

the specimens recorded above have been included under one specific name. They all agree in the possession of the peculiar hook-like organs on the dorsal surface of the prosoma—a character which differentiates them from all the other species I have seen—but they differ greatly among themselves in the characters of the capitular valves. As an example of the variation in these characters, I figure a specimen from off the coast of Cuba (text-fig. 7). It will be seen that it differs from the holotype (from the Victoria-Tasmanian cables) in the much narrower form of the capitulum, the relatively shorter carina, and the scutum with the basal margin at right angles to the chord of the occludent margin. Other specimens, however, both from the Atlantic and from the Indo-Pacific areas, are intermediate between the two forms, and I am unable to point out any characters by which they can be satisfactorily grouped.

XL.—*On Five new Mammals from Java.*

By HERBERT C. ROBINSON and C. BODEN KLOSS.

Pithecus pyrrhus sondaicus, subsp. n.

Type.—Adult male (skin and skull) collected at Tjibodas, Preanger Regencies, West Java, 4500 ft., on 12th February, 1916, by H. C. Robinson. Federated Malay States Museums, no. 164/16. Original number 7181.

Diagnosis.—Black throughout, only the back of the hind limbs with a few white-tipped hairs. Size rather smaller than the eastern typical race, *P. pyrrhus* (Horsf.) = *S. maurus* (auctt.).

Dimensions of the type, measured in the flesh.—Head and body 540 mm.; tail 740; hind foot 163; ear 30.

Cranial measurements: greatest length 104·7 (110·1*); basal length 77·0 (82·0); zygomatic breadth 78·1 (85·8); maxillary tooth-row, excluding incisors, 35·7 (38·4).

Specimens examined.—The type and one other adult male from the same locality compared with eight adults from Eastern Java.

* Measurements in parentheses are those of an adult male *P. p. pyrrhus* from Ongop-Ongop, Idjen Massif, near Banjoewangi, 5700 ft., East Java. F.M.S.M. no. 585/16.

Remarks.—We have followed Thomas and Wroughton (P. Z. S. 1909, i. p. 372) in adopting the name *pyrrhus*, Horsf., for both black and yellow forms of the monkey usually known hitherto as *Semnopithecus maurus*, which latter name is inapplicable as belonging to a West-African mangabey. We cannot accept Elliot's views in adopting the earlier title *auratus*, Geoffr., 1812. Dr. Elliot makes no statement as to the skull, but remarks that the tail has black hairs intermingled with the golden-yellow ones, which tends to show that the specimen is quite immature. It is, moreover, without exact provenance. Neither Horsfield nor any other author has designated any type-locality for *pyrrhus*, and we therefore fix it as the province of Pasuruan, whence Schlegel and Jentink have cited many specimens.

As regards the present form, Schlegel (Mus. Pays-Bas, xii. p. 55, 1876) has already noted that the Eastern form is very much greyer than animals from the western parts of the island, where adults are quite black.

Rattus sabanus mayapahit, subsp. n.

Type.—Adult female (skin and skull) collected at Tjibodas, West Java, 5000 ft., on February 12th, 1916, by H. C. Robinson. Federated Malay States Museums, no. 1/16. Original no. 7178.

Characters.—A rat of the *sabanus-vociferans* group, but differing from all described Malayan forms in having the tail not bicoloured.

Colour.—Pelage of the type usual in the group, but on the whole rather less wiry. Ochraceous-tawny element rather paler and less prominent, median area of back rather dark. Under surface white, faintly tinged with cream, sharply defined from the sides. Feet separated from the limbs by a ring of mouse-grey. Brown median streak on the hands not reaching the terminal digits, which are pure white. The same area on the feet less defined than in other members of the group. Tail coarsely ringed and thinly clad with hairs dark at the base, but becoming rather paler towards the tip. Ears elongate, extremely thinly clad with very short hairs, practically naked.

Skull.—Massive, as in the group generally; nasals tapering, somewhat spatulate at the tips, tooth-rows slightly divergent, mesopterygoid space elongate, bulb-shaped, not parallel-sided. Palatal foramina rather short, bullæ small, rather more flat-

tened than in either *R. s. sabanus* or *R. s. vociferans*. Interparietal semielliptic, the length one-half the breadth.

Measurements.—Head and body (taken in the flesh) 251 (242*) mm.; tail 335 (358); hind foot 50 (49); ear 28 (30).

Cranial measurements: greatest length 55.0 (56.3); condylo-basilar length 48.0 (49.0); palatilar length 24.8 (25.0); diastema 15.0 (14.6); palatal foramina length 8.0 (8.1); greatest length of nasals 21.3 (21.6); zygomatic breadth 24.9 (25.6); length of upper molar row 9.4 (10.2).

Specimens examined.—Four; the type, an adult male from Sodong Jerok, Idjen Massif, near Banjoewangi, E. Java, and an immature male and female from the same locality.

Remarks.—The entirely uniform tail in the adult will at once separate this species from all other members of the group, apart from the characters of the median streak on the hands and feet, which may possibly not be constant. Otherwise there are no very special differences. In other localities as well as in Java rats of the group are not usually found above about 4000 ft., being replaced in the Malay Peninsula and in Sumatra by the *ciliatus* section, which, however, so far as is at present known appears to have no representative in Java or in Borneo.

In Borneo and the Malay Peninsula rats of this group are at their brightest. In outlying parts of their range (*R. s. herberti* from Central Siam and *R. s. listeri* from Sikkim) they become duller as in the present form and *R. s. ululans* of Sumatra.

Rattus bukit treubii, subsp. n.

Type.—Adult male (skin and skull) collected at Tjibodas, Mt. Gedeh, Western Java, 5000 ft., on 23rd February, 1916, by H. C. Robinson. Original no. 7271.

