

Article XII.—MAMMALS FROM BRITISH EAST AFRICA, COLLECTED BY THE TJÄDER EXPEDITION OF 1906.

BY J. A. ALLEN.

The present collection, numbering 205 specimens, represents 56 species and subspecies. The expedition landed at Mombasa, April 27, and arrived at Nairobi, by train over the Uganda Railroad, May 1. From this point a circuitous hunting trip was made to the Athi Plains, the trip extending eastward to Doinyo Sabuk. On returning to Nairobi, the march was continued near the line of the railroad north to Nakuru, and thence still northward nearly to Lake Baringo, passing on the west side of Lake Hannington to Nyamusi, and thence southeastward to Mount Kenia. From Mount Kenia the course was southwestward to Kijabe, and across the railroad to the southern edge of the Mau Escarpment. Later a short hunting trip was made from Maungu, on the lower part of the Uganda railroad.

The principal localities at which specimens were taken are various points on the Athi Plains, May 6 to May 28; Kijabe, June 2-14 and September 18; Elmenteita, June 26-30; Nakuru, July 2-10; Solai, July 24-29; Lake Hannington, August 1-3; Nyamusi, August 2-8; Laikipia, August 10-21; Guasinarock, August 22 to September 2; the western slopes of Mount Kenia, September 12; Nyeri, September 13; Maungu, October 12.

The collection consists principally of medium to large-sized species, it containing only a few rodents and insectivores, and no bats. Nineteen species and subspecies of Antelopes are represented, in several instances by series of from five to ten specimens of each. There is also a fine series of the Grant Zebra, and complete skeletons of the Giraffe and Rhinoceros. All the specimens, with few exceptions, were carefully measured in the flesh, ten measurements of each being taken with a view to their use in mounting the specimens for exhibition. Of these three — total length (in a straight line) from the tip of the nose to the end of the vertebræ of the tail, length of tail vertebræ, and height at shoulders — are generally given in the following annotations, together with the principal measurements of the adult skulls, as a contribution to a better knowledge of the species to which they relate.

The skins were so carefully prepared in the field that they reached the Museum in excellent condition, and surprisingly few of the skulls are defective. This is due to the care, skill, and tireless energy of Mr. Herbert Lang, of the American Museum, who accompanied the expedition as preparateur, and to whom is mainly due the large number and fine condition of the specimens brought in by the expedition. To Mr. Tjäder's skill with

the rifle is of course due the material that came into Mr. Lang's hands for preparation, during the four months the expedition was in the field. The expedition was rendered possible through the very liberal support given it by Mr. Samuel Thorne, of New York City, an esteemed patron of the Museum.

Although the mammal fauna of British East Africa has been liberally exploited during the last twenty-five years or more, as regards especially the larger species, and the recognition of subspecies has perhaps been carried to excess, the present collection has been found to contain a few forms that appear to have not yet been satisfactorily described; at least, I have been unable to recognize them from the very incomplete descriptions thus far published, many of the larger subspecies having been based on fragmentary material in the form of hunters' trophies. The smaller mammals of East Africa doubtless still offer a rich field for the expert collector, since they are easily overlooked by the ordinary explorer and big-game hunter.

1. ***Buffelus caffer* (Sparrrman).** CAPE BUFFALO.

One specimen, adult female, Solai, July 27. Total length, 3180 mm.; tail vertebræ, 800; height at shoulders, 1450. Skull, total length, 520; occipitonasal length, 435; condylobasal length, 480; zygomatic breadth, 43; greatest orbital breadth, 203; breadth above p^3 , 163; length of horns, along curvature, 625; greatest spread (outside measurement), 225; distance apart at tips, 426.

2. ***Taurotragus oryx livingstonei* (Selater).** LIVINGSTON ELAND.

Two specimens: an old female (now in the collection of Mr. Samuel Thorne), Laikipia, August 10; an old male, Guasinarock, August 27.

The collector's measurements are as follows: Total length, ♀ 2870, ♂ 3100 mm.; tail vertebræ, ♀ 610, ♂ 780; height at shoulders, ♀ 1360, ♂ 1580. The principal measurements of the male skull are: Total length, 470; occipitonasal length, 400; condylobasal length, 420; palatal length, 210; zygomatic breadth, 190; greatest breadth at orbits, 200; mastoid breadth, 78; length of nasals, 200; greatest width of nasals, 45; length of upper toothrow (at alveolar line), 141; length of horns (in straight line) 578.

3. ***Tragelaphus tjaderi* sp. nov.** TJÄDER BUSHBUCK.

Type, No. 27776, ♂ ad., Nakuru, British East Africa, July 6; Tjäder Expedition.

Top of head yellowish rufous; sides of head lighter and yellower; the nose as far back as the eyes blackish; a very small white spot about an inch below the

posterior canthus of the eye, and another larger white spot about three inches posterior to the angle of the mouth; upper lip in front, chin and throat pure white, forming an oval white patch about 125 mm. long and 45 wide, anteriorly extending to the lips; another oval white patch on the lower throat, about 65 mm. long with the greatest width 45 mm.; a crescent of white on the front of the lower neck, about 30 mm. wide antero-posteriorly and 110 in transverse extent; also a large white spot at inside of shoulder; middle of dorsal region yellowish brown, passing posteriorly into yellowish rufous on lower back and thighs, with a conspicuous crest of lengthened hairs extending from the shoulders to the base of the tail; sides of the body and ventral surface dusky chestnut, darker and less rufous than the mid-dorsal region; a narrow median line of white on lower abdomen; neck yellowish gray-brown all round, a little darker dorsally; fore limbs blackish brown externally, somewhat lighter internally as far as the carpal joint; thence distally a dusky front line to fetlocks where it expands and covers the whole foot, except the toes, which are creamy white in front, from hoofs to dewclaws, the whitish area divided mesially by a broad dusky line; sides of fore limb, from "knee" nearly to fetlocks, yellow orange; hind limbs dark brown to hocks, then bright yellowish-brown laterally, with a broad front stripe of cream white (nearly pure white mesially) extending from the hock nearly to the fetlocks, gradually narrowing distally; fetlocks and pasterns dark brown, with a pair of elongate yellowish white patches, divided by a narrow dusky line, on front of pasterns; tail bushy, rufous above, darkening apically, with the sides and lower surface clear white and the tip black. No white bands, stripes or spots on the body, and no white line from the eye.

Total length, 1450 mm.; head and body, 1230; tail vertebræ, 220; height at shoulders, 820. Skull, condylobasal length, 218; palatal length, 123; length of nasals, 85; greatest breadth, 97; mastoid breadth, 84; breadth above m^2 , 75; upper toothrow, 67; lower jaw, incisive border to angle, 173; height, angle to coronoid, 86; lower toothrow, 71; diastema, 50. Length of horns, following curvature, 215; distance between points, 95.

Represented only by the type, a fully adult male, with somewhat worn teeth.

This species is evidently closely related to *T. delamerei* Pocock, from Sayer, Somaliland, based on a single subadult male without horns (probably really a female), with which it agrees in most of the markings, but from which it differs in having the lower parts much darker instead of lighter than the back; the much larger size of the white patches on the foreneck; the long white band on the front of the hind leg (representing the dark stripe on the fore legs), instead of "hind legs colored like the fore legs," etc.; and the presence of a conspicuous dorsal crest. Geographical considerations also favor their being distinct.

4. *Oryx beisa* (Rüppell). BEISA ANTELOPE.

Three specimens, two adult males and a young male: Lake Hannington, 2 specimens, August 1; Guasinarock, 1 specimen, Sept. 1.

The two adult males measure respectively as follows: Total length, 2030, 2100 mm.; tail vertebræ, 440, 450; height at shoulders, 1200, 1260. The two skulls measure respectively: Greatest length (= occipitonasal),

380, 385, condylobasal, 345, 357; palatal, 223, 210; length of nasals, 152, 149; zygomatic breadth, 139, 136; upper toothrow, 106, 97; length of horns, 748, 793.

5. **Gazella granti granti** (Brooke). GRANT GAZELLE.

Seven specimens: Komarock, 3 males, two very old and one young adult, May 18; Zebra Farm, Athi Plains, 3 specimens, adult male and female and a young one about six days old, May 25 and 26; Nakuru, adult female, July 4.

The dark markings on the face, the flank stripes and pygal bands vary individually, all being well developed in young animals and more or less obsolete in both the old males and old females.

The external measurements are as follows:

| | | | | | | | |
|--------|----------|---------------|-------|-------------|------|----------------------|------|
| 27784, | old ♂, | total length, | 1760; | tail vert., | 290; | height at shoulders, | 980. |
| 27785, | “ ♂, | “ “ | 1630; | “ “ | 300; | “ “ | 930. |
| 27783, | adult ♂, | “ “ | 1480; | “ “ | 320; | “ “ | 940. |
| 27786, | old ♀, | “ “ | 1460; | “ “ | 270; | “ “ | 820. |

A young male, about six days old, differs from the adults in general coloration and in various details. The dorsal surface is grayish fulvous, slightly varied with black-tipped hairs, particularly on the thighs and hind limbs; pygal stripes faintly indicated by narrow transverse blotches of blackish hairs intermixed with pale grayish fulvous; flank stripes broad and black; no dark spot above the eye; crown dusky gray; no pygal white area, the color of the back being continued to the base of the tail, which for the basal inch is like the back, the rest of the tail intense black.

6. **Gazella granti notata** Thomas. THOMAS GAZELLE.

Four specimens, all from Laikipia plateau, at about 6000 feet altitude: Nyamusi, old male, Aug. 7; Laikipia, an old male and a young male, Aug. 11 and 20; Guasinarock, an old male, Aug. 25.

These specimens are rather deeper colored or more rufous than the series of true *granti* from the plains to the southward, and present a similar range of individual variation in color, the flank stripes being absent or obsolete in the old examples and strongly marked in the single young male. The external measurements of two middle-aged males and a young adult male are as follows:

| | | | | | | | |
|--------|----|---------------|-------|-------------|------|----------------------|------|
| 27791, | ♂, | total length, | 1730; | tail vert., | 260; | height at shoulders, | 900. |
| 27792, | ♂, | “ “ | 1680; | “ “ | 240; | “ “ | 930. |
| 27793, | ♂, | “ “ | 1540; | “ “ | 300; | “ “ | 950. |

The Laikipia plateau specimens are rather smaller than the plains specimens, with less divergent horns, as shown by the following measurements of the horns and skulls of the males of each.

