *type* as above.

Besides its colour-characters this form is readily recognizable by its small size (remembering that the type is a male), thinner fur, the reversal of its nuchal hair, and the great size of its upper molars. Its comparatively lowland habitat at Cochabamba is, of course, the cause of its thinner covering.

Mr. Simons did not get any skunks on the Amazonian

* Cocha bamba = place of pigs.

† *C. zorrilla*, Ann. & Mag. Nat. Hist. (7) v. p. 217 (1900); renamed Ann. & Mag. Nat. Hist. (7) viii. p. 528 (1901).

‡ The hind foot now measures only 60 millim. s. u. and 68 millim. c. u. Perhaps Mr. Simons has made a slip of the pen.

(Rio Securé) side of the watershed. Had he done so they would presumably have been of the *C. amazonicus* type.

7. *Sciurus cuscinus*, Thos.

2 ♀. Charuplaya, 1350 m. 8th to 22nd June, 1901.
Native name "Antara."

8. *Nectomys Garleppi*, Thos.

3 ♂, 3 ♀. Charuplaya, 1350 m. 24th May to 27th June, 1901.

9. *Oryzomys levipes*, sp. n.

Imm. ♀. Choro, 3200 m. 27th July, 1901.

(Type from Limbane, Peru.)

Allied to *O. Keaysi*, Allen, but smaller.

General appearance very much as in *O. Keaysi*, the fur of the same quality, and the colour similar throughout except that, at least in typical specimens, the under surface in *O. levipes* is buffy, not defined on the sides, and in *O. Keaysi* dull whitish, defined laterally. But in this respect there is considerable variation, and I do not lay much stress on the distinction.

Skull, as compared with that of a topotypical *O. Keaysi*, smaller and lighter throughout, as may be seen by the measurements. Interorbital region narrow, finely beaded. Palatal foramina large and widely open, extending back almost to the level of the front of m^1 .

Dimensions of the type :—

Head and body 130 millim.; tail 160; hind foot (s. u.) 31; ear 27.

Skull: greatest length 35.7; basilar length 28; zygomatic breadth 18.5; length of nasals 13.2; interorbital breadth 5; breadth of brain-case 14.2; palate length 15.6; diastema 9.5; palatal foramina 6.5 × 3.3; length of upper molar series 6.

Hab. Limbane, Dept. of Puno, S.E. Peru. Alt. 2200 m.

Type. Old female. B.M. no. 1.1.1.24. Original number 1132. Collected 6th July, 1900, by P. O. Simons.

Of this smaller form of *O. Keaysi*, also distinguished by its large palatal foramina, the Museum possesses the type from Limbane, a couple from Yuncas, N.W. Bolivia, 2200 m., a young one from Astillero, Bolivia, 2700 m., and the immature skin in the present collection. The determination of the last-named is a little doubtful, but it appears to be an example in changing pelage.

10. *Oryzomys yunganus*, sp. n.

♂. 1475. Charuplaya, 1350 m. 19th June, 1901.

A member of the *O. laticeps* group, most closely allied to *O. perenensis*, All., but more uniformly rufous.

Size about as in other members of the group. Fur close and glossy, about 9 millim. long on the back. General colour dark fulvous, finely and profusely lined with black. Head greyer, sides and rump clearer and stronger rufous. Under surface soiled whitish, the bases of the hairs slaty, their tips dull white; line of demarcation on sides fairly marked. Tip of muzzle whitish, base of whiskers brown, continuous with a dark ring round eyes. Forehead greyish, lined with black. Ears very short-haired, pale brown, not contrasting with the general colour. Hands and feet silvery white above. Tail almost naked, very finely scaled, whitish below proximally, the remainder greyish brown.

Skull, as compared with that of *O. perenensis*, shorter, with more expanded zygomata (in the aged type). Interorbital region narrower. Molars shorter, but much worn in the type.

Dimensions (measured in the flesh):—

Head and body 125 millim.; tail 128; hind foot (s. u.) 28; ear 21.

Skull: greatest length 31·3; basilar length 25; zygomatic breadth 16·5; length of nasals 12·1; interorbital breadth 4·5; palate length 13·7; diastema 8·1; palatal foramina $5 \times 2·4$; length of upper molar series 4·9.

