

Article III.— MAMMALS FROM PALAWAN ISLAND, PHILIPPINE ISLANDS.

By J. A. ALLEN.

The Museum has recently secured a small collection of mammals from the Philippine Islands, collected by Colonel John R. White, of the Philippine Constabulary. Of the 33 specimens contained in the collection, representing 13 species, 32 were collected at Iwahig, Palawan Island, the other, a specimen of *Muntiacus*, on Balabac Island.

There are several imperfect hunters' skins in the lot, but the greater part are well made skins in good condition. The skulls, however, were left in the skins, and on removal prove to be imperfect, the preparator having removed the posterior portion of the skull.

I am indebted to Mr. Gerrit S. Miller, Jr., Curator of Mammals, U. S. National Museum, for kindly sending me for examination in this connection specimens of *Paradoxurus*, *Arctitis*, and *Mungos* from Borneo and Sumatra, collected by Dr. W. L. Abbott.

1. **Manis** sp. A young adult, skin and skull, of the *Manis javanica* type.

2. **Sus ahencobarbus** *Huet*. Two very young specimens, of different ages, in the striped pelage of the young, are provisionally referred to this species. In one the light stripes are orange rufous, in the other lighter and yellower.

3. **Muntiacus nigricans** (*Thomas*). One specimen, skin and skull, young adult male (last molar just appearing), Balabac Island. As this specimen differs in some details of coloration from the type (also from Balabac), the following detailed description of it is appended.

Front of head fulvous varied with black-tipped hairs, this color extending back to base of ears as two broad superciliary stripes, separated by a band of black beginning on the forehead between the eyes and, broadening and darkening, forming a conspicuous median band of black, merging posteriorly with the general dark color of the dorsal surface; back and sides blackish, the hairs ashy brown (not white as in the type) at extreme base, then bright fulvous tipped with blackish, the fulvous ground color more or less visible at the surface, conspicuously so on the sides; sides of head fulvous, the hairs slightly black-tipped; the naked interramal space bordered narrowly with white, extending forward from the white throat patch, which latter is continued medially backward through the large black shield which covers the foreneck, and with the white bands that border the black area laterally; the throat markings, both white and black, are separated from the white pectoral area by a broad transverse band of fulvous hairs tipped more or less broadly

with black; abdominal region pale fulvous, the hairs, chiefly along the median line, faintly washed with brownish black; lower abdominal and inguinal areas, inside of thighs, and a band on front of hind leg to below tarsal joint pure white; rest of hind limb fulvous, varied proximally with black-tipped hairs; axillary area white, from which a band of white extends downward along inside of forearm; tail dusky with white tip.

Total length (from skin), 540 mm; head and body 475; tail vertebræ, 65; hind foot, 114. The skull is imperfect, lacking the occipital portion, but affords the following measurements: tip of nasals to fronto-parietal suture, 66.5; length of nasals, 27, width in front, 6.3, at base, 11; palatal length, 62; upper premolar-molar series (last molar just breaking through alveolus), 356; greatest zygomatic breadth, 44; least interorbital breadth, 25.

4. **Sciurus steeri** Günther. Two specimens. These agree better with Dr. Günther's second specimen, from Puerto Princesa, Palawan, than with the type, obtained from Balabac. It is perhaps probable that Günther's two specimens represent two separable insular forms. The present specimens differ somewhat from each other in the amount of white and rufous on the ventral surface. In both the white is mainly restricted to the pectoral region; in one it covers about half of the ventral surface, in the other less than one-fourth, while Günther's Palawan example is described as "lower parts pure white, with the exception of the root of the tail; anal region with the borders of the white abdomen brownish red." With this evidence of individual variability it seems undesirable to give a new name to the Palawan form without comparison with additional Balabac examples.

5. **Sciuropterus nigripes** Thomas. Five specimens, 3 adult, 1 young adult, and 1 young still retaining the milk dentition. One only is in normal coloration, like the type (from Puerta Princesa, Palawan); the others are more or less patched with white. Two are entirely white below, and much more than half white above (including the tail), with irregular patches of gray, mostly small. The other two are mostly gray above with small patches of white, and whitish below with small patches of gray.

6. **Mus luteiventris** sp. nov.

Type, No. 29717, Iwahig, Palawan, Philippine Islands; coll. Col. John R. White. Size medium; pelage spiny, strongly so above, weakly so below.