Gazella granti granti.

| | Horns. | | | Skulls. |
|--------------------|---------|------------------------|------------------------|----------------------|
| | Length. | Distance between tips. | Circumference at base. | Condylobasal length. |
| 27784 | 600 | 414 | 178 | 254 |
| 27785 | 528 | 327 | 176 | 262 |
| 27783 ¹ | 523 | 257 | 153 | 254 |

Gazella granti notata.

| | | | | |
|-------|-----|-----|-----|-----|
| 27791 | 600 | 173 | 175 | 242 |
| 27792 | 548 | 223 | 163 | 238 |
| 27793 | 460 | 168 | 170 | 240 |

7. *Gazella thompsoni* Günther. THOMPSON GAZELLE.

Six specimens, all males, of which four are old and two young; two are represented by skulls only. The localities and dates are: Nairobi, May 6; Athi River Station, May 8; Komarock, May 18; Zebra Farm, Athi Plain, May 25 and 26 (2 specimens); Nyeri, Sept. 13.

Measurements are given of three of the adult males, as follows:

| | | | | | |
|----------------------|-------|-------------|------|---------------------|------|
| 27779, total length, | 1140; | tail vert., | 230; | height at shoulder, | 640. |
| 27778, " " " | 1210; | " " " | 210; | " " " | 680. |
| 27780, " " " | 1220; | " " " | 220; | " " " | 700. |

Measurements of Skulls.

| | 27777 | 27778 | 27780 | 27779 |
|--|-------|-------|-------|-------|
| | ♂ | ♂ | ♂ | ♂ |
| Condylobasal length | 192 | 192 | 186 | 182 |
| Zygomatic breadth | 79 | 83 | 81 | 81 |
| Interorbital breadth | 58 | 57 | 55 | 57.5 |
| Greatest orbital breadth | 82 | 88 | 85 | 86 |
| Breadth at lachrymal fossæ | 32 | 35 | 30 | 31 |
| Length of horns over curvature | 302 | 312 | 332 | 252 |
| " " " in straight line | 298 | 304 | 325 | 245 |
| Distance between tips | 98 | 97 | 110 | 95 |

8. *Æpyceros melampus* (Lichtenstein). PALLAS.

Nine specimens: Big Tree Camp, Athi Plain, 3 specimens, adult male and female, and an embryo, May 22; Zebra Farm, Athi Plain, 1 adult male, skin and skull, May 25; Nyamusi, 1 male, August 2; Laikipia, 1 old male skull, August 18; Guasinarock, 3 specimens, an adult female and 2 young males, August 30.

In two of the 7 skins, there is a very distinct brownish nose stripe; in

¹ Young adult.

two others the nose stripe is faint, and in the others it is quite absent. The nose stripe is strongest in two of the Guasinarock specimens, while in the third specimen from this locality it is nearly obsolete. The Guasinarock examples strongly approach the face markings of *Æ. petersi*, including the brownish streak in front of the eye. Apparently *Æ. petersi* is merely a subspecies of *Æ. melampus*.

The external measurements of three old males and two old females are as follows:

| | | | | | | | |
|---------------------|----|---------------|-------|-------------|------|---------------------|------|
| 27697, ¹ | ♂, | total length, | 1700; | tail vert., | 310; | height at shoulder, | 910. |
| 27794, ² | ♂, | " " | 1750; | " " | 360; | " " | 920. |
| 27795, ³ | ♂, | " " | 1630; | " " | 340; | " " | 920. |
| 27799, ⁴ | ♀, | " " | 1530; | " " | 310; | " " | 860. |
| 27801, ⁵ | ♀, | " " | 1600; | " " | 300; | " " | 870. |

The skull and horns of the three males show considerable individual variation. They are all fully adult, with the teeth much worn, but the largest one of the three is apparently somewhat older than the other two, the skull being more heavily ossified and the horns thicker and heavier.

Mr. Oldfield Thomas characterized, some years ago (P. Z. S., 1892, pp. 553, 554), a subspecies of *Æpyceros melampus* from Zomba, British Central Africa, as *Æ. m. johnstoni*, on the basis of shorter horns and narrower, more slender skull. In the following table of the principal measurements of our three males and two females, the measurement given by Thomas of a skull of *Æ. melampus typicus* (from Latakoo, Bechuanaland) and a skull of *Æ. m. johnstoni* are added for convenience of comparison.

Measurements of Skulls and Horns.

| Skulls. | 27697 | 27795 | 27794 | 27801 | 27799 | Æ. m. typ. | Æ. m. john- stoni. |
|---|-------|-------|-------|-------|-------|---------------|--------------------------|
| | ♂ | ♂ | ♂ | ♀ | ♀ | ♂ | ♂ |
| Condylbasal length | 250 | 243 | 253 | 251 | 233 | 260 | 255 |
| Palatal length | 136 | 130 | 145 | 146 | 139 | — | — |
| Zygomatic breadth | 108 | 95 | 96 | 96 | 98 | — | — |
| Interorbital breadth | 80 | 70 | 77 | 73 | 70 | 87 | 74 |
| Greatest breadth at orbits | 114 | 112 | 113 | 102 | 103 | 127 | 113 |
| Breadth just anterior to orbits | 72 | 70 | 71 | 66 | 65 | 74 | 60 |
| Greatest breadth at m ¹⁻² | 78 | 71 | 72 | 70 | 71 | 75 | 69.5 |
| Breadth between alveoli of p ¹ | 30 | 29 | 33 | 29 | 31 | 34 | 29 |
| <i>Horns.</i> | | | | | | | |
| Length along curves behind | 592 | 530 | 605 | — | — | 569 | 402 |
| Length in straight line | 504 | 474 | 448 | — | — | 477 | 338 |
| Greatest distance apart | 445 | 328 | 405 | — | — | 390 | 250 |
| Distance between tips | 403 | 313 | 323 | — | — | 315 | 250 |

¹ Athi Plain.² Nyamusi.³ Kijabe.⁴ Athi Plain.⁵ Guasinarock.

9. *Cervicapra redunca wardi* Thomas. WARD REEDBUCK.

Six specimens, 4 adult females, a young male and a young female: Kijabe, June 6; Elmenteita, June 28 and 29; and Nakuru, July 10.

Three adult females measured in the flesh as follows:

| | | | | | | |
|-----------|---------------|-------|-------------|------|---------------------|------|
| 27805, ♀, | total length, | 1180; | tail vert., | 200; | height at shoulder, | 810. |
| 27802, ♀, | " | " | 1320; | " | " | 720. |
| 27803, ♀, | " | " | 1350; | " | " | 740. |

Four adult female skulls range in total length from 222–229 (220); condylobasal length, 195–200 (197.5); greatest breadth (posterior border of orbits), 88–100 (94).

10. *Kobus ellipsiprymnus* (Ogilby). WATERBUCK.

Five specimens, of which 2 (♂ adult and ♂ juv.) were collected at Nakuru, July 2; 1 (♀ ad.) Solai, July 29; 1 (♀ ad.), Laikipia, August 18; 2 (♂ ad.), Guasinarock, Sept. 1 (only one of these is now in the collection). The collector's measurements of the five adults are:

| | | | | | | |
|-------|---------------|-------|-------------|------|---------------------|-------|
| ♂ ad. | total length, | 2310; | tail vert., | 370; | height at shoulder, | 1300. |
| ♂ | " | " | 2550; | " | " | 1190. |
| ♂ | " | " | 2550; | " | " | 1300. |
| ♀ | " | " | 2090; | " | " | 1200. |
| ♀ | " | " | 2270; | " | " | 1210. |

11. *Madoqua langi* sp. nov. LANG DIK-DIK.

Type, No. 27832, ad. ♀, Elmenteita, June 29; Tjäder Collection; collected by Mr. Herbert Lang, for whom the species is named.

A little larger than *M. kirki*, and very similar in coloration, but cranial characters radically different. Nasals not reduced as in *M. kirki*, rostrum shorter and premaxillæ not decurved at tip.

Total length, 710 mm.; tail vertebræ,—; height at shoulders, 440. Skull, total length, 119; condylobasal, 103; palatal, 59; greatest breadth, 59; least interorbital, 42; postorbital, 42; mastoid, 39; nasals, length on median line, 24; width at middle, 17; palatal width at m¹, 20; upper toothrow, 37; tip of premaxillæ to p¹, 25; lower jaw, front border of mandible to angle, 88; height, angle to top of coronoid, 44; lower toothrow, 40.

In the coloration of the dorsal surface this species is indistinguishable from *M. kirki*; the ventral surface is pale fawn instead of clear white, strong anteriorly and fading out to nearly white posteriorly; cheeks and sides of neck strong fulvous instead of fulvous gray, and top of head and crown more strongly varied with yellowish rufous.

Strictly comparable skulls of the two species differ greatly in every detail. The skull of *M. langi* is much larger, with much heavier dentition, relatively as well as absolutely. The ventral outline of the rostrum is straight, not arched as in *M. kirki*; the nasals are nearly three times larger, thus greatly lengthening the antorbital portion of the skull; the palatal surface is flat, instead of deeply depressed in the middle, and the premaxillæ are broader and less depressed at the front margin. The distance from the front of the orbit to the end of the premaxillæ is 23 mm.; in *M. kirki* the corresponding measurement is 12 mm. The premaxillæ extend backward to the nasals and are distinctly separated from the maxillæ by a suture; in *M. kirki* the premaxillæ terminate opposite p^1 , or become at this point enclosed by the maxillæ. In a young specimen of *kirki* still retaining the milk dentition the premaxillæ can be traced back opposite to the middle of dp^2 , where they become covered by the evident closing over them of the maxillæ.

