

Article XXIX.—LIST OF MAMMALS FROM VENEZUELA,
COLLECTED BY MR. SAMUEL M. KLAGES.

By J. A. ALLEN.

During three years — 1900–1902 — Mr. Samuel M. Klages, a well-known entomological collector, collected birds and mammals for this Museum in Venezuela, incidentally to his other work. The collection of mammals, which forms the subject of the present paper, includes 275 specimens, representing 46 species. Some were collected in the immediate vicinity of Ciudad Bolivar, but the greater part at Maripa, Suapure, and other points in the Caura Valley.

1. *Marmosa klagesi* Allen. — Ciudad Bolivar, 3 specimens, 2 adult and 1 young, Oct. 26, Nov. 13, and Jan. 2; La Union, 3 specimens, 1 adult female and 2 young, May 4 and June 7. (See this Bulletin, XII, 1900, p. 198.)

2. *Marmosa mitis* Bangs. — Ciudad Bolivar, 1 specimen, Sept. 11. Indistinguishable from Santa Marta, Colombia, specimens.

3. *Marmosa murina* (Linn.). — Suapure, 1 specimen, Nov. 17.

4. *Peromys brevicaudatus dorsalis* Allen. — Ciudad Bolivar, 3 adults, taken in December, and 2 young from Suapure, March 25 and Dec. 15. (See this Bulletin, XX, 1904, p. 327.)

5. *Caluromys trinitatis leucurus* Thomas. — Ciudad Bolivar, skin and skull, adult male, Oct. 15; Suapure, skull only of a half-grown specimen, March 25.

6. *Metachirus nudicaudatus* (E. Geoffroy). — Maripa, 1 specimen, adult female, Feb. 28.

7. *Didelphis marsupialis* Linn. — Ciudad Bolivar, 1 specimen, a female about one third grown, Jan. 11.

8. *Bradypus tridactylus flaccidus* (Gray). — Nine specimens, collected as follows: Ciudad Bolivar, 3 specimens, 2 of which are adult females and the other a young female about one third grown, Jan. 25 and Feb. 6; Suapure, 4 specimens, 3 adult females and a young female, Sept. 11, Oct. 20, and Feb. 17;

Maripa, 2 specimens, adult female and young, Dec. 28, and Jan. 30.

No. 16135, ♀ ad., the whole front and sides of the head are covered with erect, stiff, bristly hairs, very different from the coarse, long, soft hairs of the rest of the pelage. These hairs are shorter on the face in front of and around the eyes, longer and stiffer over the top of the head, and still longer and less rigid on the sides of the head, neck, and throat. The coloration of the 'mask' is peculiar, being yellowish white on the front border, passing into golden ochraceous over the top and sides of the head and on the throat, enclosing a large circular area of ferruginous chestnut on the side of the head behind the eyes. There is also a narrow blackish eyering and a short, well-defined blackish postocular stripe. Top of head and nape, back to shoulders, blackish brown; rest of upper parts mixed blackish brown and dull soiled grayish white, which coloration extends onto the outer surface of the limbs; rump yellowish gray, unmixed with blackish; ventral surface and inside of limbs lighter than sides — dingy gray with less admixture of dusky hairs. A median black line is continued back over the shoulders from the nape, with a yellowish white stripe on each side. The hairs of the front part of this black dorsal band are much finer and softer than those of the general pelage, and the woolly underfur of the adjoining whitish bands is suffused basally with a golden tint. Claws white at tip, the basal two thirds yellowish.

No. 16136, ♀ ad., Feb. 6, is similar but the colors in general are everywhere paler, with the light colors prevailing over the dark tints. There is, however, a general difference in the character of the dorsal patch, which is sharply defined by the different character of the hair as well as by its strikingly contrasting colors. This patch has a length of 70 mm. by a width of about 35 (as measured from the dry unfilled skin), and is long oval in outline. The hair, evidently new, is short and stiff, like that on the mask, being only about 10 mm. in length, in striking contrast with the adjoining loose flaccid hairs 30–50 mm. long. The patch is divided by a median band of deep black, varying in width from 7 to 20 mm., being widest anteriorly and narrowest in the middle, and flanked on either side by a much wider band of ochraceous orange.

