





Alpheus Fuller Williams.

THE
BOOK OF ANTELOPES.

BY

PHILIP LUTLEY SCLATER, M.A., PH.D., F.R.S.,
SECRETARY TO THE ZOOLOGICAL SOCIETY OF LONDON,

AND

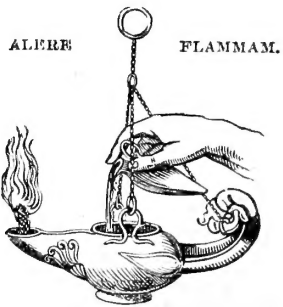
OLDFIELD THOMAS, F.Z.S., F.R.G.S.,
ASSISTANT IN THE ZOOLOGICAL DEPARTMENT OF THE BRITISH MUSEUM.



IN FOUR VOLUMES (1894—1900).

VOL. IV.

LONDON:
R. H. PORTER, 7 PRINCES STREET, CAVENDISH SQUARE, W.
1899—1900.



PRINTED BY TAYLOR AND FRANCIS,
RED LION COURT, FLEET STREET.

QL
 737
 VS
 S4
 1894
 V.4c.2
 SCNHRB

CONTENTS.

— * —

VOL. IV.

	Page
Subfamily VI. HIPPOTRAGINÆ	1
Genus I. HIPPOTRAGUS	3
110. THE BLUE-BUCK. <i>Hippotragus leucophæus</i> (Pall.). [Plate LXXVI.]	5
111. THE ROAN ANTELOPE. <i>H. equinus</i> (Desm.). [Plates LXXVII. & LXXVIII.]	13
112. THE SABLE ANTELOPE. <i>H. niger</i> (Harr.). [Plates LXXIX. & LXXX.]	31
Genus II. ORYX	41
113. THE LEUCORYX. <i>Oryx leucoryx</i> (Licht.). [Plate LXXXI.]	43
114. THE BEATRIX ANTELOPE. <i>O. beatrix</i> , Gray. [Plate LXXXII.]	51
115. THE GEMSBOK. <i>O. gazella</i> (Linn.). [Plate LXXXIII.]	57
116. THE BEISA. <i>O. beisa</i> (Rüpp.). [Plate LXXXIV.]	65
117. THE TUFTED BEISA. <i>O. callotis</i> , Thomas. [Plate LXXXV.]	73
Genus III. ADDAX	77
118. THE ADDAX. <i>Addax naso-maculatus</i> (Blainv.). [Plate LXXXVI.]	79
Subfamily VII. TRAGELAPHINÆ	89
Genus I. BOSELAPHUS	91
119. THE NILGAI. <i>Boselaphus tragocamelus</i> (Pallas). [Plate LXXXVII.]	93
Genus II. TRAGELAPHUS	103
120. THE DECULA ANTELOPE. <i>Tragelaphus decula</i> (Rüpp.). [Plate LXXXVIII.]	105
121. THE HARNESSED ANTELOPE. <i>T. scriptus</i> (Pallas). [Plate LXXXIX.]	109
122. THE CAPE BUSHBUCK. <i>T. sylvaticus</i> (Sparrm.). [Plate XC. fig. 2.]	117
123. CUMMING'S BUSHBUCK. <i>T. roualeyni</i> (Cumming). [Plate XC. fig. 1.]	123
124. DELAMERE'S BUSHBUCK. <i>T. delamerei</i> , Pocock	129
125. THE BROAD-HORNED ANTELOPE. <i>T. eurycerus</i> (Ogilby). [Plate XCI.]	131
126. ANGAS' ANTELOPE. <i>T. angasi</i> , Angas. [Plate XCII.]	137
Genus III. LIMNOTRAGUS	149
127. SPEKE'S SITATUNGA. <i>Limnotragus spekii</i> (Selater). [Plate XCIII.]	151
128. SELOUS'S SITATUNGA. <i>L. selousi</i> (Rothsch.). [Plate XCIV.]	157
129. THE CONGAN SITATUNGA. <i>L. gratus</i> (Selater). [Plate XCV.]	165

	Page
Subfamily VII. TRAGELAPHINÆ (<i>continued</i>).	
Genus IV. STREPSICEROS	171
130. THE GREATER KUDU. <i>Strepsiceros capensis</i> (A. Smith). [Plate XCVI.]	173
131. THE LESSER KUDU. <i>S. imberbis</i> , Blyth. [Plate XCVII.]	185
Genus V. TAUROTRAGUS	193
132. THE ELAND. <i>Taurotragus oryx</i> (Pall.). [Plates XCVIII. & XCIX.]	195
133. THE DERBIAN ELAND. <i>T. derbianus</i> (Gray). [Plate C.]	215

 APPENDIX.

LIST OF THE SPECIES AND SUBSPECIES OF ANTELOPES DESCRIBED AS NEW DURING THE PROGRESS OF THIS WORK	223
INDEX	229

LIST OF ILLUSTRATIONS

IN THE TEXT.

—*—

VOL. IV.

Fig.	Page
88. Frontlet of the Blue-buck	11
89. Horns of Baker's Roan Antelope	25
90. Head of Roan Antelope	29
91. Head of Sable Antelope	38
92. A Leucoryx attacked by a Lion	48
93. Young Leucoryx	49
94. Female Beisa	70
95. Horns of male Addax	83
96. Horns of female Addax	83
97. Head of a female Addax	85
98. Skull and horns of an adult male Nilgai	100
99. Frontlet of an adult male Nilgai	101
100. Skull and horns of Cumming's Bushbuck	126
101. Frontlet of Cumming's Bushbuck	127
102. Delamere's Bushbuck	130
103. The Bongo Antelope	134
104. Head and horns of the Broad-horned Antelope	135
105. Head and horns of Angas' Antelope	140
106. Angas' Antelope, ♂ & ♀	146
107. Horns of <i>Tragelaphus</i> sp. inc.	147
108. Speke's Sitatunga in a Papyrus-swamp	153
109. Horns and feet of Speke's Sitatunga	154
110. Speke's Sitatunga, ♂ & ♀	156
111. Outer view of right foot of Selous's Sitatunga, $\frac{1}{3}$ nat. size	158
112. Horns of Congan Sitatunga	167
113. Head of the male Congan Sitatunga, from the specimen in the British Museum	169
114. Male and female Kudu	183
115. Horns of Lesser and Greater Kudus	188
116. Skull and horns of Livingstone's Eland, ♂	205
117. Horns of <i>Taurotragus oryx gigas</i>	208
118. Abnormal horns of female Eland	209
119. Herd of Derbian Elands	218
120. Horns of Derbian Eland	219
121. Front view of the horns of the Derbian Eland	221



THE BOOK OF ANTELOPES.

VOL. IV.

SUBFAMILY VI. *HIPPOTRAGINÆ*.

General Characters.—Size large. Muzzle hairy. Anteorbital glands absent. Tail long, more or less tufted. Mammæ 4.

Skull heavily built; without supraorbital pits, with small or no lachrymal fissures, and without anteorbital fossæ. Molars very high and broad, and with accessory internal columns; therefore very similar to those of the Bovinæ, the subfamily containing the Oxen.

Horns long, straight, curved, or spiral; present and of approximately equal dimensions in both sexes.

Range of Subfamily. Ethiopian Region—Africa south of Atlas and Arabia.

This subfamily contains some of the largest and finest Antelopes in existence. Three genera are usually recognized, which may be distinguished as follows:—

- A. Horns straight or curved, not twisted. Hoofs normal.
 - a*. Horns placed above the orbits, starting nearly vertically upwards and then curving strongly backwards 1. HIPPOTRAGUS.
 - b*. Horns placed behind the orbits, slanting backwards nearly in the line of the face 2. ORYX.
- B. Horns spirally twisted, placed as in *Oryx*. Hoofs broadly rounded.
 - 3. ADDAX.

DSI

GENUS I. HIPPOTRAGUS.

Type.

- Egocerus*, Desm. Mamm. ii. p. 475 (1822) (nec *Ægoceros*, Pall.
 Zool. Ross.-As. i. p. 224 (1811) H. LEUCOPHÆUS.
Aigocerus, H. Sm. Griff. An. K. v. p. 324 (1827) H. LEUCOPHÆUS.
Hippotragus, Sund. Pecora, K. Vet.-Ak. Handl. 1844, p. 196 (1846). H. LEUCOPHÆUS.
Ozanna, Brehm, Thierl. iii. p. 227 (1880) (in synonymy) H. NIGER.

Size large; form high and comparatively slender, less stout and bovine than in the succeeding genera. Muzzle hairy. Tail long and tufted. Mammæ 4. Large accessory hoofs present.

Skull proportionally long, its frontal region very convex upwards, the large horn-cores rising almost vertically above the posterior half of the orbits. Lachrymal fissures almost or quite obsolete. No anteorbital fossa. Premaxillæ not reaching to the nasals.

Horns medium or long, slightly but evenly divergent, nearly vertical basally, strongly curved backwards above; heavily ringed.

Female with horns similar to those of the male, but shorter, slenderer, and much smoother.

Range of the Genus. Africa south of the Sahara, but not occurring in the great Congo Forest.

Of this genus, which contains some of the handsomest Antelopes in existence, we recognize three species, one of them (alas!) now extinct. The widely distributed Roan Antelope may be provisionally separated into four local subspecies, which require further elucidation.

A. General colour greyish or pale brown. Horns not or but little longer than the head.

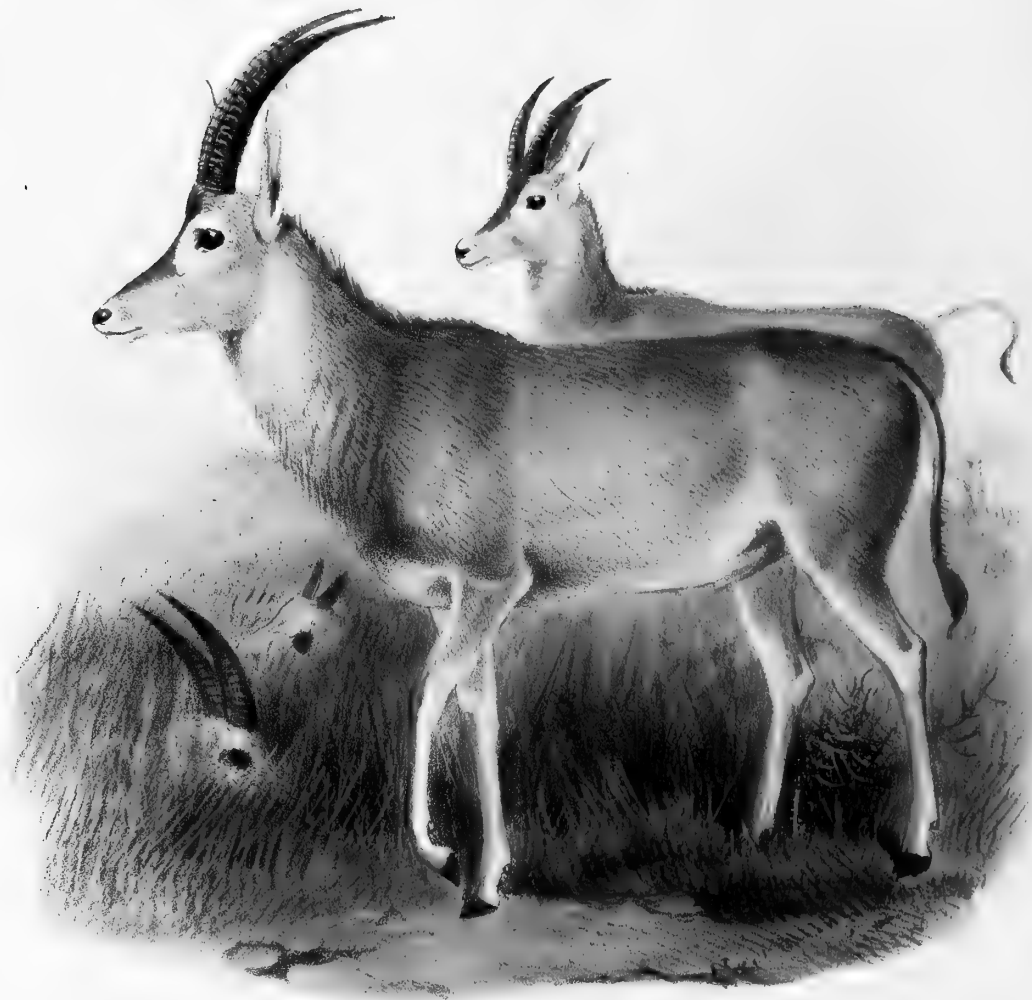
a. Size smaller. Face without black markings . 110. *H. leucophæus*.

b. Size larger. Face with strongly contrasted black and white markings.

111. *H. equinus*.

- a*. General colour greyish ; ears shorter. (S. Africa.)
Subsp. *typica*.
- b*. General colour pale rufous ; ears shorter. (E. Africa.)
Subsp. *rufo-pallida*.
- c*. General colour browner ; ears longer. (N.E. Africa.)
Subsp. *bakeri*.
- d*. General colour more fulvous ; ears still longer. (W. Africa.)
Subsp. *gambiana*.
- B. General colour black. Horns much longer than the head.
112. *H. niger*.





Walf del. J Smit lith.

The Blue-Buck, ♂ and ♀.
HIPPOTRAGUS LEUCOPHÆUS.

Hanhart imp.

Published by B.H. Porter.

110. THE BLUE-BUCK.

HIPPOTRAGUS LEUCOPHÆUS (PALL.).

[PLATE LXXVI.]

- Blue Antelope*, Pennant, Quadr. p. 66 (1781).
La Gazelle Tzeiran, Buff. Hist. Nat. Suppl. vi. p. 168, pl. xx. (1782).
Blaauw-bok, Sparrm. Voy. to Cape (Engl. transl.), ii. p. 219 (1786).
Blawe Bock, Le Vaill. Voy. à l'int. de l'Afrique, i. p. 58 (1790).
Antilope leucophæa, Pall. Misc. Zool. p. 4 (1766); id. Spic. Zool. fasc. i. p. 6 (1767), fasc. xii. p. 12 (1777); Erxl. Syst. R. A. p. 271 (1777); Zimm. Spec. Zool. Geogr. p. 545 (1777); id. Geogr. Gesch. ii. p. 106 (1780); Gatt. Brev. Zool. i. p. 78 (1780); Schr. Säug. pl. cclxxviii. (1784); Bodd. Elench. Anim. p. 139 (1785); Gmel. Linn. S. N. i. p. 182 (1788); Kerr, Linn. An. K. p. 306 (1792); Donnd. Zool. Beytr. p. 619 (1792); Link, Beytr. Nat. ii. p. 99 (1795); Daudin, in Lacépède's Buffon, xiv. p. 183 (1799); Bechst. Syst. Uebers. vierf. Th. ii. p. 641 (1800); Shaw, Gen. Zool. ii. p. 355 (1801); Turt. Linn. S. N. i. p. 111 (1802); Desm. N. Dict. d'H. N. (1) xxiv. Tabl. p. 52 (1804); G. Cuv. Dict. Sci. Nat. ii. p. 204 (1804); Tied. Zool. i. p. 408 (1808); Thunb. Mémoires. Ac. Pétersb. iii. p. 313 (1811); Licht. Reise, i. p. 265, ii. p. 121 (1811-12); G. Fisch. Zoogn. iii. p. 416 (1814); Afz. N. Act. Ups. vii. p. 219 (1815); Desm. N. Dict. d'H. N. (2) ii. p. 204 (1816); G. Cuv. R. A. i. p. 262 (1817); Goldf. Schr. Säug. v. p. 1183 (1818); Gray, Med. Repos. xv. p. 307 (1821); Schinz, Cuv. Thierr. i. p. 394 (1821); Desmoul. Dict. Class. i. p. 446 (1822); H. Sm. Griff. An. K. iv. p. 176, v. p. 324 (1827); Less. Man. Mamm. p. 386 (1827); J. B. Fisch. Syn. Mamm. p. 479 (1829); Smuts, En. Mamm. Cap. p. 68 (1832); Oken, Allg. Naturg. vii. p. 1396 (1838); Laurill. Dict. Univ. d'H. N. i. p. 618 (1841); Schinz, Syn. Mamm. ii. p. 440 (1845); Temm. Esq. Zool. Guin. p. 192 (1853); Gieb. Säug. p. 295 (1853).
Capra leucophæa, Thunb. Resa, ii. p. 127 (1789); Engl. Transl. ii. p. 113 (1793).
Antilope (Bubalis) leucophæa, Licht. Mag. nat. Fr. Berl. vi. p. 159 (1814).

- Cerophorus (Oryx) leucophæus*, De Blainv. Bull. Soc. Philom. 1816, p. 75.
Antilope (Egocerus) leucophæa, Desm. Mamm. ii. p. 475 (1822).
Aigocerus leucophæus, A. Sm. S. Afr. Quart. Journ. ii. p. 185 (1834); Gray, Knowsl. Men. p. 16 (1850); Fitz. SB. Wien, lix. pt. 1, p. 177 (1869); Huet, Bull. Soc. Acclim. (4) iv. p. 483 (1887); Jent. Cat. Ost. Leyd. Mus. (Mus. Pays-Bas, ix.) p. 135; id. Cat. Mamm. Leyd. Mus. (t. c. xi.) p. 166 (1892).
Hippotragus leucophæus, Sund. Pecora, K. Vet.-Ak. Handl. 1844, p. 197 (1846); id. Hornschuch's Transl., Arch. Skand. Beitr. ii. p. 148; Reprint, p. 72 (1848); Kohl, Ann. Mus. Wien, i. p. 83 (1886); Bryden, Kloof and Karroo, p. 290 (1889); Flow. & Lyd. Mamm. p. 343 (1891); Lyd. Horns and Hoofs, p. 245 (1893); Trouess. Cat. Mamm. fasc. iv. p. 952 (1898).
Antilope capensis, P. L. S. Müll. Natursyst. Suppl. p. 52 (1776).
Cemas glaucus, Oken, Lehrb. Nat. iii. pt. 2, p. 740 (1816).
Antilope glauca, Forst. Descr. Anim. p. 391 (1844).

VERNACULAR NAME :—*Blawe-bock* of Dutch (*Le Vaillant*).

Size much less than in the two following species; height at withers from 45 inches (σ in Paris) to 40 inches (φ in Vienna). General colour bluish grey. Forehead brown; upper lip and a patch in front of the eye lighter than the general colour, but there are none of the marked black and white contrasts so prominent in *H. equinus*. Ears not so long or so pointed as in *H. equinus*, and without black tufts at their tips. Mane on nape of neck short, inconspicuous, directed forward; throat-mane almost or quite absent. Belly dull whitish, not contrasted with the sides. Limbs with an inconspicuous darker line down their anterior surfaces. Tail-tuft greyish, but little darker than the general colour.

Skull probably merely differing from that of *H. equinus* by its smaller size, but, so far as is known, no museum possesses an example of it.

Horns like those of *H. equinus*, but much smaller and more slender; perhaps rather longer in proportion to the size of the animal. Those of the Paris specimen (a male) measure $21\frac{1}{2}$ inches in length round the curve and have 28 rings upon them. The pair in the British Museum are rather shorter.

Hab. Cape Colony only. (Exterminated at the end of the last century.)

The Blue-buck, like the Quagga (*Equus quagga*), belongs to the category of larger animals that have become extinct within the historic period. While the Square-lipped Rhinoceros (*Rhinoceros simus*) and the Mountain

Zebra (*Equus zebra*) are still occasionally to be met with in one or two remote districts of South Africa, it would seem that the Blue-buck and the Quagga, as living creatures, have utterly perished from the face of the earth, and are only now represented by a few specimens in some of the principal museums of Europe.

Although the "Blaauwe-bok" or "Blau-bok" was long known to early travellers at the Cape under its vernacular names, the great Russian naturalist Pallas was the first to register it definitely in the 'Annals of Science.' Under the name *Antilope leucophaea* Pallas described it in 1766, in his 'Miscellanea Zoologica,' from a specimen in the Leyden Museum*, and placed it as the first species of his genus *Antilope*. We have already, however (Book of Ant. III. p. 3), given the reasons why another species—the Black-buck of India—should be deemed to be the type of Pallas's generic term *Antilope*, and in accordance with ordinary usage we employ Sundevall's name *Hippotragus* for the present species and its allies.

