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A NEW GENUS AND SPECIES OF GIANT RAT FROM THE SOLOMONS.

By

ELLIS LE G. TROUGHTON,
Zoologist, Australian Museum.

(Plate xix.)

THE discovery of this remarkable animal, which makes such an interesting addition to the several genera of giant rats described from New Guinea, and represented so far in the Solomons by the genus *Cyromys* on Guadalcanar, has resulted from the very keen collecting activities of Rev. J. B. Poncelet, S.M., of the Catholic Mission at Buin, in the south of Bougainville Island. During a visit to the Museum early in 1934, Father Poncelet made enquiries regarding collecting possibilities on the island, with the result that his generous offer to make a representative collection for the institution was gladly accepted, and the necessary instructions and equipment supplied.

The energetic and thorough methods of the collector may be gathered from the fact that several carefully tabulated collections of insects, fishes, reptiles, and mammals have already been received, of such numbers and variety that considerable time must elapse before the material can be thoroughly worked out. Particular attention has been devoted by Father Poncelet to the mammals, included in which are several rats not hitherto recorded from Bougainville, and species of large and small bats, to be dealt with in a following paper.

In dealing with this outstanding novelty at the earliest opportunity, comparison with *Cyromys*, probably the nearest ally in form as well as habitat, has been prejudiced by the lack of illustration or adequate description of the dentition of both species of that genus. When one notes how simply and clearly the accompanying photos, by the Museum photographer, Mr. G. C. Clutton, illustrate diagnostic features such as the length and sparseness of the coat, tail and foot structure, and dentition, it is astonishing to realize that most of the Australasian mammals described abroad have been denied any form of illustration whatever. One can only hope that all future work upon the mammals, and fauna generally, may provide illustrations where necessary to amplify the usual brief descriptions.

Unicomys gen. nov.

Diagnosis.—Size large. Hair long and sparse, without close underfur. Hind foot relatively large, the inner or thenar pad long, broad, and continuous with the 1st interdigital pad. Tail long, slightly exceeding the head and body in the holotype, about 76 mm. from the vent covered with hair up to 80 mm. in length; remainder almost naked, the mm. long hairs limited to one to a scale; the irregular rings average four to five to the cm., set with non-overlapping rudimentary scales with low crinkled surfaces. Palate ridges: Two raised and thickened pre-molar ridges, undivided but slightly indented in the middle line; six less inflated and rather irregular inter-molar ridges, the 2nd to 6th clearly divided. Mammae 2-2 = 4. Habitat: Bougainville Island, Solomons Group.

Skull.—Zygomatic arches powerful and widely expanded, the anterior plate very broad and straight-edged anteriorly. Interorbital region concave, the edges somewhat thickened but not beaded, the sinuous ridges developing post-orbitally and tending to form an angular process at the fronto-parietal suture; the subsidiary post-orbital process, below the ridge, not as prominent as in *Cyromys*. Palatal foramina short, ending about 5 mm. in front of m^1 . Palatal space between first molars wider than the single molar. Bullæ small and little inflated.

Dentition.—Incisors normal, not unduly elongate or grooved anteriorly. Upper molar laminae without the zig-zag pattern of *Mallomys*, the anterior laminae of m^1 and m^2 much as in *Rattus*, but their hind margins infolded instead of broadly convex; anterior lamina of m^3 separate and transverse, with outer and inner cusps, and the hind lamina transversely elongate instead of oval as in *Rattus*. Lower molar series differing from the usual *Rattus* pattern attributed to *Cyromys* in the following details:—All laminae except the first and last bent backward laterally, forming an angle in the middle line. Small but distinct antero-external subsidiary cusps are situated on the last lamina of m_1 , and m_2 , instead of on the anterior lamina of m_2 and m_3 , as in *Rattus*.

Genotype.—*Unicomys ponceleti* sp. nov.

