

feet greyish white, the fingers and toes pure white. Tail short, tapering, heavily haired throughout, "slate-grey" (arising from a mixture of blackish and white hairs) above, dull whitish below.

Skull markedly larger than that of *L. pedunculatus*, but of similar shape. Supraorbital edges sharply square, not ridged. Palatal foramina long and narrow. Bullæ smaller than in the smaller species.

Molars much larger than in the allied form, but of quite similar structure.

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

Head and body 167 mm.; tail 114; hind foot 29; ear 21.

Skull: greatest length 41; basilar length 32.5; zygomatic breadth 21.3; nasals 14; interorbital breadth 5; palatilar length 18.7; diastema 11.5; palatal foramina 8.3; length of upper molar series 7.2.

*Hab.* Parry's Creek, near Wyndham, E. Kimberley, N.W. Australia. Alt. 100'.

*Type.* Old female. B.M. no. 9. 2. 16. 3. Original number 29. Collected 9th October, 1908, by J. P. Rogers. Presented by the Perth Museum through B. H. Woodward, Esq. Two specimens.

"Trapped in a rough stony gorge."—*J. P. R.*

This species is readily distinguishable from *L. pedunculatus* by its larger size, shorter tail, and greyer colour.

L.—*New Species of Paradoxurus, of the P. philippinensis Group, and a new Paguma.* By OLDFIELD THOMAS.

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HITHERTO the Palm-Civets of the Philippines, North and South, and of Borneo, have been considered as all belonging to one species, for which the name *P. philippinensis*, Jourd. (first locality mentioned, Luzon), has been used.

But a comparison of the material in the British Museum shows that the Mindanao animal is materially larger than that from Luzon, that the Bornean one is quite peculiar in colour, and that an additional form of the group occurs in the Tawi-Tawi Islands, between N. Borneo and Mindanao.

I also take this opportunity to describe the Hainan representative of *Paguma larvata*.

*Paradoxurus minax*, sp. n.

Size markedly larger than in the Luzon *P. philippinensis*, about equalling that of the Indian *P. niger*. General colour uniform dark brown, less mottled than in *philippinensis*; three broken lines of black spots fairly well defined on the back. Light frontal band little conspicuous. Crown and backs of ears blackish brown. Limbs, feet, and tail uniformly dark.

Skull similar to that of *philippinensis*, but conspicuously larger throughout. Teeth of the same general rounded shape, the carnassial with a heavy postero-internal ledge.

Dimensions of the type (measured in skin):—

Head and body 580 mm.; tail (broken in type, 440 mm. in another specimen of about equal size); hind foot 75.

Skull: basal length 98; condylo-basal length 105; greatest breadth 60; length of nasals in middle line 19.5; interorbital breadth 19; breadth of brain-case 34; palatal foramina 5.5; palatal length 47;  $p^4$ , length on outer edge 8.4, greatest diagonal diameter 9.6.

*Hab.* (of type). Davao, S. Mindanao.

*Type.* Adult male. B.M. no. 7. 2. 2. 6. Original number 766. Collected by M. P. Anderson. Presented by His Grace the Duke of Bedford, K.G.

This species is readily distinguishable from any of the other species in the neighbourhood by its markedly larger skull.

I also refer to this species the adult and young specimens collected by Cuming in the Islet of Camiguin, just N. of Mindanao, which were called "*P. zeylanicus*" (fortunately as a *nomen nudum*) in Gray's 'List of Mammals' of 1843\*.

*Paradoxurus torvus*, sp. n.

Size about as in *P. philippinensis*. General colour dark coppery brown (between mummy-brown and vandyke-brown), approaching that of the S.-Indian *P. jerdoni*. Face wholly blackish, without lighter markings, as are also the backs of the ears, the nape to the withers, and the rump. Back with three inconspicuous black lines. Fore and hind limbs and tail blackish brown. Under surface dark chocolate-brown.

Skull most like that of *P. philippinensis*, the teeth of

\* List Mamm. B. M. p. 55 (1843).

similar rounded character, larger individually than those of *P. sabanus*, the nearest species geographically. Posterior edge of palate of the reversed V-shape found in the genus *Paguma*, although it is at about the same distance behind the molars as is usual in *Paradoxurus*.

Dimensions of the type (measured in skin):—

Head and body 490 mm.; tail 410; hind foot 64.

