

range is from 23.2 to 25.5), in the new genus the strong shortening of the rostrum is very obvious. In *Delanymys* the rostral length, measured from the upper angle of the infraorbital foramen to the tip of the nasals, is 23.1 per cent of the occipito-nasal length; in *Petromyscus* it is 28 to 31 per cent. The third upper molar in *Delanymys* is far larger proportionately than in *Petromyscus* or any of the other genera, the tooth having about half the crown area of m^2 instead of less than one-third as in *Petromyscus*. In all skulls of the latter genus examined, the palate extends posteriorly to roof in the anterior portion of the mesopterygoid fossa: in *Delanymys* the palate ends on a line joining the posterior margins of the third molars, and the mesopterygoid fossa is therefore completely open anteriorly. In *Delanymys* the zygomatic plate is much narrower than in *Petromyscus* both actually and proportionately. In *Petromyscus* there is a tendency for the lower incisor root to develop a bony knob projecting from the side of the mandible between the coronoid and condylar processes; in the new genus this incisor root knob is very strongly developed and projects above the mandibular upper edge between the two processes named above. Externally the extreme tail length and the proportions of the limbs, as well as the character of the pelage, separate *Delanymys* clearly not only from *Petromyscus* but from the other Dendromurines.

Type species *Delanymys brooksi*, sp. nov.

***Delanymys brooksi* sp. nov.**

Type. Adult ♂, skin and skull, B. M. n° 61.1610, original n° MU 51. Collected 4th. September 1961 by M. J. DELANY at Echuya (or Muchuya) Swamp, near Kanaba, Kigezi, S. W. Uganda. Echuya Swamp lies south of the Kabale-Kisoro road, about two miles east of the Kanaba Gap, and about 36 miles from Kabale by road, at an elevation of 7,500 feet. It lies west of Lake Bunyoni, and its southern end reaches the Ruanda border. The species is named in recognition of the great interest in field work on Uganda small mammals of Allan C. BROOKS, Biologist, Department of Game and Fisheries, Uganda, to whom Mr DELANY is indebted for much help and encouragement in collecting.

Diagnosis. Characters of the genus. Size very small, tail very long, 175 per cent of head and body length. Manus with five digits; D.1 vestigial, with nail, D.2 longer than D.5, D.3 and D.4 longest and subequal, all with long curved claws. Pes with five digits, D.1 smallest, D.5 longer than D.1, D.3 and D.4 longest, subequal, all with long cur-

ved claws. Heels and soles completely naked. Fore feet very small, hind feet long and narrow. Tail scaly, thinly covered with short stiff hairs not concealing the scales, slightly longer and more numerous at tip but not forming a pencil. Fur very dense and soft, but liberally interspersed over the whole dorsal surface by long projecting guard hairs, so stout in section as almost to justify the name of bristles.

Colour. Whole dorsal surface of body a warm russet, approximating to Hazel of Ridgway or to 5.0 YR 4/6 of the Munsell Book of Color. The fur everywhere, above and below, is dark slate for its basal two-thirds, terminating on the dorsal surface with the russet or hazel colour. This basic colour is darkened by the large number of long black-tipped guard hairs projecting far beyond the fur to give it a characteristic blackish overwash. These long guard hairs mostly have a pale buff median band concealed by the fur, and on the flanks they tend to have pale tips rather than black. Between each eye and the nostrils there is a distinct black patch, separated on the centre of the muzzle by an area paler than the dorsal russet. The posterior surface of the ears is covered with short black hairs, and the inner surface is lined with short russet hairs on a blackish ground. The chin is whitish, and the whole of the under surface of the body is a warm buff, the hairs everywhere dark slate basally. Both manus and pes are covered above with short pale buff hairs. The tail hairs above are blackish, paler below. External measurements: head and body 57, tail 100, hind foot 17, ear 10.