Remarks.—Apart from the hairy instead of woolly type of pelage, and relatively larger hind foot, distinguishing it from both *Cyromys* and *Mallomys*, the genus is further separated from *Cyromys*, which is of generally similar cranial dimensions, by the relatively longer and differently patterned molars, and differences in tail and sole-pad structure. Distinguished from *Mallomys* also in having palatal foramina barely half as long, the inter-molar space wider, instead of narrower, than the first molar, and by differences in the molar patterns. At once distinguished from the large coarse-haired Papuan genera *Hyomys* and *Anisomys* by the patterns and relative size of the molar rows.

The comparatively great size of the hind foot and skull is shown by the foot of a young adult female equalling, and the skull being actually longer than those of the Philippine *Phloeomys*, which is regarded as the largest member of the family *Muridae*. The foot length is also greater than in an adult male of *Mallomys hercules* with head and body over 5 inches longer, while the skull length of an old male is only 7.8 mm. shorter than in the large *Mallomys*, described as having the largest skull of the sub-family *Murinae*.

Diagnosis of the new genus involved a close survey not only of *Cyromys*, probably the nearest in structure as well as habitat, and *Mallomys* of Papua, but also of the Philippine *Lenomys* and *Crateromys* with whose dentition, in the absence of figures, that of *Mallomys* was compared. Lack of a detailed description or figures of *Cyromys* dentition is unfortunate, but a review of the characters confirms the generic distinction of the new form, which should prove of considerable interest in regard to the relationships and distribution of the fauna of the Austro-Pacific region.

***Unicomys ponceleti* sp. nov.**

A uniformly blackish giant rat, readily distinguished from both species of *Cyromys*, which are probably the nearest allied in general form and dimensions, by the diagnostic features emphasized in the generic description. Habitat: Bougainville Island, Solomons Group.

External Characters.—Colour uniformly sombre brownish-black above and below. Hair remarkably long, fine, and sparse, without close or woolly underfur, so that the skin shows through on any part as the specimen is moved; the shorter, somewhat softer hair of the back averaging 30 mm. in length, the longer hairs ranging from 50 to 65 mm., and the longest attaining 80 mm. on the rump and tail base. Face very thinly haired on the cheeks and around the eyes, so that the gradually lengthening hairs above, from rhinarium to nape, give the head a strikingly crested appearance in profile. Ear comparatively short and broad, barely attaining half the distance between its anterior base and the posterior canthus of the eye when pressed forward. Manus almost naked above, the palmar surface lightly granulated and the pads inflated and faintly striated; the thenar pad remarkably large and flattened, its toughened surface covering the base of the short pollex and extending across to the middle line of the palm, its front edge tri-lobed or foliated, and its area about 10.5 x 10.5 mm. Pollex very short and stout, measuring only 5 mm. from base to tip of the broadly arched nail, which entirely covers it. Pes also thinly haired above, proportionately very large, and remarkably prehensile in appearance, with the 1st and 5th digits extendible almost at right angles, and the 2nd and 4th widely separable. Sole, pads, and digits very smooth in comparison to size, the pads large and inflated, their surfaces microscopically lined, rest of sole faintly rugose; main or hind part of thenar pad long and broad (15 x 6 mm.) and differing from that of *Cyromys* in being continuous with the 1st interdigital pad, the apparent division by a small intermediate pad being due to natural creasing, and the entire combined pad measuring about 26 mm. Tail of holotype slightly exceeding the head and body length, long-haired for about 3 inches (76 mm.) from the vent, the remainder almost naked, the hairs about 1 mm. long, limited to one between each scale, set in the grooves between rings; the scale-rings wide, averaging four to five to the cm., and the scales isolated, not overlapping each other or the grooves between, their crinkled surfaces giving the tail a peculiarly serrated appearance, except on the terminal fourth, where the irregular rings seem like large smooth scales. Mammæ 2-2 = 4.