Madoqua cavendishi Thomas, described from near the type locality of *M. langi*, from a young male still retaining the milk dentition, is a much larger animal and very differently colored, being dark fawn above instead of yellowish gray; the skull of "an immature male with the milk dentition still in place," has a total length of 123 mm., while a fully adult female skull of *M. langi* has the total length only 120; judging by the size of skulls of *M. kirki* of corresponding ages, an adult skull of *M. cavendishi* should have a total length of 135 mm.

12. *Madoqua (Rhynchotragus) kirki* (Günther). KIRK DIK-DIK.

Six specimens: Nyamusi, 4 specimens, August 2; Guasinarock, 2 specimens, Sept. 2. All are adult except one; one lacks external measurements. The collector's measurements of the four adults are as follows:

| | | | | | | |
|-----------|---------------|------|-------------|-----|------------------|------|
| 27836, ♂, | total length, | 610; | tail vert., | 20; | shoulder height, | 390. |
| 27835, ♂, | " " | 600; | " " | 30; | " " | 390. |
| 27833, ♂, | " " | 570; | " " | 30; | " " | 400. |
| 27831, ♀, | " " | 650; | " " | 25; | " " | 400. |

Three male skulls and one female skull measure as follows:

| | | | | | | | | |
|-----------|---------------|------|---------------|-----|--------------|-----|-----------------|-----|
| 27835, ♂, | total length, | 108; | condylobasal, | 93; | gr. breadth, | 57, | upper toothrow, | 35. |
| 27836, ♂, | " " | 111; | " " | 94; | " " | 54; | " " | 36. |
| 27833, ♂, | " " | 111; | " " | 95; | " " | 58; | " " | 35. |
| 27831, ♀, | " " | 119; | " " | 96; | " " | 55; | " " | 34. |

13. **Nesotragus moschatus** *Von Düben*. ZANZIBAR ANTELOPE.

One specimen, an adult male, Kijabe, June 6. Total length, 690 mm.; tail vertebræ, 80; height at shoulders, 360. Skull, condylobasal length, 105; greatest breadth, 60; length of horns, 60.

14. **Raphicerus neumanni** (*Matschie*). NEUMANN STEINBOCK.

One specimen, a middle-aged adult male, Komarock, May 16. Total length, 810 mm.; tail vertebræ, 50; height at shoulder, 470. Skull, condylobasal length, 122; greatest breadth, 70; length of horns, 102.

15. **Oreotragus schillingsi** *Neumann*. SCHILLINGS KLIPSPRINGER.

Two specimens, adult males, Nakuru, July 3 and 10. Of one of them no measurements were taken; measurements of the other are: Total length, 930 mm.; head and body, 850; tail vertebræ, 80; height at shoulders, 510. Skull, total length, 140 mm.; condylobasal length, 122; greatest breadth, 83; length of horns, 87.

16. **Cephalophus grimmia** (*Linnaeus*). COMMON DUIKER.

One specimen, a young male (last molar not fully up), Solai, July 25.

17. **Connochætes taurinus albojubatus** *Thomas*. WHITE-BEARDED GNU.

Two specimens, young male and adult female, Stony Athi River Bridge, Oct. 10. (No external measurements).

The female has the throat beard white, and the mane black mixed with white hairs on the outer edges. The young male has the throat beard mixed gray and white, giving the effect of whitish gray; there is a strongly marked rusty gray band across the face just above the eyes, representing the whitish face band in *C. taurinus johnstoni* Sclater, and the mane is black edged with white. This specimen has the appearance of an intergrade between *C. t. albogularis* and *C. t. johnstoni*, indicating that *albogularis* is merely a subspecies of *C. taurinus*, as originally regarded by Thomas.

18. **Bubalis cokei** (*Günther*). COKE HARTEBEEST.

Eight specimens, of which 6 are adult males; the others are an adult and a young female: Komarock, 4 males, May 16-18; Zebra Farm (Athi Plain), 1 male, May 26; Kijabe, 2 specimens (♂ and ♀), June 2 and Sept. 18; Nakuru, 1 specimen (♀ juv.), July 2.

External Measurements.

| | | | | | | | |
|--------|---|-----------------|-------|-------------|------|----------------------|-------|
| — | ♂ | , total length, | 2100; | tail vert., | 430; | height at shoulders, | 1250. |
| 27819, | ♂ | , “ “ | 2090; | “ “ | 430; | “ “ | 1220. |
| 27820, | ♂ | , “ “ | 2050; | “ “ | 410; | “ “ | 1290. |
| 27817, | ♂ | , “ “ | 2010; | “ “ | 440; | “ “ | 1210. |
| 27816, | ♂ | , “ “ | 1970; | “ “ | —; | “ “ | 1250. |
| 27821, | ♂ | , “ “ | 1970; | “ “ | 400; | “ “ | 1180. |
| 27818, | ♀ | , “ “ | 1940; | “ “ | 490; | “ “ | 1150. |

Measurements of Skulls.

| | 27822 | 27821 | 27820 | 27816 | 27817 | 27819 | 27818 |
|--------------------------------------|-------|-------|-------|--------|-------|-------|-------|
| | ♂ | ♂ | ♂ | ♂ juv. | ♂ | ♂ | ♀ |
| Greatest length | 445 | 436 | 438 | 430 | 428 | 405 | 417 |
| Occipitonasal length | 407 | 408 | 410 | 409 | 406 | 387 | 400 |
| Condylbasal length | 371 | 364 | 368 | 364 | 367 | 351 | 364 |
| Palatal length | 218 | 218 | 228 | 213 | 217 | 213 | 219 |
| Zygomatic breadth | 136 | 126 | 125 | 122 | 129 | 123 | 119 |
| Least interorbital breadth | 97 | 90 | 90 | 84 | 91 | 81 | 81 |
| Length of nasals | 196 | 203 | 196 | 204 | 191 | 191 | 184 |
| Breadth of nasals | 38 | 35 | 32 | 30 | 32 | 30 | 31 |
| Upper tooththrow | 92 | 85 | 94 | 95 | 90 | 90 | 96 |

Measurements of Horns.

| | 27822 | 27821 | 27820 | 27816 | 27817 | 27819 | 27818 |
|---|-------|-------|-------|--------|-------|-------|-------|
| | ♂ | ♂ | ♂ | ♂ juv. | ♂ | ♂ | ♀ |
| Length along convexity | 410 | 348 | 343 | 375 | 390 | 360 | 320 |
| Circumference at base | 258 | 255 | 210 | 220 | 243 | 227 | 185 |
| Spread (outside) at outer angle | 348 | 412 | 391 | 382 | 395 | 380 | 374 |
| Distance below points | 356 | 350 | 345 | 426 | 265 | 270 | 353 |

This fine series of specimens, all middle-aged or old adults except one (No. 27816, a male with the permanent premolars just coming into use), is of interest as showing the considerable range of individual variation in the size and shape of the horns. This is indicated in respect to the inflection of the points, whether inward or outward, by the lower two lines of the above table of measurements. When the measurements in the lower line exceed those of the line above it, the tips of the horns are directed outward; when they are less, they are directed inward. Thus in No. 27816 they markedly diverge, while in Nos. 27817 and 27821 they even more markedly converge, and thus strongly contrast with most of the others, which are in varying degrees intermediate.

The color variation in this series is comparatively slight.

19. *Bubalis jacksoni* Thomas. JACKSON HARTEBEEST.

Three specimens: 2 adult females, Solai, July 26 and 28; Lake Han-
nington, 1 old male, August 3.

The two females measure, respectively: Total length, 2230, 2100;
tail vertebræ, 580, 530; height at shoulders, 1300, 1280. The male measures,
total length, 2350; tail, 555; height at shoulders, 1350.

The principal dimensions of the skulls are: Total length (base of horns
to tip of premaxillæ), ♂ 520, ♀ 470, ♀ 475; occipitonasal length, ♂ 455,
♀ 434, ♀ 427; condylobasal length, ♂ 490, ♀ 385, ♀ 385; palatal
length, ♂ 247, ♀ 235, ♀ 235; zygomatic breadth, ♂ 136, ♀ 130, ♀ 134;
least interorbital breadth, ♂ 89, ♀ 88, ♀ 84; length of nasals, ♂ 225,
♀ 218, ♀ 219; breadth of nasals at edge of premaxillæ, ♂ 37, ♀ 32, ♀ 33.5;
upper toothrow, ♂ 101, ♀ 92, ♀ 98; length of horns following convexity
(on side), ♂ 510, ♀ 415, ♀ 365; circumference at base, ♂ 277, ♀ 215,
♀ 215; distance between points, ♂ 196, ♀ 188, ♀ 197.

20. *Giraffa camelopardalis rothschildi* Lydekker. ROTHSCHILD GIRAFFE.

One specimen, a very old male, skin and complete skeleton, Maungu,
Oct. 12.

Total height to top of horns, 5200 mm.; height at shoulders, 3115;
total length, 4730; tail vertebræ, 940.

Some of the principal measurements of the skull are as follows: Occi-
pionasal length, 573; condylobasal length, 710; palatal length (on median
line), 382; palatal breadth at m^1 , 95; zygomatic breadth, 240; mastoid
breadth, 178; orbital breadth (posterior border of orbits), 305; length of
horn-cores (above midline of cranium), 155; length of premolar-molar
series, 154; premolars, 69.