Skull: basal length 39; condylo-basal length 94; greatest breadth 57.5; length of nasals in middle line 14; interorbital breadth 15.5; breadth of brain-case 33.5; palatal length 42; palatal foramina 5; front of  $p^1$  to back of  $m^2$  30;  $p^4$ , length on outer side 8, greatest diameter 8.7.

*Hab.* Bangao Island, Tawi-Tawi Group.

*Type.* Old male. B.M. no. 94. 9. 28. 9. Collected July, 1893, by A. Everett.

Even if the peculiar coppery-brown colour of this *Paradoxure* should prove to be due in any degree to a melanoid suffusion (and there is no evidence for this suggestion), the continuation of the dark colour of the head down to the withers, the large size of the teeth as compared with those of *P. sabanus*, and the *Paguma*-like shape of the posterior nares will distinguish the species from any of its allies.

#### *Paradoxurus sabanus*, sp. n.

Size smallest of the group. General colour a peculiar greyish olivaceous tinged with buffy, being far the most distinctly olivaceous of the *Paradoxures*. The usual lines and spots on the back visible, but not conspicuous or sharply defined. Underside brown, the hairs broadly tipped with buff or pale tawny. Muzzle, back of ears, and crown black, a variable amount of light greyish grizzling on the forehead and area in front of the ears. In some specimens there is a complete frontal light band, and in others not. Limbs and tail blackish as usual.

Skull like that of *P. philippinensis*, but the teeth smaller throughout.

Dimensions of the type (measured in skin):—

Head and body 465 mm.; tail 360; hind foot 68.

Skull: basal length 88; condylo-basal length 92; greatest breadth 57; length of nasals in middle line 16; interorbital breadth 17; breadth of brain-case 32; palatal length 42; front of  $p^1$  to back of  $m^2$  28.5;  $p^4$ , length on outer edge 7, greatest diameter 8.4.

*Hab.* North Borneo. Type from Spitang.

*Type.* Old male. B.M. no. 93. 3. 4. 5. Collected July, 1892, by A. Everett.

Its peculiar buffy-olivaceous colour and small size will readily distinguish the Bornean *Paradoxure* from *P. philippinensis*, with which it was united by Blanford.

*Paguma larvata hainana*, subsp. n.

Markings particularly prominent. Tail nearly all black. Molars large.

Size about normal. Fur coarse and harsh, not nearly so rich as in true *larvata*. Ends of dorsal hairs strong buffy. Head-markings very strikingly contrasted, sharply defined; median white line pure white to between the ears, and then continued, rather less pure, down the nape nearly to the end of the black nuchal area; black bands bordering it on forehead broad, very deep black; supraorbital white spots small, infraorbital fairly large, sharply defined; anteaurel spots small. Chin black, succeeded behind by a well-marked whitish collar. Belly dull brownish white. Hands and feet black. Tail black, all but its basal three inches above and six below.

First upper molar larger than in true *larvata*, conspicuously larger than in subsp. *taivana*; its surface, in the unworn state, comparatively flat, the postero-external cusp obsolete. Carnassial scarcely or not larger than in *larvata*.

Dimensions of the type (measured in skin):—

Head and body 470 mm.; tail 425; hind foot 76.

Upper carnassial, length on outer edge 7.6, greatest diameter 8;  $m^1$  6.8 × 7.6.

*Hab.* Five-Finger Mountains, Hainan.

*Type.* Immature male. B.M. no. 99. 9. 2. 1. Collected April or May, 1899, by Mr. John Whitehead.

Dr. Matschie has suggested that the Formosan form of *P. larvata*, *P. l. taivana*, Swinh., may be the same as the original *larvata*, but it has not the well-marked whitish collar mentioned in Hamilton Smith's description and present in examples from the Lower Yang-tse. Its first upper molar is much smaller than in the mainland specimens, in marked contrast to that of the present animal, in which this tooth is much larger.



Thomas, Oldfield. 1909. "L.—New species of *Paradoxurus*, of the *P. philippinensis* group, and a new *Paguma*." *The Annals and magazine of natural history; zoology, botany, and geology* 3, 374–377.  
<https://doi.org/10.1080/00222930908692594>.

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**DOI:** <https://doi.org/10.1080/00222930908692594>

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