Skull. (Fig. 1-4). The marked shortening of the rostrum in contrast with the broad and rounded braincase is the most obvious distinguishing feature of the skull. The zygomatic arches are well bowed outwards, and the interorbital constriction is narrow. The infraorbital foramen is well open; the zygomatic plate is narrow. The palatal foramina are long and widely open; posteriorly they reach as far as the front of the first molars. The palate is broad and noticeably hollowed out, and it does not extend posteriorly beyond a line joining the backs of the third molars, so that the anterior part of the mesopterygoid fossa remains open. The mesopterygoid fossa itself is wide and the pterygoid processes are long. The mandible is short, and the bony knob of the incisor root is conspicuous, projecting above the upper edge of the ramus just in front of the condylar process.

Dentition (Fig. 5-6). The upper incisors are ungrooved, orthodont, slightly compressed laterally. The cheek teeth show a close affinity with the other Dendromurine genera in the great reduction of the inner row of cusps; only cusp 6, considerably reduced, remain-

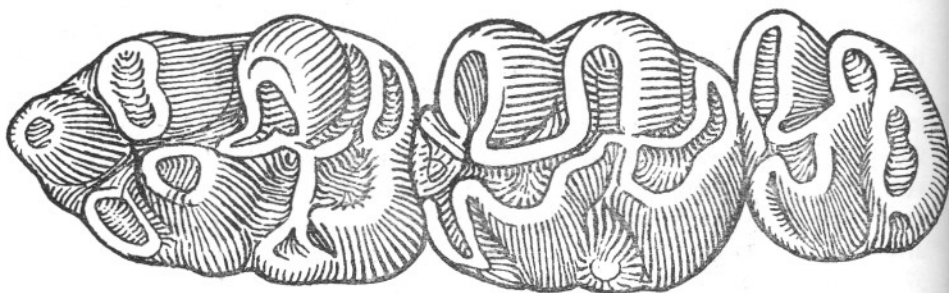
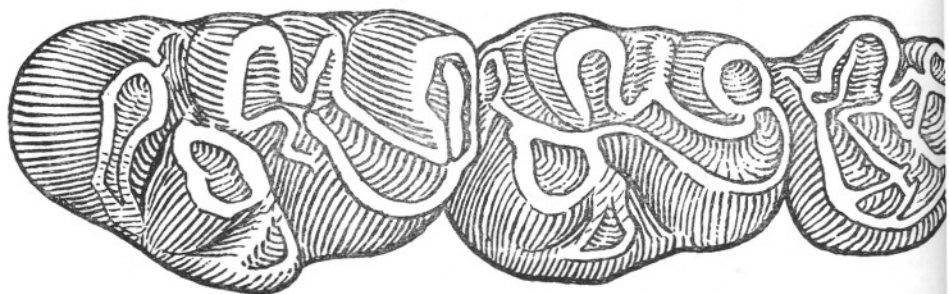


Fig. 5. - *Delanymys brooksi* type skull. Right maxillary cheek-teeth. $\times 52$.
Fig. 6. - *Delanymys brooksi* type skull. Right mandibular cheek teeth. $\times 51$.

ing in m^1 and m^2 . The comparatively large size of m^3 separates *Delanymys* from any other member of the subfamily. In general cusp pattern the cheek teeth, upper and lower, closely follow the type described in such detail for *Petromyscus* by HINTON (1926), so that it is not necessary to describe them again in detail here, particularly in view of the excellent figure.

The cranial and dental measurements of the new genus and species compared with those of the type skulls of the four forms of *Petromyscus* are shown in the accompanying table.

Collector's Field Notes. « Weight 5 grammes. Apparently adult, testes 7 mm. long. » Mr DELANY informs me (*in litt.*) that the specimen was trapped in a sedge swamp. The abundant sedges (*Pycreus* sp.