Owing to excessive exostosis, numerous rough bony excrescences have
been developed, there being three on the median line in front of the frontal
horn, the anterior one one-half as large as the frontal horn itself; there is a
small one between the bases of the main horns, and two others symmetri-
cally placed, one on either side of the skull, about four inches above and
obliquely posterior to the orbits; also two prominent bony knobs on the
inner surface of each of the main (parietal) horns, those on the left being
much larger than those on the right. There are also minor but prominent
protuberances of bone on the sides of the face and on each malar bone.
The bases of the two posterior (occipital) horns were, according to the
collector, Mr. Lang, still cartilaginous, and no indication of their presence

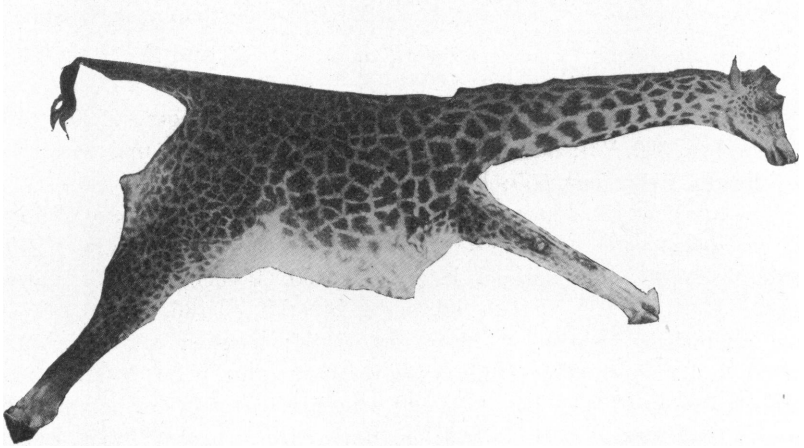


Fig. 1. *Giraffa camelopardalis tippelskirchi* Matschie. No. 27752, ♀ juv., Komarock, May 13.

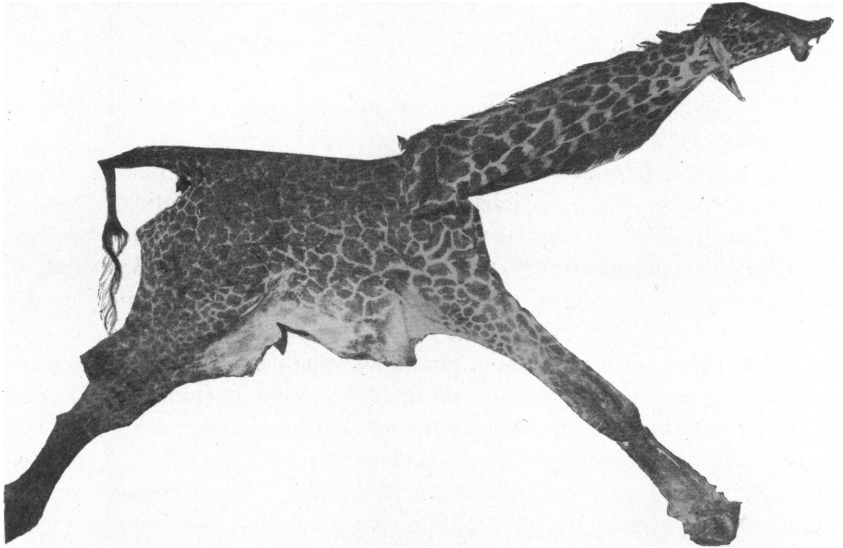


Fig. 2. *Giraffa camelopardalis rothschildi* Lydekker. No. 27753, ♂, very old adult, Maunga, Oct. 12.

is shown by the occipital crest. Externally there were five well-developed horns, the occipital pair, however, being much smaller than those in front of them.

The markings on the body are coarse and large, with the light interspaces very narrow. (See Fig. 1.)

21. *Giraffa camelopardalis tippelskirchi Matschei*. TIPPELSKIRCH GIRAFFE.

One specimen, a young female, Komarock, May 13. Total height, 3910 mm.; height at shoulders, 2580; total length, 3730; tail vertebræ (not given).

The sutures of the skull are still widely open and the surface of the bones is smooth. The premolars are none of them fully up, although p^3 has nearly reached its full height, while the crown of p^1 is only just through the gum. Occipitonasal length of the skull, 572 mm.; condylobasal length, 572; greatest width at orbits, 284.

The markings are well shown in the accompanying Fig. 2, from a photograph of the skin. They agree closely with those of a specimen (also a young female) figured by Lydekker,¹ from Lake Eyassi.

22. *Phacochoerus africanus (Gmelin)*. WART HOG.

Four specimens, one each from the following localities; Big Tree Camp (Athi Plains), adult female, May 22; Elmenteita, young female, June 27; Solai, an old male, July 29; Guasinarock, young male, August 22. Also an embryo, from the female first mentioned.

The external measurements of the old male and the adult female are, respectively, total length, ♂ 1650, ♀ 1470 mm.; head and body, ♂ 1260, ♀ 1100; height at shoulders, ♂ 790, ♀ 650. The skulls of these specimens measure: Total length, ♂ 435, ♀ 360; condylobasal, ♂ 340, ♀ 277; palatal, ♂ 247, ♀ 197; zygomatic breadth, ♂ 208, ♀ 173; interorbital breadth, ♂ 123, ♀ 116; mastoid breadth, ♂ 146, ♀ 118; upper tooth-row, ♂ 90, ♀ 84; length of last molar (at alveolar border), ♂ 37, ♀ 41; greatest spread of upper canines, ♂ 287, ♀ 188; length measured on convexity, ♂ 210, ♀ 123; lower canines, spread at tips, ♂ 252, ♀ 182; length along anterior border, ♂ 120, ♀ 82.

The dental formula of the old male is $i. \frac{1}{2}, c. \frac{1}{1}, pm. \frac{2}{1}, m. \frac{3}{3} = \frac{14}{4} = 28$; of the old female, $i. \frac{1}{3}, c. \frac{1}{1}, pm. \frac{2}{1}, m. \frac{3}{3} = \frac{14}{4} = 30$. In the female m_1 is much reduced in size and greatly worn. In the young male (last molar not

¹ Proc. Zool. Soc. London, 1904, I, p. 214 (text-fig. 28).

fully exposed posteriorly) the dental formula is the same as in the female. In the skull of the young female (about half grown) the number of teeth is the same as in the adult, but the premolars and incisors all belong to the deciduous set. The dentition of the adult female agrees entirely with the illustration of the dentition of *Phacochærus* given by Owen (Odontog., pl. 141, fig. 2), and that of the young female, with the milk teeth still in place, with the same author's illustration (*ibid.*, fig. 1). In short, the dentition in the present series of *Phacochærus* conforms entirely with the formulas and detailed description of the dentition of this genus given by Owen in his 'Odontography,' published some sixty years ago. Yet a different dental formula is given in most modern works (giving 34 to 36 teeth), which may be correct for *P. æthiopicus*, but apparently is not correct for *P. africanus*.

23. *Equus burchelli granti* Winton. GRANT ZEBRA.

Eleven specimens were obtained, several of them from near the type locality (Theca River, upper Tana River), collected as follows:

Lukania, near Athi River station, adult male and female, May 9; Zebra Farm, near Athi River station, and Kijabe-Naivaska, adult and young, May 26; Elmenteita, two old males, May 27 and 28; Nakuru, adult female, July 6; Laikipia, two adult males, August 18 and 20.

The external measurements of seven adults are as follows:

| | | | | | | |
|-----------|---------------|-------|-------------|------|----------------------|-------|
| 27747, ♀, | total length, | 2460; | tail vert., | 430; | height at shoulders, | 1270. |
| 27744, ♂, | " " | 2400; | " " | 450; | " " | 1290. |
| 27742, ♂, | " " | 2350; | " " | 400; | " " | 1140. |
| 27749, ♂, | " " | 2320; | " " | 380; | " " | 1250. |
| 27750, ♂, | " " | 2440; | " " | 400; | " " | 1200. |
| 27743, ♂, | " " | 2510; | " " | 400; | " " | 1260. |
| 27749, ♀, | " " | 2420; | " " | 350; | " " | 1230. |

The principal measurements of the skulls are:

| | | | | | | |
|------------------------|---------------|------|----------------------|------|---------------|------|
| 27743, ♂, | total length, | 520; | condylobasal length, | 450; | zyg. breadth, | 194. |
| 27744, ♂, | " " | 530; | " " | 465; | " " | 193. |
| 27742, ♂, | " " | 507; | " " | 445; | " " | 193. |
| 27749, ♂, | " " | 502; | " " | 445; | " " | 192. |
| 27750, ♂, | " " | 520; | " " | 455; | " " | 193. |
| 27745, ♀, | " " | 507; | " " | 450; | " " | 192. |
| 27747, ¹ ♀, | " " | 520; | " " | 445; | " " | 187. |
| 27751, ♀, | " " | 507; | " " | 445; | " " | 184. |

The variations in markings and coloration in this series of specimens is quite noteworthy, as might be expected in a species in which the markings

¹ Young adult; p³ and m³ just breaking through the alveoli.

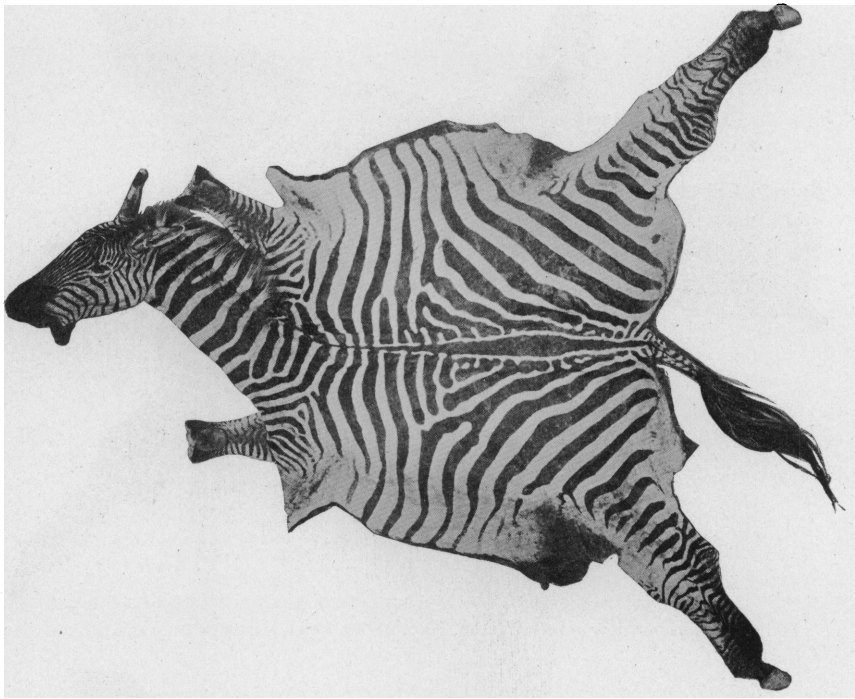


Fig. 3. *Equus burchelli granti* Winton. No. 27742, ♂ ad., Lukania, Athi Plains, May 9.