The next author after Pallas to mention this Antelope appears to have been Allamand, who made various contributions to an edition of Buffon's 'Histoire Naturelle,' issued in Holland by Schneider in 1766 and the following years. Allamand, however, carelessly confounded this South-African Antelope with the *Gazella gutturosa* of Siberia, of which the native name is Tzeiran or Dzéren (see Book of Ant. III. p. 84), and adopted the same name for it. Allamand's figure of his "Tzeiran" was taken from a mounted specimen in the Cabinet d'Histoire Naturelle of J. C. Sylvius von Lennep, of Harlem, which on the death of the owner had passed by bequest to the Société Hollandaise des Sciences of that city. This specimen, when in skin, had been obtained from a dealer who did not know whence it came, but from the mode of its preparation it was believed by Allamand to have been brought from the Cape.

Our countryman Pennant, in his 'History of Quadrupeds,' of which the first edition was published in 1781, gave a third original description of this species, which he called the "Blue Antelope." It was taken, he tells us, from a skin bought at Amsterdam, and said to have been obtained from the Cape of Good Hope. Pennant fully recognized its identity with Buffon's "Tzeiran," and remarked on the use of this erroneous Asiatic name for it.

* See Temminck's footnote, Esq. Zool. s. l. Côte de Guiné, p. 192; and Jentink, Mus. de P.-B. xi. (7) p. 166.

Sparrman, who arrived at the Cape in 1772 and subsequently made a long journey into the interior, tells us in his narrative * of having found a skin of the Blue-buck (which he identified with Pallas's *A. leucophaea* and Pennant's "Blue Antelope") preserved at "Krakeel-rivier," but he does not appear to have met with it alive himself.

But a rather later explorer of the Cape Colony, the well-known French naturalist François Le Vaillant, author of the 'Oiseaux d'Afrique' and many other ornithological works, was more fortunate. As Le Vaillant appears to have been the only traveller known to have himself obtained an example of this now extinct species, we will extract from the first volume of his 'Voyage d'Afrique' what he has written on this subject.

On December 18th, 1781, Le Vaillant left Capetown to explore the country to the east called "Hottentot Holland." A few days later, after crossing the river Sonder-end, and passing through the valley of Soete-Melck, he arrived at a place called "Tiger-Hoek," where he had appointed some Hottentots to meet him, and went on the chase in their company:—

"Nous eûmes bientôt joint quelques troupes de Gazelles; le pays en étoit couvert; mais elles se tenoient toujours hors de portée. Enfin, après avoir bien couru, mon chasseur m'arrêtant tout d'un coup, me dit qu'il aperçoit un *Blawe-Bock* (un Bouc bleu) couché. Je porte les yeux vers l'endroit qu'il m'indique et ne le vois pas. Il me prie alors de rester tranquille et de ne faire aucun mouvement, m'assurant de me rendre maître de l'animal. Aussitôt il prend un détour, se trainant sur ses genoux; je ne le perdois pas de vue, mais je ne comprenois rien à ce manège nouveau pour moi. L'animal se lève et bronte tranquillement sans s'éloigner de la place. Je le pris d'abord pour un cheval blanc; car, de l'endroit où j'étois resté, il me paroissoit entièrement de cette couleur (jusques-là je n'avois point encore vu cette espèce de Gazelle): je fus détrompé lorsque je vis ses cornes. Mon Hottentot se trainoit toujours sur le ventre, il s'approcha de si près et si promptement que mettre l'animal en joue et le tirer fut l'affaire d'un instant; la Gazelle tomba du coup. Je ne fis qu'un saut jusques-là et j'eus le plaisir de contempler à mon aise la plus rare et la plus belle des Gazelles d'Afrique. J'assurai mon Hottentot que, de retour au camp, je le récompenserois généreusement. Je l'envoyai aussitôt chercher un cheval pour transporter la chasse. L'intelligence de cet homme et les divers moyens qu'il avoit employés pour surprendre l'animal me rendoient son service important et précieux; je me proposois bien de me l'attacher par tous les appâts qui séduisent les Hottentots. Je commençai par lui donner une forte provision de tabac et je joignis à ce présent de l'amadou, un briquet et l'un de mes meilleurs couteaux. Il se servit de ce dernier meuble et se mit à dépecer l'animal avec la même adresse qu'il l'avoit tué. J'en conservai soigneusement la peau.

* Resa till Goda Hopps-udden, p. 627 (1783).

“ Cette Gazelle a été décrite par Pennant, sous le nom d’*Antilope bleu* ; par Buffon, sous le nom de *Tzeiran*. Ce dernier Naturaliste a donné la figure d’une partie de ses cornes ; elle est rare et très-peu connue. Lors de ma résidence en Afrique, je n’ai vu que deux de ces Gazelles et une autre qui fut apportée au Gouverneur, quelques années après, pendant l’un de mes séjours à la Ville. Elles venoient, comme la mienne, de la vallée Soete-Melk, seul canton qu’elles habitent. On m’avoit assuré que j’en verrois dans le pays des grands Namaquois ; malgré toutes mes informations et perquisitions j’ai été trompé dans cette attente. Tout les Sauvages m’ont assuré ne point la connoître. On m’avoit encore attesté que la femelle portoit des cornes ainsi que le mâle ; je ne puis rien dire là-dessus, puisque les seules que j’aye vues étoient toutes trois de ce dernier genre.

“ Sa couleur principale est un bleu léger, tirant sur le grisâtre ; le ventre et l’intérieur des jambes dans toute leur longueur font d’un blanc de neige ; sa tête surtout est agréablement tachetée de blanc.

“ Je n’ai pas remarqué que cette Gazelle, vivante, ressemblât à du velours bleu, et que, morte, sa peau changeât de couleur, comme le dit M. Sparrman. Vivante ou morte, elle m’a paru toujours semblable. La teinte de celle que j’ai rapportée n’a jamais varié. J’en ai vu une autre à Amsterdam que l’on conservoit depuis plus de quinze ans. Il en étoit de même de celle du Gouverneur du Cap ; plus fraîche encore que la mienne, dans tout le reste elles étoient pareilles. Je ne puis m’empêcher d’ajouter ici que je ne reconnois pas beaucoup cet animal dans les dessins et les gravures que j’en ai vus jusqu’à présent. Dans mes descriptions, je donnerai celle que j’ai faite de celui-ci, et le dessin très exact que j’en ai tiré sur les lieux, avant qu’on le déshabillât.”

After Le Vaillant’s time little further addition was made to the history of this Antelope until the publication (in 1811 and 1812) of Lichtenstein’s ‘Travels in Southern Africa,’ in which several allusions to it will be found. In the first of these Lichtenstein, on the way from Swellendam to Algoa Bay in December 1803, tells us that much game—Antelopes and Zebras—was met with in the mountains near the Buffalo-jagt River, “ but the beautiful Blau-bok (*Antilope leucophæa*) is, as Barrow has correctly supposed, almost exterminated. In the year 1800 one was shot, of which the skin is now at Leyden, but since then no more have been seen.” In the second volume of his ‘Reise,’ when on the Dweika, between Stellenbosch and Graaf Reinet, in the following December, Lichtenstein informs us that game was plentiful in the inner valleys of the mountains, and continues:—“ Here are still found the Zebra, the Bontebok, and the Rehbok in comparative abundance, and even the Blau-bok (*Antilope leucophæa*), which is almost exterminated elsewhere, is said to occur occasionally.” In his celebrated article upon the genus *Antilope*, published in the ‘Magazin der Gesellschaft

naturforschender Freunde zu Berlin,' two years subsequently, Lichtenstein, after a description of this species from the specimen at Berlin, continues as follows:—"The skin which I describe is, unfortunately, the last that has been seen. Since 1799, when this specimen was shot, no more have been met with, and it is known that this Antelope was found only in the now well-populated district of Zwellendam, and nowhere else. Apparently this beautiful animal is now quite extinct."

The animal having been thus exterminated towards the end of the last century, its very existence became a matter of doubt to some naturalists, who were inclined to consider the specimens of it left in our museums as small or immature individuals of the nearly allied Roan Antelope (*H. equinus*). This view was taken by Andrew Smith*, de Blainville, Gray, and even Harris, who, one would think, might have learned better from the traditions on the subject prevalent among the Boers. But the accurate Sundevall was strongly against this opinion, and, after examining the specimens at Upsala, Stockholm, and Paris, said decidedly "*Minimè animal fictum, ut credidit A. Smith.*" Sundevall, however, failed to convert Gray on this subject, and Gray, although, as he tells us, he had examined the specimen at Paris, chose to unite this species to the Roan Antelope, and to call them both *Hippotragus leucophæus*.

The most recent authority to vindicate the claims of the Blue-buck to specific distinctness is Herr F. F. Kohl, of Vienna, who, in an article upon new and rare Antelopes in the Imperial Natural History Museum, published in 1866, after accurately describing the specimen in that collection and pointing out its distinctive characters from *H. equinus*, gave a full list of the various synonyms to be allocated to these two species.

There can be little doubt, therefore, that *Hippotragus leucophæus* must be regarded as an extinct animal, of which at the present time five mounted specimens only are known to exist. All these we have already alluded to, but we may repeat that they are to be found in the Museums of Paris, Leyden, Vienna, Stockholm, and Upsala.

Finally, however, we are glad to be able to add that, although our National Collection does not contain a complete example of this species, yet it possesses a frontlet and horns which, after careful comparison, we have no hesitation in referring to *H. leucophæus*. The horns (fig. 88, p. 11) are

* Ill. Zool. S. Afr., Mamm. sub tab. xxviii. (*H. equinus*).

just 20 inches in length and 6·1 in basal circumference; they have the characteristic ridging and curvature of the horns of the male, and are obviously adult, but their size is less than the horns of the female Roan Antelope. The frontlet on which they are borne measures 3·85 inches between the orbits. The exact origin of this frontlet is not known, but it has been long in the Museum.

Fig. 88.



Frontlet of the Blue-buck.
(From the specimen in the British Museum.)

Our illustration of the Blue-buck (Plate LXXVI.) was put upon stone by Mr. Smit many years ago, from a water-colour sketch by Mr. Wolf, which is now before us. This sketch was drawn by Mr. Wolf under Sir Victor Brooke's directions, probably from the specimen at Paris, which we believe Sir Victor examined more than once, but we regret to say that there is

no certainty on this point. It should be mentioned, however, that the elongation of the hairs on the neck shown in the Plate is probably rather exaggerated, as this species, we are told by Sundevall, had only a very short "neck-mane."

January, 1899.



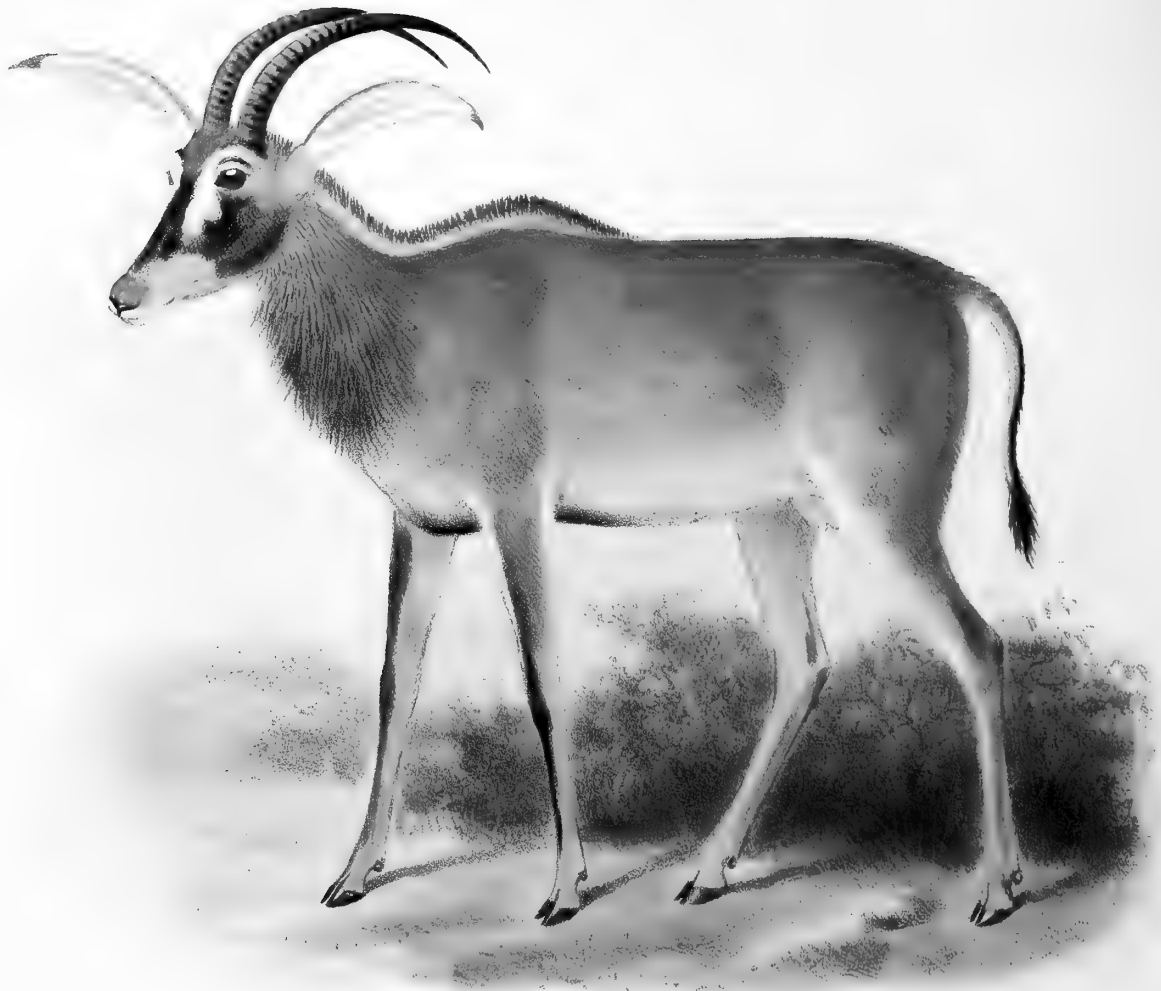
Wolf del. J. Smit lith.

The Roan Antelope.
HIPPOTRAGUS EQUINUS.

Published by R.H. Porter.

Hanhart imp.





Waterhouse Hawkins del. J. Smit lith.

The Gambian Roan Antelope, ♀.
HIPPOTRAGUS EQUINUS GAMBIANUS .

Published by R. H. Porter

Hanhart imp

III. THE ROAN ANTELOPE.

HIPPOTRAGUS EQUINUS (DESM.).

[PLATES LXXVII. & LXXVIII.]

Subspecies *a.* H. E. TYPICUS.

- Antelope equina*, Desm. N. Dict. d'H. N. (1) xxiv. p. 4, & Tabl. p. 32 (1804); *id.* op. cit. (2) ii. p. 204 (1816); G. Cuv. R. A. i. p. 263 (1817); Schinz, Cuv. Thierr. i. p. 394 (1821); Desmoul. Dict. Class. i. p. 446 (1822); Desm. Mamm. ii. p. 476 (1822); Burch. List Quadr. pres. to B. M. p. 8 (1825) (Orange Free State); H. Sm. Griff. An. K. iv. p. 177, v. p. 324 (1827); Less. Man. Mamm. p. 387 (1827); J. B. Fisch. Syn. Mamm. p. 480 (1829); Smuts, En. Mamm. Cap. p. 69 (1832); Goldf. in Schreb. Säugeth. iv. p. 1186 (1836); A. Sm. Cat. S. Afr. Mus. p. 11 (1837); Laurill. Dict. Univ. i. p. 618 (1841); Wagn. Schr. Säug. Suppl. iv. p. 482 (1844), v. p. 435 (1855); Schinz, Syn. Mamm. ii. p. 441 (1845); *id.* Mon. Antil. p. 37, pl. xlii. (1848).
- Aigoceros equinus*, A. Sm. S. Afr. Quart. J. ii. p. 185 (1834); Harris, Wild Sports S. Afr. p. 379 (1839); *id.* Portraits Wild Anim. S. Afr. p. 92, pl. xviii. (1840); A. Sm. Ill. Zool. S. Afr. pl. xxvii. (1840); Gray, P. Z. S. 1850, p. 132; *id.* Knowsl. Men. p. 16 (1850); Bly. Cat. Mamm. As. Soc. p. 169 (1863); Fitz. SB. Wien, lix. pt. 1, p. 177 (1869); Jent. Cat. Mamm. Leyd. Mus. (Mus. Pays-Bas, xi.) p. 166 (1892).
- Hippotragus equinus*, Sund. Pecora, K. Vet.-Ak. Handl. 1844, p. 197 (1846); *id.* Hornschuch's Transl., Arch. Skand. Beitr. ii. p. 148; Reprint, p. 72 (1848); ScL. P. Z. S. 1868, p. 217; Buckley, P. Z. S. 1876, p. 288; ScL. List An. Z. S. (8) p. 139 (1883); (9) p. 158 (1896); Flow. & Gars. Cat. Coll. Surg. ii. p. 262 (1884); Kohl, Ann. Mus. Wien, i. p. 85 (1886); W. ScL. Cat. Mamm. Calc. Mus. ii. p. 156 (1891); Flow. & Lyd. Mamm. p. 343 (1891); Nicolls & Egl. Sportsm. S. Afr. p. 51 (1892); ScL. P. Z. S. 1893, p. 728 (Lake Mweru); Lyd. Horns and Hoofs, p. 243 (1893); Lorenz, Ann. Mus. Wien, ix., Notizen, p. 62 (1894); Rendall, P. Z. S. 1895, p. 362 (Transvaal); Millais, A Breath from the Veldt, p. 127 (1896) (Mashoonaland); Ward, Horn Meas. (2) p. 181 (1896);

- Kirby**, Haunts of Wild Game, p. 548 (1896) (Transvaal); **Johnston**, Brit. Centr. Afr. p. 318 (1897); **Trouess.** Cat. Mamm. fasc. iv. p. 951 (1898).
- Tackhaitse*, **Daniell**, Afr. Scenery, no. 24 (1804-8), whence
- Capra aethiopica*, **Schinz**, Cuv. Thierr. i. p. 403 (1821).
- Capra jubata*, **Goldf.** Schr. Säug. v. pl. 287 c (1824).
- Antilope barbata*, **H. Sm.** Griff. An. K. iv. p. 180, v. p. 325 (1827); **Smuts**, En. Mamm. Cap. p. 70 (1832); **Jard.** Nat. Libr., Mamm. vol. iii. p. 199, pl. xxiii. (1835).
- Aigoceros barbata*, **A. Sm.** S. Afr. Quart. J. ii. p. 186 (1834).
- Antilope truteri*, **Fisch.** Syn. Mamm. p. 478 (1829).
- "*Antilope aurita*, **Burchell**," **H. Sm.** Griff. An. K. v. p. 325 (1827).
- Aegoceros leucophæus*, **Gray**, List Mamm. B. M. p. 158 (1843) (*nec* Pall.); **id.** Ann. Mag. N. H. (1) xviii. p. 232 (1846); **id.** List Ost. B. M. pp. 58 & 145 (1847); **id.** Cat. Ung. B. M. p. 102 (1852); **Gerrard**, Cat. Bones Mamm. B. M. p. 239 (1862); **Gray**, Cat. Rum. B. M. p. 34 (1872); **id.** Hand-l. Rum. B. M. p. 103 (1873); **Jent.** Cat. Ost. Leyd. Mus. (Mus. Pays-Bas, ix.) p. 135 (1887); **id.** Notes Leyd. Mus. ix. p. 173 (1887) (Mossamedes); **id.** Cat. Mamm. Leyd. Mus. (Mus. Pays-Bas, xi.) p. 166.
- Hippotragus leucophæus*, **Brehm**, Thierl. iii. p. 226 (1880); **Selous**, P. Z. S. 1881, p. 755; **id.** Hunter's Wanderings, p. 213 (1881); **Flow. & Gars.** Cat. Coll. Surg. ii. p. 262 (1884); **Bocage**, J. Sc. Lisb. (2) ii. p. 26 (1890) (Mossamedes); **Ward**, Horn Meas. (1) p. 140 (1892).

