

**Article XVIII.—ON MAMMALS COLLECTED IN
SOUTHEASTERN PERU, BY MR. H. H. KEAYS,
WITH DESCRIPTIONS OF NEW SPECIES.**

By J. A. ALLEN.

The Museum has recently received two small collections of mammals made by Mr. H. H. Keays, at Juliaca, in southeastern Peru, a little to the westward of Lake Titicaca. Mr. Keays writes: "Our camp is situated in the loop of the Inambary River. The country is very broken, with deep narrow cañons, and is covered with a dense undergrowth of shrubs and vines, with here or there a palmetto or a cedar rising above the surrounding vegetation." He gives the altitude as 6000 feet, and the position as latitude $13^{\circ} 30'$ S., longitude 70° W.

The collections number only 18 species, but contained several not previously described, and others of special interest. The collector's field notes are enclosed by marks of quotation, and are followed by the initials H. H. K., when not otherwise indicated.

1. *Chironectes minimus* Zimmermann.—One specimen, an adult male, taken Jan. 28, 1900. Mr. Keays says it "came into the mill in the flume, the flume at that time taking up all the water of the creek."

2. *Didelphis pernigra* Allen.

Didelphis pernigra ALLEN, Bull. Am. Mus. Nat. Hist. XIII, 1900, 191. Oct. 23, 1900.

Three specimens, as already described (*l. c.*). "Apparently quite common, judging by their signs along the trail. One of these animals had been robbing my traps of their bait for several days when he was caught by one front toe."—H. H. K.

3. *Thylamys keaysi* Allen.

Thylamys keaysi ALLEN, Bull. Am. Mus. Nat. Hist. XIII, 1900, 198. Oct. 23, 1900.

Three specimens, as already described (*l. c.*). "Two of the three specimens were found dead in the trail, having been killed

by some small animal of about their own size. The other was taken in a trap placed in a runway. Their stomachs all contained beetles."—H. H. K.

4. *Lagidium peruanum* *Meyen.*—One specimen, Tierapata, Peru, Oct. 9, 1899.

"This species is not to be included among the animals of this region [Juliaca]. They exist in suitable places from Lake Titicaca to the Andes. None were seen on the east side of the range, nor have I heard of any on this side. They subsist upon grass and inhabit the rough, rocky cliffs, living in the crevices of the rocks. They are very active, and are able to run up or down a perpendicular rock. They are most active in the morning and evening, though I have seen them at all hours of the day."—H. H. K.

5. *Dactylomys peruanus*, sp. nov.

Type, No. 16060, ♀ ad., Juliaca, Peru, altitude 6000 feet, March 15, 1900; Coll. H. H. Keays.

Pelage soft and full, with long bristly overhairs, but without spines. Above nearly uniform yellowish brown, varied with black-tipped hairs, without tendency to a darker median area; lighter yellowish brown on the sides; sides of nose whitish; top of nose sooty gray; top of head, to a line in front of the ears, gray varied with light yellowish brown; below white, tinged irregularly with pale buff, and with a faint brownish post-pectoral area; the color of the dorsal surface encroaches upon the sides of the abdomen, near the lower edge of which are situated the mammæ, leaving a very narrow white ventral area; base of the tail below bright ferruginous; fore arms and legs concolor with the sides of the body; fore and hind feet grayish brown, becoming lighter on the toes; ears broad, rounded above, brown, nearly naked, with a thin marginal fringe of long bushy hairs; tail considerably longer than the body, for the basal two or three inches heavily clothed with long black hairs tipped with whitish, giving a grizzled dark gray effect above and on the sides, lighter below; apically the hairs become thinner, the annulations gradually becoming visible at about the end of the basal fourth; the rest of the tail is thinly clothed with long brownish black hairs, which form a well-developed tuft at the end, the scales, except at the extreme tip, visible through the hairy covering. The greater part of the head and the basal portion of the tail are gray, in strong contrast with the dark yellowish brown color of the upper surface of the body. Mammæ 4, abdominal; at least, no others can be discovered in the present specimen.