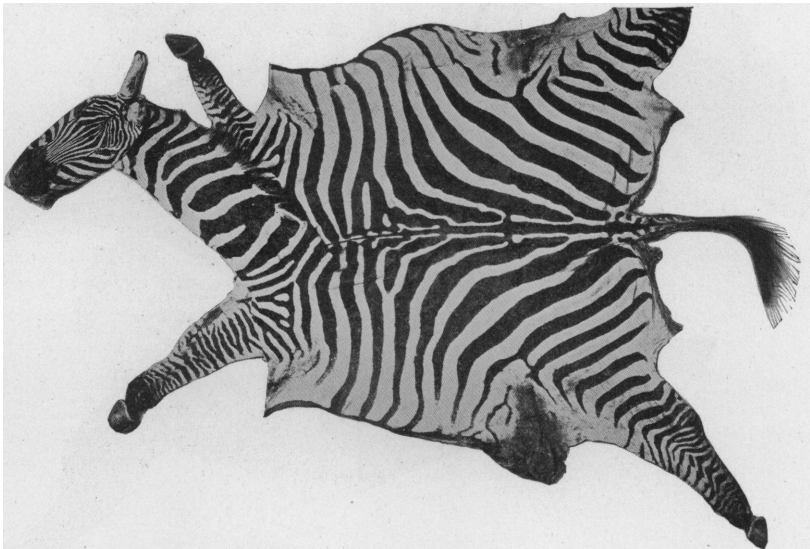


Fig. 4. *Equus burchelli granti* Winton. No. 27743, ♂ ad., Zebra Farm, Athi Plains, May 26.

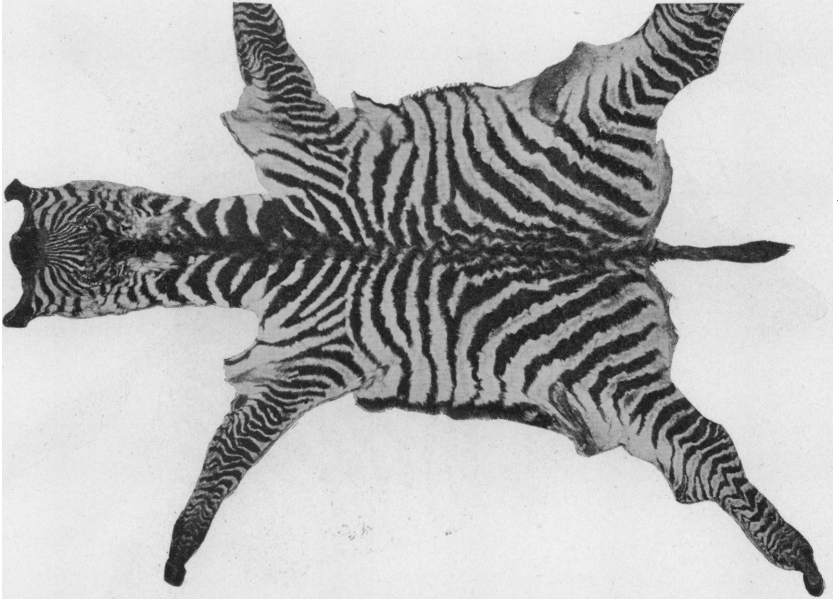


Fig. 5. *Equus burchelli granti* Winton. No. 27746, foetal specimen from No. 27745 (See Fig. 6).

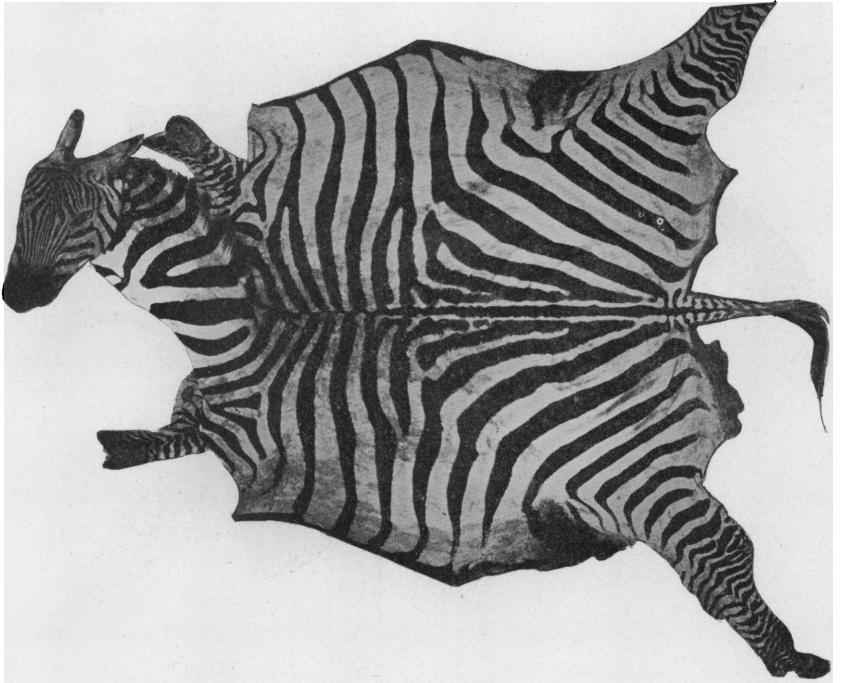


Fig. 6. *Equus burchelli granti* Winton. No. 27745, ♀ ad., Elmenteita, June 29.

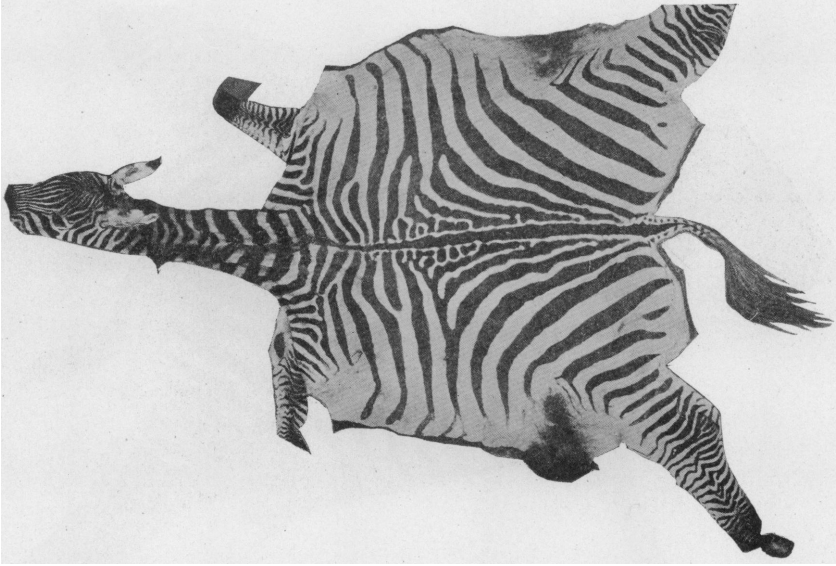


Fig. 7. *Zebra burchelli granti* Winton. No. 27747, ♂ ad., Elmenteita, June 27.

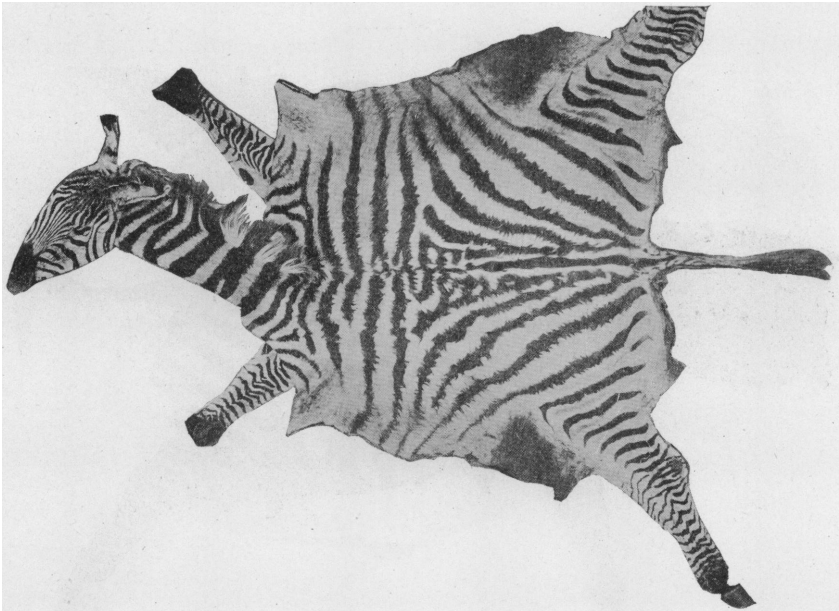


Fig. 8. *Zebra burchelli granti* Winton. No. 27748, ♂ juv., Nakuru, July 6.