Subspecies *b.* H. E. RUFO-PALLIDUS.

- Aegoceros leucophæus*, **Scl.** P. Z. S. 1864, p. 103 (Kazeh, *Speke*).
- Hippotragus bakeri*, **Jackson**, Big Game Shooting, i. p. 292 (1894); **id.** P. Z. S. 1897, p. 454; **Matschie**, Säugeth. Deutsch-O.-Afr. p. 134 (1895).
- Hippotragus equinus*, **de Winton**, P. Z. S. 1898, p. 127 (Brit. E. Afr.).
- Hippotragus rufo-pallidus*, **Neumann**, P. Z. S. 1898, p. 850 (German and British East Africa).

Subspecies *c.* H. E. BAKERI.

- Hippotragus bakeri*, **Heugl.** Ant. u. Büff. N.O.-Afr. (N. Act. Leop. xxx. pl. ii.) p. 16, pl. ii. figs. 6 *a* & *b* (1863); **Baker**, Nile Tributaries, pp. 475 & 545 (1867); **Scl.** P. Z. S. 1868, p. 214, pl. xvi.; **Heugl.** N.O.-Afr. ii. p. 110 (fig. of head) (1877); **Huet**, Bull. Soc. Acclim. (4) iv. p. 66 (1887); **Flow. & Lyd.** Mamm. p. 343 (1891); **Ward**, Horn Meas. (1) p. 142 (1892); **Lyd.** Horns and Hoofs, p. 246 (1893); **Trouess.** Cat. Mamm. fasc. iv. p. 951 (1898).
- Aegoceros bakeri*, **Fitz.** SB. Wien, lix. pt. 1, p. 177 (1869); **Gray**, Cat. Rum. B. M. p. 34 (1872).
- Antilope leucophæa*, **Schweinf.** Herz. von Afrika, i. p. 237 (fig. of head), ii. p. 533 (1874).

Subspecies *d.* H. E. GAMBIANUS.

Aegoceros leucophæus, var. ?, "Docoi" or *Whitemouth* of Mandingoes, Gray, Cat. Ung. B. M. p. 103 (1852), whence

Aegoceros koba, Gray, Cat. Rum. B. M. p. 35 (1872); id. Hand-l. Rum. B. M. p. 103 (1873).

Hippotragus koba, Ward, Horn Meas. (1) p. 142 (1892); *Matsch.* Mittheil. deutsch. Schutz-gebiet, vi. p. 17 (1893); *Pousargues*, Ann. Sci. Nat. (7) iv. p. 131 (1896); *Trouess.* Cat. Mamm. fasc. iv. p. 951 (1898).

Hippotragus equinus, *Sci. P. Z. S.* 1896, p. 983, 1898, p. 350 (Gambia) (*Llewelyn*).

VERNACULAR NAMES:—*Roan Antelope* of English; *Bastard Gemsbok* and *Bastard Eland* of Dutch; *Qualata* of Northern Bechuanas; *Tai-hait-sa* of Southern Bechuanas; *Ee-taku* of Matabilis; *Ee-pala-pala chena* (White Sable Antelope) of the Makalakas; *Impengo eetuba* of Masubias; *Oo-ka-mooh-wee* of Makubas; *Kwar* of Masaras (*Selous*); *Takayezi* of Transvaal Zulus (*Rendall*); *Palance* in Angola (*Bocage*); *Kolongo* of Kinyamwesi in E. Africa (*Böhm* fide *Matschie*); *Abu Maaref* of Upper Nile Arabs (*Heuglin & Baker*). *Anomm* in Dinka; *Ommar* in Djur; *Manja* in Bongo; *Bisso* in Niam-Niam; *Wunnunguh* in Golo; *Omahr* in Bellanda; *Dahngah* in Ssehre (*Schweinfurth*).

Size very large, an adult male standing 56 inches high at the withers. General colour greyish, browner in the two northern subspecies. Top and sides of face black, contrasting markedly with the white muzzle and lips and with a prominent patch just in front of the eyes. On the lower half of this patch the hairs are elongated into a brush. Behind the eyes a second less conspicuous white patch is present. The black, however, is only developed in the adult, young specimens having the face nearly uniform with the body. Ears very long, narrow, pointed, their tips pencilled with black. Mane well developed, brown, directed backward, except just on the withers, where there is a tendency for it to be whorled. Throat-mane long and prominent. Belly white, its definition laterally rather variable. Limbs brownish fawn, black patches occasionally present on the outer sides of the shoulders and forearms. Tail reaching to the hocks, its brush black.

Skull-dimensions of an adult male (of subspecies *H. e. bakeri*):—Basal length 16 inches, greatest breadth 6·75, muzzle to orbit 10·3.

Horns stout and strong, cylindrical, heavily ridged, evenly divergent, curved backward; comparatively short for the size of the animal, good

specimens being only from 26 to 30 inches in length, and the longest recorded only 33.

Female similar to the male, but the horns more slender, smoother, less heavily ridged, and less strongly curved backward, and neck and body less robust.

Hab. Africa south of the Sahara, except in the Congo wood-region.

It is a well-known and generally accepted fact amongst naturalists that animals which have a wide distribution have also a special tendency to vary, and that if specimens of them from different parts of their ranges are compared, such specimens are usually found not to agree exactly, but to be distinguishable by differential characters more or less evident. When these characters are easily observable and definable their possessors are usually referred to different species, which are supposed to "represent" one another in their respective areas, and are hence often called "representative species." When the distinguishing characters are slight and less easily recognizable it has recently become the practice, especially among American naturalists, to designate their possessors as "subspecies," and, in order to indicate this, to add a third "subspecific" name to the ordinary generic and specific terms. This plan we have already adopted in some cases in the present work. But there are many cases in which, either from imperfect evidence or from an insufficient supply of specimens, it is very difficult to decide whether a "local form," as it may be termed, is better treated of as a species or as a subspecies. And in the present instance we have one of these cases before us. The Roan Antelope is very widely distributed in Africa. From the Cape Colony it extends all up the eastern side of the continent to British East Africa and Sennaar, and is also found on the west coast in Senegal, Togoland, Nigeria, and Angola. Specimens from all these countries present a very general resemblance, and have been considered by most authorities to be identical. On the contrary, other writers have regarded the local forms as distinct, and have separated them under different specific names. We confess that we have not been able (mainly, no doubt, from lack of sufficient specimens to consult) to come to a satisfactory conclusion on this subject; but, for the present, we think it a more prudent course to treat the local forms of this species found in the different districts of Africa as only of

subspecific rank, and to class them all under the one specific head as *Hippotragus equinus*.

The Roan Antelope received its specific name as long ago as 1804, when a short description of it was published by Desmarest in the twenty-fourth volume of the first edition of the 'Dictionnaire d'Histoire Naturelle,' taken from a specimen in the Paris Museum. Desmarest designated it by the French name "Antilope Osanne," but added Geoffroy's MS. scientific name "*Antilope equina*," which must, therefore, be attributed to the former author, as having first published it. Desmarest states that the exact locality of this specimen was unknown, but we think it may be safely assumed to have been from the Cape. Desmarest's description is not very accurate, but Desmoulins, who wrote the article "Antilope" in the subsequently issued 'Dictionnaire Classique d'Histoire Naturelle,' added a figure of the head of Geoffroy's type, which seems to prove that it could have been of no other than the present species.

The first European explorer in South Africa to meet with the Roan Antelope in its native wilds appears to have been Samuel Daniell, who visited the Cape about the commencement of the present century under the patronage of Lieut.-General Francis Dundas, at that time Acting Governor. In his 'African Scenery and Animals' (of which the original folio series was issued in parts in 1804 and the following years) Daniell figured what was, there is little doubt, an example of this Antelope under the name of "*The Tackhaitse*" (no. 24), and informs us, in the accompanying letterpress, that he met with two of these animals near Latakoo (or Kuruman) in Bechuanaland, where "they are usually found grazing on the edge of the Karroo Plains near the foot of the hills in small herds of five or six." Upon Daniell's "Tackhaitse" Schinz founded his *Capra æthiopica*, Goldfuss his *Capra barbata*, and Fischer his *Antilope truteri*; but all these names are happily subsequent in date to the specific term usually adopted for this Antelope, and need not concern us further.

After Daniell the next traveller to meet with the Roan Antelope appears to have been Dr. Burchell, who was at the Cape from 1811 to 1815. In his 'List of Quadrupeds presented to the British Museum,' as part of the results of this memorable expedition, Burchell records a male of *Antilope equina*, "shot at the Little Klibbolikhónni Fountain in the Transgariepine" (now Orange Free State) in December 1812. In Hamilton Smith's fourth volume

of the Mammals of Griffith's 'Animal Kingdom' a full description is given of this specimen (of which a pair of horns now alone remains in the National Collection), accompanied by a good uncoloured figure of it drawn by Thomas Landseer.

Sir Andrew Smith, whose journeys in the Cape districts took place from 1834 to 1836, published a coloured figure of this Antelope in 1840, in his 'Illustrations of the Zoology of South Africa,' and gives us the following account of its distribution in those days:—

"The range of this species is very wide, and specimens have been found wherever Southern Africa has been explored. Not very many years ago the animal was frequently seen within the northern boundary of the Cape Colony, and if we are to credit the statements of the aborigines there was a time when it occurred much more to the southward than even the locality alluded to, and from which it has now in a great measure, if not completely, disappeared. It is an animal which congregates, and commonly from six to twelve individuals are found associated together. Herds of this description are generally met in districts abounding with small hills or hilly ridges, and to such elevations they appear to resort in preference to the plains. The number of herds in any given tract is comparatively small, so that the animal, though generally diffused, is, nevertheless, nowhere abundant. Its pace is a gallop, which, in appearance, is of a heavy character, but its progress is amazingly rapid. It is an animal extremely vigilant, and always appears to be in fear of enemies; hence it comes seldom within the range of the hunter's gun."

The well-known sportsman and naturalist Sir William Cornwallis Harris, whose expedition through the interior of the Colony up to the Tropic of Capricorn took place in 1836 and 1837, writes in his usual charming style of this favourite object of the hunter's pursuit* :—

"Not less from its singular beauty than from its extreme rarity, there were few game animals in the whole African catalogue that I more eagerly sought for than the Roan Antelope—my hankering after its gay spoils being moreover greatly increased by the difficulties that I at first experienced in obtaining possession of them. According to indications given by my kind friend Dr. Smith, in whose cabinet I had seen this noble and imposing Antelope, it was on an elevated tract of rocky table-land forming a terrace on the mountains between Daniel's Kuil and Kramer's Fontein, that I first disturbed a herd whilst wandering alone in search of them along the 'rigging' of the hills. The thin covering of earth supported only a scant and faded vegetation, together with a few scrubby trees and bushes which grew from the fissures of the rock. Sur-

* 'Portraits of the Game and Wild Animals of South Africa,' p. 93.

mounted by a pair of jagged ibex-looking horns, the magpie-head of a sturdy old bull, protruded above a thin copse of brushwood through which I was riding, was not to be mistaken. I sprang from my horse, and as the whole bloom-coloured herd arose to make its rush, sent a bullet spinning betwixt the ribs of their gallant leader. But, although tantalized by an occasional glimpse of his silvery form, I followed the bloody trail over hill and through dale for eleven long hours, desisting only when the sun had gone down and daylight would serve me no longer, I was finally doomed to disappointment through lack of assistance. Not another specimen was seen until we had reached the Limpopo, the elevated tracts lying between which river and the Likwa divide the principal waters of Southern Africa, and form the peculiar habitat of this species. Even there it invariably resides in limited families, which seldom contain more than one old bull—a dozen or more of the younger males usually herding by themselves. Equal in stature to the largest Arab horse, the whole structure—remarkably powerful and muscular—is especially adapted for traversing the rugged regions that it frequents. Not less vigilant than active, its wary troops were ever most difficult to approach—the bare mountains crowned with wooded terraces that form the stronghold upon which, when disturbed, they invariably sought an asylum, proving alike impracticable to the sportsman, whether equipped in pedestrian or in equestrian order; and some time had elapsed before I accidentally ascertained the species to be so utterly destitute of *foot*—that if detected in the open glades, or among the slightly wooded downs, to which morning and evening they resort, the bulls especially may be ridden down upon an inferior horse in a quarter of a mile! For this singular fact I was the less prepared, from having previously ascertained the speed and bottom of the true Gemsbok—an animal which is scarcely less heavily built—to be unrivalled among the larger Antelopes.”

The Roan Antelope appears never to have existed south of the Orange River, and in more recent days, we fear, has retired much further into the interior than the localities specified by Andrew Smith and Cornwallis Harris. Messrs. Nicolls and Eglinton, in their ‘Sportsman in South Africa,’ tell us that it is “now very rarely found on the upper and lower banks of the Botletle River about the Mababé Flats, Great Makari-kari Salt-pans, and Chobe districts, while in the less frequented portions of Matabeleland it is still fairly common, and although once numerous in Mashonaland, is now only to be found there in the low country towards the east coast.” Mr. Selous also states that it is “tolerably plentiful” in parts of Mashonaland, and that he found a good many in the Manica country, north of the Zambesi. Mr. W. L. Sclater informs us that on the western side of South Africa it is still to be found in plenty in Damaraland and Ovampoland.

In the Transvaal, Dr. Percy Rendall, writing in 1895, states that a few of these fine animals were still to be found on the Oliphants River. Herr

Reiche, of Alfeld, informs us that, in his yearly importations of animals from the Transvaal since 1887, he has received no less than eight living examples of this Antelope, which have been disposed of to various Continental Gardens. These, however, may have been obtained in the adjoining Portuguese border-country to the north of that Republic. But Mr. Kirby, in his 'Haunts of Wild Game,' tells us that, "although very rare," the Roan Antelope is still to be found in the north-eastern parts of the Transvaal. "There are a few on the high stony ridges across the Mehlamhali and about Maripi's Berg and the Oliphants River, but nowhere in large numbers." In 1891 he shot two fine bulls on the Nuanetsi, but they were wanderers.

It was across the Limpopo within the borders of Mashonaland that Mr. John Millais came across this beautiful Antelope in 1893. Its head forms one of the subjects of the cover of his enchanting volume 'A Breath from the Veldt,' the pages of which contain several excellent sketches of this splendid animal and much information on its habits. It was near Eland's Fontein, between the Rivers Buby and Nuanetsi, that Mr. Millais obtained his first specimen of the Roan Antelope, of which he writes as follows:—

"On the Veldt the Roan has a fine and noble appearance, though it does look a bit 'front heavy.' It carries its head very finely, but not with the grace and the nobility of the Sable. In many respects it resembles its handsomer cousin. Its habits are much the same, being found alike in open or enclosed country, though on the whole it evinces a greater predilection for the great plains with scattered bush, while the Sable is fond of climbing about the low rocky hills, or in bush at the base of koppies. The Roan Antelope is also a much more regular drinker than the Sable, which can go for long periods without requiring water. A troop of the former, if undisturbed, come every evening to about the same spot on some favourite sluit of standing water, while the latter drink irregularly and nearly always about daybreak.

"Although the Roan is a very large animal, standing about 5 feet at the shoulder, the dull reddish grey of its hide makes it very hard to distinguish in bush, and it would often be passed even in the open lands but for its shy nature, which causes it to start lumbering away as soon as it sees a man on a horse.

"The Sable will stand and stare at you quite close sometimes, as much as to say 'Who the devil are you?' The Koodoo will creep under the shadow of a thorn bush and hope to 'Goodness gracious' you won't notice him; but the Roan will say 'Good morning' as soon as he sees you.

"Roans seem to keep in much smaller parties than the Sables, about a dozen cows being the limit, whilst the old males live much to themselves, and are more difficult to find than they are to bag. When running the Roans adopt single file, and each

follows closely the steps and movements of the old cow who generally leads. They have a very fair power of endurance, but I think that any decent horse, if properly handled, will run them to a standstill. All hunters, however, are agreed that one should be careful in such experiments, for this Antelope is doubtless the most dangerous of all the tribe, there being plenty of authenticated instances of the animals turning and charging furiously when merely pressed too hard."

Again, Mr. Millais writes :—

"The Dutchmen, who are generally pretty well at sea as regards the names of wild game, have never quite made up their minds what to call this animal. They consider that he has absolutely no claims to legitimacy on any score, and half the members of that nation whom you meet will christen it either 'Bastard Eland' or 'Bastard Gemsbok,' both of which are equally ridiculous and inappropriate. Though the animal, when viewed critically, is on the whole imposing and even beautiful, when seen running it looks decidedly clumsy, and wanting in both proportion and elegance; yet the head, when well set up and viewed among other specimens of African fauna, has a striking and pleasing appearance. The fine blending of colours on the face, the white switches of hair over the lachrymal glands standing out over the black of the cheeks, the fine rough neck, and the long queerly-shaped ears, all tend to give the head the wild game look it certainly possesses. The horns themselves, though nothing compared with those of the Waterbuck, Koodoos, and Sable, are beautifully annulated, and look quite in proportion. Ward gives the maximum of males as 33 inches, and females 30½ inches. I would call the attention of the reader, if a naturalist, to the very peculiar shape of the ear, and to the way that the white whisps drop from above the lachrymal sinus, making the hairs stand out slightly as they do in life.

"Of all the larger Antelope, except perhaps the Eland, the Roan is the easiest to kill. If the hunter follows a troop up they will frequently stop and allow several shots to be fired at them; but the hunter must above all things keep them in good view, for once out of sight the Roans know they are likely to be followed up, and it will be found next to impossible to approach them, their sense of sight and smell is so keen, and they so commonly start running long before you have spotted them."

Another recent authority on the Antelopes of Mashonaland, Mr. J. Ffolliott Darling, F.Z.S., has kindly favoured us with the following notes :—

"Roan Antelopes are rather scarce over most parts of Mashonaland. They run in small troops of from 3 to 6 or 8 in number. They vary greatly in bulk and in size of horn; sometimes a big bull will have a very poor head.

"I once came across a very trusting troop of Roans consisting of a bull and four cows, in the morning soon after sunrise, on an open plain; they allowed my companion to shoot the bull from the road: we put him on a wagon and went on to camp at a stream a few miles further on. During the day the four cows came along and grazed with our oxen within a few hundred yards of where we were camped. When the boy went to bring in the oxen, I went with him and I walked up to within 75 yards of the Roans before they

showed any signs of uneasiness; then they looked awhile, kicked their heels in the air, and galloped off a bit and had a little fight in play, came back again and continued playing about there while the oxen were being inspanned.

“On another occasion, in November, I found a cow and calf by themselves in the middle of the day, on an open flat. I sat down on the top of an ant-hill to watch, and presently, after inspecting me carefully at 800 yards distance, the cow lay down on the top of another ant-hill, the better to keep me in view, while the calf played about and nibbled the grass; after half an hour or so the cow got up and they moved off leisurely to the hills.”

Passing to the north of the Zambesi we have already recorded the occurrence of the Roan Antelope on the Manica Plateau in the Barotse country on the testimony of Mr. Selous. Herr Lorenz, in his list of Dr. Holub's Mammals, also catalogues a male specimen obtained by that traveller in the same district. Further north it was found by Mr. Alfred Sharpe to be abundant near Lake Mweru, and five heads of it were sent home by him in 1895. Mr. Sharpe, on his journey from Lake Nyasa to Mweru in 1892, first met with the Roan Antelope after crossing the Saisi, which flows into Lake Rikwa (see P. Z. S. 1895, p. 723). In the Protectorate of Nyasaland this Antelope would appear to be not so common, and Mr. Crawshay did not include it in his list. But it occurs, according to the late Capt. Sclater, in the Shiré Highlands on the Tochila Plains between Blantyre and Milanji (see P. Z. S. 1895, p. 728), and Major Frank Trollope is stated to have shot specimens on the east coast of Lake Nyasa (Johnston, Br. Centr. Afr. p. 318).

On the Nyasa-Tanganyika plateau between the two lakes, according to information supplied to us by Mr. James B. Yule, the Roan is one of the most abundant Antelopes, and is met with in herds of from 20 to 30.

