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# DIAGNOSES OF NEW EAST AFRICAN MAMMALS, INCLUDING A NEW GENUS OF MURIDÆ.

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The following brief descriptions are published in advance of a detailed report, now in preparation, on the Field Museum's expedition to British East Africa in 1905-6. Through the courtesy of the officials of the British Museum, especially Mr. Oldfield Thomas, it has been possible to make direct comparisons with types and authenticated specimens of previously described species. The liberality of Mr. Thomas, himself at work on East African collections, in freely advising as well as in giving access to material, is most gratefully acknowledged.

## ***Procavia mackinderi zelotes* subsp. nov.**

Type from between Naivasha and Kijabe, British East Africa. No. 17475, Field Museum of Natural History. Adult male (stage VIII). Collected January 27, 1906, by C. E. Akeley.

*Characters.* Similar to *Procavia mackinderi* but smaller; pelage shorter and harsher; subterminal zone of color on hairs of shoulders and back narrower and darker. Similar to *Procavia jacksoni* in color but widely different in cranial characters; skull shorter and broader throughout; nasals shorter; temporal fossæ more extended posteriorly; molariform teeth much larger and more hypsodont.

*Measurements.* Average of 6 adults from Kijabe, measured in the flesh by E. Heller: Total length 470 (420-530); ear 32.6 (30.5-38); hind foot (c. u.) 63.5 (60-68). Skull of type: Basal length 89.5; basilar length 78; zygomatic breadth 53.2; nasals 22.5 x 23.4; breadth between extremities of postorbital processes 38.8; diastema 8.4; maxillary toothrow (crowns) 40; greatest width of  $m^1$  7, of  $m^2$  8.4.

*Remarks.* *Procavia slatini* Sassi is evidently closely allied to *P. mackinderi* and the present form but no specimens representing it have been available for comparison. Since another form of the same group is known from the region intervening between the type locality of *slatini* and that of *zelotes*, it seems safe to assume that the two forms are well differentiated.

***Procavia brucei maculata*** subsp. nov.

Type from Lukenya Mountain, British East Africa. No. 17504, Field Museum of Natural History. Adult male (stage VIII). Collected December 18, 1905, by C. E. Akeley.

*Characters.* Similar to *Procavia brucei* and *Procavia brucei hindei* but color paler and more grayish throughout; underparts much less suffused with creamy or buffy, often nearly pure white; ears more whitish; dorsal spot almost entirely pure white; upperparts more distinctly spotted than in any other member of the *brucei* group, the dark spots in one specimen numbering between 40 and 50 and extending from the rump to the shoulders. Skull most similar to that of *hindei*, differing from that of typical *brucei* in the character of the basisphenoid which is broad and rounded on its lower surface instead of being narrow and laterally channeled; nasals broader and less emarginate behind than in *brucei*; audital bullæ smaller than in *hindei*.

*Measurements.* Collector's measurements of an adult male: Total length 465; ear 31.5; hind foot (c. u.) 60. Skull of type: Basal length 79.7; basilar length 70; zygomatic breadth 46.5; nasals 21.2 x 19.5; breadth between extremities of postorbital processes 36.3; diastema 10.4; maxillary toothrow 31.7; greatest width of m<sup>1</sup> 5.4.

***Dendromus ochropus*** sp. nov.

Type from Lake Elementeita, British East Africa. No. 16715, Field Museum of Natural History. Adolescent male. Collected February 11, 1906, by E. Heller.

*Characters.* Allied to *Dendromus mesomelas* and its relatives, but having the feet, ears, and underparts chiefly ochraceous. Upperparts dull ochraceous, the subterminal zone of color being relatively narrow and considerably mixed with dusky, producing a slightly olivaceous effect; black dorsal stripe well developed; a small blackish marking on the inside of the hind leg just above the tarsal joint; underparts pale ochraceous except a patch of forwardly directed white hairs on the throat; ears well clothed inside and out with bright ochraceous hairs; fore and hind feet ochraceous except the toes which are whitish. Somewhat similar to *Dendromus nyikæ* but pelage coarser, longer, and duller in color; ears ochraceous instead of dusky; feet and underparts ochraceous instead of white; tail bicolor instead of blackish all around. Skull slightly smaller than in *nyikæ*, with smaller bullæ and shorter palatine slits.