Measurements.—Total length, 560 mm; head and body, 240; tail vertebræ, 320; hind foot, 51 (without claws, 44); ear from notch (in dry skin), 14.

Skull.—Unfortunately the basal portion is broken, so that full measurements cannot be taken. Total length, —; basal length, —; zygomatic width,

32; mastoid width, —; interorbital width, 17; length of nasals, 17; width of nasals in front, 6.5; distance from nasals to fronto-parietal suture, 19.5; diastema, 12.5; palatal length, 17; upper tooththrow, 16; lower tooththrow, 16.5; lower jaw from tip of incisors to posterior border of condylar portion, 41.3; height at condyle, 15.

Dactylomys peruanus is based on a single female, with the teeth well worn, showing it to be fully adult. In respect to its capture the collector states (MS. notes): "I was looking after my traps just after daylight when I noticed this specimen running along the water's edge of the creek. I had no trouble killing it with a stick. Its stomach was filled with the inside of a palmetto nut, or some white tender root."

The only previously recognized species of the genus *Dactylomys* is *D. dactylinus* (Desmarest, 1817, ex E. Geoffroy MS.), based on a specimen in the Paris Museum, received from the Museum at Lisbon, and supposed to have been brought from Brazil.¹ A second specimen, a male, was collected by Natterer, on the Rio Negro; two specimens, a male and a female, were obtained on Castelnau's Voyage near Sarayacu, on the pampas of northeastern Peru (*cf.* Deville, *Rev. et Mag. de Zool.*, 1852, 357); Dr. Günther records (*P. Z. S.*, 1876, 743) the reception at the British Museum of "two fine skins of this rare Rodent, unfortunately without skulls, from the Rio Napo," concerning which he gives no further particulars; and Dr. Jentink mentions (*Notes from the Leyden Museum*, IX, 1887, 224) the acquisition by the Leyden Museum of an adult male, skin and skull, from the neighborhood of Nauta, opposite the mouth of the Ucayali River, "in northeastern Peru or Ecuador." Dr. Jentink gives external measurements and measurements of the skull of his specimen, but says nothing about its coloration. Neither can I find that the Natterer specimen has been described, beyond a transcript of Natterer's field notes by Dr. Pelzeln (*Brasilische Säugethiere*, 1883, 65), giving a few measurements and the color of the naked parts in life.

The original type specimen of the species has been repeatedly described, by various authors, and its skull and dentition figured (*cf.* Desmarest, I. Geoffroy, Waterhouse, etc.). Judging from these descriptions *D. peruanus* is very much smaller than *D.*

¹ "*Patrie*: l'Amérique méridionale; probablement Brazil."—I. Geoffroy, *Mag. de Zool.*, 1840, *Mamm.*, p. 48.

dactylinus, and very different in coloration. I. Geoffroy gives (Mag. de Zool., 1840, Mamm., 29) the length of the head and body of the Paris specimen as 350 mm. and the tail as 420; Dr. Pelzeln states that Natterer's specimen measured, total length 2' 3", length of tail, 15¼"; Dr. Jentink's measurements of the Leyden specimen are, head and body, 328 mm., tail, 406 mm. The corresponding measurements of the type of *D. peruanus* are, 240 mm. and 320 mm. This example is an old female, while the Natterer and Leyden specimens are males, but the difference is apparently far too great to be merely sexual.

6. *Proechimys simonsi* Thomas.—This recently described species is represented by a single specimen, an adult female, which agrees perfectly with Mr. Thomas's description.

"I obtained this specimen on a tract of level land on top of the mountain range north of us. The land had been at one time covered with timber, and was an ideal place for mammals, but they proved to be very scarce, as this and No. 34 [*Didelphis pernigra*] were all I took during fourteen days with sixteen traps. Its stomach was empty."—H. H. K.