Passing on northwards we now come to German and British Eastern Africa, on specimens from which countries Herr Neumann has lately based his *Hippotragus rufo-pallidus*. As already stated, we regard this local form, so far as present evidence goes, as at most not more than a subspecies of *H. equinus*. As regards its alleged variation in colour, it should be recollected that an excellent observer, Mr. Selous, tells us that these Antelopes “differ very much one from another in colour, some being of a strawberry-roan, others of a deep dark grey or brown, and others again so light as to appear almost white at a distance”*.

* P. Z. S. 1881, p. 756.

In this part of Africa the Roan Antelope appears to have been first observed by Speke, who met with it in swampy ground near Kazeh in Unyamwesi "in considerable numbers," and sent home a single head. Herr Matschie records it as observed by Böhm in Uganda. Herr Oscar Neumann kindly informs us that during his two years' journeyings in East Africa he only met with one herd of this Antelope, out of which he shot five specimens, all females. This was on the 24th of September, 1893, on the upper River Bubu, halfway between Irangi and Mount Gurui. "When approached, the herd did not go off at full speed, but trotted away and then broke into a slow canter." Herr Neumann believes he could have shot more of them if he had not been exhausted by hard running.

Herr Matschie kindly furnishes us with the following additional localities for this Antelope in German East Africa:—Upper Pangani River, south of Kilimanjaro (*Kaiser* and *Schillings*); between Lumbwa and Kavirondo (*Schillings*); and Ufipa in Ukonongo (*Hösemann*).

In British East Africa, likewise, this Antelope appears to be local and rather rare. Mr. Jackson believes that he saw it on the northern slopes of Mount Elgon (Big Game Shoot. i. p. 292), and, more recently, has recorded that Capt. F. S. Dugmore, R.N.R., shot a male on the Athi Plains in July 1896*. Mr. Jackson also writes to us from the Ravine Station on the Uganda Road as follows:—

"In April last, two marches from here, I saw a herd of 7 Antelopes much resembling the Roan. They were about 800 yards off, and I had a good look at them with a powerful telescope before commencing a stalk, which, I regret to say, was unsuccessful through one of them, that I did not notice, seeing me. There were four cows, one bull, and two half-grown calves. In colour they were like an Oryx, and not unlike it in shape, though larger and longer on the leg. The back of the neck was arched, like a Sable, and appeared to carry a short dark zebra-like mane. The ears were very long and tufted, and the horns of both the bull and cows were thick in proportion to their length, the bull's perhaps 20 inches or more, and curved backwards like a Roan. With the exception of one calf they were all standing under a big tree in the shade, and as they were all broadside on to me I could not make out what the facial markings were like. As the calf stood facing me, its ears stood out almost at right angles to its head, with a slight droop towards the tips. They appeared to me to be not large enough for Roan (I have only seen those in the Natural History Museum), and I believe that they are more likely to be *H. bakeri*. I feel sure that they are of the same species as that I saw on the northern slopes of Mount Elgon in 1890." (See P. Z. S. 1897, p. 454.)

* See 'Field,' lxxxviii. p. 764 (1896).

Finally, on March 1st last year, Mr. W. E. de Winton at a meeting of the Zoological Society exhibited a head-skin of this Antelope, brought home from Machakos, on the Uganda Road, by Mr. S. L. Hinde, which had been obtained from the Collector at that station.

From the slopes of Mount Elgon we will now proceed further northwards to the swamps of the Bahr el Ghazal and the plains of the Atbara and Blue Nile. Here we find the Roan Antelope, or at all events its nearly allied representative, long ago recognized, and dedicated, as a new species, to the memory of the well-known British sportsman and traveller the late Sir Samuel Baker. Heuglin, who was the author of the name "*bakeri*," though well acquainted by report with this species (which he says occurs in herds in the open districts of Galabat and on the Atbara), tells us that he had only once seen it himself, and had derived most of his information on it from Baker, who, in his 'Albert Nyanza,' vol. i. p. 340), speaking of the Latooka country on the right bank of the White Nile, between 4° and 5° N. lat., writes as follows:—

"I saw varieties of Antelopes, including the rare and beautiful *Maharif*; but all were so wild, and the ground so open, that I could not get a shot. This was the more annoying, as the *Maharif* was an Antelope that I believed to be of a new species. It had often disappointed me; for although I had frequently seen them on the south-west frontier of Abyssinia, I had never been able to procure one, owing to their extreme shyness, and to the fact of their inhabiting open plains, where stalking was impossible. I had frequently examined them with a telescope, and had thus formed an intimate acquaintance with their peculiarities. The *Maharif* is very similar to the Roan Antelope of South Africa, but is mouse-coloured, with black and white stripes upon the face. The horns are exactly those of the Roan Antelope, very massive and corrugated, bending backwards to the shoulders. The withers are extremely high, which give a peculiarly heavy appearance to the shoulders, much heightened by a large and stiff black mane like that of a hog-maned horse. I have a pair of horns in my possession that I obtained through the assistance of a lion, who killed the *Maharif* while drinking near my tent; unfortunately the skin was torn to pieces, and the horns and skull were all that remained."

The well-known scientific traveller Dr. Schweinfurth also met with this Antelope in several localities in the course of his journeys (1868-71) among the upper affluents of the Bahr el Ghazal, and furnishes us with a long list of the vernacular names by which it is known among the various native tribes of that country. In the first volume of his 'Im Herzen von Afrika' (p. 237) he gives a good figure of its head, and tells us how, as he was one day deeply

engaged in botanizing in the forests of Bongo, a fine full-grown specimen of this stately beast suddenly appeared close to him, and fell a victim to two well-directed shots, to the great joy of the accompanying natives.

Dr. William Junker, who visited the same district of Africa in 1882, also met with this Antelope in Zemio's territory upon the upper affluents of the

Fig. 89.



Horns of Baker's Roan Antelope.
(From P. Z. S. 1868, p. 216.)

Welle, where he tells us ('Travels in Africa,' Keane's translation, iii. p. 144) that his hunter brought in a "Bastard" Chamois (*Antilope leucophæa*). Of this animal a figure is given which seems decidedly to belong to this species.

In 1868 Sclater gave an account before the Zoological Society of London
VOL. IV.

of a young male Equine Antelope of this form which he had observed in the King of Italy's Menagerie, and illustrated it by exhibiting a coloured photograph of the animal, which was subsequently reproduced in the Society's 'Proceedings.' The animal had been received from Dr. Ori, the King's agent at Khartoum, and on its death was deposited in the Royal Zoological Museum of Turin. Sclater's paper was supplemented by some field-notes on this Antelope contributed by Sir Samuel Baker, who also sent for exhibition the fine pair of horns of the typical specimen described by Heuglin, then in his collection. A figure of them is likewise given in Sclater's article in the 'Proceedings,' which, by the kind permission of the Society, we are enabled to reproduce in these pages (fig. 89, p. 25).

On Nov. 24th, 1878, the Zoological Society of London acquired a young male Equine Antelope from Mr. C. Hagenbeck, who stated that he had received it along with other animals from Upper Nubia. If this statement was correct, which there is no reason to question, this animal was, no doubt, an example of *Hippotragus equinus bakeri*, although it was never recognized as such. It lived in the Regent's Park Gardens until February 23rd, 1889.

There was also, about twenty years ago, an Equine Antelope, obtained from the same source, living in the Zoological Garden at Berlin. Mr. Clarence Bartlett has kindly lent us an excellent water-colour drawing of this specimen taken by the late Stanley Wilson. It represents, no doubt, the same local form of this Antelope. Mr. Hagenbeck informs us that the Berlin specimen was also received by him in one of his consignments from the Egyptian Sudan.

That a representative of the Equine Antelope is likewise found in West Africa on the open country traversed by the Upper Gambia has been known since Whitfield, as recorded by Gray in 1852, brought home specimens of its head and horns. Gray did not then consider these to indicate any difference from the Cape specimen of this species in the British Museum. In a subsequent journey Whitfield also brought home for the Derby Menagerie two, or perhaps three, living examples of this Antelope. These were figured by Waterhouse Hawkins in three water-colour drawings forming part of the two volumes of original sketches by Waterhouse Hawkins and Wolf which are now in the Library at Knowsley, and which, by the kind permission of the present Earl of Derby, were exhibited and described by Sclater at the meeting of the

Zoological Society on December 15th, 1896 *. From the MS. notes written on these three drawings we learn that they were made on board the s.s. 'African' on Sept. 11th and 12th, 1848, and represent the adult female and young male of this Antelope—the "*Dacris*" of Whitfield.

By the kind permission of Lord Derby we now give an exact copy, slightly reduced in size, put upon the stone by Mr. Smit (Plate LXXVIII.), of Waterhouse Hawkins's drawing of the "*Dacris*," which forms one of the figures of plate 5 of the second volume of this valuable series, and is stated to represent an adult female. This figure will be observed to differ from that of the male (Plate LXXVII.) in its much lighter and more reddish colouring, and especially in the longer ears of the Gambian animal.

One of the young specimens brought home by Whitfield is now stuffed in the Derby Museum at Liverpool. As we learn from the label, it died in London on its way to Knowsley.

More recently heads of this Antelope have been obtained on the Gambia by Dr. Percy Rendall, F.Z.S., and by Sir R. B. Llewelyn, the present Governor. The latter were exhibited by Sclater at a meeting of the Zoological Society on May 3rd, 1898 †, when attention was called to the large number of fine Antelopes that occur in the Gambia Colony, and to the desirableness of procuring further information about them. According to the notes supplied to us by Sir R. B. Llewelyn, the Roan Antelope, which is the "*Da Kevoi*" of the Mandingos, is found in some places in Jara and Kiaung, and is common in Eastern Niammina.

The horns in question are those of a not fully adult animal, measuring $26\frac{1}{2}$ inches along the curvature. They do not present any noticeable features to distinguish them from those of *Hippotragus equinus typicus* of South Africa.

The existence of this Antelope in West Africa has been further confirmed by Herr Matschie, who has included it in his list of Mammals of the German Protectorate of Togo, on the Gulf of Guinea, where it occurs on the uplands of the interior. Herr Matschie kindly informs us that the Berlin Museum has received from that locality a defective head and skin without horns from Misa-höhe, transmitted by Herr Baumann, and two skulls of females from Bismarckburg (*Kling* and *Conrad*). In the collection of the British Museum

* See P. Z. S. 1896, p. 981.

† See P. Z. S. 1898, p. 349.

there are also a scalp and skull of a young male of the Roan Antelope obtained at Balaga, Beaufort Island, on the Niger, and presented by Capt. A. J. Richardson.

Lastly, we may add that there is a fine young male Roan Antelope now living in the Zoological Garden, Antwerp, which is stated to have been received from Senegal, and, if so, would probably belong to the subspecies now under consideration.

As regards the name to be used for this local form or subspecies of the Roan Antelope a few words are necessary. Gray, in his 'Catalogue of the Ruminants,' published in 1872, proposed to call it "*koba*"—no doubt because of Whitfield's assurances that it was the "Kob" or "Koba" of the Jolliffs, and, as will be seen by our list of synonyms, several subsequent authors have followed Gray's lead. But we have already fully discussed the question of this much-vexed name (see Vol. I. p. 60), and have shown that it is hopeless to attempt to refer the "Koba" of Buffon satisfactorily to any of the species with which it has been identified. It follows that the Latin specific term "*koba*," founded on Buffon's name, must also fall to the ground. Under these circumstances we propose to designate the western form of the Roan Antelope *Hippotragus equinus gambianus*, as being the representative of this species in the Gambia.

South of Togo, along the West-African coast down to the Congo and in the great Congo valley itself, we are not aware of the Roan Antelope ever having been met with; nor is it likely to occur there, as the uniform dense forest which covers these districts would be little suited to its habits. But when we proceed further south to Mossamedes and the interior of Angola, where the country becomes drier and more open, the Roan Antelope is again found. Dr. Jentink mentions it in his article on the mammals collected in Mossamedes by Mr. P. J. van der Kellen (Notes Leyd. Mus. ix. p. 173); and Prof. J. V. Barboza du Bocage includes it in his catalogue of the Mammals of Angola, published in 1892, as having been received from Golungo Alto in the interior, where, along with the Sable Antelope, it is known by the native name of "Palanca" or "Malanca" (Jorn. Ac. Sc. Lisboa, 2, ii. p. 26). We presume that the Angolan representative of the Roan Antelope will be found to belong to the typical South-African form *Hippotragus equinus typicus*.

The specimens of the Roan Antelope in the British Museum consist of a

mounted adult male and a young one, and the skeleton of a male, from Mashonaland, presented by Mr. F. C. Selous (exhibited in the gallery); an adult male presented by Sir Andrew Smith, being the specimen figured in his 'Illustrations,' as above referred to; a female presented by Lord Derby; and a skin and skull of an adult from Lake Mweru, presented by Mr. Crawshay. There are also several pairs of horns, one of which was received from Dr. Burchell. These specimens all belong to the typical form.

Of the East-African *H. equinus rufo-pallidus* the British Museum has only the scalp and skull from Machakos (*Dr. Hinde*) above referred to,

Fig. 90.



Head of Roan Antelope.

Of *H. e. bakeri* the British Museum has two skulls (σ et ♀) from the Atbara, obtained by the collector Essler.

Of the West-African *H. e. gambianus* the series in the National Collection comprises a pair of frontlets (σ et ♀) from Gambia (*Whitfield*) presented by Lord Derby, a scalp and skull from the Upper Gambia presented by Dr. Percy Rendall (above referred to), and the specimen from the Niger presented by Capt. Richardson.

This series, as is evident, is quite insufficient to solve the vexed question as to the amount of distinctness of the four geographical forms or subspecies, which must remain open for future investigators.

Our illustration of the adult male of this Antelope (Plate LXXVII.) was put on the stone by Mr. Smit, about twenty years ago, from a water-colour sketch by Mr. Wolf. It is now impossible to ascertain from what specimen this sketch was taken, but it is conjectured to have been from a skin and skull procured by Mr. Selous in S.E. Africa. At the same time a wood-block of the head (fig. 90, p. 29) was drawn, which shows well the essential differences between the Roan Antelope and the Sable Antelope (see fig. 91, p. 38).

January, 1899.

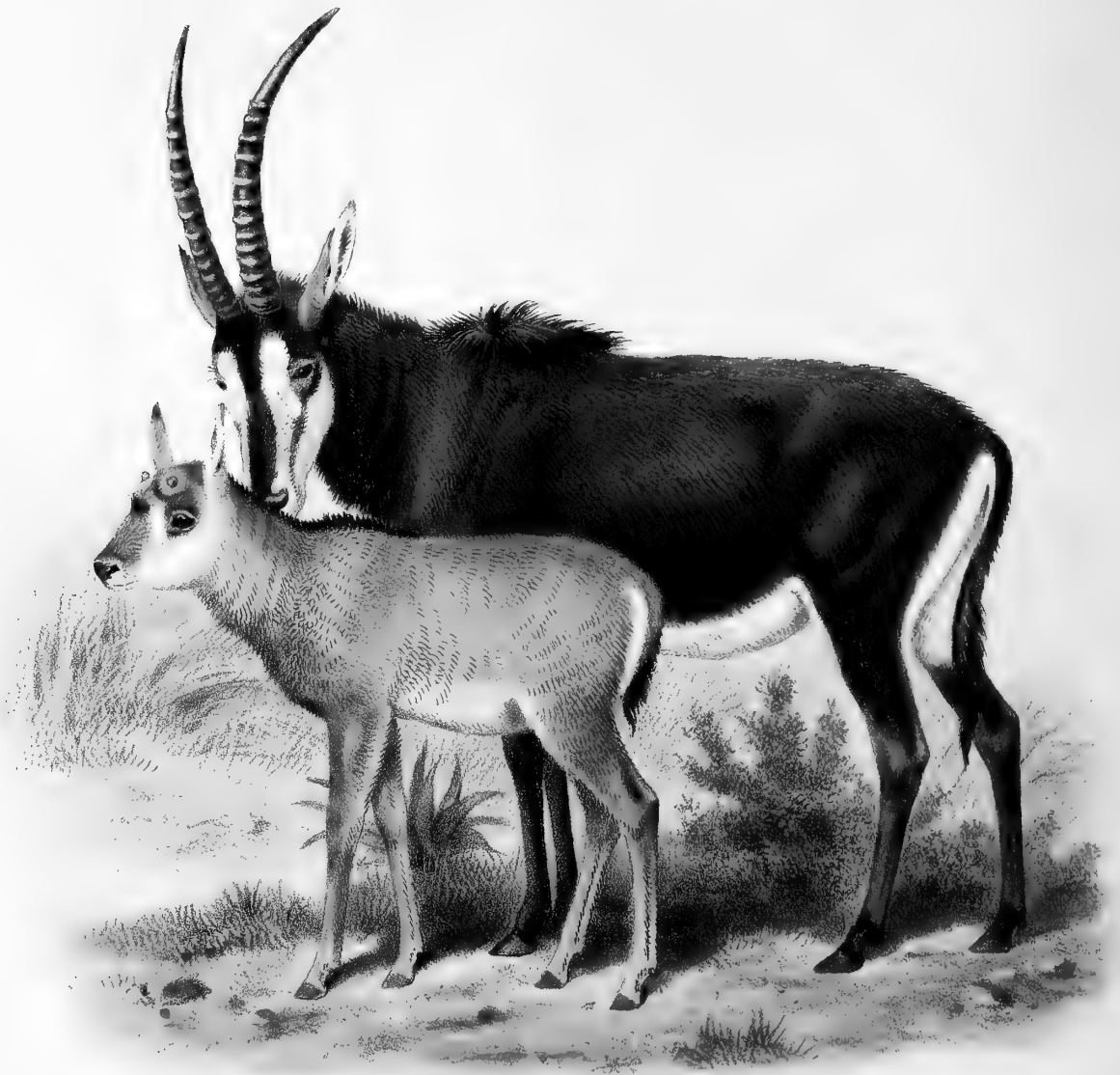


Alt. 66. Length 100.

The Sable Antelope.
HIPPOTRAGUS NIGER.

H. Hart sculp.

Published by R. H. Porter



H. Leutemann del. J. Smit lith.

The Sable Antelope, ♂ et vit.
HIPPOTRAGUS NIGER.

Hanhart imp.

Published by R.H. Porter

112. THE SABLE ANTELOPE.

HIPPOTRAGUS NIGER (HARR.).

[PLATES LXXIX. & LXXX.]

- Aigoceros niger*, Harris, P. Z. S. 1838, p. 2 (Jan. 9); id. Tr. Z. S. ii. p. 213, pl. xxxix. (1838); id. Portr. Wild Anim. S. Afr. p. 126, pl. xxiii. (1840); Gray, List Mamm. B. M. p. 158 (1843); id. Knowsl. Men. p. 17 (1850); id. P. Z. S. 1850, p. 133; id. Cat. Ung. B. M. p. 104 (1852); Harris, Wild Sports S. Afr. (ed. 5) pp. 216 & 349, pl. xxii. (1852); Gerrard, Cat. Bones Mamm. B. M. p. 240 (1862); Scl. P. Z. S. 1864, p. 103 (Kazeh, *Speke*); Kirk, P. Z. S. 1864, p. 658 (Zambesia); Fitz. SB. Wien, lix. pt. 1, p. 177 (1869); Gray, Cat. Rum. B. M. p. 35 (1872); id. Hand-l. Rum. B. M. p. 103 (1873); Huet, Bull. Soc. Acclim. (4) iv. p. 480 (1887); Jent. Cat. Ost. Leyd. Mus. (Mus. Pays-Bas, ix.) p. 135 (1887); id. Cat. Mamm. Leyd. Mus. (op. cit. xi.) p. 166 (1892).
- Antilope nigra*, Gerv. Dict. Sci. Nat., Suppl. i. p. 265 (1840); Laurill. Dict. Univ. d'H. N. i. p. 618 (1841); Wagn. Schr. Säug., Suppl. iv. p. 484 (1844), v. p. 436 (1855); Schinz, Syn. Mamm. ii. p. 442 (1845); id. Mon. Antil. p. 38, pl. xliii. (1848); Peters, Säug. Mossamb. p. 190 (1852).
- Hippotragus niger*, Sund. Pecora, K. Vet.-Ak. Handl. 1844, p. 197 (1846); id. Hornschuch's Transl., Arch. Skand. Beitr. ii. p. 148; Reprint, p. 72 (1848); Heugl. Ant. u. Büff. N.O.-Afr. (N. Act. Leop. xxx. pt. 2) p. 16 (1863) (Shilluk Co.); Scl. P. Z. S. 1868, p. 218; Buckley, P. Z. S. 1876, p. 288; Bocage, P. Z. S. 1878, p. 745 (Mossamedes); Brehm, Thierl. iii. p. 227 (1880); Selous, P. Z. S. 1881, p. 756; id. Hunter's Wanderings, p. 214 (1881); Scl. List Anim. Z. S. (8) p. 139 (1883), (9) p. 158 (1896); Flow. & Gars. Cat. Coll. Surg. ii. p. 263 (1884); Johnston, Kilima-njaro, p. 354; Crawshay, P. Z. S. 1890, p. 660 (Nyasa); Bocage, J. Sci. Lisb. (2) ii. p. 26 (1890) (Mossamedes); Flow. & Lyd. Mamm. p. 343 (1891); Ward, Horn Meas. (1) p. 137 (1892), (2) p. 178 (1896); Nicolls & Egl. Sportsm. S. Afr. p. 50 (1892); Thos. P. Z. S. 1893, p. 504 (Zomba); Lyd. Horns and Hoofs, p. 245 (1893); Lugard, E. Afr. i. p. 533 (1893); Jackson, in Badm. Big Game Shooting, i. pp. 285 & 293 (1894); Lorenz, Ann. Mus. Wien, ix., Notizen, p. 62 (1894); Rendall, P. Z. S. 1895, p. 362 (Transvaal); Matsch. Säug. Deutsch-

O.-Afr. p. 134 (1895); *Sci. P. Z. S.* 1896, p. 506 (Zomba); *Thos. P. Z. S.* 1896, p. 797 (Nyasaland); *id. P. Z. S.* 1897, p. 939 (Zomba); *Trouess. Cat. Mamm.* fasc. iv. p. 952 (1898).