*Measurements.* Type: Total length 167; head and body 71;

tail vertebrae 96; hind foot (c. u.) 19. Skull of type: Greatest length 20.4; basilar length 14.6; zygomatic breadth 10.7; nasals 7.1; palatine slits 4.1; maxillary toothrow 3.3; length of  $m^1$  2.

**Dendromus nairobæ** sp. nov.

Type from Nairobi, British East Africa. No. 16709, Field Museum of Natural History. Old male. Collected November 6, 1905, by E. Heller.

*Characters.* Allied to *Dendromus ochropus* and *D. nyikæ* but tail shorter and color much brighter; upperparts bright tawny, with the black dorsal stripe sharply contrasted; zone of tawny color relatively wide; underparts pale creamy whitish; ears pale ochraceous; feet white, slightly touched with fulvous; tail distinctly bicolor; inner side of hind leg without dusky spot above tarsal joint. Skull very broad, with heavy, angled zygomata, the zygomatic breadth slightly greater anteriorly than posteriorly.

*Measurements.* Type: Total length 163; head and body 83; tail vertebrae 85; hind foot (c. u.) 18; ear 14. Skull of type: Zygomatic breadth 11.6; nasals 8; palatine slits 3.9; maxillary toothrow 3; length of  $m^1$  1.7.

**Dendromus whytei pallidescens** subsp. nov.

Type from Lukenya Mountain, British East Africa. No. 16710, Field Museum of Natural History. Adult male. Collected December 28, 1905, by E. Heller.

*Characters.* Similar to *Dendromus whytei* but paler; general color of upperparts pale buffy ochraceous instead of tawny; underparts creamy white, nearly pure white on chin and throat; facial region without dusky markings; dorsal stripe obsolescent, consisting of an indistinct narrow line of dusky-tipped hairs mixed with fulvous.

*Measurements.* Type and one topotype, respectively: Total length 147, 137; head and body 69, 60; tail vertebrae 78, 77; hind foot (c. u.) 15.5, 16; ear 11.2. Skull of type: Greatest length 19.8; basilar length 14.8; zygomatic breadth 10.3; nasals 7.2; palatine slits 3.7; maxillary toothrow 3; length of  $m^1$  1.8.

**Zelotomys** gen. nov.

*Type.* *Mus hildegardæ* Thomas (= *Zelotomys hildegardæ*).

*Characters.* Size medium (hind foot 22–24); tail shorter than head and body; ear moderate, rounded; mammae 2-2=8. Skull short and broad; braincase very short; frontals but little expanded posteriorly, their supraorbital boundaries smoothly rounded; nasals

extended posteriorly beyond anterior root of zygoma and ending about on the plane of the middle of the first upper molar; interparietal very small. Molars very broad and more hypsodont than in *Mus*; first upper molar longer than second and third combined; second upper molar broader than long and very obliquely set in tooth-row; cusps of molars numerically as in *Mus*; upper incisors decidedly projecting.

**Thamnomys surdaster polionops** subsp. nov.

Type from Lukenya Mountain, British East Africa. No. 17112, Field Museum of Natural History. Adult male. Collected December 20, 1905, by E. Heller.

*Characters.* Similar to *Thamnomys surdaster* but less tawny on the sides from the nose to the flanks; sides of face, arms, and sides of body more or less olivaceous gray with slight mixture of tawny; a distinct dusky area from the eye to the base of the whiskers; upperparts bright tawny as in *surdaster*. Skull much as in *surdaster*, but averaging slightly larger and broader. Distinguished from *Thamnomys dryas* by the possession of 6 mammae instead of 4; from *T. macmillani* by larger size and darker color; from *T. ibeanus* by smaller size, smaller ears, brighter color, and paler under sides of hind legs.

*Measurements.* Type: Total length 284; head and body 120; tail vertebræ 164; hind foot (s. u.) 24; ear 16. Skull of type: Greatest length 30.4; basilar length 22.9; zygomatic breadth 14.3; nasals 11; least interorbital breadth 4.5; postpalatal length 10.5; diastema 7.4; palatine slits 6.8; maxillary toothrow 4.5.