Hab. and *type* as above.

This species may be distinguished from its other Andean allies by its more fulvous general colour, shorter molars, and narrower interorbital region. Two specimens closely similar to it were previously obtained by Mr. Simons near Mapiri, further north-west in Bolivia. I confess that I think the various local forms of this intricate and difficult group might be more properly considered as subspecies than species; but as Dr. Allen has described the other forms as species, it will be less confusing to do the same in the present case.

11. *Oryzomys Stolzmanni*, Thos.

12 ♂, 4 ♀. Charuplaya. May to July.

♂. Choro, 3500 m. 11th July.

The Charuplaya specimens vary among themselves to a remarkable extent, their backs ranging from grizzled grey to deep rufous and their bellies from white to buffy. The variation in size is also considerable.

12. *Neacomys spinosus*, Thos.

2 ♀. Charuplaya, 1300 m. 20th May, 7th June, 1901.

13. *Phyllotis Wolffsohni*, sp. n.

2 ♀. Tapacari, 3000 m. 23rd March, 1901.

♀ & young. Cochabamba, 2600 m. 22nd April, 1901.

Ph. Darwini group.

General appearance not unlike that of the true *Ph. Darwini* of Valparaiso, but softer furred and with longer tail. Hairs of back about 13–14 millim. in length. General colour above dull greyish fulvous, the tips of the hairs blackish. Sides clearer and more buffy. Under surface sharply defined white, the bases of the hairs slaty grey, even on the chin and throat. Hands and feet pure white above. Tail long, well-haired, but not pencilled, brown above and whitish below, but the contrast not so marked as in *Eligmodontia domorum*.

Skull markedly different in shape from that of *Ph. Darwini*; the brain-case longer and narrower, the posterior interorbital region much more expanded, with marked divergent supraorbital ridges commencing halfway along the interorbital space. Nasals long and broad. Palatal foramina large and open, reaching to the first third of m^1 . Bullæ much smaller than in *Ph. Darwini*. Molars comparatively large and heavy.

Dimensions of the type:—

Head and body 125 millim.; tail 144; hind foot (s. u.) 28; ear 25.

Skull: greatest length 32; basilar length 25; zygomatic breadth 16; nasals 13.4×4.9 ; interorbital breadth 4.4; breadth of brain-case 13.1; palate length 14; diastema 8.5; palatal foramina 8×2.7 ; length of upper molar series 5.4.

Hab. Tapacari, 3000 m.

Type. Old female. B.M. no. 1. 1. 1. 59. Original number 1390. Collected 23rd March, 1901.

I have named this handsome species in honour of my friend Mr. J. A. Wolffsohn, to whose generosity the British Museum is indebted for series of all the mammals of Valparaiso. His specimens of the true *Ph. Darwini* have been of especial service in the present connexion.

The striking difference in the shape of the interorbital region will readily distinguish this species from all its allies.

14. *Phyllotis lutescens*, sp. n.

2 ♀. Choquecamate, 4000 m. 14th to 16th July, 1901.

♀. Choro, 3500 m. Original number 1510. 24th July, 1901. *Type.*

Allied to *Ph. Haggardi*, Thos.

Size about as in *Ph. Haggardi*. Fur thick and close; hairs of back about 14 millim. in length. General colour dull greyish tawny, heavily lined with black. Sides dull buffy. Under surface dirty greyish, the hairs slaty grey basally, dull whitish drab terminally. Head rather greyer than back. Ears large, uniformly brown. Upper surface of hands and feet white. Tail well-haired, finely pencilled terminally, blackish brown above, white below.

Skull low, smoothly rounded; interorbital region narrow, parallel-sided, slightly concave above, its edges smooth, slightly squared, not beaded. Front edge of zygoma-root concave, with an overhanging point above. Palatal foramina long, reaching to the first third of m^1 .

Incisors unusually broad and stout; molars small and delicate.

Dimensions of the type:—

Head and body 118 millim.; tail 138; hind foot (s. u.) 25; ear 23.