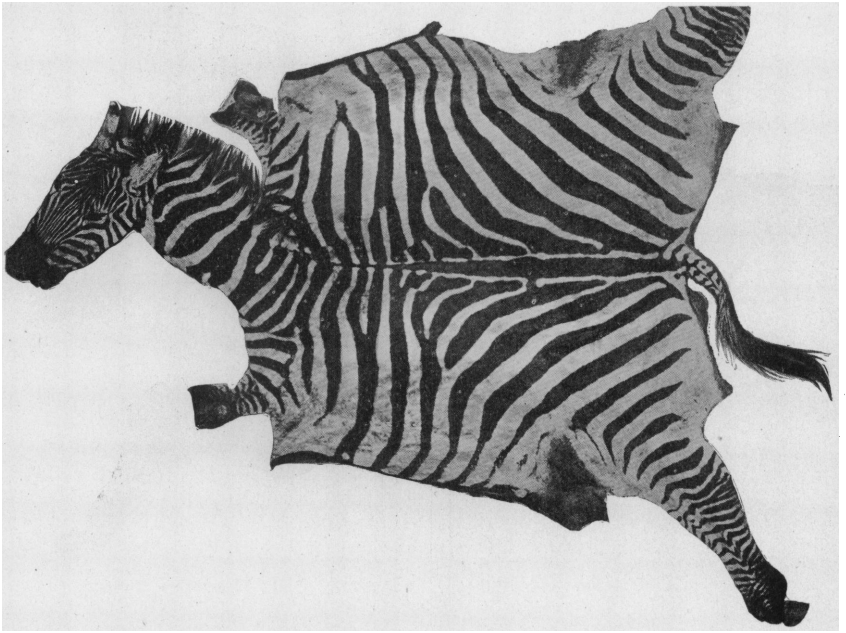


Fig. 9. *Equus burchelli granti* Winton. No. 27750, ♂ ad., Laikipia, August 20.

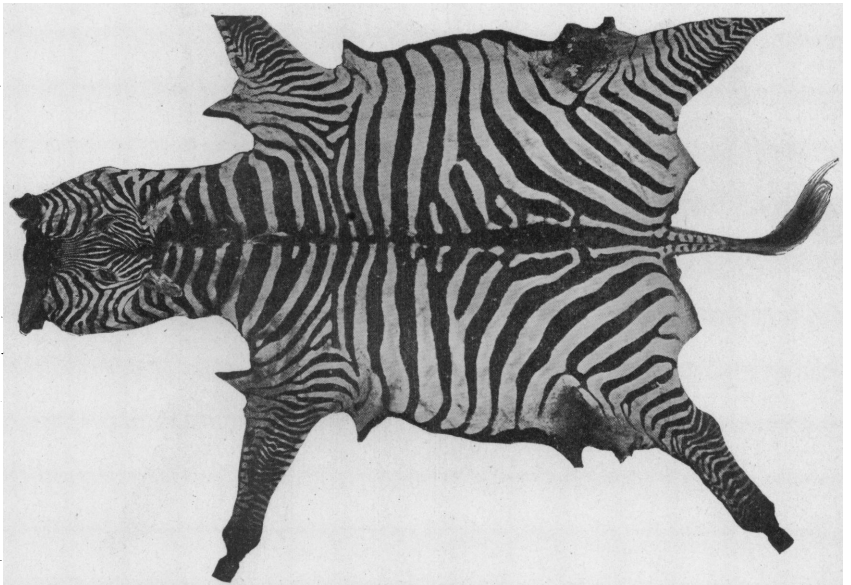


Fig. 10. *Equus burchelli granti* Winton. No. 27751, ♂ ad., Kijabe-Naivaska, June 26.

consist of alternating black and white stripes. The dark stripes vary in color from intense black to dull brown-black; the general ground color of the body from clear white to cream-white; the nose patch from tan-color to dark brownish black. Inasmuch as the dark stripes usually differ more or less on the two sides of the same individual, a wide range of individual variation would be expected, and its extent is well shown in the accompanying text figures (Figs. 4-10). In several specimens there are quite distinct shadow stripes, but as a rule they are absent.

24. *Rhinoceros bicornis* Linnæus. TWO-HORNED RHINOCEROS.

Seven specimens: Kijabe, 4 specimens, June 10-12; Solai, 2 specimens, July 24 and August 1; Kenia, skull only, Sept. 10.

They include a skin and skeleton of an unborn young, a skin and complete skeleton of an adult male, a head skin and skull of an old male, and three separate skulls, of which two are half grown young and the other a young adult. The external measurements taken by Mr. Lang from the freshly killed specimens are as follows:

| |
|--|
| 27760, unborn, total length, 1210; tail vert., 240; height at shoulder, 590. |
| 27759, ♀ juv., " " 2550; " " 590; " " " 1280. |
| 27754, ♂ juv., " " 2760; " " 470; " " " 1290. |
| 27755, ♀ juv., " " 3420; " " 690; " " " 1580. |
| 27758, ♂ ad., " " 3440; " " 590; " " " 1640. |
| 27757, ♂ ad., " " 3900; " " 640; " " " 1500. |
| 27756, ♂ ad., no measurements. |

The following are the principal measurements of two old adult and two young adult skulls:

Measurements of Skulls.

| | 27757 ♂ juv. | 27756 ♀ juv. | 27755 ♀ old | 27758 ♂ old |
|---|-----------------|-----------------|----------------|----------------|
| Occipitonasal length | 573 | 550 | 523 | 617 |
| Condylobasal length ¹ | 560 | 548 | 518 | 567 |
| Length of palatines from notch to front border | 205 | 205 | 195 | 211 |
| Breadth of palatines at m ¹ | 85 | 85 | 80 | 84 |
| Zygomatic breadth | 336 | 340 | 329 | 335 |
| Least postorbital breadth | 105 | 110 | 98 | 138 |
| Breadth at lachrymal processes | 258 | 247 | 223 | 268 |
| Mastoid breadth | 253 | 233 | 223 | 247 |
| Distance between tips (outside) of paroccipital processes | 145 | 138 | 138 | 127 |

¹ To maxillo-premaxillary suture, the premaxillaries in two of the four specimens having been lost.

Measurements of Skulls (continued).

| | 27757 ♂ juv. | 27756 ♀ juv. | 27755 ♀ old | 27758 ♂ old |
|--|-----------------|-----------------|----------------|----------------|
| Distance between tips (outside) of postglenoid processes | 150 | 139 | — | 152 |
| Length of nasals | 200 | 188 | 193 | — ² |
| Breadth of nasals at base | 160 | 150 | 152 | — |
| Breadth near tips | 144 | 117 | 102 | 145 |
| Length of molar-premolar series | — ¹ | — ¹ | 258 | 254 |
| Length of premolar series | 134 | 135 | 128 | 150 |

25. *Elephas africanus* Blumenbach. AFRICAN ELEPHANT.

Head skin (now mounted) and skull of a male, Nakuru, July 3. External measurements. Total length, 7400 mm.; height at shoulders, 3150; tail vertebræ, 1500.

26. *Procavia jacksoni* Thomas. JACKSON DASSIE.

One specimen, adult female, Kijabe.

This specimen agrees very closely, as regards coloration, size, and cranial characters, with Thomas's *P. jacksoni*, based on a youngish female (stage vii), from Ravine Station, British East Africa.

27. *Procavia crawshayi* THOMAS. CRAWSHAY DASSIE.

Two specimens, eastern slope of Mount Kenia (alt. 11,000 feet): an old female (stage viii) which contained on embryo; Kijabe (alt. 7,500 feet), a young male (stage v).

28. *Procavia brucei* (Gray). BRUCE DASSIE.

I refer to the *P. brucei* group 4 specimens collected as follows:

Elmenteita, 3 specimens, June 30; Kijabe, 1 specimen, August.

The total length of an adult male (stage viii) from Elmenteita, in the flesh, is 500 mm. The principal measurements of the skulls of this and another old male (both stage viii) from Elmenteita are respectively as follows: Total length, 92, 91; condylobasal length, 86, 84; palatal, 48, 47; greatest zygomatic breadth, 52, 53; length of premolar-molar series, 37, 35.5; diastema, 15, 12.5. The teeth are most worn in the smaller specimen. The other two specimens are respectively in stages v and vi.

The three specimens from Elmenteita were killed on the same day at

¹ M¹ not fully up.

² Sutures wholly obliterated.

the same camp, and were members of a single colony, yet they differ notably in coloration. The oldest specimen, as shown by the worn teeth, is the palest and most fulvous; the other adult male is the darkest and the lower back has a strong suffusion of rufous, which is absent in both the others. The young female is also dark but lacks the rufous tint, the general effect of the upper parts being a dusky fulvous gray. The fourth specimen, from Kijabe, is intermediate between the dark and light *Elmenteita* specimens. The crown is like the back in all four.

29. ***Procavia emini*** (?) *Thomas*. EMIN DASSIE.

One specimen, young male (stage v), Solai, July 25, is very doubtfully referred as above.

This specimen is strikingly different in coloration from any other in the collection, and from all described species except *Procavia emini*, based on a very young specimen (stage i), from Monbuttu, and thus far apparently unique. The present specimen is much older and darker than the type, with the pelage not fluffy nor especially soft. It is possibly only an albinistic example of *P. brucei*. The color above is dull light yellowish brown, the hairs being uniform pale brown from the base to near the tip, which is pale yellowish or buffy. This coloration is uniform throughout the dorsal aspect, from the nose to the tail, including the sides of the body outside of the limbs and ears. The ventral surface, from chin to anal region, is uniform pale yellowish white, the basal half of the pelage darker, pale buffy brown. In dentition and cranial characters it is quite like the specimens referred above to *P. brucei*.

30. ***Lepus victoriae*** *Thomas*. VICTORIA HARE.

Five specimens, Laikipia, August. The collector's measurements of two of the specimens are, respectively, total length, ♂, 500 mm., ♀ 520; tail, ♂ and ♀, 90. Ears, in dry skin, 102, 107, from notch, 81, 87; hind foot (*s. u.*), 101, 97.

The five skulls measure as follows:

| |
|---|
| 27846, ♂, total length, 83; basal length, 66.5; zyg. breadth, 40. |
| 27851, — “ “ 86; “ “ 67.5; “ “ 41. |
| 27852, — “ “ 87.5 “ “ 72. “ “ 40.8. |
| 27853, — “ “ 87; “ “ 71.3; “ “ 40.5. |

31. ***Tachyoryctes splendens ibeanus*** *Thomas*. IBEAN EARTH RAT.

Twelve specimens, of which 10 are adult and 2 are young in the dark gray first pelage. Four were collected at Nairobi, May 3-6, and 8 at Kijabe, June 6-17 and July 19.

None of these specimens is very old, but three of them have the sagittal crest well-developed, but not quite to the extent indicated in Thomas's figure (P. Z. S., 1900, p. 180). The measurements of my largest specimens barely reach 40 mm. for the 'basilar' length, and 30-31 for the zygomatic breadth, as against, respectively, 41.5 and 32.5-34 given by Thomas.