**Thamnomys ibeanus** sp. nov.

Type from Molo, British East Africa. No. 17096, Field Museum of Natural History. Adult male. Collected March 15, 1906, by E. Heller.

*Characters.* Size large; color dark and relatively dull; hind legs just above tarsal joint usually dark-colored all around; skull and teeth relatively large. Most similar to *Thamnomys dolichurus* but color darker; size larger; teeth slightly larger; audital bullæ smaller. Somewhat similar to *T. surdaster* and *T. s. polionops* but size larger and color duller; skull and teeth larger; audital bullæ relatively small, about equalling those of *polionops* in actual size.

*Measurements.* Type: Total length 329; head and body 136; tail vertebræ 193; hind foot (s. u.) 26; ear 21. Average of 8 adults from Molo, Gilgil, and Lake Elementaita: Total length 305 (290-330); head and body 121 (109-136); tail vertebræ 184 (174-204); hind foot

(s. u.) 25.3 (24–26.5); ear 20.7 (19–22). Skull of type and an adult from Lake Elementeita, respectively: Greatest length 32.7, 31.8; basilar length 25.3, 24.4; zygomatic breadth 15.9, 14.9; nasals 11.9, 12.3; least interorbital breadth 5, 4.7; postpalatal length 11.8, 11.2; diastema 8.4, 8; palatine slits 7.8, 7.2; maxillary toothrow 5.1, 4.6.

**Cricetomys gambianus kenyensis** subsp. nov.

Type from south side of Mount Kenya, British East Africa. No. 17517, Field Museum of Natural History. Adult male. Collected by C. E. Akeley.

*Characters.* Most similar to *Cricetomys gambianus proparator* but proximal dark color of tail more extensive, occupying at least three-fifths of the length of the tail; color of upperparts somewhat paler especially on the sides which are more contrasted with the back. Skull slightly larger than in *proparator*; nasals broader posteriorly, their outer sides nearly parallel; rostrum slightly thicker dorsoventrally; infraorbital plate narrower and less forwardly projecting. Somewhat similar to *C. g. viator* but much darker in color, with a more marked dorsal area.

*Measurements.* Skull of type: Greatest length 76.3; basilar length 62.6; zygomatic breadth 36.5; least interorbital breadth 12; nasals 31; postpalatal length 25.5; diastema 25; palatine slits 8; maxillary toothrow 11.3.

**Otomys thomasi** sp. nov.

Type from Molo, British East Africa. No. 16698, Field Museum of Natural History. Adult female. Collected March 16, 1906, by E. Heller.

*Characters.* Allied to *Otomys irratus tropicalis* and other species having narrow nasals and  $m^3$  with seven laminæ, but color widely different and skull decidedly arched or "humped." Dominant color of upperparts varying from pale cinnamon to wood brown instead of rich hazel as in *tropicalis*; a rather conspicuous patch of creamy buff behind the ears; fore and hind feet entirely creamy buff; underparts wood brown.

*Measurements.* Type and one topotype, respectively: Total length 282, 283; head and body 184, 180; tail vertebræ 98, 103; hind foot (s. u.) 30.5, 31; ear 24, 23.5. Skull of type: Greatest length 43.3; basilar length 34.6; zygomatic breadth 21.7; length of nasals 20.7; greatest breadth of nasals 7.5; least interorbital breadth 3.4; depth from highest point of orbit to alveolar border at front of  $m^3$  14.5; postpalatal length 15.1; palatine slits 7.5; maxillary toothrow 9.2; greatest width of  $m^1$  2.5.

**Otomys angoniensis elassodon** subsp. nov.

Type from Naivasha, British East Africa. No. 16684, Field Museum of Natural History. Adult female. Collected January 29, 1906, by E. Heller.

*Characters.* Similar to *Otomys angoniensis*, but paler and more grayish; molars narrower; nasals broadly expanded;  $m^3$  with seven laminae. Distinguished from *Otomys nyikæ canescens* by slightly darker color but especially by more elongate skull, narrower brain-case, and narrower molars.