No. 16134, ♀ juv. (about one third grown), Jan. 25. This closely resembles in coloration and texture of pelage No. 16135, but the tints are paler, and the hair rather softer.

The 6 adults of this series, all sexed by the collector as females, vary greatly in the color of the dorsal surface, some being much lighter than others, with the dark color arranged in irregular patches. Three of them have the bright-colored,

conspicuous, chestnut and black post-intercapular patch of short stiff hair described above under No. 16136; two are quite without any such differentiation of the color and texture of the hairs of this region, while the other has the black hairs on this area shorter and softer than those of the adjoining pelage. Apparently, therefore, the presence or absence of this highly differentiated patch is not sexual, nor does it appear to be seasonal, as those with the patch were collected, respectively, Sept. 11, Jan. 30, and Feb. 6, while those without it were taken, respectively, Oct. 20, Dec. 30, and Jan. 25. It may, however, have some relation to the period of reproduction, which seems to vary with the individual, since a half-grown young was taken Dec. 28, and two others much younger were collected, respectively, Jan. 25 and Feb. 17.

These specimens are presumed to be referable to *Arctopithecus flaccidus* Gray (P. Z. S., 1849, p. 72, pl. xi, fig. 1), the type of which is the Dyson specimen from Venezuela, afterwards renamed *Arctopithecus flaccidus*, var. 1, *dysoni* by Gray in 1869 (Cat. Carn., Pachy., and Edent. Mamm., 1869, p. 365), and still later (1871) *Bradypus columbicus* by Fitzinger.

9. *Choloepus didactylus* (Linn.). — La Union, 1 specimen, adult female, June 2.

10. *Cyclopes didactylus* (Linn.). — Ciudad Bolivar, 1 specimen, female, Aug. 10; San Ecidro, 2 specimens, male and female, Feb. 6.

11. *Tamandua longicaudata* (Wagner). — Five specimens, collected as follows: El Llagual, 1 specimen, May 7; Suapure, 1 specimen, Feb. 8; Maripa, 3 specimens, Nov. 30 and Jan. 18.

These five specimens of the Yellow Tamandua are very different in cranial characters as well as in coloration from the common *Tamandua tetradactyla*, and show beyond question that the species is well-founded, although the tail is not "nearly double the length of the body," as stated by Turner (P. Z. S., 1851, 218), the relative length of the tail to the body being apparently about the same as in *T. tetradactyla*, as given by Wagner (Suppl. Schreber's Säug., IV, 1844, p. 210). The ears, however, are much longer and larger.

Four of these specimens show no trace of the dark color

markings of the common tamandua, the coloration being nearly uniform yellowish brown, but varying from light straw color to much darker in different individuals. In the other specimen the nape, shoulders, and middle of the body all around are dusky with the tips of the hairs yellow, and a narrow median line of yellow extending from the shoulders to the hips. This specimen strongly suggests the color pattern of the common tamandua. The skull is larger than in *T. tetradactyla*, with the rostral portion slenderer and relatively longer, and the nasals are not abruptly expanded at the posterior border, as is usually the case in *T. tetradactyla*.

All the specimens of *Tamandua* sent by Mr. Klages are of the *T. longicaudata* type.

12. **Myrmecophaga tridactyla** Linn. — Ciudad Bolivar, 1 specimen, skin and skull, Jan. 7; Maripa, 2 specimens, — skeleton, Dec. 5, and skin and skull, Nov. 26.

13. **Mazama rufa** (F. Cuvier). — Three specimens: 2 adult females, Maripa, July 8 and Aug. 21; a young male, Suapure, Aug. 21.