Diagnosis.—Allied to *R. bukit* (Bonh.) from the Malay Peninsula and *R. fraternus* (Robinson & Kloss)† from Sumatra, but less spiny than the latter, tail rather shorter; always lacking the ochraceous patch on the chest, which is always present in Sumatran animals. General size decidedly smaller.

Skull and teeth.—Similar to *R. bukit*, except in size.

Dimensions.—Measurements of the type taken in the flesh: head and body 144 mm.; tail 187; hind foot 29; ear 20.5.

* Measurements in parentheses are those of the adult male, F.M.S.M. 869/16, from Eastern Java.

† Journ. Straits Branch Roy. Asiat. Soc. no. 73, p. 273 (1916); Journ. F.M.S. Museums, viii. pt. 2, p. 47 (1918).

Cranial measurements: total length 35.3; condylo-basilar length 29.9; diastema 9.0; upper molar row 6.0; length of palatal foramina 6.1; median length of nasals 13.3; breadth of nasals 4.2; zygomatic breadth 16.0.

Specimens examined.—Twenty-four adult and many immature specimens all from the vicinity of the type-locality.

Remarks.—This species, which is the lowest-ranging of the forest-rats of the group on the Gedeh Volcano, is very uniform in coloration and degree of spininess, therein differing from *R. fraternus*, which is variable in both respects. From *R. bukit* of the Malay Peninsula it differs in its brighter, less clayey colouring, less stiff spines, and finer annulation of the tail. From *R. orbus* of the northern parts of the Malay Peninsula in its smaller size, relatively shorter tail, and lack of pectoral markings.

Rattus cremoriventer cretaceiventer, subsp. n.

Type.—Adult male (skin and skull) collected at Tjibodas, West Java, 4500 ft., on February 22nd, 1916, by H. C. Robinson. Federated Malay States Museums, no. 256/16. Original number 7263.

Characters.—A rat of the group represented in the Malay Peninsula by *R. cremoriventer* (Miller) and in Borneo by *R. kina* and *R. rapit* (Bonhote), but pelage longer and less spiny, colour duller, and with the belly almost chalk-white with only a faint tinge of cream. Teeth decidedly heavier and interparietal foramina narrower. Bullæ larger and broader.

Colour etc..—Pelage of the type usual in rats of the group, composed of three elements, viz., long black piles with pale tips or subterminal bands; broad, flattened, grooved spines, greyish green in colour, with dark tips and a woolly underfur, grey at the base, with ochraceous-buff tips. General colour-effect above a mixture of buff, drab, and black, the latter more evident on the median line, the sides more rufous buff. Head and sides of the face more brownish, the muzzle pale chocolate-brown, hands and feet silvery whitish, with narrow brown median streak, the hairs very short. Below white, sharply separated from the colour of the sides, the hairs white to the base, longer and less spiny than in the allied races. Tail brownish, coarsely ringed (about nine to the centimetre at the base), well clad with fine dark brown hairs increasing in length towards the tip, which is distinctly pencillate. An indication of a rufous-buff collar, which is interrupted in the middle.

Skull.—The cranial portion relatively shorter and broader

than in *R. c. cremoriventer*, with the parietal ridges less sharply deflected. Orbital constriction more marked and the infraorbital plate narrower; zygomatic arches decidedly more slender; nasals as in *R. c. cremoriventer*, terminating in a point posteriorly. Beneath, with the palatal foramina narrower, the interpterygoid space almost parallel-sided, not pear-shaped anteriorly; bullæ decidedly larger and more globose in an antero-posterior direction. Teeth decidedly larger, the posterior molar much larger.

Measurements.—Head and body (taken in the flesh) 137 mm.; tail 196; hind foot 29; ear 19.

Skull: greatest length 36.2; condylo-basilar length 30.8; diastema 9.1; zygomatic breadth 16.2; length of nasals 12.9; upper molar row 6.3.

Mycteromys crociduroides vulcani, subsp. n.

Type.—Adult female (skin and skull) collected at Kandang Badak, Mt. Gedeh, Western Java, 7900 ft., on 5th March, 1916, by H. C. Robinson, Federated Malay States Museums, no. 897/16. Original no. 7381.

Diagnosis.—Warmer in colour above than the type-species of the genus, *Mycteromys crociduroides* (Robinson & Kloss*), tail equal to the head and body in length. Ears large, rounded, almost naked. Pelage dense, close, and very soft.

Colour.—Above a very fine grizzle of hazel and black, the base of the fur slaty grey; hands and feet seal-brown; tail uniform black. Beneath greyish, strongly washed with ochraceous buff, more markedly so in the median line.

Skull.—As in the typical species, but the rostrum decidedly heavier and relatively shorter; teeth smaller.

Dimensions.—Head and body 95 mm.; tail 95; hind foot 24; ear 18.

Cranial measurements: greatest length 25.3; condylo-basilar length 23.0; diastema 7.8; upper molar row 3.7; length of palatal foramina 5.0; median nasal length 9.5; breadth of combined nasals 2.5; zygomatic breadth 12.6.

Specimens examined.—Two, the type and a two-thirds-grown female from the same locality.

This species differs at a glance from the large series of the genotype obtained at Korinchi, Sumatra, in its much warmer colour, shorter tail, dark hands and feet, and heavier rostrum. Out of several hundred rats trapped in the locality these were the only specimens obtained, so that it is in all probability a rare form.

* Journ. Straits Branch Roy. Asiat. Soc. no. 73, p. 271 (1916); Journ. F.M.S. Mus. viii, pt. 2, p. 57 (1918).



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