*Measurements.* Type: Total length 270; head and body 183; tail vertebræ 87; hind foot (c. u., dry) 29; ear 21. Skull of type: Greatest length 41; basilar length 34.3; zygomatic breadth 21; length of nasals 17.7; greatest breadth of nasals 8.9; least inter-orbital breadth 4.5; depth from highest point of orbit to alveolar border at front of  $m^3$  13.8; postpalatal length 15; palatine slits 8; maxillary toothrow 8.2; greatest width of  $m^1$  2.4.

**Otomys nyikæ canescens** subsp. nov.

Type from Kijabe, British East Africa. No. 16682, Field Museum of Natural History. Adult male. Collected January 20, 1906, by E. Heller.

*Characters.* Similar in size and cranial characters to *Otomys nyikæ*, but color much paler and grayer; general effect of upperparts grizzled wood brown or broccoli brown instead of deep russet; nasals broadly expanded anteriorly;  $m^3$  with seven laminae. Color much as in *Otomys a. elassodon*, but slightly more grayish; skull shorter and broader; molars wider.

*Measurements.* Type and two topotypes, respectively. Total length 259, 255, 242; head and body 175, 165, 157; tail vertebræ 84, 90, 85; hind foot 29, 30, 27.5; ear 19.5, 21, 20. Skull of type: Greatest length 37.2; basilar length 30.9; zygomatic breadth 19.6; length of nasals 17.1; greatest breadth of nasals 8.5; least inter-orbital breadth 4.6; depth from highest point of orbit to alveolar border at front of  $m^3$  12.8; postpalatal length 13.8; palatine slits 6.8; maxillary toothrow 8.4; greatest width of  $m^1$  2.6.

**Arvicanthis barbarus convictus** subsp. nov.

Type from Voi, British East Africa. No. 17206, Field Museum of Natural History. Adult male. Collected April 16, 1906, by E. Heller.

*Characters.* Allied to *Arvicanthis barbarus spekei*, *A. b. zebra* and other forms having unbroken stripes. Size about as in *spekei* but

color decidedly more rufescent. Light stripes pale ochraceous buff and numbering 5–6 of the heavier or primary ones and 4–5 of the secondary ones on each side. Four definite primary dark stripes on each side, each divided by a secondary light stripe. Ears bright cinnamon rufous; upper side of fore and hind feet ochraceous buff; underparts creamy buff. Skull much as in *spekei* but molars slightly smaller: larger and more elongate than in *zebra* and *albolineatus*.

*Measurements.* Type: Total length 228; head and body 104; tail vertebrae 124; hind foot (c. u.) 26; ear 14.5. Skull of type: Greatest length 29.9; basilar length 23.2; zygomatic breadth 13.6; nasals 11.2; least interorbital breadth 4.5; postpalatal length 10.7; diastema 6.7; palatine slits 5.8; maxillary toothrow 5.2.

**Arvicanthis barbarus albolineatus** subsp. nov.

Type from Lukenya Mountain, British East Africa. No. 17194, Field Museum of Natural History. Adult female. Collected December 14, 1905, by E. Heller.

*Characters.* Most similar to *Arvicanthis barbarus zebra* but paler with lighter, more whitish stripes and decidedly paler ears. Somewhat similar to *A. b. spekei* but smaller with paler stripes, paler ears, and smaller molars. Arrangement of stripes about as in *zebra* and *convictus*; light dorsal stripes pale creamy, those on the sides still lighter, almost white; median dark stripe extending forward beyond the ears; forehead and sides of face coarsely grizzled creamy; ears buff or cream buff instead of ochraceous or tawny as in allied forms; fore and hind feet buffy white. Skull with relatively short broad braincase, small molars, and good-sized audital bullæ.

*Measurements.* Type: Total length 216; head and body 102; tail vertebrae 114; hind foot (c. u.) 24; ear 13. Skull of type: Greatest length 27.6; basilar length 21.1; zygomatic breadth 13.1; nasals 11.1; least interorbital breadth 4.3; postpalatal length 9.3; diastema 6.5; palatine slits 5.3; maxillary toothrow 5.1.