7. *Nectomys garleppii* Thomas.—Four specimens (3 males and 1 female, all adult), collected Nov. 1, 1899, and Jan. 3 and 7, and Feb. 20, 1900.

The collector's measurements from the fresh specimens are as follows:

16058, ♂,	Head and body,	214;	tail,	216;	hind foot,	51.
16057, ♂,	" "	241;	" "	242;	" "	51.
15801, ♂,	" "	240;	" "	230;	" "	54.
16059, ♀,	" "	253;	" "	242;	" "	57.

The female is wholly destitute of molar teeth in both jaws, and nearly all traces of their insertion have been obliterated by the filling of the former root-cavities by bony deposit.

"Taken in a pile of slide rock, caused by a landslide. It feeds on a green berry that is common here."—H. H. K.

8. *Neacomys spinosus* (Thomas).—Four specimens—2 adult males, 1 adult female, and 1 'young adult' male—Juliaca, Nov. 8–13, 1899. In the adults the pelage of the ventral surface is uniform whitish or yellowish white to the base, the tips of the hairs suffused with buff, especially over the pectoral region. In

the young specimen the pelage of the ventral surface is plumbeous for the basal two thirds of its length. (Cf. Thomas, under *N. spinosus tenuipes*, in Ann. and Mag. Nat. Hist., 7th Ser., V, Jan. 1900, 153.)

These specimens agree so exactly with Mr. Thomas's original description (P. Z. S., 1882, 105) of this species, from Huambo examples, that their specific identity seems obvious, except that the fifth hind toe, exclusive of the claw, reaches to the end of the first phalanx of the fourth toe, instead of "barely to the middle of the first phalanx of the fourth toe." The only mammæ discoverable in the female are 4, two pectoral and two abdominal.

"All taken at the same place, under the edge of a bluff on a small gulch. When the skin is fresh the spines on the back come out very easily. I call this mouse Porcupine Mouse."—H. H. K.

9. *Oxymycterus juliacæ*, sp. nov.

Type, No. 15804, ♂ ad., Juliaca, Peru, Nov. 29, 1899; coll. H. H. Keays.

Above dark chestnut brown, grizzled with black, darkest along the median line, where over a portion of the middle of the back the prevailing color is black; sides lighter and more reddish; below dull brownish gray, with a faint tinge of buff, well defined from the reddish brown color of the sides; chin dull yellowish white; ears pale brown, well clothed on the inner surface with dusky hairs, nearly naked externally; upper surface of fore and hind feet blackish brown, the palms flesh color, the soles darker, more brownish; tail unicolor, dark brown, sparsely clothed with short bristly black hairs, scarcely at all concealing the annulations.

Measurements.—Total length, 250 mm.; head and body, 138; tail, 112; hind foot, 32, without claws, 29; ear (in dry skin), 13, from notch, 16.

Skull.—Nasals broadest in front, slightly trumpet-shaped or flaring upward at the end, and terminating posteriorly in a line with the lachrymals. The rostral portion of the skull is broad in proportion to the rest of the skull, which is rather narrow and elongate. Anterior zygoma-root low, narrow, and much rounded off on the antero-superior border. Interorbital region with rounded borders, and an incipient muscular ridge running from the orbit posteriorly. Interparietal very small. Palatal foramina rather large, terminating posteriorly in a line with the end of the first third of m^1 .

Total length, 36.4; basilar length, 29; zygomatic breadth, 16; least interorbital breadth, 6.7; mastoid breadth, 14.8; nasals, 15; interparietal, 2×5.5 ; diastema, 8; palatal foramina, 7.8×3 ; upper molar series, 8.

The type and only specimen is an adult male in fine condition, with the teeth much worn, showing it to be an old adult, yet there is barely a suggestion of parietal ridges, and no trace whatever of any postorbital processes.

Oxymycterus juliaca is evidently closely related to *O. inca* Thomas, agreeing very closely with it in size and proportions, but differs from it so much in the color of the underparts, and in certain cranial details, that the two forms seem unquestionably separable.