Skull: greatest length 29; basilar length 22; zygomatic breadth 15.5; nasals, length 12.6; interorbital breadth 4; breadth of brain-case 13.5; palate length 12.7; diastema 8; palatal foramina 7×2.3 ; length of upper molar series 4.6.

Hab. and *type* as above.

This species is a southern representative of the *Ph. Haggardi* of Ecuador, from which it differs in various cranial details and notably its stouter incisors. Its shorter tooth-row separates it from *Ph. osilæ*, Allen. Mr. Simons's former collections from La Paz and other localities in N.W. Bolivia also contain specimens apparently referable to this form.

15. *Eligmodontia domorum*, sp. n.

6 ♂, 3 ♀. Tapacari, 3000 m. 23rd to 30th March, 1901.

♂, 3 ♀. Paratani, 2500 m. 1st to 6th April, 1901.

2 ♂. Cochabamba, 2600 m. 20th to 24th April, 1901.

E. griseoflava group.

General colour of the type as in that of *E. cachina*, Allen*, but in older specimens it becomes more yellowish, as in the type of *E. chacoensis*. Sides clearer buffy. Belly sharply

* *Phyllotis cachinus*, Allen, Bull. Am. Mus. N. H. xiv. p. 409 (1901). On renewed examination I am inclined still to adhere to the view I put forward in 1898 (P. Z. S. 1898, p. 210), that the *griseoflavus* group is really more allied to *Eligmodontia* than to the more or less hypsodont *Phyllotis*.

defined white, the bases of the hairs more or less slaty, but the extent of this varies very much in the different specimens. Hairs of throat white to the base. Ears large, finely haired, greyish brown. Upper surface of hands and feet white. Tail, as usual, long and prominently bicolor, dark brown above and white beneath, but it is much less tufted terminally than in the allied forms, the hairs of its terminal inch only being lengthened, and these rarely attaining as much as 4 millim. in length.

Skull similar in all respects to that of *E. cachina*, except that the bullæ are conspicuously smaller in all dimensions (length 6.2 millim. as against 7.3, breadth between bullæ on basilar suture 3.0 instead of 1.9).

Dimensions of the type :—

Head and body 140 millim.; tail 146 (range up to 170); hind foot (s. u.) 31 (range from 29); ear 25.

Skull: greatest length 35.4; basilar length 27.5; zygomatic breadth 18.4; length of nasals 15; interorbital breadth 5.6; palate length 15.3; diastema 9.2; palatal foramina 7.6×2.5 ; length of upper molar series 5.1.

Hab. of type. Tapacari. Altitude 3000 m.

Type. Adult male. B.M. no. 1. 1. 1. 47. Original number 1384. Collected 23rd March, 1901.

This species may be readily distinguished from its allies by its less bushy tail and smaller bullæ, like as it is to these in all other respects.

The series from Tapacari were all caught in the house.

The most interesting point about this species is its extraordinary resemblance to *Phyllotis Wolffsohni*, caught at the same localities. Except that the *Eligmodontia* has larger and clumsier feet, it is almost impossible to distinguish the two without examining the skulls. This resemblance in itself is a point in favour of the two animals being really generically different.

16. *Eligmodontia carilla*, sp. n.

♂. Original number 1497. Choro, 3500 m. 11th July, 1900.

Near *E. sorella*, but with shorter tail.

Closely similar externally, in size, colour, and character of fur, to the Peruvian *E. sorella* *. General colour slightly paler (about isabella colour of Ridgway), the postauricular spots rather larger, and the longer hairs mixed with the fur less numerous; in other respects the description of *E. sorella*

* Ann. & Mag. Nat. Hist. (7) vi. p. 297 (1900).

will apply verbatim to this species, and need not be repeated. Tail much shorter than in *E. sorella*, longer than in *E. ducilla**, grey above, white below and laterally.

Skull almost exactly similar to that of *E. ducilla*, the brain-case short and broad, not elongated as in *E. sorella*. Supraorbital edges square, not ridged. Palatal foramina long, reaching back to the level of the middle of m^1 . Posterior nares narrow, the opening square-angled.

Dimensions of the type:—

Head and body 74; tail 49; hind foot (s. u.) 17; ear 17.