Skull.—Broad and strongly built, with widely expanded powerful zygomatic arches, the anterior plate very broad and almost straight edged in front, its width in the middle line varying from 8 to 10 mm. in three skulls. Interorbital region concave, with the edges somewhat thickened but not beaded, the ridges developing post-orbitally and tending to form an angular process at the fronto-parietal suture, below which is a subsidiary post-orbital process, distinct from the crown-ridge but not as prominent as in *Cyromys*. Palatal foramina short, ending about 5 mm. from m^1 . Palatal space between the first molars wider than the single molar. Hind margin of palate about in line with the middle of m^3 . Bullæ small and little inflated.

Dentition.—Incisors normal, the lower ones not unduly tapered, or grooved anteriorly. Molar series relatively longer than in either species of *Cyromys* and, with the exception of the anterior laminae of m^1 and m^2 , differing in the following characters from the normal *Rattus* type indicated for the allied genus. Hind lamina of the two anterior molars folded backwards laterally, instead of outwards to form a cusp, so that except when very worn the hind margins are infolded, instead of being broadly convex; m^3 differs in having the anterior lamina separate and extended laterally to form outer and inner cusps, while the posterior lamina is transversely elongate, instead of oval as in *Rattus*. Lower molars differing in having the anterior lamina of m_1 narrower and without the antero-external notch seen in the unworn lamina of *Rattus*. All other lamina except the last differ in being bent backward

laterally, so that they are notched or angled in the middle line. The small but distinct external subsidiary cusps are situated between the second and third lamina of m_1 , and the first and second lamina of m_2 , instead of being on the first lamina of m_2 and m_3 , as in *Rattus*.

Dimensions of Holotype, young Adult Female.—Complete in alcohol: head and body 330; tail 340; hind foot, length 71.5, breadth at base of first to fifth digits 23; ear 23 x 21 mm.

Skull: Holotype, and skull with worn molars in brackets; greatest length 62.8 (69.2); basal length 56.5 (62); zygomatic breadth 34.8 (38.3); breadth outside m^1 13 (13.4); breadth inside m^1 5 (5.5); interorbital width 10.1 (9.8); nasals 22.3 x 7.2 (25.7 x 8.7); palatilar length 30.2 (32.8); palatal foramina 7.6 x 3.4 (7.8 x 4); upper molar row 13.4 (13.8); width of m^1 4.1 (4).

Habitat.—Collected in densely wooded country, about 10 miles inland from Buin, south Bougainville Island, Solomons Group, where it is very rare, and is called "Nagara" by the natives, according to Father Poncelet.

Type Specimens.—Holotype, young adult female, No. M. 5756, and two paratype skulls, Nos. S. 1940-1, with more or less worn molars. In the Australian Museum; collected and donated by Father J. B. Poncelet, S.M.

Remarks.—The prehensile nature of the long and naked tail, and large well-padded feet with their extremely mobile and strongly clawed digits, suggest that this giant rat leads a mainly arboreal existence amongst the dense foliage of its habitat. There seems little doubt that the striking characteristics and dental features have evolved during prolonged isolation on Bougainville Island, similar to that of *Cyromys* on Guadalcanar, which Thomas regarded as accounting for the occurrence of both an arboreal and terrestrial species of that genus, actually as modified descendants of a single insular form.

It is with great pleasure that the name of the collector and donor is associated with this interesting species in appreciation of the important and careful field-work, which he voluntarily undertook and has carried out so enthusiastically under what at times must prove extremely trying conditions.

EXPLANATION OF PLATE XIX.

Unicomys ponceleti gen. et sp. nov. Holotype, young adult female.

Fig. 1.—Complete animal.

Fig. 2.—Palm, right manus.

Fig. 3.—Sole, right pes.