10. *Oxymycterus apicalis*, sp. nov.

Type, No. 16064, ♂ ad., Juliaca, Peru, altitude 6000 feet, Jan, 7, 1900; coll. H. H. Keays.

General color above dull blackish washed with gray, darker on the median area, lighter, more grayish on the sides, the hairs being there minutely tipped with gray; below gray brown, with a slight buffy tinge, most pronounced on the chest and throat, the hairs being pale plumbeous basally and broadly tipped with grayish white; lips and chin faintly rufescent; ears pale brown, very thinly haired; fore feet dusky brown, palms pale brownish flesh color; hind feet rather lighter above than the fore feet and more grayish brown, the soles dark brownish, much darker than the palms; tail uniform brown above and below, except that the apical fourth to third is white, in strong contrast with the basal portion, the whole so thinly haired that the annulations are distinctly visible.

Measurements.—Type, total length, 158 mm.; head and body, 148; tail, 158; hind foot, 36, without claws, 33.5; ear (in dry skin), from crown, 16, from notch, 21. Another specimen, ♂ ad., is somewhat larger, measuring total length, 350; head and body, 165; tail, 185; hind foot, 37. A very old female measures exactly the same as the type.

Skull.—The skull is of the usual *Oxymycterus* type, the interorbital region being smoothly rounded, the parietal ridges obsolete, the anterior zygoma root narrow and strongly rounded on the antero-superior border, and the palatine foramina very large. The nasals are very long, extending back considerably beyond the posterior border of the anterior zygomatic arch. The skull of the type measures as follows: total length, 38; basal length, 30; length of nasals, 17; diastema, 9; zygomatic breadth, 17.5; interorbital breadth, 8; mastoid breadth, 14.8; palatal foramina, 8.6 x 3.5; upper molar series, 6.

Oxymycterus apicalis is based on four specimens, two adult males, one adult female, and a 'young adult' female, all collected at Juliaca, Peru, Dec. 20, 1899, and Jan. 4-7, 1900, by Mr. H. H. Keays. He says "it seems to be the most common small mammal here."

This species is easily distinguished from any of its described congeners by its large size, blackish coloration, and very long, white-tipped tail. The white tail-tip is present in all the specimens, but varies in length from about one sixth to one third of the total tail length.

11. *Oryzomys keaysi*, sp. nov.

Type, No. 16062, ♀ ad., Juliaca, Peru, altitude 6000 feet, Jan. 7, 1900; coll. H. H. Keays, in whose honor the species is named.

Above yellowish brown, varied with black-tipped hairs, especially on the middle area of the back, lighter and more yellowish on the sides, and slightly grayish on the front of the head and nose, darker, almost blackish, around the eyes and at the base of the tail; below grayish white, in some individuals with a slight yellowish tinge on the breast; ears very large, dark brown, thinly clothed with short blackish hairs; feet dull grayish brown, the toes of the fore feet and the hind feet nearly naked; palms dull light brown, soles blackish brown; tail very long, naked, rather dark brown above, a little lighter brown below.

Measurements.—Total length (type), 355 mm.; head and body, 158; tail, 197; hind foot, 38, without claws, 35.8; ear (in dry skin), from crown, 18, from notch, 21, by 20 in width. Another specimen, an adult male, measures the same; three other 'adults' range as follows; total length, 305–335; head and body, 150–162; tail, 155–174; hind foot, 32–34.

Skull.—The skull is very heavily built in all its parts, with the supraorbital bead and parietal ridges strongly developed; and the interorbital plane is decidedly depressed in old specimens. Palatal foramina short and broad.

Total length (of type), 38.3; basal length, 29.5; nasals, 15; zygomatic breadth, 19; mastoid breadth, 14.3; interorbital breadth, 6; diastema, 9.3; palatal foramina, 6.5 x 3; upper molar series, 6. Several other rather younger skulls range in total length from 35–37.