Types	Occipitonasal length	Condylbasal length	Zygomatic breadth	Braincase breadth	Interorbital breadth	Zygomatic plate breadth	Nasal length	Infraorbital foramen to nasal tips (a)	Infraorbital foramen to occiput (b)	Percentage of (a) to (b)	Palatal length	Palatal breadth outside m ³ -m ³	Palatal foramina length	Bullae length × breadth	m ¹ length	m ² -m ³ length	Upper toothrow length	Mandible length	Lower toothrow length
<i>Delanymys brooksi</i>	17.3	16	9.6	9	2.6	1.4	5.8	4	13.4	29.8	7.5	3.4	3.6	3.6 × 2.8	1.2	1.3	2.5	10.5	2.4
<i>Petromyscus collinus</i>	25.5	23.4	c.12.3	11.8	4	2.6	9.6	8	18	44	12.8	4.5	5	4.5 × 3	2	1.5	3.5	15.5	4.2
<i>Petromyscus c. bruchus</i>	24.8	23	×	11.6	4.1	2.4	9.4	7	18	39	13	3.6	5	4.5 × 3.2	2	2	4	15	4
<i>Petromyscus c. shortridgei</i>	25.4	23.6	×	11.5	4	2.5	10.2	8	18	44	13.8	4.7	4.5	4.5 × 3.2	2	2	4	15.5	3.7
<i>Petromyscus monticularis</i>	23.2	21.3	×	11	4	2.7	8.9	7	17	41	12.2	4.5	4.5	4.5 × 3.5	1.9	2.1	4	14	3.3

Table of skull and teeth measurements

and *Cyperus* sp.) are eighteen inches to two feet high, grow in tussocks, and form a dense canopy. The traps were set at the bases of the tussocks, where there was an elaborate system of channels. Water was often present in the channels but never more than a few inches deep. The other most characteristic plants of this habitat are *Kniphofia* sp., (abundant), *Helichrysum* spp. (abundant), *Lobelia* sp. and *Erica* sp. (locally frequent), and *Alchemilla* sp. (frequent). Around the swamp edge is either *Hypericum* bush or a herb-grassland extremely rich in species. Above these and completely surrounding them is 40-foot high giant bamboo, *Arundinaria alpina*, known as Echuya Forest. The previous history of the swamp is: dry valley - lake - swamp forest - present swamp (no previous history of *Papyrus*). Mr DELANY is indebted to Dr MICHAEL MORRISON of the Botany Department, Makerere College, Kampala, for the botanical data. The swamp itself is long and narrow, being about four miles long and one mile wide.

Remarks. The unexpected discovery of such a distinct new rodent in Uganda is of special interest, not only because it demonstrates that the time has not yet arrived when the nominal list of African mammals can be considered complete, but also because its characteristics bring into question the scope of the subfamily Dendromurinae. As defined by ELLERMAN (1941), one of the two main characters of the subfamily is the vestigial m^3 and m_3 . In *Delanymys*, which falls within the remaining part of the definition of the subfamily in regard to the reduction of the inner cusps of the upper molars, m_3 is by no means vestigial or greatly reduced. Whereas the three best known and most widespread genera in the subfamily, *Dendromys*, *Steatomys*, and *Malacothrix*, all agree in having grooved upper incisors, a strongly modified infraorbital plate bearing a masseteric knob, and no incisor root process on the mandible, the other two genera listed by ELLERMAN, *Petromyscus* and *Prionomys*, differ from the majority in either two or all three of these characters. In the present context, the rare West African genus *Prionomys* needs no further consideration because of its very specialised cheek teeth and other characters, so that the South African genus *Petromyscus* remains as the nearest in most respects to *Delanymys*. Apart from the latter, it is the only one to develop a bony process on the mandible for the incisor root. But the skull characters outlined above under the generic diagnosis are in themselves sufficient to separate *Delanymys* clearly from *Petromyscus*, quite apart from the external character of the very long tail in the former.