Skull: greatest length 21.5; zygomatic breadth 11.4; nasals 8.5×2.8 ; interorbital breadth 3.1; breadth of brain-case 10; palate length 8.9; diastema 5.1; length of palatal foramina 5.2; length of upper molar series 3.4.

Hab. and *type* as above.

This pretty little mouse is exceedingly like *E. sorella* externally except for its decidedly shorter tail. On the other hand, its skull is more like that of the still shorter-tailed *E. ducilla*. All are mountain forms, from 10,000 feet and upwards. They are evidently rare locally, as in each case Mr. Simons has sent home only a single example.

17. *Euneomys sublimis*, Thos.

♀. Cosmini. 4300 m. 9th March, 1901.

Closely similar to the original specimens obtained by Mr. Simons at an altitude of nearly 18,000 feet above Caylloma, Peru.

18. *Akodon varius*, sp. n.

An *Akodon* of about the size and general appearance of *A. hirtus*, but more fulvous when adult and with sharp supra-orbital edges.

2 ♂, 1 ♀. Tapacari, W. of Cochabamba, 3000 m. 29th March, 1901.

♂. Paratani, 2500 m. 4th April.

♀. Cochabamba, 2400 m. 20th April. *Type*.

Fur coarse and shaggy; hairs of back about 13 millim. in length. General colour coarsely lined greyish, more slate mixed in some specimens, more buffy or fulvous in others, at least on the posterior back. The type approximates to "broccoli-brown" in general tone, with the rump dull buffy, but some specimens are more fulvous and others are almost entirely greyish brown. Sides dull drab. Under surface soiled whitish, the tips of the hairs whitish, but their slaty

* Ann. & Mag. Nat. Hist. (7) vii. p. 182 (1901).

bases showing through; lines of demarcation not sharply defined. Face lined greyish. Ears not contrasting with the general colour; an indistinct postauricular light patch present. Upper surface of head and feet dull whitish; fifth hind toe without claw reaching to about the middle of the basal phalanx of the fourth. Tail about the length of the body without the head, well-haired, but the distinct rings of scales showing through; blackish above, dull white below.

Skull markedly different from that of most *Akodons* in its general build, which more resembles that found in *Zygodontomys*. Upper outline strongly bowed. Nasals narrow, evenly converging backwards, extending just beyond the premaxillary processes. Interorbital region flat transversely, convex longitudinally, sharply square-edged, though not ridged. Palatal foramina extending back to the middle of m^1 ; posterior palatal opening square, level with the back of m^3 .

Dimensions of the type:—

Head and body 100 millim.; tail 80; hind foot, s. u. 23, c. u. 24.5; ear 19.

Skull: greatest length 29; basilar length 23; zygomatic breadth 15; length of nasals 11; interorbital breadth 5; breadth of brain-case 12.4; palate length 12.5; diastema 8; length of palatal foramina 6.8; length of upper molar series (worn) 5.

Hab. Cochabamba and the high grounds west of it.

Type. Old female. Original number 1420. Collected 20th April, 1901.

This distinct species has more the look of a small *Zygodontomys* than an *Akodon*, but its teeth prove it to be a member of the latter genus. In its greyer phase it has some resemblance also to *A. hirtus*, but its skull is widely different.

19. *Akodon pacificus*, sp. n.

♂. La Paz, 4000 m. 28th February, 1901.

(?) ♀. Cochabamba, 2600 m. 25th April, 1901.

(?) 2 ♀. Choro. 3500 m. 8th to 10th May, 1901.

General appearance of *A. olivaceus* and *mollis*, but skull markedly different.

Size comparatively large. Fur close and thick and rather coarse; hairs of back about 11 millim. in length. General colour above pale olivaceous grey, not so strongly tawny as in the smaller species *A. puer*. Sides rather more yellowish. Under surface soiled greyish, with buffy tips, not sharply defined laterally. Eyes with yellow rings. Ears of medium

length, well-haired, grey, with tufts of yellowish hairs at their anterior bases. Upper surface of hands and feet whitish. Tail brown above, whitish on sides and below.

Skull more angular than usual in this group. Interorbital region narrow, nearly square-edged. Brain-case low and narrow. Palatal foramina extending nearly to the middle of m^1 . Palate ending level with the back of m^3 .