Aegoceros niger, var. *kirkii*, Gray, *Cat. Rum. B. M.* p. 35 (1872) (Zambesia).

Ozanna nigra, Brehm, *Thierl.* iii. p. 227 (1880).

Aigocerus harrisi, Harris, *Wild Sports of S. Africa*, (ed. 1) pp. 261 & 378 (1839).

VERNACULAR NAMES :—*Sable Antelope* or *Harris-buck* of English; *Zwart Wit Pens* of Dutch; *Potoquane* of Southern Bechuanas; *Qualata inchu* of Bamangwatos and Makalolos; *Umtjiele* of Matabilis; *Pala-Pala* of Makalakas; *Impengo* of Masubias; *Ookwa* of Makubas; *Solvepe* of Masaras (*Selous*). *Inguarato* and *Marabulla* of Mashoonas (*Darling*). *Mbarapi* of Ajawa; *Mpala-Mpala* of Anyanja, Angonis, and other Nyasa races (*Crawshay*). *Palla-Halla* in Swahili (*Matschie*).

Size rather less than in the Roan Antelope; adult male about 52 inches at the withers. General colour a rich glossy black, at least in adult males, only relieved by the white of the face-markings, of the inner surface of the ear, and of the belly. Centre line of face black, outside which there is a white streak reaching from the bases of the horns to the muzzle, succeeded again on the cheeks by a black band. Lips and region of lower jaw white. Ears of ordinary length, their tips not pencilled. Mane well developed, the hairs directed backward. A throat-mane present. Belly and back of hams sharply defined white. Limbs black, the inner sides of the thighs white. Whole of tail black.

Skull-dimensions of an adult male from Nyasaland:—Basal length 15·7 inches, greatest breadth 6·55, muzzle to orbit 11.

Horns much longer than in *H. equinus*, compressed laterally, their longitudinal much greater than their transverse diameter, heavily ringed, boldly curved backward. In length they are often 43 or 44 inches long round the front curve, the record being 46 inches.

Female. Similar to the male, but more or less brownish in colour; horns (just as in *H. equinus*) more slender and smooth, less curved, and rather shorter than in the male.

Hab. Eastern Africa, from the Northern Transvaal to German East Africa.

The distinguished traveller and sportsman Sir William Cornwallis Harris, whose works we have so often quoted in these pages, was the discoverer of

this Antelope, which was characterized by Gordon-Cuming—the great African hunter—as “one of the loveliest animals which graces this fair creation.” Harris writes in one of his works that “the desire nearest to his heart” from the beginning of his journey had been to “discover something new”; and in the present instance he certainly succeeded. But we will let him tell his story in his own words.

When encamped on the Cashan Mountains in what is now the north-western part of the Transvaal, in 1836, as he writes in his volume on ‘Wild Sports in Southern Africa,’ he achieved his success as follows:—

“My double-barelled rifle having again suffered in a fall with my horse, I took the field on the 13th December with a heavy weapon constructed upon the primitive principle of flint and steel, which, as a *pis-aller*, I had obtained at the Kuruman.

“Our party were in full pursuit of a wounded elephant, when a herd of unusually dark-looking antelopes attracted observation in an adjacent valley. Reconnoitring them through a pocket-telescope from the acclivity on which we stood, I at once exclaimed that they were new; and having announced my intention of pursuing them, if requisite, to the world’s end, I dashed down the slope, followed by the derision of the Hottentots, for my unsportsman-like attention to an ‘ugly buck,’ *one* specimen of which, however, I assured them I would rather possess than all the elephants in Africa! In an instant I was in the middle of the herd, which was then crossing the valley—nine chestnut-coloured does leading, and two magnificent coal-black bucks—all with scimitar-shaped horns—bringing up the rear. Hastily dismounting, I was delighted to observe them stand for a few seconds within fifty yards, and stare at me with amazement. In vain was it, however, that I pulled the trigger of my rifle; three several times the heavy machinery of the lock descended with alarming vehemence, but no report followed the concussion; and the herd having in the meantime ascended a steep hill, I fairly rode my horse to a standstill in the attempt to overtake them. Cursing my hard fortune as I dashed the hateful weapon to the ground, I hastened to the camp to repair my rifle; armed with which, and mounted on a fresh steed, I returned with my companion to the spot, where, having taken up the footmarks, we followed them, with unwearied perseverance, among the hills, during the whole of that and the following day, without attaining even a glimpse of the objects of our quest. At noon of the third day, however, peeping cautiously over a bank, our laudable assiduity was rewarded by the gratifying sight of the two bucks grazing by themselves, unconscious of our approach, in a stony valley.

“Having disposed our forces, after a moment’s consultation, so as to intercept the game from a tangled labyrinth of ravines, the attack was made. The hind leg of the handsomer of the two was dangling in an instant, and in another he was sprawling on the earth. Quickly recovering himself, however, he led me more than a mile over the sharp stones ere he was brought to bay, when, twice charging gallantly, he was at length overthrown and slain.

“It were vain to attempt a description of the sensations I experienced when thus, after three days of toilsome tacking and feverish anxiety, unalleviated by any incident that could inspire the smallest hope of ultimate success, I at length found myself in actual possession of so brilliant an addition to the riches of natural history. The prize evidently belonged to the Aigocerine group, and was equal in stature to a large galloway. The horns, which were flat, and upwards of three feet in length, swept gracefully over the back in the form of a crescent. A bushy black mane extended from the lively chestnut-coloured ears to the middle of the back; the tail was long and tufted; and the glossy jet-black hue of the greater portion of the body contrasted beautifully with a snow-white face and belly. We thought we could never have looked at or admired it sufficiently; my companion observing, after a long pause, ‘that the Sable Antelope would doubtless become the admiration of the world.’ A drawing and description having been completed on the spot, the skin was carefully removed and conveyed upon a pack-horse in triumph to the camp; and it may possibly interest those of my readers, who shall have followed me during the last three days, to learn that I succeeded, with infinite difficulty, in bringing this unique and interesting specimen of African zoology, in a state of high preservation, to Cape Town, where, in October last, it was elegantly set up by Monsieur Verreaux, the French naturalist, and obligingly taken to England by my well-known friend Captain Alexander, 42nd Royal Highlanders, and is now in the British Museum.”

On January 9th, 1838, Harris exhibited his mounted specimen of the Sable Antelope at a meeting of the Zoological Society of London, and proposed for it the apposite scientific name “*niger*.” The same specimen was subsequently figured in the second volume of the Society’s ‘Transactions.’

Writing in 1881 Mr. Selous gave the following account of the distribution of the Sable Antelope at that period:—

“At the present a few Sable Antelopes are still to be found in south-western Matabele Land, in the neighbourhood of the Ramokwebani, Shashani, and Samookwe rivers (tributaries of the Shashe). Along the waggon-road leading from Tati to the Zambesi it may be met with here and there, but is decidedly scarce. All along the Chobe river, as far as I have been, I have met with this Antelope, though sparingly. In the Mābābe country, and on the road leading from there to Bamangwato, I neither saw a Sable Antelope nor the spoor of one, and do not think its range extends so far to the west. In the broken country to the south of the Victoria Falls, in the neighbourhood of the Pendamatenka and Daka rivers, it is not uncommon, but its true home is the higher portions of the Mashuna country, to the north-east of the Matabele country. There it is the commonest Antelope, and may still be met with in herds of over fifty individuals, the usual number being from ten to twenty. However large the herd, I have never seen more than one full-grown bull with it, though there may be several

half-grown ones; whilst in a large herd of any other kind of Antelopes two or more full-grown males are nearly always to be seen. On the Manica plateau, north of the Zambesi, Sable Antelopes are also to be met with. The longest pair of male Sable Antelope's horns I have seen measured 45 inches over the curve, the longest pair of female 33 inches. In the Mashuna country and along the Chobe the average length of the horns of these animals is greater than in south-western Matabele Land."

In his admirable work entitled 'A Breath from the Veldt' Mr. John Millais has devoted many pages and sketches to the illustration of this splendid creature, which he evidently places as the finest of all the Antelopes of South Africa. He describes it as follows:—

"In general appearance and sporting qualities the Sable Antelope (*Hippotragus niger*) yields the palm to none of its kind. There is about the whole animal that indescribable charm that is so intensely African and associated with the wild life. Its strong individuality must ever stand out in the minds of those who have been so fortunate as to see and shoot it, and it is certainly one of the chief objects of interest in the splendid fauna of that country. Apart from its satin-like hide, sweeping horns, erect mane, and great strength, the Sable Antelope presents an appearance of fearlessness and nobility that is very striking, to say the least of it. Though the Koodoo surpasses his rival in elegance and general appearance when dead, he is but a skulker, and makes but a poor show beside the Sable on the Veldt. I would say, if such a comparison be allowable, the two hold their own like the rival beauties of a London drawing-room. The fair beauty sits quietly in a corner, charming her immediate circle with her graceful shyness and beauty, and people take sly glances at her from the other end of the room, while pretending to devote their attention to someone else. What a contrast with her black-eyed rival, who flaunts into the room as if she owned the entire show, and commands the attention of all eyes by her flashy and striking beauty! The one attracts attention slowly, the other commands it at once. Roughly speaking, the height of this grand Antelope at the shoulder is about $4\frac{1}{2}$ feet, but he looks much taller, owing to his great shoulders and unusually thick neck, ornamented with its erect crest of hair. The tail is long, and has a good wisp of hair at the end, which, like the tails of the Roan Antelope and the Waterbuck, swings from side to side as the animal gallops away. Like the Koodoo, the horns of the Sable are its chief glory, and the noble manner in which the head is carried by the buck when on the move is a splendid thing to see. Unlike all Deer, and nearly all Antelope, the Sable when running arches the neck instead of raising the chin; this gives the animal its nice picture-book look, and I could hardly imagine a finer subject for an animal painter than a herd of these grand beasts on the move, if their heads and necks be properly drawn."

Mr. F. V. Kirby, F.Z.S., in his 'Haunts of Wild Game,' also devotes a whole chapter to an account of his rencontres with this Antelope, which he found "by no means rare" in his favourite hunting-grounds in the Lydenburg

district of the Transvaal, and gives several excellent illustrations of its noble form.

Lastly, Mr. J. Ffolliott Darling, F.Z.S., has kindly favoured us with the following field-notes on this Antelope as lately observed by him in Mashonaland and Matabeleland:—

“These Antelopes, of which the Mashona names are *Inguarūti* and *Marabālla*, were much more numerous before the incursion of the Pioneers in 1890, but even now, in most out-of-the-way places, they are abundant, especially on the higher parts of the plateau, which is from 3000 to 5000 feet high. As late as 1896 I have seen troops of these bucks lying out on the open flats at midday, far from any cover, but, as a rule, when much disturbed and hunted, they seek concealment in the bush for their daily sleep. They usually go in troops of from 5 to 12 or 15, the largest herd I ever counted consisting of 22 individuals; I often heard of troops of 50 or 60, but when an opportunity offered of counting them they invariably resolved themselves into a score or so. Occasionally one comes across a bull keeping altogether by himself, and in such cases I always found him very wary and almost impossible to approach within shot. Whatever may be the reason for his going alone, it is evidently the same cause that has also made him very suspicious and cautious. I have known a lone bull haunt a certain spot for months, and have seen him frequently, but never in company. Sometimes 3 or 4 bulls will be found together, but usually herds are mixed—young and old, male and female, run together; a troop of 10 will consist of one big bull, 3 or 4 younger males, and the remainder cows or young ones. The old bulls don't seem to wish to drive away the younger males, as Deer do.

“One day, as I was quietly meandering through the bush in Mashonaland, a troop of 10 or 12 Sable came trotting by. About half had gone past me without suspicion, when a cow took the alarm, and, stopping suddenly, looked in my direction. She could not exactly make out the enemy, but after a few seconds she stamped her foot two or three times and snorted, as if to warn the others to keep quiet. They all stopped, gazing about, but finally cantered off without having satisfied their curiosity.

“These Antelopes fight very well with their long curved horns, and strike sideways very quickly. A dog that is unwise enough to run up behind and try to lay hold of one has little chance of escaping impalement. A bull won't run very far from a dog, but will stop to fight him, and if the dog keeps out of his reach and stays running round and barking at him the hunter can easily get up for a shot.

“When taken young, Sables get very tame and bold, and will push open the door and demolish a loaf of bread or any other eatables that may be handy. A young bull used to frequent the laager at Salisbury during the Mashonaland rebellion in 1896; he was very friendly with white folks, but—unlike some of the stay-at-home philanthropists—knew the difference between white and black men very well, and if a ‘black brother’ took any liberties with him he was promptly knocked down.

“The Sable calves are mostly born in November and December (spring and early summer), but I have shot cows heavy with young at the same time that others had good-sized calves.”

Passing northwards of the Zambesi we find the Sable Antelope recorded by Peters, in his 'Reise nach Mossambique,' as met with in the Portuguese dominions west of Tette, and on the woody plains of Sena. In Nyasaland Mr. Crawshay tells us it is not by any means evenly distributed, but appears to be plentiful in some places. In the Shiré Highlands, as Sir Harry Johnston writes, the Sable is one of the commonest Antelopes, frequenting the wooded hills rather than the low-lying plains, and we have seen many heads obtained by Mr. Sharpe, the late Capt. Sclater, and others from this district.

Sir Harry Johnston believes that the Sable Antelope is also found on the Nyasa-Tanganyika plateau; but it has not, so far as we are aware, been obtained there by Mr. Sharpe, Mr. Crawshay, Mr. Yule, and others who have traversed that district. It, however, certainly occurs again further north in the coast-district of German East Africa. Herr Oscar Neumann informs us that during his journey through German and British East Africa he never saw a specimen of *H. niger* alive, but only the skin of one that had been killed near Tanga on the coast. His opinion is that the species is not now to be met with anywhere in the interior of German East Africa, but that there are still some herds of it left on the coast opposite Zanzibar, near Tanga and Pangani. In this district it was formerly hunted by Sir John Kirk, in whose collection there is a head of the Sable Antelope, which has been examined by Sclater. The specimen, as Sir John kindly informs us, was obtained about twelve miles inland, somewhat to the north of the River Wami, in the winter of 1884-5.

Whether the Sable Antelope occurs much further north than this seems to be by no means certain. Sir Harry Johnston has enumerated it among the Antelopes of the Kilimanjaro district (Kilima-njaro Exp. p. 354). Sir John Willoughby had a shot at what "*he believed* was a herd of 'Sable Antelopes'" on his journey from Mombasa into the interior in 1886 (East Africa, pp. 46, 47), but did not secure a specimen. Mr. Jackson and Mr. Gedge "*saw* a herd of about ten or twelve near Gulu Gulu in November 1888," but Mr. Jackson admits that no European has yet bagged a Sable Antelope in British East Africa.

There is also no good authority for the occurrence of the Sable Antelope still further north on the White Nile, although it is included in Heuglin's List of N.E. African Mammals as being met with in the Shilluk country on the authority of v. Pruyssenaer. We may therefore, for the present, draw

the northern limit of the Sable Antelope on the east side of Africa at somewhere about the 5th degree N. lat. On the western side of Africa the Sable Antelope, which Mr. Selous has already shown to occur on the Manica Plateau in Barotseland, appears to extend thence into Southern Angola, where, according to Prof. Barboza du Bocage, Welwitsch obtained it in Mossamedes*.

Many living specimens of the Sable Antelope have been brought to Europe of late years. The first example, a male, reached our Zoological Society's

Fig. 91.



Head of Sable Antelope.

Gardens in 1861, and a second male in 1873. In 1895 a fine young pair were purchased of Mr. C. Reiche, of Alfeld, along with the young female Giraffe which arrived in February of that year. They have done well and are still thriving, but have not yet bred.

At the Zoological Gardens of Hamburg they have been more fortunate with this species, a fine calf having been born there on the 1st of May, 1894. Of this interesting animal we are able to give an illustration (Plate LXXX.) through the kindness of the Director, Dr. Bolau, who has sent Sclater an

* Journ. Sc. Lisb. ii. p. 26.

excellent water-colour drawing of the mother and young, executed by the well-known German zoological artist Leutemann, when the young one was rather more than a fortnight old. Other Continental gardens have also now, or have lately had, living representatives of this beautiful species. In the Cologne Gardens, as Dr. Wunderlich kindly informs us, this Antelope has bred twice—in April 1896, when the period of gestation was observed to be 272 days, and in March 1898, when it was reckoned at 281 days.

Our illustration of the male of this Antelope (Plate LXXIX.) was put on the stone by Mr. Smit, under the direction of the late Sir Victor Brooke, about twenty years ago, from a water-colour sketch prepared by Mr. Wolf, but we have not been able to ascertain from what specimen it was taken. Mr. Smit at the same time prepared a wood-block of the head (fig. 91, p. 38), which he believes was taken from a specimen lent to Sir Victor by Mr. Selous.

Besides Harris's original type specimen to which we have already called attention, there are mounted examples of both sexes of this Antelope and a mounted skeleton in the British Museum received from Mr. Selous, who procured them in Mashonaland. There are also in the National Collection a skin of an adult female from Caffreland (*Wahlberg*), three skins from Nyasaland presented by Sir Harry Johnston, and a skin from Lake Mweru presented by Mr. Alfred Sharpe, besides several skulls and pairs of horns from different localities.

January, 1899.



GENUS II. ORYX.

Type.

Oryx, De Blainville, Bull. Soc. Philom. 1816, p. 75 O. GAZELLA.

Size medium or large. Tail with a long and thick terminal tuft. Hairs along the neck and spine with their points projecting towards the head, the parting being situated on the rump or behind the middle of the back.

Skull with small lachrymal vacuities and of the same general structure as in *Hippotragus*; but the bases of the horns, instead of rising vertically above the eyes and forming an elevated forehead as in that genus, project straight backwards, continuing the line of the face and lying in the same plane as the nasal bones.

Horns long, cylindrical, slender, straight, or with a gradual and gentle backward curvature, diverging at a very acute angle; ribbed in their basal half.

Female with horns as in the male.

Range of the Genus. Africa south of the Sahara, except in the west-coast woodland and Congo Basin; also Southern Arabia.

The five species of the genus here recognized may be arranged as follows:—

a. Horns, when fully developed, crescentically recurved throughout. Neck and part of the shoulder to the base of the fore leg of a ruddy-brown hue and strongly contrasted with the yellowish-white tint of the body.