14. **Sciurus flammifer** Thomas. — Thirteen specimens, collected as follows: Suapure, 5 specimens, Feb. 14 and 15; El Llagual, 2 specimens, March 18 and 20; La Union, 6 specimens (topotypes), Oct. 18.

The 5 Suapure specimens and one of the 6 La Union specimens are in the normal pelage of the type; the 2 El Llagual specimens and 5 of the La Union specimens are melanistic. In one of these the ventral surface is white; in another the hairs of the ventral surface are dusky at base and conspicuously tipped with white; in all the others the ventral surface is dusky, tinged with chestnut in two. There are traces of the orange-rufous lateral line in several of the melanistic specimens. The normal specimens are all white-bellied.

15. **Sciurus æstuans gilvularis** (Wagner). — Six specimens: Suapure, 4 specimens, Feb. 6–13 and Sept. 16; La Union, 1 specimen, Oct. 21; El Llagual, 1 specimen, March 23. The September and October specimens are much deeper orange buff below, and more of a reddish cast above than the

February and March examples, from practically the same localities.

I am unable to satisfactorily distinguish these specimens from Santarem examples of *S. gilvicularis*.

16. **Mus alexandrinus** *Geoffroy*. — One specimen, Ciudad Bolivar.

17. **Oryzomys klagesi** *Allen*. — One specimen, El Llagual, Feb. 19. (See this Bulletin, XX, 1904, p. 327.)

18. **Sigmomys alstoni** (*Thomas*). — El Llagual, 1 specimen, adult female, March 2.

19. **Zygodontomys stellæ** *Thomas*. — El Llagual, 5 specimens (2 males, 3 females), all adult, March 12-23.

These specimens agree well with the description of *Z. stellæ* except as regards some of the external measurements, namely, "head and body, 110 millim.; tail, 38." But, "Tail about equal to the body without the head" is also not in harmony with these proportions. The description otherwise, including the dimensions of the skull, etc., agrees with the present series. The collector's measurements are: Head and body, 2 males, 133, 148; 3 females, 118-127; tail vertebræ, 2 males, 102, 108; 3 females, 83-98; average for the whole series, 130, 98. Skull, total length, 29-31. Although all are adult, the larger specimens, with the teeth greatly worn, are much older than the smaller examples.

20. **Holochilus venezuelæ** *Allen*. — El Llagual, 2 specimens, a very old male and a half-grown female, March 20. (See this Bulletin, XX, 1904, p. 330.)

21. **Proechimys cherriei** (*Thomas*). — Seven specimens, El Llagual, March 18-23.

22. **Dasyprocta lucifer** *Thomas*. — One specimen, an adult male, El Llagual, March 14. Head and body, 520 mm.; tail, 32; skull, greatest length, 115; zygomatic breadth, 51.

23. **Felis onca** *Linn.* — One specimen, Maripa.

24. **Felis maripensis** *Allen*. — One specimen, adult male, Maripa, Dec. 7. (See this Bulletin, XX, 1904, p. 331.)

25. **Canis** (*Thous*) **cancrivorus** *Desmarest*. — Two specimens, adult male and female, Suapure, Feb. 9.

Mr. Klages's collection contains 5 specimens of *Canis* of the

cancrivorus group, two of which are from Suapure and three from Maripa. The Suapure specimens are larger (on the basis of the skulls) and grayer than the Maripa animals, with much less rufous suffusion. These, in the absence of Guiana specimens for comparison, I provisionally refer to the coast form, *cancrivorus*. They are gray above, heavily varied with black along the middle of the back and upper surface of the tail, with little buffy suffusion, even of the underfur, and this mainly restricted to the sides of the neck, below and behind the ears; below buff, paler on the breast and inguinal region; chin blackish, the black extending back for 175 mm.; limbs yellowish buff, strongest on the sides and washed with blackish on the anterior surface. Total length, ♂ 958; ♀ 933; head and body, ♂ 660, ♀ 635; tail vertebræ, ♂ 298, ♀ 305; hind foot (approximate from dry skin), ♂ 144 (with claws 150), ♀ 144 (with claws 150); ear (dry), ♂ 62, ♀ 60. Skull, total length, ♂ 148.5, ♀ 145.5; basal length, ♂ 139, ♀ 138; zygomatic breadth, ♂ 82, ♀ 77.