Dimensions of the type:—

Head and body 105 millim.; tail 78; hind foot (s. u.) 23; ear 15.

Skull: greatest length 26.5; basilar length 22.1; zygomatic breadth 14.2; nasals, length 10; interorbital breadth 4.4; breadth of brain-case 11.6; palate length 10.8; diastema 7; palatal foramina 5.8; length of upper molar series 4.2.

Hab. (of type). La Paz, 4000 m.

Type. Old male. Original number 1376. Collected 28th February, 1901.

The olivaceous species of *Akodon* are an exceedingly difficult group to make out, and I am unable at present definitely to determine all the large numbers of them obtained by Mr. Simons during his exploration of the Andean chain. From Ecuador southwards to Chili they are the commonest of Muridæ, and every collection contains many of them. Those of Ecuador and Peru appear mostly to be my *A. mollis*, described from Tumbez, N. Peru. Meyen's *A. boliviensis*, paradoxically enough, was also from Peru, but can probably never be determined with certainty, as the type is quite young, and might be any one of several different forms.

In this Bolivian collection there are three species at least, and none of these can I identify with any described form. The present one, *A. pacificus*, is of much the size and general appearance of the ordinary Andean *A. mollis*, but its interparietal region is markedly narrower and more sharp-edged.

I am not quite satisfied about the determination of the Cochabamba and Choro specimens, as they are not fully adult.

20. *Akodon puer*, sp. n.

2 ♂, 1 ♀. Choquecamate, 4000 m. 14th to 15th July, 1901.

A small species of the olive-coloured group.

Size small. Fur thick and soft, hairs of back about 10 millim. in length. General colour above pale olive-grey, lined with blackish (near "raw umber," Ridgway). Sides tawny olive, gradually passing into dull soiled isabella on the

belly. Eyes ringed with yellow. Ears short, well-haired, scarcely darker than the head. Hands and feet dull whitish above. Tail well-haired, blackish brown above, dull whitish laterally and below.

Skull small, slender and delicate, with a small narrow brain-case. Interorbital region smooth, slightly convex above, its edges squarely rounded, not ridged. Anterior plate of zygoma-root well thrown forward, its front edge vertical. Palatal foramina long, reaching past the middle of m^1 .

Dimensions of the type:—

Head and body 78 millim.; tail 65; hind foot (s. u.) 19; ear 14.5.

Skull: greatest length 24.2; basilar length 18.8; zygomatic breadth 11.7; length of nasals 8.5; interorbital breadth 4.5; breadth of brain-case 10.9; palate length 10.2; diastema 6.1; palatal foramina 5.4×1.9 ; length of upper molar series 3.4.

Hab. as above.

Type. Old female. Original number 1501. Collected 15th July, 1901.

This is one of the smallest species of the genus. It appears to belong to the *A. xanthorhinus* group.

21. *Akodon fumeus*, sp. n.

2 ♀. Choro, 3500 m. 8th to 10th May, 1901.

A dark-coloured species of the *A. mollis* group.

Size fairly large. Fur very fine; hairs of back about 9 millim. in length. General colour dark olivaceous (near "olive" of Ridgway), intermediate between the clear olivaceous of *A. mollis* and *pacificus*, and the dark colour of *A. caliginosus*. Under surface almost as dark as the upper, merely rather a paler olivaceous. Face rather more yellowish, indistinct rings round eyes. Ears short, well-haired, concolorous with head. Upper surface of hands and feet brown, the digits paler. Tail more thinly haired than in the other Andean species, the scales not hidden; brown throughout, except that the under surface is lighter proximally.

Skull on the whole very like that of *A. mollis*. Interorbital region similarly broad and rounded. Palatal foramina reaching past the middle of m^1 .

Dimensions of the type:—

Head and body 100 millim.; tail 84; hind foot (s. u.) 21; ear 16.

Skull: greatest length 26; basilar length 20; zygomatic

breadth 12·7; length of nasals 10; interorbital breadth 5·2; breadth of brain-case 12; palate length 10·7; diastema 7·2; palatal foramina 6·2; upper molar series 4.

Hab. as above.

Type. Old female. Original number 1437. Collected 10th May, 1901.