Above dull yellowish rufous, slightly varied with black-tipped bristles; below olive buff, the hairs grayish brown at extreme base; bristles of the dorsal surface silvery white with blackish tips; bristles of the ventral surface wholly yellowish white, and weak, being scarcely appreciable to the touch; ears pale dusky brown; feet very pale creamy white; tail pale brown, unicolor, naked (to the unaided eye but seen under a magnifying glass to be thickly set with short setæ).

Total length (type, from skin), 293 mm.; head and body, 163; tail, 130; hind foot, 28. Skull, too imperfect for full measurements; zygomatic breadth, 14; length of nasals, 12; upper molar series, 5.2.

Three specimens, one adult, the others young adults. The three examples agree perfectly in color, and seem clearly distinguishable from any of the allied forms.

7. ***Felis minuta*** *Temminck*. Two incomplete hunter's skins and a kitten, apparently only a few days old, are provisionally referred to this species.

8. ***Viverra tungalunga*** *Gray*. Two adult males.

9. ***Paradoxurus philippinensis*** *Jourdan*. Three specimens are doubtfully referred to this species. They differ widely in color from each other, but all have three fairly well defined dark dorsal stripes, with the adjoining sides of the back more or less distinctly mottled with dusky spots. One, a young animal still retaining the entire milk dentition, is nearly black on the back, feet and tail, and brownish black on the head; flanks washed with gray due to a subapical whitish band near the tip of the hairs; below lighter, with the tips of the hairs dull silvery.

Of two adult females, one has the head, nape and tail brown with a faint indication of a light band across the front of the head; limbs dark rufous brown; body above pale brown, with three dark central longitudinal stripes and indistinct spots external to the bands, the hairs of the rest of the dorsal area being subterminally broadly ringed with dull silvery white. The other female (unfortunately without the skull) is very much lighter colored, gray being the prevailing tint except on the top of the head, nape, tail, and limbs, mottled with dusky and with three distinct blackish dorsal stripes. An additional imperfect flat skin agrees in coloration with the light colored example last described.

These four specimens, all from the same locality, indicate a wide range of individual variation in coloration.

10. ***Arctitis whitei*** sp. nov.

Type, No. 29740, ♀ ad., Iwahig, Palawan, Philippine Islands; collected by Col. John R. White, for whom the species is named.

Similar in character of pelage and general features of coloration to the other forms of the genus, but notably different in details of tooth structure from the Indian and Sumatra forms, and in the color of the head, which is of the same general color as the rest of the dorsal surface.

General color black washed with fulvous, the basal part of the pelage being deep black, the hairs broadly tipped with fulvous, the fulvous tint forming the surface color on the fore limbs, and the prevailing tint over the greater part of the body. Pelage long and coarse except on the head, where it is short, especially on the nose and facial region, where the prevailing color is dark, the hairs narrowly tipped with whitish. Neck all round and terminal fifth of tail black; outer surface of ears heavily tufted with black, with a narrow white or yellowish white border. Ventral

surface rather thinly haired, the hairs crinkled and more or less wooley, blackish at base broadly tipped with dull fulvous on the chest and inside of fore limbs; the black of the sides encroaches on the thoracic region; abdominal region pale silvery fulvous, continuous over the anal region and along the under side of the tail as a broad mesial band for two thirds the length of the tail. Mystacial bristles very long, reaching to the ears, white or yellowish white. Mammæ 4, abdominal.

Measurements (type, from skin): Total length, 1310 mm.; head and body, 700; tail vertebræ, 610; hind foot (s. u.), 100, (c. u., 107). The skull lacks the occipital portion, but affords the following measurements: Zygomatic breadth, 75; interorbital breadth, 27.5; postorbital breadth, 32; across postorbital processes, 40; length of nasals, 27.5; breadth of nasals at front border, 14; palatal length, 67.5; palatal breadth (outside to outside of m^1), 36.5; length of canine above alveolus, 16. The tooth formula in the type skull is defective, m^2 being absent on both sides, and p^1 on the right side. Another skull, also a female, with dentition complete, gives the following: Interorbital breadth, 28; postorbital breadth, 34.3; across postorbital processes, 41; length of nasals, 27; breadth of nasals at front border, 14; palatal length, 65; palatal breadth (outside to outside of m^1), 36; upper toothrow (canine to m^2), 40; length of canine above alveolus, 19; breadth of incisors (the series at alveolar border), 15.