The other three specimens agree well with the description of *Canis cancrivorus savannarum* Thomas, except that they are a little larger; they are provisionally referred to that form, as follows:

26. **Canis (Thous) cancrivorus savannarum** Thomas. — Three specimens, two adult males, Maripa, Dec. 24 and 29, and a half-grown female, Maripa, Aug. 1.

The December specimens are in greatly worn pelage, the long hairs on the back in one of the specimens and on the tails in both being greatly worn. In fresh pelage the whole back from the shoulders posteriorly is evidently strongly varied with black, as in the Suapure specimens. The underfur is strongly instead of faintly suffused with buff, brightening to orange buff on the neck, including the region of the ears and top of the head; pectoral region, insides of limbs, and the tail (except median line above), also deep orange buff; the rest of the ventral surface deep buff. Even the surface color on the sides of the neck and the area surrounding the ears is deep rusty buff.

As already said, these specimens are smaller than those

from Suapure, of corresponding sex and age, and besides being markedly different in coloration, m^2 is disproportionately smaller and less produced internally. The adult specimens respectively measure: Total length, 965, 973; head and body, 686, 668; tail, 279, 305; hind foot (approximately from dry skin), 140 (with claws 150), 140 (with claws 148); ear (dry), 50, 48. Skull, total length, 137, 134; basal length, 129, 130; zygomatic breadth, 76, 74. These measurements being of males naturally exceed those given of the female type of *savannarum*.

Canis aquilus (= *Urocyon aquilus* Bangs), from the coast region of Colombia, while strongly resembling externally the present group, differs from it in the skull being relatively broader and shorter with rather heavier dentition. While specifically distinct from *C. cancrivorus* it has only the most remote relationship to the genus *Urocyon*, which is suggested only by its coloration and coarse pelage.

27. **Tayra barbara** (*Linn.*). — Suapure, 2 specimens, Feb. 9 and 13.

28. **Nasua phaeocephala** *Allen*. — Two specimens, adult female and young adult male, Suapure, Sept. 14. (See this Bulletin, XX, 1904, p. 334.)

29. **Myotis nigricans** (*Wied*). — Forty specimens, Maripa, Dec. 10–23.

30. **Proboscidea naso** (*Wied*). — Seven specimens, Maripa, Dec. 7–11, and Mato River, Feb. 24.

31. **Saccopteryx bilineata** (*Temm.*). — One specimen, Suapure, April 20.

32. **Myopterus planirostris** (*Peters*). — Two specimens, Maripa, Dec. 9 and 10.

33. **Molossus obscurus** *E. Geoffroy*. Seventy-five specimens, — 25 from Ciudad Bolivar, Sept. 30–June 26; 50 from Suapure, December.

34. **Molossus pretiosus** *Miller*. — Twenty-four specimens, — 13 from Ciudad Bolivar, Sept. 27–Oct. 13; 11 from Suapure, April 15.

35. **Promops barbatus** *Allen*. — One specimen, La Union, Caura district, Sept. 27. (See this Bulletin, XX, 1904, p. 228.)

36. *Dermanotus suapurensis* Allen. — One specimen, Suapure, Oct. 26. (See this Bulletin, XX, 1904, p. 229.)

37. *Lonchophylla thomasi* Allen. — One specimen, Ciudad Bolivar, Jan. 26. (See this Bulletin, XX, 1904, p. 230.)

38. *Micronycteris megalotis* (Gray). — One specimen, Ciudad Bolivar, Oct. 18.

39. *Hemiderma perspicillatum* (Linn.). — Two specimens, Ciudad Bolivar, May 20 and October 23.