This species is much darker than the other members of the present group, though not so dark as *A. caliginosus*. From *A. lutescens*, Allen, the only allied species whose type I have not examined, it may be distinguished by its broader interorbital region. It is probably a southern representative of *A. mollis*, while *A. pacificus* is equally a northern representative of *A. olivaceus*. It has a close external resemblance to *Oxymycterus mimus*, but its zygoma-root is as in typical *Akodon*.

22. *Akodon caliginosus*, Tomes.

4 ♂, 5 ♀. Charuplaya, 1350 m. 22nd May to 2nd July, 1901.

23. *Akodon bacchante*, sp. n.

♂. Choro. 2nd May, 1901.

Allied to *A. pulcherrimus*, but with rufous points.

Size and general characters as in *A. pulcherrimus*, the fur of similar length and thickness, a white patch present behind the ear, and the line of demarcation on sides similarly high. Fur of back 10 to 12 millim. in length. General colour above olivaceous grey, about as in *A. p. cruceri*, uniform on back and sides. Underside sharply defined white, the hairs dark slaty basally, white terminally. Muzzle, ears, metacarpals, hind feet, and upperside of tail bright fulvous, similar to the small patch on the sides of the muzzle in *A. pulcherrimus*. On the head the fulvous covers the whole of the nose and surrounds the eye, fading off on the crown into the general greyish colour. Visible part of ears bright fulvous, especially basally; a white patch on the side of the neck behind each ear, and of about its size, so as just to be covered by it when folded back; the patch, as in *A. p. cruceri*, widely separated from the white of the lower surface. Metacarpals fulvous, fingers white. Under surface of tail whitish, and a narrow line along its terminal half black, but the greater part of the upper surface fulvous.

Skull broken in the only specimen, but apparently very much as in *A. pulcherrimus*. Nasals long and narrow. Palatal foramina extending to the middle of m^1 .

Dimensions of the type (an old male, measured in flesh):—

Head and body 102 millim.; tail 85; hind foot (s. u.) 25; ear 20.

Skull: length of nasals 12; interorbital breadth 5; palate length 11.5; diastema 7.5; palatal foramina 6.9×2.3 ; length of upper molar series 4.2; lower jaw, condyle to incisor tip, 19.

Hab. and *type* as above.

This is one of the most showy and beautiful species that I have ever seen. With the general appearance of *A. pulcherrimus*, especially *A. p. crucei*, it is at once separated by its brilliantly fulvous muzzle, ears, feet, and tail.

Mr. Simons assigns the same native name, "Ketacui," to this animal as he did to *A. pulcherrimus*. "Caught in cabin."

24. *Oxymycterus paramensis*, sp. n.

2 ♂, 1 ♀. Choquecamate, 4000 m. 15th July, 1901.

♂ ♀. Choro, 3500 m. 5th and 10th May, 1901.

♀. Alisuni, 2600 m. 22nd July, 1901.

Size markedly less than in *O. juliacæ* and other members of that group, rather less than in *O. Roberti* of Minas Geraes. General colour and appearance strikingly like those of *O. Roberti*, to which *O. paramensis* seems to be most nearly allied. Fur longer and thicker than in *O. Roberti*; ordinary hairs of back 13–14 millim. in length, and mingled with these there are a number of longer finer hairs attaining 18 millim. in length. General colour above black, lined greyish brown (near "broccoli-brown") anteriorly, and dull rufous (near "Mars brown") posteriorly, the head and fore neck being of the first colour and the rump of the second. Longer hairs on rump tipped with shining whitish. Cheeks and sides dull greyish buffy. Under surface not sharply defined, dull soiled buffy, the bases of the hairs slaty, their tips buffy; chin and throat rather lighter. Hands and feet dull greyish white. Tail well-haired, blackish above, greyish white on sides and below.

Skull, as compared with that of *O. Roberti*, smaller and more lightly built throughout; nasals long, slightly trumpet-shaped and *retroussé* anteriorly; interorbital region comparatively narrow, square-edged; palatal foramina narrow, not widely open.

Dimensions of the type:—

Head and body 130 millim.; tail 102; hind foot, s. u. 25, c. u. 27.5; ear 18.