Doubts have been expressed as to the correct allocation of *Petromyscus*. ELLERMAN (1941) called attention to the Cricetine appearance

of the cheek teeth, at least in adults, and even suggested a possible relationship with the South African Cricetine *Mystromys*. More definite views have recently been expressed by LAVOCAT (1957, 1959). This author (1957) described under the name *Mystromys darti* a maxilla and mandible, both incomplete, from the Pleistocene deposits at Makapansgat, Transvaal. In size this was far smaller than the recent *Mystromys albicaudatus* and the fossil *M. hausleitneri*, and it was even smaller than *Petromyscus*. In his description of the teeth of *Mystromys darti* LAVOCAT made comparisons with *Petromyscus*, concluding that the latter could be maintained as distinct from *Mystromys*, but suggesting that his new *Mystromys darti* showed a tendency to bridge the gap in certain dental details.

The same author later (1959) after reviewing the evidence, was in favour of considering the Dendromurinae an aberrant group of Cricetids rather than a degenerate group of Murids, instancing in particular certain fossil Cricetodonts in which a minute inner tubercle of the second lamina of m^1 suggested an approach to the recent Dendromurine type of dentition.

In this context, it was clearly necessary to consider the possibility that *Mystromys darti* might have been an earlier name for the animal now found in Uganda; its very small size and a superficial resemblance in some dental characters having to be taken into consideration. However, it appears that the teeth of LAVOCAT's fossil mouse, as described and figured, are clearly closer in structure to *Mystromys* than to *Petromyscus*, and in size it seems that *Mystromys darti*, with a lower toothrow length of 2.8 mm. for an obviously immature specimen, must be a larger animal than *Delanymys brooksi*, which, adult, has a lower toothrow of 2.5 mm. Further, since no other parts of the skull of *Mystromys darti* have been produced, it would be premature to suggest any particularly close relationship with *Delanymys*, whose cranial proportions are so distinct.

Examination of the 30 skulls of *Petromyscus* in the British Museum shows that wherever the cheek teeth are unworn, the third cusp of the second lamina of m^1 and m^2 is clearly recognisable as functionally developed, as in *Delanymys*, and it seems that the evidence is not sufficiently strong to justify the removal of *Petromyscus*, and the rest of the Dendromurinae, to the Cricetidae as LAVOCAT has suggested.

Incidentally, as *Mystromys* has had to be considered in relation to the new genus, it was necessary to check the identity of the little known *Mystromys longicaudatus* NOACK (1887), of which the type locality is Gonda (Igonda), south of Tabora, northwest Tanga-

nyika Territory. But since this proves to have a head and body length approximating to the tail length of 90, and a skull (as figured) of normal proportions and measuring 25.5 mm. in total length, it need not be considered further here.

Finally it remains to congratulate Mr DELANY on this discovery, one that indicates that further intensive collecting of small mammals in the Central African regions may well produce still more surprises. The bodily form, tail length and limb proportions of *Delanymys*, it has been suggested, may show a convergent resemblance to the Holarctic jumping mice, the Zapodidae, which also often favour swampy habitats with dense vegetation. For the excellent figures of the skull and teeth of *Delanymys brooksi* I am indebted to Miss JOANNA WEBB.

REFERENCES

- ELLERMAN, J. R. (1941). — Families and Genera of Living Rodents, 2: 306, 316. — Brit. Mus. (Nat. Hist.).
- HINTON, M. A. C. (1926) in THOMAS, O. — The Generic Position of certain African Muridae, hitherto referred to *Aethomys* and *Praomys*. — *Ann. Mag. Nat. Hist.*, (9), 17: 175-176.
- LAVOCAT, R. (1957). — La Faune de Rongeurs des Grottes à Australopithèques. — *Palaeontologia Africana*, 4: 71.
- LAVOCAT, R., (1959). — Origines et affinités des Rongeurs de la sous-famille des Dendromuriné. — *C. R. Acad. Sci. Paris*, 248: 1375-1377.
- NOACK, R. (1887). — Beiträge zur Kenntniss der Säugethier-Fauna von Ost- und Central-Afrika. — *Zool. Jahrb.*, 2: 246, pl. 1x, figs. 16-18.