40. *Phyllostomus hastatus* (Pallas). — Twelve specimens, — 1 from Ciudad Bolivar, Oct. 16; 11 from Suapure, April 15, of which 7 are young, about one half to two thirds grown, still retaining some of the milk incisors. They are all in young pelage, and all are very dark brown, or blackish brown.

41. *Phyllostomus discolor* Wagner. — Two specimens, Ciudad Bolivar, August 12, and Suapure, Nov. 17.

42. *Artibeus planirostris* (Spix). — Two specimens, Ciudad Bolivar, May 25 and September 2.

43. *Uroderma bilobatum* Peters. — Three specimens, 1 from Ciudad Bolivar, Sept. 27; 2 from Suapure, Nov. 17.

44. *Sturnira lilium* (E. Geoffroy). — Two specimens, Suapure, April 15, and Maripa, Dec. 9.

45. *Ateles belzebuth* I. Geoffroy. — One specimen, La Union, Caura district, Aug. 15 — an old female with greatly worn teeth.

46. *Cebus fatuellus* (Linn.). — Four specimens, of which 1 is from Suapure, taken Oct. 26; 1 from La Union, Oct. 9; 1 from El Llagual, March 12; and 1 from Maripa, April 21.

These four specimens well sustain the reputation of this species for variability, no two of them being very nearly alike.

The Suapure specimen (Oct. 26) is an old male in excellent pelage, with well developed lateral crests or 'horns'; and the hair of the flanks is very long. It has the top of the head deep brownish black; the nape, shoulders, and front half of the back dark brown with the tips of the hairs yellowish brown; lower back and rump dark reddish brown with the tips of the hairs yellowish rufous, making this tint the prevailing shade; limbs externally yellowish brown, with the upper surface of the feet and hands blackish brown; throat pale yellowish; sides of face yellowish gray; ventral surface chestnut rufous; inside of shoulders and inside of upper arms rusty yellow;

inside of thighs strongly reddish brown; tail yellowish brown, darker apically, the hairs individually being blackish brown for most of their length and broadly tipped with yellowish gray.

Another old male from El Llagual (March 12) has the pelage considerably worn, and perhaps for this reason presents only a tendency to lateral crests—more so on one side than on the other—which apparently had been either shed or worn away. The general coloration of the dorsal surface, tail, and outside of limbs is very similar to that of the Maripa specimen, but the light tips of the hairs are paler, more yellowish, and less rufous. The ventral surface, however, is quite different, the remaining hairs of the breast and abdomen (which are nearly naked) being brown with a slight reddish cast, while the shoulders and upper arms are pale buff instead of rusty yellow.

An old female from La Union (Oct. 9) is in good pelage but lacks the lateral crests. The crown and middorsal region from nape to tail are brownish black with a slight rufescent tinge, the hairs very slightly tipped with dull rusty yellow. The under surface is about as in the La Union specimen, with the buffy tints several shades stronger.

An old female from Maripa (April 21) is in very worn pelage and evidently much faded, the light color on the sides of the face and chin being soiled grayish white and on the shoulders and upper arms very pale buffy white. The dark color on the top of the head forms a wedge-shaped median band, beginning as a mere line and widening gradually as far back as the ears where it occupies about two thirds of the interaural space.

The collector's external measurements are as follows:

16930, old ♂, Suapure;	head and body, 445;	tail vertebræ, 496,
16929, ad. ♂, El Llagual;	“ “ 445;	“ “ 508.
17559, old ♀, La Union;	“ “ 425;	“ “ 572.
16931, ad. ♀, Maripa;	“ “ 381;	“ “ 406.

The skulls, while all adult, vary much in age, No. 16930 being a very old male, and also in size, as follows:

16930, old ♂, total length, 102;	zygomatic breadth, 66.
16929, ad. ♂, “ “ 93;	“ “ 60.
17559, old ♀, “ “ 89;	“ “ 59.
16931, ad. ♀, “ “ 87;	“ “ 55.