This species is based on a series of five specimens, all taken at Juliaca, respectively, Nov. 6, Dec. 1, Jan. 2, 4, and 6, and are very uniform in coloration. The November specimen is in shorter and more worn pelage than the others, and for this reason is perhaps a shade darker. Mr. Keays refers to this as the "most common mammal of the region."

Oryzomys keaysi is of about the size of *O. prator* Thomas, but appears to have a relatively longer tail, and differs from that species radically in coloration. It appears to have no very near known ally.

12. *Oryzomys obtusirostris*, sp. nov.

Type, No. 15811, ♀ ad., Juliaca, Peru, altitude 6000 ft., Dec. 6, 1899; coll. H. H. Keays.

General color above blackish brown with a faint yellowish wash, giving a slight general olivaceous effect, most pronounced on the sides, due to a slight fulvous tipping of most of the hairs; below dull buffy plumbeous, the buffy tinge strongest on the breast; ears black, well clothed with black hairs; hind

feet dusky brown above, blackish below; fore feet much lighter, both above and below; tail dark brown, slightly lighter below, especially proximally, practically naked, with very fine scutellation. A second specimen, a young adult female, is similar except that it is slightly more fulvous on the sides and less dark on the ventral surface.

Measurements.—Type, total length, 227 mm.; head and body, 100; tail, 127; hind foot, 27, without claws, 25. Another specimen, somewhat younger (the last molar not fully grown), measures, total length, 211; head and body, 98; tail, 113; hind foot, 27.

Skull.—The skull is rather short and broad, the rostral portion especially short, with short but broad palatal foramina. Supraorbital bead and parietal ridges well defined. The dentition is very heavy for the size of the animal. The type is a full-grown specimen, but the teeth are wholly unworn.

Total length, 30; basal length, 21.5; nasals, 10; zygomatic breadth, 16; mastoid breadth, 13; interorbital breadth, 5.3; diastema, 6; palatal foramina, 4.7×2.5 ; upper molar series, 6.

This species is represented by two females, one a young adult, the other not quite fully grown. It agrees nearest in size and proportions with *O. longicaudatus* (Bennett), from which it differs in coloration and in cranial characters.

13. *Akodon caliginosus* (Tomes).—Four specimens, taken Nov. 28 and 29, 1899, and Jan. 6 and Feb. 22, 1900, are referred provisionally to this species.

“I believe these little fellows migrate, as I had six traps sprung by them in one night along their apparent line of travel.”—H. H. K.

14. *Sciurus æstuans cuscinus* Thomas.—Two specimens, taken Dec. 2 and 7, 1899.

Mr. Keays says that according to the miners these squirrels are quite generally distributed wherever there is timber, but are not numerous. The miners had never seen any before at so high an elevation.

15. *Nasua nasua* (Linn.).—A young male, about one fourth grown, is provisionally recorded under this name.

16. *Nyctinomus*, sp.—Two specimens, ♂ and ♀ ad., March 14, 1900, representing a species nearly related to *N. brasiliensis* I. Geoffroy.

17. *Myotis*, sp.—Two specimens, ♂ ad., Dec. 2, and ♀ ad., March 10. Nearly related to *M. oxyotus* (Peters), but clearly different. Apparently the two specimens represent two distinct species, distinguished by strong color differences, and by the distribution of the hair on the interfemoral membrane.

18. *Alouata nigra* (*E. Geoffroy*).—One specimen, an adult male, taken at an altitude of 5000 feet.

“I took this specimen from a band of about fifty. They were the first I had seen. They travel by swinging from tree to tree. As the specimen fell dead, the rest of the band did not appear to be frightened by the noise of the gun. Two of them dropped down from the tree to the ground where the dead one lay, picked him up and stood him against the tree, as though they expected him to climb it. Then they seemed to realize that he was dead, and, dropping him, began to chatter; then the whole band took up the cry and scampered off through the treetops. The stomach was partly filled with green leaves.”—H. H. K.