113. *O. leucoryx*.

b. Horns normally straight or nearly so. Neck of the same colour as the body.

a'. Size smaller (height about 3 ft. at the withers). Legs, with the exception of the pasterns, which are white, of a nearly uniform brown colour both outside and inside; body of a nearly uniform dirty white; no black spinal stripe, and only a faint throat-stripe; tips and edges of ears white; nearly the whole of the cheek beneath the eye covered with a large brown or blackish patch continuous with the ocular

stripe; at most a faint brown stripe passing along the side above the belly; tail-tuft white at the base 114. *O. beatrix*.

b'. Size larger (height about 4 ft. at the withers). Colour of legs below knees and hocks pale dirty white, and lighter in tint than the body, though often patched with black in front; body and neck of a nearly uniform tawny hue, with a dark spinal stripe and a deep black throat-stripe; tips and adjacent edges of ears black; cheek below the eye of the same colour as the neck, bounded in front by the black ocular stripe and behind by a similar stripe running from near the base of the ear; a deep black stripe running along the side above the whitish belly; tail-tuft black.

*a*². Hairs on throat long, frequently forming a median tuft or beard; nasal patch black, united on both sides with the lower end of the ocular stripe and passing beneath the jaw, so as to form a complete black ring round the white muzzle; a black stripe above the knee on the fore leg, extending on the outer side almost to the shoulder; a large black patch on the rump; a black stripe above the belly on both sides continued on to the thigh, and there united with a large patch of the same colour, which covers the hind leg, both outside and inside, almost down to the hocks; a black patch or stripe on the front of the cannon-bone of the hind leg 115. *O. gazella*.

*b*². Hairs on throat short, not forming a tuft or beard; nasal patch not meeting the ocular stripe, so that the muzzle is not circumscribed by a continuous black band; black stripe above the knee on the fore leg only extending about halfway up to the shoulder; hind-quarters of a nearly uniform tawny tint, without any black patches on the rump or thighs; lateral stripe above the belly not passing on to the thigh; hind legs without any black bands or stripes.

*a*³. Black hairs on the ears not produced into a tuft; parting of the hairs on the dorsal median line lying far back upon the rump.
116. *O. beisa*.

*b*³. Hairs on the ears produced into a long black tuft; parting of the hairs along the spine situated a little behind the middle of the back 117. *O. callotis*.



The Leucoryx.
ORYX LEUCORYX.

Published by R.H. Porter.

113. THE LEUCORYX.

ORYX LEUCORYX (LICHT.).

[PLATE LXXXI.]

- Algazel*, Buff. Hist. Nat. xii. pp. 211 & 272, pl. xxxiii. figs. 1 & 2 (horns) (1764).
L'Algazelle, F. Cuv. H. N. Mamm. i. pl. 376 (1819) (Senegal).
Antilope gazella, Pall. Spic. Zool. fasc. xii. p. 17 (1777) (nec *Capra gazella*, Linn.);
 Kerr, Linn. An. K. p. 316 (1792); Daudin, in Lacépède's Buffon, xiv. p. 182
 (1799); Bechst. Syst. Uebers. vierf. Th. ii. p. 642 (1800); Desm. N. Dict. d'H. N.
 (1) xxiv. Tabl. p. 32 (1804); Goldf. Schr. Säug. v. p. 1182 (1819); Schinz, Cuv.
 Thierr. i. p. 294 (1821); Desmoul. Dict. Class. d'H. N. i. p. 444 (1822); Desm.
 Mamm. ii. p. 475 (1822); Savi, Isis, 1832, p. 499; Rüpp. N. Wirbelth. p. 16
 (1835); Oken, Allg. Naturg. vii. p. 1396 (1838); F. Cuv. Index to H. N. Mamm.
 p. 5 (1842); Wagn. Schr. Säug. Suppl. iv. p. 481 (1844); Schinz, Syn. Mamm.
 ii. p. 437 (1845); Gieb. Säug. p. 295 (1853).
Cerophorus (Oryx) gazella, Blainv. Bull. Soc. Philom. 1816, p. 75.
Oryx gazella, Jent. Cat. Ost. Leyd. Mus. (Mus. Pays-Bas, ix.) p. 135 (1887); id.
 Cat. Mamm. Leyd. Mus. (op. cit. xi.) p. 166 (1892); Matsch. SB. Ges. nat.
 Fr. 1893, p. 104; Pousargues, Ann. Sci. Nat. (7) iv. p. 131 (1896); Trouessart,
 Cat. Mamm. fasc. iv. p. 954 (1898).
Cemas algazel, Oken, Lehrb. Nat. iii. pt. 2, p. 741 (1816) (part.).
Antilope algazella, Rüpp. N. Wirb. Abyss. p. 26 (1835).
Antilope tao, H. Sm. Griff. An. K. iv. p. 189, v. p. 327 (1827); A. Sm. S. Afr. Quart.
 Journ. ii. p. 187 (1834); Schinz, Syn. Mamm. ii. p. 425 (1845).
Antilope leucoryx, Licht. Darst. Säug. pl. i. (1827) (nec Pall.); Hempr. & Ehr. Symb.
 Phys. Decas ii. pl. iii. (1828) (Dongola); Fisch. Syn. Mamm. p. 478 (1829);
 Waterh. Cat. Mamm. Mus. Z. S. (2) p. 41 (1838); Oken, Allg. Naturg. vii.
 p. 1394 (1838); Laurill. Dict. Univ. d'H. N. i. p. 618 (1841); Reichenb. Säug.
 iii. p. 120, pl. xxxvii. (1845); Schinz, Syn. Mamm. ii. p. 434 (1845); id. Mon.
 Antil. p. 32, pl. xxxvi. (1848).

- Oryx leucoryx*, Sund. K. Vet.-Ak. Handl. 1842, p. 201 (1843); Gray, List Mamm. B. M. p. 156 (1843); id. Ann. Mag. N. H. (1) xviii. p. 232 (1846); Sund. Pecora, K. Vet.-Ak. Handl. 1844, p. 206 (form *a* et *γ*) (1846); id. Hornschuch's Transl., Arch. Skand. Beitr. ii. p. 157; Reprint, p. 81 (1848); Gray, P. Z. S. 1850, p. 134; id. Knowsl. Men. p. 17 (1850); id. Cat. Ung. B. M. p. 107 (1852); Barth, Reise, i. p. 589 (1850) (Asben, Centr. Afr.); Scl. P. Z. S. 1863, p. 230 (gestation, 8 mths.); Fitz. SB. Wien, lix. pt. 1, p. 177 (1869); Gray, Cat. Rum. B. M. p. 36 (1872); id. Hand-l. Rum. B. M. p. 104 (1873); Sclater, P. Z. S. 1873, p. 604; Brehm, Thierl. iii. p. 231 (1880); Sclater, in Wolf's Zool. Sketches, i. pl. xxiii. (1861), ii. pl. xix. (1868); id. List Anim. Z. S. (8) p. 138 (1883), (9) p. 158 (1896); Flow. & Gars. Cat. Coll. Surg. ii. p. 261 (1884); Jent. Cat. Ost. Leyd. Mus. (Mus. Pays-Bas, ix.) p. 135 (1887); W. Sclater, Cat. Mamm. Calc. Mus. ii. p. 156 (1891); Flow. & Lyd. Mamm. p. 344 (1891); Ward, Horn Meas. (1) p. 148 (1892), (2) p. 188 (1896); Mockler-Ferryman, Up the Niger, p. 50 (1892) (Lokoja, Niger); Jent. Cat. Mamm. Leyd. Mus. (Mus. Pays-Bas, xi.) p. 166 (1892); Lyd. Horns and Hoofs, p. 249 (1893); Matsch. SB. nat. Freund. 1893, p. 104; Pousargues, Ann. Sci. Nat. (7) iv. p. 131 (1896); Johnston, P. Z. S. 1898, p. 352; Trouessart, Cat. Mamm. fasc. iv. p. 955 (1898).
- Antilope ensicornis*, Hempr. et Ehr. Symb. Phys. i. p. i (sub *Ant. leucoryge*) (1832); Wagner, Schr. Säug. Suppl. iv. p. 479 (1844), v. p. 437 (1855) (var. *β. nubica* and var. *γ. senegalensis*).
- Oryx ensicornis*, Heugl. Ant. u. Buff. N.O.-Afr. (N. Act. Leop. xxx. pt. 2) p. 17 (1863); id. N.O.-Afr. ii. p. 113 (1877).
- Antilope (Oryx) bezoastica*, H. Smith, Griff. An. K. iv. p. 191, v. p. 327 (1827).
- Oryx bezoarticus*, Fitz. SB. Wien, lix. pt. 1, p. 178 (1869).

VERNACULAR NAMES:—*Toa* or *Tao* of the Hebrews and Egyptians (*Hamilton Smith*); *Abu-harb*, of Sennaar and Kordofan Arabs (*Licht.*); *Wahsch el Baqer* and *Baqer el Wádi* of the Arabs (*Heuglin*); *Lymbe* and *Aschamel* of the Tuaregs (*Barth.*).

Height at withers about 40 inches. Prevailing colour of the sides of the body yellowish or reddish white, often more or less dappled with blotches of pale brown; neck and shoulders above the base of the leg ruddy brown, this colour extending from the withers along the back and becoming diffused over the rump, thighs, and base of the tail. Head whitish, with a greyish-brown patch on the nose and on the forehead, the two united by an ill-defined brownish stripe; a stripe of the same hue extending a short distance above the eye and below it on to the middle of the cheek; the hinder part of the cheek of the same reddish-brown colour as the neck; ears dirty white, the tips and rims not darkened. No distinct dark stripe along the throat,

no dark stripe along the middle of the back and nape of the neck, and only a faint longitudinal stripe on each side between the flanks and belly; mane of neck brown. Legs whitish in tint, clouded in front with brown, which spreads downwards from the shoulders and thighs. Hairs along the spine reversed from rump.

Horns long, with a bold crescentic backward curvature; attaining a length of nearly 40 inches.

A skull offers the following measurements:—Basal length 13 inches, muzzle to orbit 9, greatest width 5·75.

Female similar to the male, but horns thinner.

Hab. Interior of North Africa from Dongola to Senegal.

Whatever the *Oryx* of Aristotle, Pliny, and other ancient writers may have been (which has been a subject of much discussion), there can be little doubt that the *Oryx* of Oppian, commemorated in his celebrated poem on the Chase, was based on an Antelope of this group. In the Latin translation of Oppian's work it is described as a beast much dreaded by its fellow creatures:—

“ In densis etiam sævissima bestia sylvis
 Trux stabulatur Oryx, odium commune ferarum
 Præcipuusque timor. Cornu gerit acre, colorem
 Lactis habet verni: facies est candida, solæ
 In vultu malæ picea caligine nigrant:
 Turgescit duplex crassa pinguedine dorsum.
 Cornua sublimes excelsa feruntur in auras,
 In quibus est mucro fuscus, lethalis et acer.”

The classical term “*Oryx*” was first introduced into scientific literature by Pallas in his memoir on the genus *Antilope* published in 1767. But here he grossly misapplied the term “*Oryx*” to the Eland, which he called *Antilope oryx*. In his second memoir on the same subject, however (1777), Pallas corrected this unfortunate error, and transferred *Oryx* to the Gemsbok of the Cape, to which it was certainly much better applicable.

In 1816 De Blainville, when subdividing the Antelopes, first adopted *Oryx* as a generic term, and made the *Antilope oryx* of Pallas (that is, *Oryx gazella*) its type. The generic name of the present species was thus settled, but before we can arrive at its proper specific name some further explanation is necessary.

By modern authorities, almost without exception, the present Antelope has been called the "Leucoryx, *Oryx leucoryx*," and it is well known by this name in the Museums and Zoological Gardens of Europe. But when we proceed to investigate the strict claims of the present animal to this title, a difficult question presents itself. The *Antilope leucoryx* of Pallas in all probability, and certainly the *Antilope leucoryx* of succeeding authors until about 1827, was not the present species, but, as will be clearly shown in our next article, the Beatrix.

Buffon, in his 'Histoire Naturelle,' called the present species "*l'Algazel*," and Pallas and his followers named it *Antilope gazella*. But the term "*gazella*," as we shall presently show, had been previously appropriated by Linnæus to the allied Gemsbok of Southern Africa. The fact is that most of the early authors had no clear ideas as to the distinctive characters of the present animal, and habitually confounded it both with the Beatrix of Arabia and the Gemsbok of the Cape.

The earliest travellers of modern days to meet with the Leucoryx in its native wilds and to transmit perfect specimens of it home to Europe were the well-known German naturalists Hemprich and Ehrenberg, who explored Nubia, Arabia, and the adjoining countries from 1820 to 1825. Unfortunately Lichtenstein, who first described and figured their specimens of this Antelope about the year 1827, chose to identify it with the *Antilope leucoryx* of Pallas and to employ Pallas's name for it. In the 'Symbolæ Physicæ,' in which Hemprich and Ehrenberg's own account of their expedition was given to the world in 1828, Lichtenstein's example of using *Antilope leucoryx* as the scientific name of the present species was followed.

Hemprich and Ehrenberg state that they had originally intended to have called this species *Antilope ensicornis*, but that they eventually gave up their proposed designation for the term adopted by Lichtenstein. The same was the case also with nearly all the leading authorities subsequent to Lichtenstein, so that to attempt to restore the name "*leucoryx*" to what is probably its proper owner would now only create confusion. We prefer therefore to designate the present species as *Oryx leucoryx* (Licht.), to which name it is undoubtedly entitled.

After giving an accurate description of the present animal, and figures of the two specimens brought home, which, although of not first-rate quality, are perfectly recognizable, Hemprich and Ehrenberg inform us that they met with it in Dongola, between Ambukol on the Upper Nile and Simrie

near Chor-el-Lebben, where they hunted it along with the Arabs on horseback.

In Dongola and Kordofan, they proceed to tell us, this Antelope is met with in herds in the deserts. Its flesh is much appreciated by the Arabs, and is dried and laid by for future use, being likewise often sold in the markets. Its skins are used for shields and sandals, but are not considered of first-rate quality for these purposes. The Arabs of the Kubabish tribe, they inform us, call this Antelope "*Abu-harb*," and state that it lives chiefly on the leaves and twigs of the acacias (*Acacia textilis* and *A. ehrenbergi*) which are found in the valleys of the desert in this district.

The next great explorer of North-eastern Africa, Ruppell, does not add much to our knowledge of the present species, which, in his list of Antelopes in the 'Neue Wirbelthiere,' he tells us, lives in herds in the deserts of Nubia and also in Egypt proper, as far north as the borders of the Fayoum. He comments, however, upon its confusion by Lichtenstein with the *A. leucoryx* of Pallas, and calls it *Antilope algazella*, after Buffon.

Our third leading authority on North-African mammals, Theodor von Heuglin, informs us that the Leucoryx was only met with by him in Southern Nubia and Kordofan, and in the oasis of El-Kāb, west of Dongola. But, according to the Central-African traveller Nachtigal, the range of this species extends into Borgu and Tibeste, while Barth in 1850 met with it in the hills of Air or Asben, north of Agades, in about 19° N. lat. and 9° E. long.

Proceeding still further westward, we may state that there can be little doubt that the Leucoryx was formerly met with in the southern part of Tunisia, although at the present epoch it seems to be nearly, if not quite, extinct in the Beylik. When Sclater was in Tunis in 1898 he observed a stuffed specimen of a young Leucoryx Antelope in the palace of the Bey at Marsa, and was told that it had been originally received alive from the southern frontiers of Tunisia (see P. Z. S. 1898, p. 280).

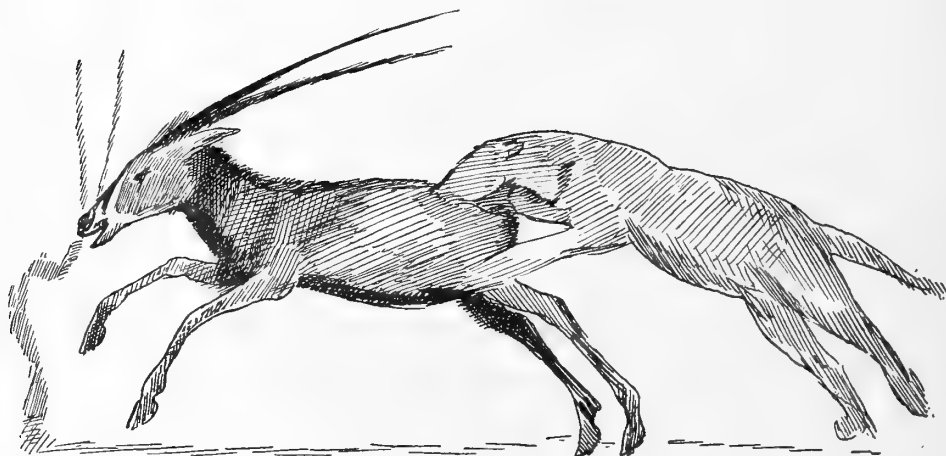
In the Musée Alaoui, at the Bardo Palace, Tunis, Sclater was also shown an unmistakable figure of a Leucoryx attacked by a Lion, represented on a piece of Roman mosaic pavement. Of this figure Sir Harry Johnston has kindly furnished us with the accompanying sketch (fig. 92, p. 48).

The mosaic pavement in question, which was discovered among the remains of a Roman villa in the vicinity of Tunis, contains representations of various animals of the chase found in that district in Roman times. The *Gætulus Oryx* of Juvenal (Sat. xi. 140) was therefore in all probability the Leucoryx.

We are not aware of any authentic records of the occurrence of the *Leucoryx* on the southern frontiers of Algeria and Morocco, where, in recent times, it has probably been driven far into the interior. But when we go on as far west as Senegal and Nigeria it would appear that the *Leucoryx*, or a form so closely allied to it as to be barely distinguishable, is still abundant in the Senegambian deserts, and is also, according to Capt. Mockler-Ferryman, met with on the Nile in the vicinity of Lokoja.

The first specimen of the *Leucoryx* received from Senegal was, so far as we know, that figured by Geoffroy St.-Hilaire and F. Cuvier in 1819 in the 'Histoire Naturelle des Mammifères' (plate 376), which was then living

Fig. 92.

A *Leucoryx* attacked by a Lion.

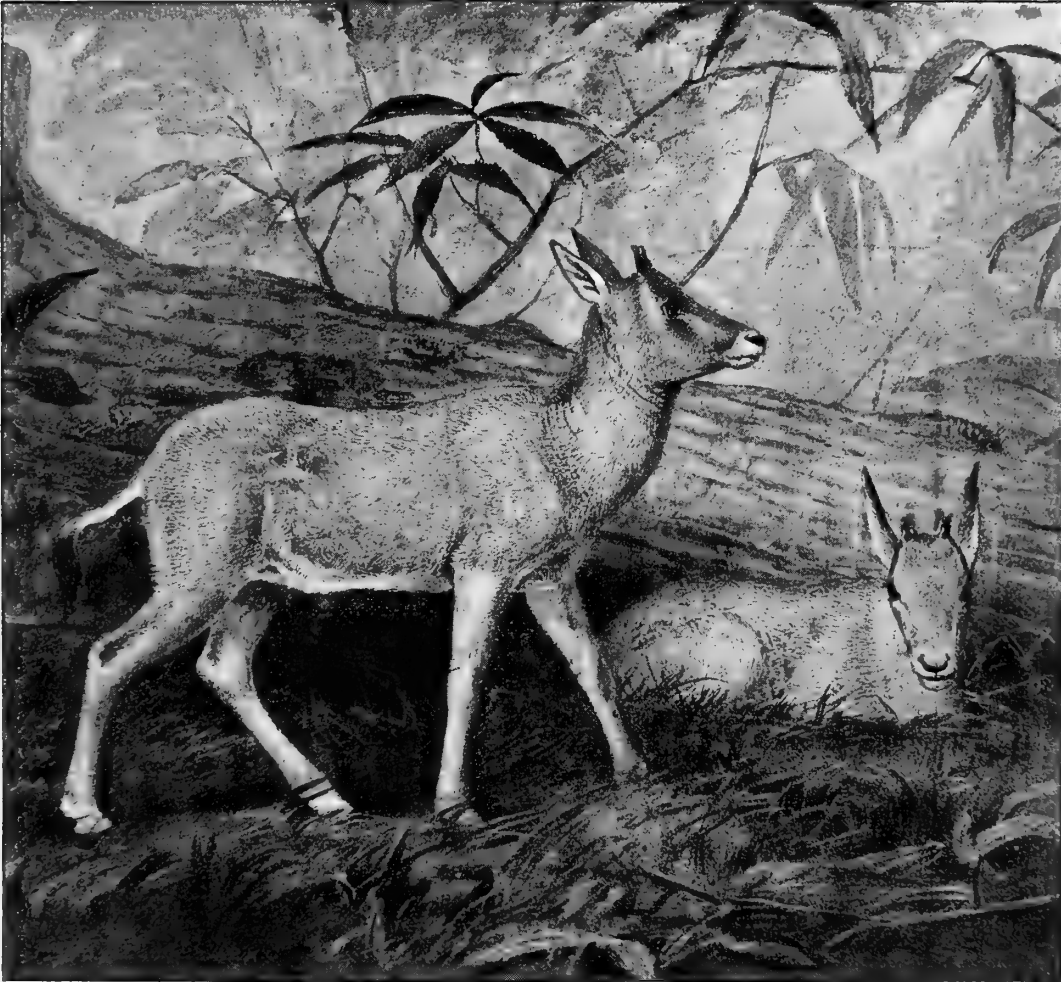
in the Jardin des Plantes. This, we are told, was an adult male, standing about four feet high to the top of its head, and having long and well-developed horns.