Skull: greatest length 32.5; basilar length 24.3; zygomatic breadth 14.2; nasals 12.5×4 ; interorbital breadth 5.6; breadth of brain-case 13.2; palate length 12.2; diastema 7.3; palatal foramina 7×2.6 ; length of upper molar series 4.9.

Hab. High Paramos surrounding sources of Rio Securé. Type from Choquecamate, 4000 m.

Type Male. Original number 1504. Collected 15th July, 1901.

"On grassy plain." "In stone wall." "Native name 'Huacucha.'"—*P. O. S.*

This species differs from the one it most resembles—*O. Roberti* of Minas Geraes—by its smaller size, longer and softer fur, and the presence of the longer fine hairs on its posterior back; but its general appearance is very similar, and the two no doubt represent each other in these widely separated localities.

While *O. juliacæ* is the *Oxymycterus* of the low valleys bordering on the Amazonian plains, *O. paramensis* represents the genus on the Andean highlands. No member of the genus has hitherto been recorded from so great an altitude.

The Choro specimens are rather larger than the others, but do not seem specifically separable.

25. *Oxymycterus juliacæ*, Allen.

2 ♂. Charuplaya, 1350 m. 21st May to 22nd June, 1901.

Originally described from the Inambari River.

26. *Proechimys securus*, sp. n.

2 ♂, 4 ♀. Charuplaya, 1350–1400 m. June 1901.

Allied to *P. bolivianus*, Thos., but with shorter feet.

Size rather small. General colour, as usual, dark fulvous, heavily lined with black on the back. Sides rather clearer, the edges of the belly lined, especially in the younger specimens, with a line of bright buffy; but this is absent in the type. Under surface white, fairly well defined laterally. Head browner than back. Ears naked, greyish brown; the tufts at their anterior bases dark brown. Upper surface of hands and feet dull whitish brown. Tail, as usual, finely haired, not pencilled, brown above, white below.

Skull, like the foot, short in proportion to the size of the animal, low and squat. As compared with that of *P. bolivianus*, the nasals are broader, with slightly convex lateral edges, the interorbital space is proportionally broader and is flatter and less strongly ridged. Supraorbital edges evenly curving

outwards, without marked postorbital angle, ridges scarcely trespassing on the parietals; palatal foramina broadest at their middle or anterior third, strongly narrowed behind, with well-marked inturned posterior ridges; posterior nares narrow, sharply V-shaped; pterygoid processes spatulate; bullæ comparatively small.

Dimensions of the type (measured in the flesh):—

Head and body 210 millim.; tail 180; hind foot, s. u. 44, c. u. 47.5; ear 24. Other hind-foot measurements (s. u.): 42, 43, 43, 44.

Skull: greatest length 49; basilar length 37; zygomatic breadth 24; nasals 17×5.3 ; interorbital breadth 10; palate length 17.6; diastema 11.2; palatal foramina 5.6×3 ; length of bullæ 9.5; length of upper molar series 8.

Hab. Charuplaya, Upper Securé River. Alt. 1400 m.

Type. Old female. Original number 1459. Collected 16th June, 1901.

This *Proechimys* is, as usual, remarkably like its allies externally, though it may be distinguished by its much shorter foot. Its short squat skull is readily separable from the larger long-muzzled one of *P. bolivianus*.

27. *Coendou Simonsi*, sp. n.

♀. No. 1481. Charuplaya, 1400 m. 22nd June, 1901.

Allied to *C. bicolor*, Tschudi, and, like it, a member of the group with uninflated skulls, without longer hairs on the back, and with spines on the belly.

Size rather less than in *C. bicolor*, decidedly greater than in *C. quichua*. Back without any obvious admixture of hairs, although, as usual, there are a few hidden among the spines. Spines, where longest on the back, attaining a length of about 85 millim. General colour above dark chocolate-brown, speckled with orange on the head, shoulders, and lower edges of flanks, uniform on the back, and modified on the rump by the showing through of the light bases to the spines. Individually the spines are all yellowish white basally for about one half their length on the head and back and two thirds their length on the rump; then on the head and shoulders and along a narrow line on the lower flanks there is a subterminal band of brown, the tip being orange, and on the rest of the upper surface the whole terminal half or third of the spine is dark brown. Under surface clothed with thin spines mixed with fine inconspicuous hairs, its colour pale brown more or less modified by the whitish bases of the spines. Muzzle and orbital region pale brown. Ears

brown, the tuft of spines near their outer base whitish basally, then dark, with a subterminal ring of white and an inconspicuous black tip. Hands and feet uniformly dark brown above. Proximal two thirds of tail above clothed with bicolor blackish-tipped spines like the rump, its sides and under surface bristly, more uniformly blackish, but mixed with a few inconspicuous white bristles; end of tail brown on sides and below, naked above.