Mr. Thomas gives external measurements for only one specimen, Mr. Makinder's from Nairobi, namely: "Head and body, 188 mm.; tail 57; hind foot, 29; ear, 10. Mr. Lang's measurements of 9 adults are as follows:

| | | | |
|---------------|------|-------|-------|
| Total length, | 210; | tail, | 52. |
| " | " | 220; | " 55. |
| " | " | 220; | " 60. |
| " | " | 224; | " 46. |
| " | " | 226; | " 56. |
| " | " | 245; | " 58. |
| " | " | 250; | " 70. |
| " | " | 255; | " 65. |
| " | " | 265; | " 55. |

In the above table the specimens are arranged according to age, as indicated by the skulls, and range from young adults to old; only the last three have a sagittal crest, and in these it is not strongly developed.

The Nairobi specimens are much paler than the Kijabe series, including the incisors, which are pale yellow instead of deep yellow. Although the two localities are only a few hundred miles apart, the two forms may be separable.

32. **Arvicanthis pumilio** (*Sparman*). STRIPED MOUSE.

One specimen, Kijabe, June 2.

33. **Arvicanthis barbara** (*Linnaeus*). BARBAROUS MOUSE.

Three specimens: Kijabe, 2 specimens, June 8; Nairobi, 1 specimen, May 2.

The Nairobi specimen is appreciably darker than the others, distinctly suffused with rufous, and much larger, the collector's measurements being, total length, 270 mm., tail, 152. The Kijabe specimens measure, respectively, ♂, 240, 115, ♀, 230, 120. Both are young, while the Nairobi specimen is old, with the teeth well worn, the difference in age apparently accounting for the difference in size.

34. **Arvicanthis nairobæ** sp. nov. NAIROBI MOUSE.

Type, No. 27877, ♂ ad., Nairobi, British East Africa, May 24, 1906; Tjäder Expedition; collected by H. Lang.

General color above fulvous gray, darker over the median region, lighter on the sides, and faintly suffused with rufous on the lower back and rump, the anterior half of the body being thus paler and much grayer than the posterior third; below whitish, the basal plumbeous portion of the pelage showing more or less through the surface; ventral area not very sharply defined, the whitish of the lower parts gradually merging into the gray of the sides; upper surface of the feet like the sides — fulvous gray sprinkled with dusky; ears short and broad (about 14 by 18 mm. in dry skin), evenly rounded above, covered with very short fulvous gray hairs on both surfaces; tail about one fifth shorter than head and body, sparingly clothed with short hairs (in the type concealing the annulations, in others not obscuring them), the dorsal third black (type) or blackish, the sides and below pale fulvous.

The pelage is rather coarse and harsh, with scanty dark plumbeous underfur; the coarser hairs are plumbeous basally, broadly banded subterminally with buff, and tipped with black, resulting in a buffy gray general tone, finely grizzled with blackish, becoming faintly rufous posteriorly to the rump, which is more or less strongly suffused with rufous at the base of the tail. In general effect externally, both in form, proportions (including the ears and tail) and coloration, this species presents a strong likeness to the pallid forms of the American genus *Sigmodon*. The outer toes, however, are so greatly reduced that both fore and hind feet give the appearance, on casual inspection, of being three-toed.

Total length (type), 260 mm.; tail vertebræ, 116; hind foot (*s. u.*) in dry skin. 26. Four adult specimens (3 ♂♂, 1 ♀) measure, total length, 262 (250–270); tail, 114 (105–120). Skull, type, total (occipitonasal) length, 34; basilar length, 28; palatal length, 16; nasals (broad and depressed in front, tapering evenly posteriorly from 5 to 1.5 mm.), 13; zygomatic breadth, 17; interorbital breadth, 5; mastoid breadth, 13; upper toothrow, 7.

Represented by seven specimens, of which 4 are adult and 3 young, the smallest being in first pelage, which is soft and long, pale reddish fulvous above varied with brownish black, and white with a fulvous wash below. They were all collected at Nairobi, May 1–21.

35. *Mus kijabius* sp. nov. KIJABE MOUSE.

Type, No. 27881, ♂ ad., Kijabe, British East Africa, June 8, 1906; Tjäder Expedition; collected by Herbert Lang.

Above olivaceous gray, the mid-dorsal region heavily lined with black, black prevailing along the median line; below plumbeous gray, washed with pale olivaceous; fore arms and legs blackish plumbeous, in contrast with the color of the flanks; ears of medium size, blackish brown, nearly naked; tail about one fifth longer than head and body, dark brown, naked; fore feet with the carpus clothed with dusky brown hairs, the toes naked, brownish flesh-color; hind feet dark brownish flesh-color, sparsely clothed with short, brown, bristly hairs, the general effect being dark brown with a flesh-color tinge.

Pelage of the dorsal surface consisting of abundant soft plumbeous underfur, with rather coarse overhair which over the mid-dorsal area consist of fine grooved bristles; pelage of the ventral surface soft, thick and plumbeous throughout with very slight olive-gray tips, forming a faint superficial wash, except in one specimen

in very fresh unworn pelage, where the olivaceous gray wash is a prominent feature of the coloration.

Total length (type), 290 mm.; head and body, 137; tail, 153; hind foot (*s. u.*) from skin, 27; ear, dry, 15. Another adult is slightly larger, measuring, total length, 300; tail, 170.

Skull of type (a young adult), occipitonasal length, 34.6; basal length, 33; zygomatic breadth, 14.5; least interorbital breadth, 5.5; mastoid breadth, 14; length of nasals, 12; upper toothrow, 5.3. A second specimen, older with worn teeth: occipitonasal length, 34; length of nasals, 11; mastoid breadth, 13.5.

This species does not seem to closely resemble any previously described. Its dark coloration, particularly of the ventral surface, the dark brown naked tail and ears, and the dark, nearly naked feet suggest *Mus rattus*, but it is a much smaller species, and really quite radically different in details of coloration.

Represented by five specimens, of which 2 are adult, 2 nearly adult, and a young specimen in first pelage, all from Kijabe, June 6-8. The very young specimen is lighter and grayer on the flanks and whitish gray below.

36. *Mus* sp.

One specimen, adult male, Kijabe, June 6. Gray brown, ventral surface fulvous; size submedium, tail much shorter than head and body, feet buffy white. Total length, 255; tail, 117.

37. *Mus* sp.

One specimen, adult female, Zebra Farm, Athi Plains, May 24.

A small species, fulvous brown above with narrow dark median dorsal area and whitish underparts and feet. Total length, 224; tail, 117.

38. *Otomys irroratus* Brants. VLEY OTOMYS.

Four specimens, Kijabe, June 7 and 8.

39. *Otomys jacksoni* Thomas. JACKSON OTOMYS.

One specimen, Kenai, Sept. 9.

40. *Xerus rutilus* (Cretzschmar). GROUND SQUIRREL.

One specimen, adult male, Nyamusi, Aug. 3.

41. **Felis serval** *Schreber*. SERVAL.

Adult male, skin and skeleton, Kijabe, June 3. Total length, 1160 mm.; tail vertebræ, 360; height at shoulder, 490. Skull, total length, 131; condylobasal, 109; palatal length, 50; zygomatic breadth, 92; breadth (outside) at m^1 , 54.5; breadth at outside base of canines, 31; upper tooth-row (including canine), 40; length of carnassial on outer border, 13.

Three additional skins, reserved by Mr. Tjäder, vary greatly in depth of color and in details of markings.

42. **Felis leo** *Linnæus*. LION.

The collection contains a young kitten, killed with the mother on the Guadamurtu River, September 4. The latter, together with a male killed in May on the Kapita Plains are among the trophies reserved by Mr. Tjäder. No measurements were taken.

43. **Cynælurus jubatus** (*Schreber*). CHEETAH.

Skull of male (skin reserved by Mr. Tjäder), Nyamusi, August 2. External measurements: Total length, 2060; tail vertebræ, 710; height at shoulders, 760. Skull, total length, 189; condylobasal, 153; palatal length, 70; zygomatic breadth, 128; palatal breadth (outside at m^1), 73; breadth at outside base of canines, 48; upper toothrow (including canine), 55; length of carnassial (outer border), 22.

44. **Ichneumia albicauda** (*G. Cuvier*). WHITE-TAILED MONGOOSE.

One specimen, consisting of the skull and a part of the skin (including the tail and lower part of back), taken at Guasinarock, Sept. 2.

No external measurements. The skull measures, total length, 109 mm.; condylobasal length, 101; zygomatic breadth, 57; length of premolar-molar series, 36.3.

45. **Genetta stuhlmanni** *Matschie*. STUHLMANN GENET.

A single flat skin, without skull, taken at Maungu, October 2, is doubtfully referred to this species, with the description of which it well agrees.

46. **Hyæna crocuta** (*Erxleben*). SPOTTED HYÆNA.

Adult male, Elmenteita, June 27. Pelage harsh, worn and faded, the dark markings dull brown. Total length, 1360 mm.; tail vertebræ,

230; height at shoulder, 730. Young adult male, Kijabe, June 14. Pelage full, long and soft, the dark markings sharp and deep black. Total length, 1280; tail vertebræ, 210; height at shoulder, 650. Also a complete skeleton of a female, Guasinarock, Aug. 24. Measurements not taken.

The skulls measure:

| |
|---|
| 27767, ♀, total length, 260; condylobasal length, 208; zyg. breadth, 163. |
| 27766, ♂, " " 242; " " 202; " " 151. |
| 27765, ♂, " " 245; " " 204; " " 169. |

47. **Proteles cristatus** (Sparman). AARD WOLF.

One specimen, adult male, Majimota, August 2.

Total length, 900 mm.; tail vertebræ, 270; height at shoulder, 490. Skull, total length, 141; condylobasal length, 129; palatal length, 80; zygomatic breadth, 82; postorbital processes, 57; width of muzzle at canines, 42; postorbital width, 34.

48. **Canis lateralis** *Sclater*. SIDE-STRIPED JACKAL.