When the thirteenth Earl of Derby formed his great menagerie at Knowsley between 1835 and 1850, the group of the *Leucoryx* Antelopes was one of the specialities of the collection. The adult male and female were figured by Waterhouse Hawkins in plate xvii. of the 'Gleanings,' and the young one, born at Knowsley, forms one of the figures in plate xvi. of the same work.

Lord Derby obtained his first female *Leucoryx* in 1837, but it was not until the retirement of Mr. Cross from the Surrey Zoological Gardens and

the consequent dispersal of that collection, some six or seven years afterwards, that he succeeded in acquiring a male. Owing to the age of the female at that time, although she bred twice with the male she failed to rear her offspring, and died in 1846, being then, as Lord Derby believed, the

Fig. 93.



Young Leucoryx.
(From 'Zoological Sketches.')

only female of this species in England. When the Derby Menagerie was dispersed in August 1851, the pair of Leucoryx Antelopes were among the animals selected by the Zoological Society of London, in virtue of Lord Derby's

bequest to them, and became the foundation of a stock which flourished for many years in the Regent's Park Gardens. Young ones were bred of this pair or of their descendants in 1852, 1853, 1860, and 1864. Fresh examples of the *Leucoryx* were obtained by the Society in 1870 and 1880, and in 1881 a fine female was brought home and presented to the Menagerie by the late Mr. John M. Cook, F.Z.S.

This Antelope has not done so well in the Regent's Park of late years, but there is still one example of it living in the Menagerie, obtained last year, and it is hoped that a breeding pair may soon be re-established. An excellent figure of the adults of both sexes of the *Leucoryx* Antelope, drawn by Wolf from the Zoological Society's specimens, was published in the first volume of Wolf and Sclater's 'Zoological Sketches.' In the second volume of the same work a young one, likewise drawn by the same skilful artist, is represented on plate xix. The calf in question was born in 1851, and was about six months old when Mr. Wolf's water-colour drawing (from which fig. 93, p. 49, has been taken) was prepared.

Lord Derby's stock of the *Leucoryx* is said to have been received from Nubia, while others in the Zoological Society's Gardens came from Senegal.

We have not been able to recognize any difference between animals from these two countries, although they have been separated as distinct local forms (*nubica* and *senegalensis*) by Wagner, and more recently by Herr Matschie as different species.

There are at present no complete specimens of this Antelope in the British Museum, and skins of it fit for mounting both from Dongola and from Senegal are much required, in order that a strict comparison of examples from these widely distant localities may be made. The series now in the National Collection consists only of a mounted skeleton formerly in the Zoological Society's Museum, a skin and skull of a young one from Sennaar, and some skulls and horns.

Our Plate of this Antelope (Plate LXXXI.), which represents both sexes, was drawn on stone by Mr. Smit from a sketch prepared by Mr. Wolf, and probably represents the same animals as the plate in 'Zoological Sketches' above referred to.

May, 1899.



W. Sel. S. Smith.

The Beatrix Antelope.
ORYX BEATRIX.

Published by R.H. Porter.

Hanhart imp.

114. THE BEATRIX ANTELOPE.

ORYX BEATRIX, GRAY.

[PLATE LXXXII.]

Gazella Indica cornu singulare, Pallas, Nov. Comm. Ac. Petrop. xiii. p. 470, pl. x. fig. 5 (1769).

Antilope leucoryx, Pallas, Spic. Zool. xii. p. 17 (1777); Herm. Tab. Affin. Anim. p. 108 (1783); Zimm. Geogr. Ges. ii. p. 108 (1780), iii. p. 269 (1783); Schreb. Säug. pl. cclvi. B (1784); Bodd. Elench. Anim. p. 139 (1785); Gmel. Linn. Syst. Nat. i. p. 190 (1788); Kerr, Linn. An. K. p. 316 (1792); Donnd. Zool. Beytr. i. p. 639 (1792); Link, Beytr. Nat. ii. p. 99 (1795); Bechst. Syst. Uebers. vierf. Th. ii. p. 641 (1800); Shaw, Gen. Zool. ii. pt. 2, p. 359 (1801); Turt. Linn. S. N. i. p. 115 (1806); Desm. N. Dict. d'H. N. (1) xvii. p. 132 (1803), xxiv. Tabl. p. 32 (1804); G. Cuv. Dict. Sci. Nat. ii. p. 237 (1804); Tiedem. Zool. i. p. 408 (1808); Thunb. Mém. Acad. Pétersb. iii. p. 313 (1811); G. Fisch. Zoogn. iii. p. 425 (1814); Afz. N. Act. Ups. vii. p. 219 (1815); Desm. N. Dict. d'H. N. (2) ii. p. 204 (1816); G. Cuv. R. A. i. p. 262 (1817); Goldf. Schr. Säug. v. p. 1180 (1818); Schinz, Cuv. Thierr. i. p. 391 (1821); Desm. Mamm. ii. p. 474 (1822); Desmoul. Dict. Class. d'H. N. i. p. 444 (1822); H. Sm. Griff. An. K. iv. p. 186, v. p. 326 (1827); Rüpp. N. Wirbelth. p. 16 (1835); Pearson, J. As. Soc. Bengal, ix. p. 519 (1840).

Leucoryx Antelope, Penn. Quadr. i. p. 68 (1781); id. ibid. 1793, p. 76 (not fig.).

Antilope (Bubalis) oryx, Licht. Mag. nat. Freund. vi. p. 156 (1814).

Cemas oryx, Oken, Lehrb. Nat. iii. pt. 2, p. 734 (1816).

Cerophorus (Oryx) leucoryx, De Blainville, Bull. Soc. Philom. 1816, p. 75.

Antilope besoarctica, Jard. Nat. Misc. (1) vii. p. 203 (1842); Reichenb. Säug. iii. p. 120, pl. xxxvii. (1845).

Antilope ensicornis, var. *a. asiatica*, Wagner, Schr. Säug. Suppl. v. p. 437 (1855).

Oryx beatrix, Gray, P. Z. S. 1857, p. 157, pl. lv.; id. Cat. Rum. B. M. p. 36 (1872); id. Hand-l. Rum. B. M. p. 112 (1873); Sclater, P. Z. S. 1872, p. 603; St. John, P. Z. S. 1874, p. 95; Sclater, P. Z. S. 1881, p. 819; id. List An. Z. S. (8)

p. 138 (1883), (9) p. 159 (1896); **W. Sclater**, Cat. Mamm. Calc. Mus. ii. p. 156 (1891); **Flow. & Lyd.** Mamm. p. 344 (1891); **Ward**, Horn Meas. (1) p. 148 (1892), (2) p. 188 (1896); **Lyd.** Horns and Hoofs, p. 249 (1893); **Matsch.** SB. nat. Freund. 1893, p. 104; **Thomas**, P. Z. S. 1894, p. 451; **Pousargues**, Ann. Sci. Nat. (7) iv. p. 131 (1896); **Trouessart**, Cat. Mamm. fasc. iv. p. 955 (1898).

Antilope beatrix, **Huet**, Bull. Soc. Acclim. (4) ix. p. 61 (1887).

Oryx Leucoryx Pallasii, **Fitz.** SB. Wien, lix. p. 178 (1869).

VERNACULAR NAMES :—*El Walrush* and *El Bukrus* of Bahrein Arabs (*Pennant*).

Height at withers about 35 inches. Prevailing colour of body, neck, and head a dirty white, slightly darker on the haunches. On the face the frontal and nasal patches are brown in colour and sometimes separated from each other; the brown stripe that passes from the eye unites with the stripe that arises near the base of the ear to form on the cheek a large patch which extends below the jaw and joins across the inter-ramal area with the corresponding patch of the opposite side; from this patch a narrow brown stripe runs along the throat, and is traceable as far as the chest, which is also brown. Ears whitish; the tip and edges not black or brown. Mane on neck whitish like the rest of the body, and there is no median dorsal black stripe. Tail white; the tuft black at the end. Fore leg from the shoulder, and hind leg from the thigh, deep brown, both on the outer and inner side down to the fetlocks; pasterns white. A faint brown longitudinal stripe is traceable on each side between the belly and the flanks. Hair along spine reversed from rump.

Horns long, straight, attaining a length of about 25 inches; ribbed for about two-thirds of their length; the ribs small and close-set.

Female. Similar to the male, and horns equally long or longer.

Hab. Southern Arabia, to the shores of Persian Gulf.

As we have already pointed out, it is highly probable, if not certain, that the *Antilope leucoryx* of Pallas and his immediate successors was the present species and not the preceding, which, however, is now universally known as "The Leucoryx." In the description of his *Antilope leucoryx* (which forms the sixteenth species in his second memoir on the genus *Antilope* published in 1777) Pallas affords us so little information that not much can be made

of it. He gives "Arabia, and perhaps Libya," as its locality, and adds references to the passage in the 'Cynegetica' of Oppian which we have already quoted, and to "*Gazellæ Indicæ cornu singulare*"—a "curious horn of an Indian Gazelle" which he had described in a former memoir on some fossil bones from Siberia. On referring to this memoir, and to the figure by which it is accompanied, we cannot say that we are by any means satisfied that the "curious horn" in question, which is remarkable for its length and slenderness (33 inches long, as given by Pallas) and for its numerous annulations, belonged to the present species. We will, however, go so far as to allow that it may possibly have done so. At any rate we must admit that it could hardly have been a horn of the Antelope which we now call the Leucoryx.

The second original authority to describe the present species was our countryman Pennant in his 'History of Quadrupeds,' where he gives the "Leucoryx" as the fifth species of his genus "Antelope." Pennant based his Leucoryx mainly upon "two drawings of animals in the British Museum, taken from life in 1712 by order of Sir John Lock, Agent of the East India Company at Ispahan; they were preserved as rarities by the Shah of Persia in a park eight leagues from the capital." Pennant informs us that he had copied his description of these animals from a paper accompanying the drawings. This species, he tells us, inhabits "Gaw Behrein, an island in the Gulf of Bassorah," meaning, no doubt, what we now call Bahrein Island in the Persian Gulf. Judging from the description and locality it would appear that Pennant's "Leucoryx" of 1781 was intended for the present Antelope, but the figure in the edition of Pennant's work of 1793, it must be allowed, gives one rather the idea of a Beisa (*Oryx beisa*).

As regards the other authors which we have quoted above as following Pallas in calling this animal *Antilope leucoryx*, it is not necessary to take much trouble about them. They merely repeat the stories of their predecessors without adding anything original thereto, and seem to have had no true ideas of the distinctness of the present species from its allies. It was not, in fact, until 1857 that the present Antelope became properly known to science in Europe by the receipt of living specimens. The first of these was brought from Bombay to England in that year and presented to the Zoological Society of London by Capt. John Shepherd. This animal, which was at first supposed to be a half-grown specimen of the Gemsbok of the Cape, quickly

attracted the notice of the late Dr. J. E. Gray, of the British Museum, who had a capital eye for strange mammals of all sorts. Dr. Gray immediately recognized it as belonging to a species unknown to him, and, having apparently no suspicion that it was possibly the veritable "Leucoryx" of the older authors, described it as new at a Scientific Meeting of the Zoological Society held on June 23rd of that year, at which Sclater (then recently elected a member of the Council) well recollects having been himself present, and proposed to call it *Oryx beatrix*, after H.R.H. The Princess Beatrice. Dr. Gray's description, published in the 'Proceedings,' is accompanied by an excellent coloured figure of the Beatrix Antelope drawn by Wolf. Dr. Gray conjectured that the specimen had been brought to Bombay from the shores of the Red Sea, but it is more probable that it was carried there from the Persian Gulf. The typical specimen, which died shortly afterwards, was deposited in the British Museum.

In March 1872 a second specimen of the Beatrix Antelope was received by the Zoological Society, and fortunately with sufficient information to solve the enigma as to its real *patria*. It was the survivor of a pair of these animals, obtained for the late Mr. Gwyn Jeffreys, F.Z.S., by Col. Pelly, then British Resident at Bushire on the Persian Gulf. In 1878 a third living specimen of this Antelope, a male, was received by the Zoological Society; this was presented by Commander F. M. Burke, of the B.I.S.N.S.S. 'Arcot,' by whom it had been obtained at Jeddah in the Red Sea from a friend who had received it as a present from the Shereif of Mecca. It was stated to have been originally captured in the neighbourhood of Tyeff or Tayf, in the Hedjaz Passes, some 150 miles east of the Red Sea. In 1881 two additional specimens of the Beatrix Antelope were presented to the same Society by the late Lord Lilford, and since that date three other examples of the same animal have been received alive by the Zoological Society. These were a pair presented by Col. E. C. Ross, C.S.I., H.B.M. Consul at Bushire, in 1890, and a single female presented by Lt.-Col. Talbot in 1892.

The typical specimen of *Oryx beatrix*, as already mentioned, is in the collection of the British Museum, as is also the adult female transmitted to the Zoological Society by Col. Pelly. Besides these, the National Collection possesses a skeleton of a young female obtained on the Persian Gulf by Mr. B. T. Finch, F.Z.S., and some skins and skulls collected in Muscat by Dr. A. S. G. Jayakar, C.M.Z.S. Specimens of the Beatrix Antelope are,

however, excessively rare in European collections, and we are not aware that any of the continental museums have succeeded in obtaining specimens of it.

From what has been stated it is evident that the range of the Beatrix Antelope reaches from the shores of the Red Sea across Southern Arabia to Muscat. How far up the coast of the Persian Gulf it extends is uncertain, but the specimens stated by Pennant to have been brought to Ispahan from the Bahrein Islands had probably been obtained from the opposite mainland.

Our figure of this Antelope (Plate LXXXII.) was put upon the stone by Mr. Smit from a sketch prepared under Sir Victor Brooke's directions by Mr. J. Wolf. This was *probably* taken from the same animal as that figured in the Zoological Society's 'Proceedings,' as above mentioned.

May, 1899.



Wolf del., Smit lith.

The Gemsbok.
ORYX GAZELLA.

Published by Miller & Co.

Leinart imp.

115. THE GEMSBOK.

ORYX GAZELLA (LINN.).

[PLATE LXXXIII.]

- Gazella Indica cornibus rectis longissimis nigris*, Ray, Quadr. p. 79 (1693).
Capra gazella, Linn. Syst. Nat. (10) i. p. 69 (1758), (12) i. p. 96 (1766); Müll. Natursyst. i. p. 412 (1773).
Antilope recticornis, Erxl. Syst. R. A. p. 272 (1777); Gatt. Brev. Zool. i. p. 78 (1780).
Gazella recticornis, Pallas, Nov. Comm. Ac. Petrop. xiii. p. 468.
Antilope bezoartica, Pallas, Misc. Zool. p. 8 (1766) (*nec* Linn.); Müll. Natursyst. Suppl. p. 55 (1776); Zimm. Spec. Zool. Geogr. p. 538 (1777); Gatt. Brev. Zool. i. p. 79 (1780).
Antilope oryx, Pallas, Spic. Zool. fasc. xii. pp. 16 & 61 (1777); Zimm. Geogr. Gesch. ii. p. 107 (1780); Herm. Tabl. Affin. Anim. p. 108 (1783); Schreb. Säug. pl. cclvii. (1784); Bodd. Elench. Anim. p. 139 (1785); Gmel. Linn. S. N. i. p. 189 (1788); Kerr, Linn. An. K. p. 315 (1792); Donnd. Zool. Beytr. i. p. 636 (1792); Link, Beytr. Nat. ii. p. 99 (1795); Daudin, in Lacépède's Buffon, xiv. p. 182 (1799); Shaw, Gen. Zool. ii. pt. 2, p. 312 (1801); Desm. N. Dict. d'H. N. (1) xxiv. Tabl. p. 32 (1804); Turt. Linn. Syst. Nat. p. 114 (1806); G. Fisch. Zoogn. iii. p. 425 (1814); Afz. N. Act. Ups. vii. p. 219 (1815); Goldf. Schr. Säug. v. p. 1177 (1818); Schinz, Cuv. Thierr. i. p. 391 (1821); Desmoul. Dict. Class. d'H. N. i. p. 444 (1822); Desm. Mamm. ii. p. 473 (1822); Burch. Travels, ii. p. 23 (1824); Less. Man. Mamm. p. 385 (1827); Fischer, Syn. Mamm. p. 478 (1829); Smuts, En. Mamm. Cap. p. 71 (1832); Rüpp. Neue Wirbelth. p. 16 (1835); Wagn. Säugeh. v. p. 1177 (1836); Waterh. Cat. Mamm. Mus. Z. S. (2) p. 41 (1838); Oken, Allg. Nat. vii. p. 139 (1838); Laurill. Dict. Univ. d'H. N. i. p. 617 (1847); Wagn. Schr. Säug. Suppl. iv. p. 476 (1844); *id.* v. p. 436 (1855); Reichenb. Säug. iii. p. 121, pl. xxxviii. (1845); Schinz, Syn. Mamm. ii. p. 434 (1845); *id.* Mon. Antil. p. 31, pl. xxxv. (1848); Gieb. Säug. p. 294 (1853); Huet, Bull. Soc. Acclim. (4) iv. p. 483 (1887).
Oryx capensis, Ogilby, P. Z. S. 1836, p. 139; A. Sm. S. Afr. Quart. J. ii. p. 187

(1834); **Harr.** Wild Anim. S. Afr. p. 38, pl. ix. (1840); **Sund.** Pecora K. Vet.-Ak. Handl. 1845, p. 207 (1847); *id.* Hornsch. Transl., Arch. Skand. Beitr. ii. p. 157; Reprint, p. 81 (1848); **Fitz.** SB. Wien, lix. p. 178 (1869); **Buckley**, P. Z. S. 1876, p. 289, 1877, p. 455; **Brehm**, Thierl. iii. p. 230 (1880); **Bryden**, Kloof and Karroo, p. 292 (1889); **Trouessart**, Cat. Mamm. fasc. iv. p. 953 (1898).

Onyx onyx, **Gray**, Med. Repos. xv. p. 307 (1821).

Antilope gazella, **Forst.** Descr. Anim. p. 380 (1844).

Antilope (Bubalis) oryx, **Licht.** Mag. nat. Freund. vi. p. 155 (1814).

Antilope pasan, **Daudin**, in Lacépède's Buffon, xiv. p. 182 (1799).

Cemas pasan, **Oken**, Lehrb. Nat. iii. pt. 2, p. 741 (1816).

Cerophorus (Oryx) oryx, **De Blainv.** Bull. Soc. Philom. 1816, p. 75.