Skull rather smaller than that of *C. bicolor*; muzzle shorter and less swollen; brain-case smooth and comparatively unridged; bullæ smaller; palatal foramina larger, and the fossa in which they lie more open. Premolar markedly larger than the molars.

Dimensions of the type (an old female, measured in the flesh):—

Head and body 425 millim.; tail 335; hind foot, s. u. 68, c. u. 79; ear 28.

Skull: greatest length to gnathion 92, to tip of nasals 82; basilar length 76; greatest breadth 51; nasals 27×19 ; inter-orbital breadth 32.3; least breadth above meatus 31.5; palate length 39; diastema 23; length of bullæ 20; length of upper tooth-series 20.

Hab. and *type* as above.

"Native names 'Chapisevada,' 'Puerco espina.'"—*P. O. S.*

This fine porcupine is clearly the representative in Bolivia of the Peruvian *C. bicolor*, from which it differs by its smaller size and the orange speckling of the head and shoulders.

These two species, with the still smaller and more speckled *C. quichua* of Ecuador*, form a natural group intermediate between the "*Synetheres*" and "*Sphiggurus*" sections of the genus, agreeing in their hairlessness and the spinous condition of their bellies with the former, but in their little inflated skull with the latter.

28. *Lagidium peruanum*, Mey.

♀. Paratani, 2600 m. 9th April, 1901.

Native name "Biscacho."

29. *Dasyprocta* sp.

Immature ♂ & ♀. Charuplaya, 1350 m. June 1901.

These two specimens are strikingly different from each

* Ann. & Mag. Nat. Hist. (7) iv. p. 283 (1899).

other, but Agoutis generally vary so much that their determination is by no means easy. The female connects through other Andean specimens collected by Mr. Simons with examples representing *D. variiegata*, Tschudi, although most of Mr. Simons's specimens are much yellower and more freckled than that described by Tschudi. The male is still more fulvous, but being immature, I can make no suggestion as to its relationships.

30. *Kerodon boliviensis*, Waterh.

♂, 2 ♀. Paratani, 2500 m. 2nd to 5th April, 1901.
Yg. ♂. Caracolto, 4000 m. 15th March, 1901.

31. *Lama huanachus*, Mol.

♀. Head, skin, and skull. Choquecamate, 5300 m.
18th July, 1901.

32. *Lama vicugna*, Mol.

♂ ♀. Choquecamate, 5000 m. 18th July, 1901.

33. *Mazama rufa*, F. Cuv.

♂. Charuplaya, 1350 m. 3rd June, 1901.

34. *Didelphis Azaræ*, Temm.

♀. Tapacari, 3000 m. 27th March, 1901.
♂. Charuplaya, 1350 m. 27th April, 1901.

35. *Metachirus nudicaudatus bolivianus*, Allen.

♂. Charuplaya, 1350 m. 7th June, 1901.
Described by Dr. Allen on specimens previously obtained at Cholumani by Mr. Simons.
"Native name 'Achucaylla.'"—*P. O. S.*

36. *Marmosa elegans*, Waterh.

♂, 3 ♀. Paratani, 2800 m. 2nd April, 1901.
In spite of the generally dissimilar character of the faunas of the two regions, I can find no differences between these Bolivian opossums and the excellent topotypical examples of *M. elegans* from Valparaiso presented to the British Museum by Mr. J. A. Wolffsohn.



Thomas, Oldfield. 1902. "XXIV.—On mammals from Cochabamba, Bolivia, and the region north of that place." *The Annals and magazine of natural history; zoology, botany, and geology* 9, 125–143.

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