One specimen, adult female, Kijabe, June 11. Total length, 1000 mm.; tail vertebræ, 360; height at shoulder, 460. Skull, total length, 156; condylobasal length, 143; palatal, 78; zygomatic breadth, 80; interorbital, 25; postorbital, 27; width at anterior border of m^1 , 46; width at canines, 25.5; length of p^4 on outer border, 15.

49. **Canis mesomelas** *Schreber*. BLACK-BACKED JACKAL.

Six specimens, Laikipia, Aug. 21, and Guasinarock, Aug. 22 and 25. External measurements were taken of only two adult males, which are respectively as follows: Total length, 1090, 1040 mm.; tail vertebræ, 370, 390; height at shoulders, 450, 460. The skulls measure as follows:

Measurements of Skulls.

| Mus. No. | Sex. | Total length. | Condylo-basal length. | Palatal length. | Breadth. | | | | | Length of p^4 |
|----------|--------|---------------|-----------------------|-----------------|-----------|-------------|------------|----------|-----------|-----------------|
| | | | | | Zygo-mat. | Inter- orb. | Post- orb. | At m^1 | At canine | |
| 27728 | ? | 140 | 129.5 | 69 | 80.3 | 27.5 | 33 | 46 | 24 | 16.2 |
| 27729 | ? | 154 | 141 | 75 | 90.5 | 31 | 32.5 | 51 | 26 | 17 |
| 27730 | ? | 149.5 | 136 | 72 | 86 | 29 | 32 | 46.5 | 24 | 15 |
| 27731 | ♂ juv. | 151 | 135 | 73 | 82 | 30 | 34 | 48.6 | 25.7 | 15.3 |
| 27734 | ♂ ad. | 153 | 137 | 75 | 87 | 29 | 32.5 | 48 | 27 | 16.3 |
| 27736 | ♀ ad. | 143 | 132 | 70 | 82 | 29 | 32 | 46 | 25 | 15 |
| Average | | 148.4 | 135.1 | 72.3 | 84.6 | 29.3 | 32.6 | 47.7 | 25.3 | 15.8 |

50. *Canis variegatus* *Cretzschmar*. VARIEGATED JACKAL.

Nine specimens: Elmenteita, 2 specimens, June 30; Guasinarock, 7 specimens, August 22 and 25. Six are fully adult, two are young adults with the dentition just fully developed, and one retains part of the milk dentition. They vary considerably in color, chiefly in respect to the amount of black in the 'saddle-area,' and in the strength of the rufous of the basal portion of the dorsal pelage, which varies from buff or pale yellowish white to dull rufous or rufous drab.

External Measurements.

| | | | | | | |
|---------------|---------------|-------|-------------|------|----------------------|------|
| 27734, ♂, | total length, | 980; | tail vert., | 300; | height at shoulders, | 450. |
| 27735, ♂, | " " | 1040; | " " | 290; | " " | 460. |
| 27726, ♂, | " " | 930; | " " | 280; | " " | 420. |
| 27737, ♂ juv. | " " | 850; | " " | 280; | " " | 400. |
| 27725, ♀, | " " | 930; | " " | 300; | " " | 420. |
| 27733, ♀, | " " | 950; | " " | 300; | " " | 420. |
| 27740, ♀, | " " | 900; | " " | 300; | " " | 420. |

Measurements of Skulls.

Breadth.

| Mus no. | Sex. | Total length. | Condyl. basal. | Pala-tal. | Zy-gom. | Inter- orb. | Post- orb. | At m ¹ | At canines. | Length of p ⁴ |
|---------|------|---------------|----------------|-----------|---------|-------------|------------|-------------------|-------------|--------------------------|
| 27737 | ♂? | 163 | 145 | 81 | 80 | 25 | 28.5 | 47 | 25 | 16 |
| 27733 | ♀ | 151 | 134 | 73 | 80 | 25.5 | 28 | 44 | 24 | 15 |
| 27732 | ♀ | 153 | 136 | 75 | 79 | 23.5 | 26 | 42.5 | 24 | 15 |
| 27735 | ♀ | 149 | 132 | 73 | 76 | 22.5 | 26.7 | 43 | 24 | 15 |
| 27739 | ♀ | 147 | 131 | 71 | 78 | 27 | 26 | 42.3 | 24 | 14.5 |
| Average | | 151.5 | 133.5 | 74.6 | 78.7 | 24.7 | 27 | 43.9 | 24.2 | 15.1 |

51. *Crocidura fumosa* *Thomas*. SMOKY SHREW.

One specimen, adult female, Zebra Farm, Athi Plains, May 24. Total length, 142 mm.; tail, 48. Skull, condylo-incisive length, 22.4; greatest breadth, 10. Agrees perfectly in coloration with Thomas's description (*Ann. and Mag. Nat. Hist.* (7), XIV, Sept. 1904, p. 238).

52. *Crocidura kijabæ* sp. nov. KIJABE SHREW.

Type, No. 27890, ♀ ad., Kijabe, British East Africa, June 2, 1906; Tjäder Expedition; collected by H. Lang.

Color above uniform seal brown with a distinct tinge of reddish; slightly paler below; hands and feet colored like the back, well-haired; ears short, broad, about 5 × 8 mm., sparsely covered with short hairs; tail blackish brown, nearly naked, with a few scattered long bristly dark brown hairs on the basal half.

Total length, 201 mm.; tail, 78; hind foot, 19. Skull, condylo-incisive length, 30; greatest breadth, 12; least interorbital breadth, 5.2; upper toothrow, 14.

This species differs from *Crocidura flavescens nyanzæ* Neumann,¹ from near Lake Nyanza (exact type locality not stated), in smaller size, relatively much longer tail, and much darker coloration.

53. ***Papio cynocephalus ibeanus* Thomas.** IBEAN BABOON.

Two males, Nakuru, July 6. One is old, the other had just reached maturity, the teeth still unworn. The external measurements are, respectively, total length, 1290 and 1100 mm.; tail vertebrae, 520 and 530; height at shoulder, 600 and 460.

54. ***Cercopithecus pygerythrus johnstoni* Pocock.** MOZAMBIQUE MONKEY.

Five specimens, Nyamusi, August 28: 1 adult male, 3 adult females, and 1 young female. The collector's measurements are:

| | |
|---------------|--|
| 27705, ♂, | total length, 1220; tail vert., 750; height at shoulders, 380. |
| 27703, ♀, | “ “ 1030; “ “ 610; “ “ “ 260. |
| 27704, ♀, | “ “ 1020; “ “ 620; “ “ “ 260. |
| 27706, ♀, | “ “ 1000; “ “ 560; “ “ “ 290. |
| 27707, ♀ juv. | “ “ 690; “ “ 410; “ “ “ 180. |

A fully adult male and a fully adult female skull give the following measurements: Total length, ♂ 103, ♀ 90; condylobasal length, ♂ 73, ♀ 62; palatal length, ♂ 39, ♀ 35; zygomatic breadth, ♂ 68, ♀ 58; mastoid breadth, ♂ 57, ♀ 48; upper premolar series, ♂ 24, ♀ 24.

55. ***Cercopithecus kolbi* Neumann.** KOLB MONKEY.

Six specimens, Kijabe, June 3-5. Only two are fully adult, a male and a female.

The male has the ventral surface, from the upper part of the breast to the base of the tail, clear dark gray—blackish gray anteriorly passing into lighter, whitish gray posteriorly; and the region at the base of the tail is like the lower back. The female has the underparts a somewhat lighter gray, and the base of the tail is reddish chestnut, much stronger colored than in the male. The young specimens are much lighter below than the adults, the youngest having the ventral surface and inside of the limbs nearly white, the hair fine and silky; the next youngest is nearly similar, but with a smoky hue over most of the ventral region; the next in age is similar but with the

¹ Zool. Jahrb., Abt. Syst., XIII, 1900, p. 544.

ventral region still darker, but the hairs are without distinct blackish annulations; the fourth has the ventral surface sooty gray, the hairs being faintly annulated with dusky. In all the young specimens there is much dull red on the under surface of the base of the tail.

The external measurements of the adult male and female are as follows: Total length, ♂ 1260 mm., ♀ 1140; head and body, ♂ 570, ♀ 500; tail vertebræ, ♂ 690, ♀ 640; height at shoulder, ♂ 360, ♀ 300. Skulls: Total length, ♂ 117, ♀ 103; condylobasal length, ♂ 84, ♀ 73; palatal length, ♂ 43, ♀ 36; zygomatic breadth, ♂ 80, ♀ 67; mastoid breadth, ♂ 60, ♀ 57; premolar-molar series, ♂ 26.3, ♀ 26.

56. *Colobus abyssinicus caudatus* Thomas. WHITE-TAILED GUEREZA.

Eight specimens were collected, of which five are in the Museum collection; six were taken at Kijabe, June 3 and 4, and two at Kenia, September 12.

The black on the base of the tail is restricted to the basal four or five inches or less; in some it is more or less diluted with white, as in two half-grown specimens, in which the tail is as in *C. a. poliurus* Thomas, from Lake Rudolf.

The external measurements of an old male, two young adult males, and one old and one young female are as follows:

| | | | | | | |
|----------------|---------------|-------|-------------|------|---------------------|------|
| 27711, ♂ old, | total length, | 1280; | tail vert., | 650; | height at shoulder, | 410. |
| 27710, ♂ | " " | 1150; | " " | 580; | " " " | 360. |
| —, ♂ juv., | " " | 1020; | " " | 480; | " " " | 300. |
| 27712, ♀ old, | " " | 1070; | " " | 560; | " " " | 330. |
| 27713, ♀ juv., | " " | 960; | " " | 490; | " " " | 290. |

An old male skull and a fully adult female skull give respectively the following measurements: Total length, ♂ 119, ♀ 103; condylobasal length, ♂ 90, ♀ 80; palatal length, ♂ 51, ♀ 43; zygomatic breadth, ♂ 85, ♀ 73; mastoid breadth, ♂ 67, ♀ 60; upper premolar-molar series, ♂ 33, ♀ 32.