Represented by two fully adult females, in excellent condition, except that the skulls both lack the occipital region; also by an adult male skin without skull, and an imperfect flat skin. The male differs from the two females in having the ventral surface much more heavily clothed and of the same coloration as the dorsal surface. The anal area, however, is fulvous and is continued for a short distance on the lower surface of the tail. Otherwise the coloration and character of the pelage is as above described, except that the tail is wholly black for the greater part of its length.

The few specimens of *Arctitis* available for examination in the present connection indicate that the genus consists of a number of easily recognizable forms, and that it is also divisible into two sections of apparently subgeneric value, on the basis of important differences in the structure of the teeth. In a skull from Sumatra (the type locality for the genus) p^4 is triangular with a well developed antero-inner cusp, while m^1 has the inner moiety much narrower than the outer. A skull from India has the same tooth structure, but is very much larger and otherwise different from the Sumatra specimen. In the Palawan specimens these teeth are obtusely oval instead of triangular in outline, and the inner half of the tooth is less reduced and less oblique to the axis of the tooth. There is also a marked difference in the dorsal outline of the skull, which rises rapidly from about the proximal third of the nasals to its highest point behind the orbital region in all skulls seen from Sumatra and India, this striking convexity being, however, much greater in males than in females. In the Palawan skulls (female) the whole top is nearly flat, conspicuously different from skulls of females from India and Sumatra.

The binturong has been previously recorded from Palawan¹ and specimens appear to have been collected there in 1884, by M. Alfred Marche, for the Paris Museum of Natural History.²

11. *Mungos palawanus* sp. nov.

Type, No. 29744 (skin only), ♂ ad., Iwahig, Palawan Island, P. I.; coll. Col. John R. White.

Prevailing color above, including tail, yellowish red punctated with black; head much paler and grayer than the body; ventral surface reddish brown, the hairs slightly tipped with yellow; fore limbs dusky; hind limbs like the sides and back. The individual hairs of the dorsal surface are reddish, annulated subapically with black and tipped with yellow, the black annulations more or less visible at the surface.

Length (from skin), head and body, 395 mm.; tail vertebrae, 190; hind foot (s. u.), 50 (c. u., 56). The specimen is without the skull.

The mongoose so long known from the Philippines appears to have always been referred to *Herpestes brachyurus* Gray, the type locality of which is Malacca.³ A comparison of the present specimen with Gray's description and figure⁴ leaves little room for doubt that the Palawan form is a quite different animal from the true *M. brachyurus* of Malacca. It is also so different from the short-tailed mongoose from Sumatra, commonly referred to *M. brachyurus*, as to need no minute comparison with it, the latter being a much larger and a much darker animal.⁵

12. *Aonyx cinerea* (Illiger). Three specimens — a skin with skull and two additional skins.

13. *Tupaia ferruginea palawanensis* Thomas. Three specimens, two adult and a young adult.

¹ 'Remarks on the Zoo-geographical Relationships of the Island of Palawan and some adjacent Islands.' By A. H. Everett. Proc. Zool. Soc. London, 1889, pp. 220-228, pl. xxiii (map). *Arctitis binturong*, p. 223.

² 'Sur la distribution géographique l'*Arctitis binturong* Raffles,' par M. E. Oustalet. Bulletin du Mus. d'Hist. Nat., VII, 1901, pp. 318-320.

³ *Herpestes brachyurus* Gray, Charlesworth's Mag. Nat. Hist., I, Nov. 1837, p. 578. "Inhabits Indian Islands. British Museum." In 1843 Gray (List of the Specimens of Mammalia in the Collection of the British Museum, 1843, p. 52) gave the species as "The Malacca Ichneumon. *Herpestes brachyurus* Gray, Mag. N. H., I, 578. a and b. Malacca." In the Zoology of the Samarang, Vertebrata, 1850, p. 15, he gave "Hab. Malacca, Malayan Peninsula"; here adding also "Borneo." Later Sumatra was included in its range, and in 1889 Everett (P. Z. S., 1889, p. 223) added Palawan. The type locality, however, is obviously Malacca.

⁴ Voyage of the Samarang, Vertebrata, pl. iv.

⁵ Compared with two specimens from Aru Bay, East Sumatra, kindly loaned to me for examination by Mr. G. S. Miller, Jr., Curator of Mammals, U. S. National Museum.