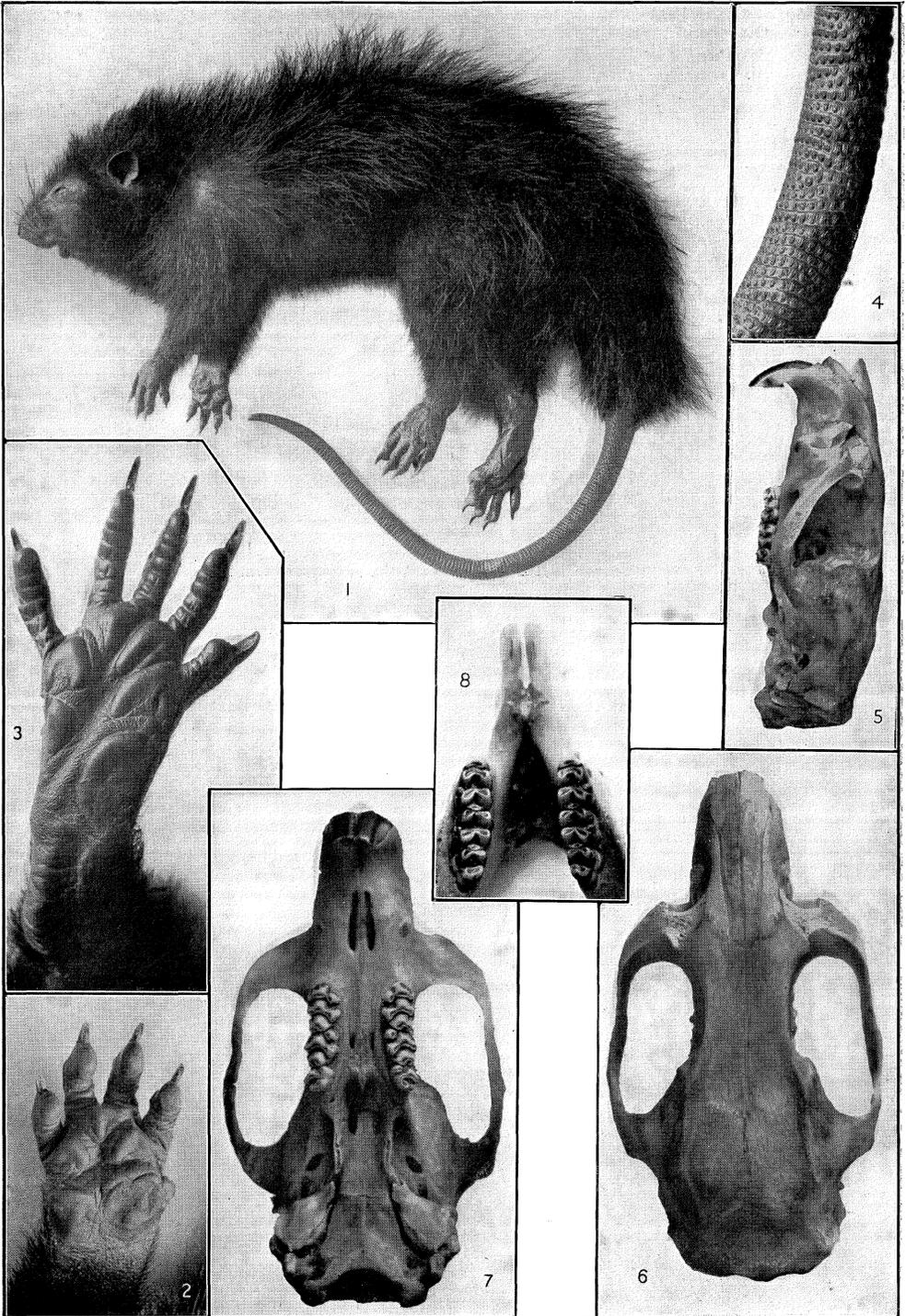
Fig. 4.—Tail, section slightly enlarged.

Fig. 5.—Skull, left side.

Fig. 6.—Skull, upper view.

Fig. 7.—Skull, lower view, showing dentition.

Fig. 8.—Lower molars.



G. C. CLUTTON, photos.