**Mus voi** sp. nov.

Type from Voi, British East Africa. No. 17062, Field Museum of Natural History. Adult male. Collected April 22, 1906, by E. Heller.

*Characters.* Allied to *Mus chrysophilus* but duller in color; general tone of upperparts dull russet rather than bright ochraceous; skull with more slender nasals, lighter and narrower zygomatic plate, slightly smaller audital bullæ, and slightly smaller molars. Upperparts dull russet brightening on the sides and face to tawny ochra-

ceous; a slight dusky marking in front of and narrowly bordering the anterior half of the eye; ears thinly clothed with tawny hairs; feet creamy white; underparts creamy white, the hairs slaty at their bases; tail dusky all around, annulations 10 per cm. Distinguished from *Mus hindei*, to which it has slight superficial resemblance, by its much longer tail and its smaller, flatter skull.

*Measurements.* Total length 315; head and body 154; tail vertebræ 161; hind foot (c. u.) 31; ear 19.5. Skull of type: Greatest length 36.3; basilar length 27.5; zygomatic breadth 17.9; nasals 14.7; least interorbital breadth 5.2; postpalatal length 12.6; palatine slits 8.2; diastema 8.2; upper toothrow 6.1.

#### *Mus niveiventris* sp. nov.

Type from Voi, British East Africa. No. 17099, Field Museum of Natural History. Adult female. Collected April 22, 1906, by E. Heller.

*Characters.* Allied to *Mus verreauxi* and *Mus brockmani*; tail decidedly longer than head and body; mammae 3-2=10. Tail shorter than in *brockmani* and color of upperparts very much darker. Slightly smaller than *verreauxi*; tail shorter; underparts entirely white with hairs white instead of slaty basally; skull smaller with relatively larger molars. Upperparts mixed buff or ochraceous buff and dusky producing a general effect of dull cinnamon to wood brown, in much worn pelage clear Mars brown; ears practically naked except near the edges where they are very thinly clothed with whitish hairs; underparts entirely creamy white to the roots of the hairs; dusky orbital very slight and scarcely evident.

*Measurements.* Type: Total length 262; head and body 109; tail vertebræ 153; hind foot (c. u.) 23; ear 17.5. Skull of type: Greatest length 30; basilar length 23.5; zygomatic breadth 14.2; nasals 13; least interorbital breadth 4.4; postpalatal length 10.2; diastema 8.1; palatine slits 7; maxillary toothrow 4.7.

#### *Mus niveiventris subfuscus* subsp. nov.

Type from Lake Elementaita, British East Africa. No. 16972, Field Museum of Natural History. Adult male. Collected February 9, 1906, by E. Heller.

*Characters.* Similar to *Mus. niveiventris* but slightly darker colored above and with hairs of underparts broadly slaty at bases except on middle of chin and throat; skull essentially as in *niveiventris* but braincase averaging broader. Smaller and shorter-tailed than *Mus verreauxi*; skull smaller; molars larger.

*Measurements.* Type: Total length 257; head and body 105; tail vertebræ 148; hind foot (c. u.) 24; ear 17. Skull of type: Greatest length 29; basilar length 22.9; zygomatic breadth 14.7; nasals 12; least interorbital breadth 4.5; postpalatal length 10; palatine slits 6.3; diastema 7.7; maxillary toothrow 4.7.

**Nasilio brachyrhynchus albiventer** subsp. nov.

Type from Lake Elementeita, British East Africa. No. 16663, Field Museum of Natural History. Adult male. Collected February 9, 1906, by E. Heller.

*Characters.* Most similar to *Nasilio brachyrhynchus malosæ* but underparts nearly white instead of buffy; eye ring narrower; sides of face without blackish markings; inside of ears thinly clothed with whitish instead of ochraceous hairs; upper lip and sides of "proboscis" whitish rather than buffy; general color of upperparts practically as in *malosæ*, decidedly darker than in *delamerei*.

*Measurements.* Type: Total length 224; head and body 116; tail vertebræ 108; hind foot (c. u.) 31; ear 22. Skull of type: Greatest length 33.3; basilar length 31.7; zygomatic breadth 18.7; nasals 13.5; least interorbital breadth 5.9; upper tooth series 17.4.