Oryx gazella, **Gray**, List Mamm. B. M. p. 156 (1843); *id.* Ann. Mag. Nat. Hist. (1) xviii. p. 232 (1846); *id.* List Ost. B. M. p. 58 (1847); *id.* P. Z. S. 1850, p. 134; *id.* Knowsl. Men. p. 17 (1850); *id.* Cat. Ung. B. M. p. 105 (1852); **Gerr.** Cat. Bones Mamm. B. M. p. 240 (1862); **Sclater**, P. Z. S. 1872, p. 604; **Gray**, Cat. Rum. B. M. p. 35 (1872); *id.* Hand-l. Rum. B. M. p. 104 (1873); **Drumm.** Large Game S. Afr. p. 426 (1875); **Selous**, P. Z. S. 1881, p. 755; *id.* Hunter's Wanderings in S. Afr. p. 212; **Bocage**, J. Sci. Lisboa, (2) v. p. 26 (1890) (Benguela); **W. Sclater**, Cat. Mamm. Calc. Mus. ii. p. 155 (1891); **Flow. & Lyd.** Mamm. p. 343 (1891); **Ward**, Horn Meas. (1) p. 143 (1892), (2) p. 184 (1896); **Nicols & Egl.** Sportsm. S. Afr. p. 49 (1892); **Lyd.** Horns and Hoofs, p. 246 (1893).
Oryx oryx, **Jent.** Cat. Ost. Leyd. Mus. (Mus. Pays-Bas, ix.) p. 135 (1887); *id.* Cat. Mamm. Leyd. Mus. (Mus. Pays-Bas, xi.) p. 166 (1892); **Matsch.** SB. nat. Freund. 1893, p. 102; **Pousargues**, Ann. Sci. Nat. (7) iv. p. 131 (1896).

VERNACULAR NAMES:—*Gemsbok* of the Dutch at the Cape; *Gemsbuck* of English; *Kukama* of Bechuanas and Makalakas; *Ko* of the Masuras (*Selous*). *Uhlaza* of Kaffirs (*Drummond*); *Gallengue* in Benguela (*Bocage*).

Height at withers about 48 inches. General colour of neck and body pale greyish tawny. Head with a black frontal patch at the base of the horns and a large patch of the same colour upon the nose, the two united by a narrow black line. Above the eye is a black stripe extending to the base of the horn, and below the eye a broad stripe passes downwards towards the corner of the mouth and, uniting with the nasal patch, spreads below on to the underside of the jaw; there is also a black stripe running from near the base of the ear along the line where the cheek passes into the neck and expanding on the lower part of the cheek fuses with the lower extremity of the ocular stripe, and contributes to the formation of the broad black area that occupies nearly the whole of the inter-ramal space. Muzzle, chin, and

lips white. Ears with tip and the adjacent edges black. From the dark inter-ramal area to the chest extends a black stripe along the throat; the hairs of this region long, forming a mane, which at one spot near the middle of the throat is produced into a pointed crest or beard. Mane of nape blackish; a black line traceable along the back as far as the rump. Rump black or clouded with black above, the black extending on to the root of the tail, the tuft of which is entirely black. Along the sides of the body above the belly, which is white, extends a broad black stripe, continuous in front with the black area of the chest and passing behind on to the lower part of the thigh, where it expands into a broad black patch covering the outer side of the hind leg as far as the hock and spreading round the leg on its inner side. Hind legs below the hocks nearly white, except for a longitudinal black stripe on the front of the cannon-bone. Fore legs white below knee, with a black spot or stripe on the front of the cannon-bone; above the knee on the outer and inner side the leg is black almost up to the shoulder, but on the inner side it is sometimes white above, the white area extending for a short distance on to the front of the leg at its base.

Horns nearly straight, rarely attaining a length of about 47 inches, more commonly less than 40. A skull has the following dimensions:—Basal length 14·5 inches, eye to nose 10, greatest width 6·25.

Female similar to the male, but slighter, with longer and more slender horns, which are less distinctly ringed and sometimes slightly bent.

Hab. Arid deserts of South-west Africa, from Bechuanaland north to Mossamedes.

The Dutch colonists who settled at the Cape in the course of the seventeenth century named the principal Antelopes which they met with there after the animals in Europe that they supposed to be their closest allies, or to be most nearly similar to them, but in many cases very inappropriately. Thus the "Eland" received its name from the Elk (*Alces machlis*), the "Reh-bok" from the Roe (*Capreolus capræa*), and the present Antelope from the Chamois or Gemse of the Alps (*Rupicapra tragus*), although in all these cases it is difficult to discern much resemblance between the European species and the South-African animals which were called after them.

Nevertheless the term "Gemsbok" has stuck to the Oryx of the Cape, and is still a familiar name for this beautiful Antelope both among the Dutch and the English in South Africa. As we have already shown, it is the type, or at any rate the first species, of de Blainville's genus *Oryx*, and that must be its generic name, but to decide what term should be selected as its proper specific name is by no means an easy task.

The "*Capra gazella*" of the tenth and twelfth editions of Linnæus's 'Systema Naturæ' has been held by many authors to refer to this species, whereas Pallas and his followers called the Leucoryx "*Antilope gazella*" and the present species "*Antilope oryx*." Modern writers have mostly called the Gemsbok either "*Oryx capensis*, Ogilby" (a name that is undoubtedly applicable to it), or "*Oryx gazella*," or "*Oryx oryx*." Of these three names we think we are justified in selecting the Linnæan "*gazella*," which has undoubted priority. It is true that Linnæus's species is based mainly on Ray's very imperfectly described "*Gazella Indica cornibus rectis longissimis nigris*," and that its "habitat" is given as "India." But Pallas himself quotes Linnæus's *Capra gazella* as a synonym of his "*Antilope oryx*"—so that we cannot justly use the latter term even if it were not the same as the generic name. It may also be urged that traditionally at least Linnæus's term "*gazella*" has usually been acknowledged to refer to this species, which we therefore propose to designate *Oryx gazella*.

As may be gathered from what has been already stated, most of the older authors had no clear ideas as to the differences between this and the two preceding Antelopes, which they only knew from imperfect specimens, and did not even realize that their areas of distribution are in every case perfectly distinct. We must, however, make one exception from this statement. In the Dutch edition of Buffon's 'Histoire Naturelle,' published by Schneider at Amsterdam, to which we have had occasion more than once to refer, there will be found a very recognizable figure of the Gemsbok, which the author identifies, perhaps correctly, with the "Pasan" of Buffon. Allamand's figure was taken from a skin received from the Cape of Good Hope, and is accompanied by a full and fairly accurate description. Both the figure and description of Allamand were reprinted by Buffon in the sixth volume of his 'Supplement' to the 'Histoire Naturelle,' published at Paris in 1782. Allamand's figure was again copied by Schreber on plate cclvii. of his 'Säugethiere,' which is believed to have been issued (long before the letter-

press) in 1784. It is there named "*Antilope oryx*, Pallas," as is also the case in the accompanying letterpress, issued in 1836, and in Wagner's supplementary volumes of the 'Säugethiere,' in which the plate of this Antelope, published in 1848, is apparently also an improved copy of Allamand's original figure.

We will now turn to some of the chief authorities on the Natural History of the Cape, and see what we can learn from them as to the habits and exact distribution of the present animal, of which the systematists tell us very little. Sparrman, who was in South Africa in 1772 and the following years, after commenting on the unsuitable appellation applied to it, says that the Gemsbok is in all probability peculiar to the north-western part of the Colony, for that in the country which he traversed, which was mainly east from Cape Town, he neither saw nor heard anything of it. But its remarkable horns were not at that period scarce in collections at Cape Town. Patterson, about 1790, met with the Gemsbok in Clanwilliam; and Barrow, about ten years later, seems to have come across it in Willowmore. Lichtenstein, in the second volume of his travels (1812), notes the occurrence of the Gemsbok in the Hopetown District, and writes of it as *Antilope oryx*. Steedman, whose 'Wanderings in South Africa' were published in 1835, devotes considerable attention to this animal and gives a good figure of it (vol. ii. p. 55) from specimens obtained on the farm of Stoffel Jacobs, near Bushman's Poorte, just south of the Orange River.

We now come to the epoch of the celebrated traveller Sir William Cornwallis Harris, who penetrated far into the interior of South Africa in 1836 and 1837. On plate ix. of his 'Portraits' Harris gives excellent figures accompanied by full descriptions of both sexes of the Gemsbok, which he met with on the Moloppo and Modder Rivers in Bechuanaland, and in the adjoining districts of the Orange Free State. We extract the following passages from Harris's lively chapter on this Antelope:—

"The South African Oryx is a most wild and warlike-looking animal, not less remarkable for beauty, speed, and vigour, than famed for the excellence of its venison, which is everywhere held in the highest estimation. Although usually found in pairs on the Karroos and unfrequented stony districts, which form its invariable habitation, the males sometimes possess two females, constituting, with their young, a family of five or six individuals. The calves, which are born of a reddish cream colour, become whiter as they increase in bulk, and are easily domesticated; but their uncertain temper renders it difficult at any time to pronounce them tame. Their horns, at first blunt and round at the tips, are soon ground to a fine needle-like point, by dint of raking and

whetting them against rough-stemmed trees,—thus becoming most formidable weapons, whether of offence or defence. The horns of the females are much longer and more *bodkinish* in appearance than those of the males, who never meet during the rutting season without desperate battles, their courage and quarrelsome disposition frequently rendering their duels fatal, one of the combatants often being run slap through the body by a lunge from the long rapier-resembling weapons of his antagonist. The natives of Southern Africa occasionally arm their spears with the horns of the Oryx; and the Hollanders of the Cape have them polished and headed with silver, to serve as walking-sticks, for which purpose they are frequently too long! Strong, active, and vigorous, the Gemsbok boldly defends itself when pressed by the hunter, using its horns with amazing energy and address, by striking right and left at its assailant with prodigious violence. Oppian, the modern Arabs of the desert, and the Hottentots, are all agreed in describing the danger of approaching these animals before they are totally disabled.”

A few years later another well-known sportsman, Roualeyn Gordon Cumming, arrived in South Africa and commenced the five years of his ‘Hunter’s Life,’ of which he has given to the world such a vivid description. Cumming first met with the Gemsbok in December 1843 in the “vast Karroo plains” west of Colesberg, where it was abundant at that epoch. He describes some of its chief peculiarities as follows:—

“The Gemsbok was destined by nature to adorn the parched karroos and arid deserts of South Africa, for which description of country it is admirably adapted. It thrives and attains high condition in barren regions, where it might be imagined that a locust would not find subsistence, and, burning as is its climate, it is perfectly independent of water, which, from my own observation and the repeated reports both of the Boers and aborigines, I am convinced it never by any chance tastes. Its flesh is deservedly esteemed, and ranks next to the Eland. At certain seasons of the year they carry a great quantity of fat, at which time they can be more easily ridden into. Owing to the even nature of the ground which the Oryx frequents, its shy and suspicious disposition, and the extreme distances from water to which it must be followed, it is never stalked or driven to an ambush like other Antelopes, but is hunted on horseback, and ridden down by a long, severe, tail-on-end chase. Of several animals in South Africa which are hunted in this manner, and may be ridden into by a horse, the Oryx is by far the swiftest and most enduring.”

In his ‘Hunter’s Wanderings’ Mr. Selous gives us an excellent account of the range of the Gemsbok about twenty years ago. He says (p. 212):—

“The Gemsbuck is almost entirely confined to the arid deserts of South-western Africa. In the Kalahari desert, to the west of Griqualand West, it is fairly plentiful,

and on the road leading along the eastern border of the desert from Kuruman to Bamangwato it is occasionally to be met with, becoming plentiful if one penetrates into the waterless country to the westward, but being unknown to the eastward, of the road. Along the waggon-road leading from Bamangwato to Tati there are a few Gemsbuck above Pelatsi, Serule, and Goqui, and they are sometimes to be met with on the upper course of the Macloutsi, Shashi, and Tati rivers. A few sometimes even wander as far eastwards as the Ramokwebani river. On the road leading from Tati to the Zambesi Gemsbuck are not often met with, but a few are occasionally to be seen in the neighbourhood of Thammasanka and Thammasetsi. A little farther westwards, however, in the neighbourhood of the great salt pans, they are numerous, as they are also in all the country between the salt pans and the Botletlie river, whilst to the west of that river, right through the desert into Damaraland, they are said to run in large herds. Where I have met with them, the country has either been open or covered with stunted bush, and along the waggon-road from Bamangwato to the Mābābe their northern range seems to be limited by the heavily-timbered sand-belts, which run east and west immediately to the south of that river, and into which the Gemsbuck does not penetrate. North of the Mābābe, in the direction of the Chobe, although many parts of the country appear well fitted for it, the Gemsbuck is unknown.

“So far as my experience goes, the Gemsbuck is far from being the fleetest or most enduring Antelope in South Africa, and in these respects cannot be compared to the Tsessebe or Hartebeest. I do not think it is either fleetest or more enduring than the Sable or Roan Antelope; and I have myself run one to a standstill without firing a shot, and I know of several other men having done the same thing. The horns of the cow become longer than those of the bull, as a rule; the longest pair of the former I have ever seen measured 3 feet 10½ inches, and of the latter 3 feet 6 inches.”

Mr. H. A. Bryden, writing in 1889, describes the Gemsbok as then “very nearly extinct in the Cape Colony.” Seven or eight years previously two of the last had been shot in the north of Calvinia, near the banks of the Orange River.

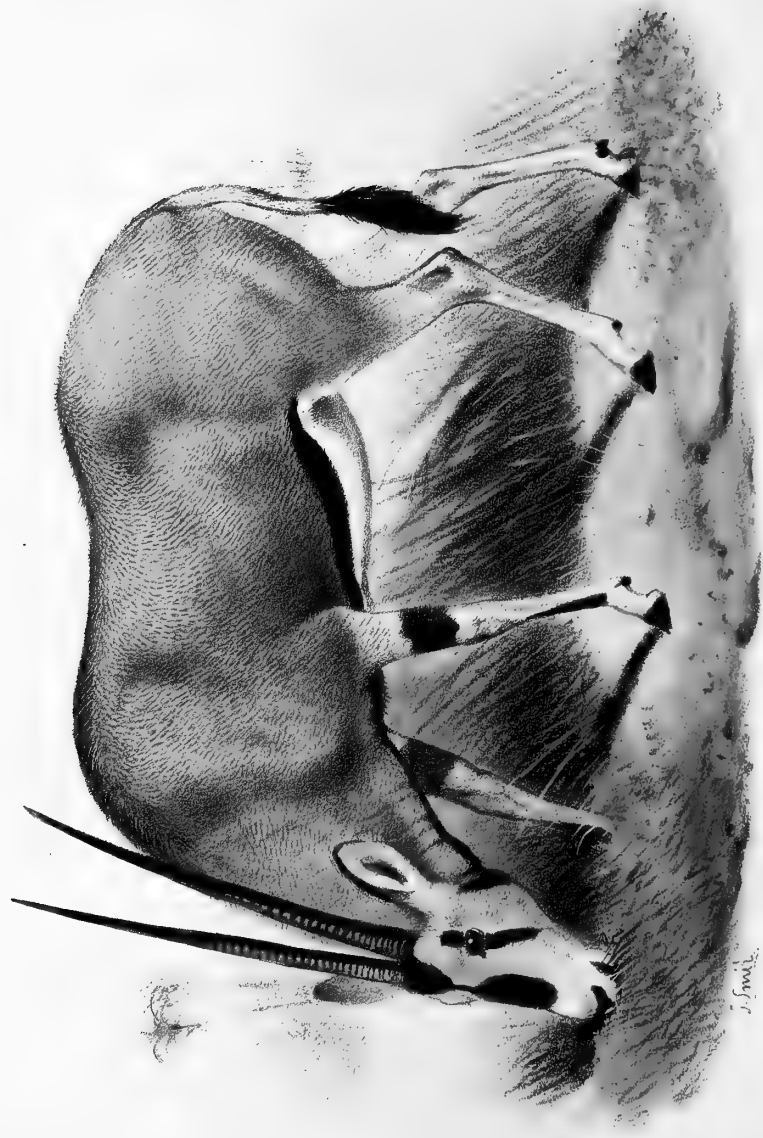
Mr. W. L. Sclater, Director of the South African Museum, Cape Town, writing of the present distribution of the Gemsbok in South Africa, informs us that, according to the statistics of the Agricultural Department, there are about 5000 Gemsboks still existing in Bechuanaland between Namaqualand and Kenhart. There are also said to be plenty of these Antelopes still to be found throughout the German South-west African territory and the western part of the Kalahari Desert. North of German South-west Africa, we know from Capello and Ivens, and other Portuguese authorities, that the Gemsbok is also found in Mossamedes and in the adjoining arid districts of Southern Angola.

The Gemsbok is very rarely seen in captivity, and we are not aware that living examples of it have ever been brought to Europe. Mr. Carl Hagenbeck, of Hamburg, who has had great experience in such matters, informs us that he has never seen this animal alive.

There is a fine mounted pair of the Gemsbok in the Gallery of the British Museum, obtained by Mr. F. C. Selous in the Bamangwato District of Bechuanaland, and a frontlet and horns procured by the same enterprising hunter on the Botletli River. Besides these there are several older stuffed specimens, as also some heads and skins, of which the exact localities are unknown.

Our figure of the Gemsbok (Plate LXXXIII.) was drawn on the stone by Mr. Smit from Mr. Wolf's sketch, but it is, unfortunately, impossible to ascertain from what specimen it was taken.

May, 1899.



The Beisa.
ORYX BEISA

Published by R. P. P. P.

Hambert, imp.

Oryx beisa Linn.

116. THE BEISA.

ORYX BEISA (RÜPP.).

[PLATE LXXXIV.]

Leucoryx Antelope, Penn. Quadr. i. pl. xii. (1793) (not description) (?).

“*Antilope dammah* der Araber,” Cretzschm. Atl. Rüpp. Reise, p. 22 (footnote) (1826) (?), whence

Antilope dammah, Rupp. Fisch. Syn. Mamm. p. 475 (1829).

Antilope beisa, Rüpp. N. Wirb. Abyss. p. 14, pl. v. (1835); Oken, Allg. Naturg. vii. p. 1392 (1838); Laurill. Dict. Univ. d'H. N. i. p. 617 (1841); Wagn. Schr. Säug. Suppl. iv. p. 477 (1844), v. p. 436 (1855); Reichenb. Säug. iii. p. 123, pl. xxxviii. (1845); Schinz, Syn. Mamm. ii. p. 436 (1845); id. Mon. Antil. p. 33, pl. xxxvii. (1848); Huet, Bull. Soc. Acclim. (4) iv. p. 71 (1887).

Oryx beisa, Sund. Pecora K. Vet.-Ak. Handl. 1844, p. 207 (1846); id. Hornschuch's Transl., Arch. Skand. Beitr. ii. p. 157; Reprint, p. 81 (1848); Gray, P. Z. S. 1850, p. 134; id. Knowsl. Men. p. 17 (1850); id. Cat. Ung. B. M. p. 106 (1852); Heugl. Ant. u. Büff. N.O.-Afr. (N. Act. Leop. xxx. pt. 2) p. 17 (1863); Fitz. SB. Wien, lix. pt. 1, p. 178 (1869); Blanf. Zool. Abyss. p. 262 (1870); Gray, Cat. Rum. B. M. p. 35 (1872); id. Hand-l. Rum. B. M. p. 104 (1873); Sel. P. Z. S. 1872, p. 604, 1874, p. 323, 1875, p. 633; Heugl. N.O.-Afr. ii. p. 111 (1877); Brehm, Thierl. iii. p. 231 (1880); Sel. P. Z. S. 1881, p. 626, pl. liv. (adult and young); id. List Anim. Z. S. (8) p. 139, fig. 19 (1883), (9) p. 159 (1896); Flow. & Gars. Cat. Coll. Surg. ii. p. 262 (1884); Lort Phillips, P. Z. S. 1885, p. 931; W. Sel. Cat. Mamm. Calc. Mus. ii. p. 155 (1891); Flow. & Lyd. Mamm. p. 343 (1891); Thos. P. Z. S. 1891, p. 207; Sel. P. Z. S. 1892, p. 102; Swayne, P. Z. S. 1892, p. 300; Ward, Horn Meas. (1) p. 146 (1892), (2) p. 186 (1896); Lyd. Horns and Hoofs, p. 247 (1893); Matsch. SB. nat. Fr. Berl. 1893, p. 103; Swayne, Seventeen Trips to Somaliland, p. 298 (1895); Rhoads,

P. Ac. Philad. 1896, p. 519; Pousargues, Ann. Sci. Nat. (7) iv. p. 131 (1896); Elliot, Publ. Chicago Mus. Zool. i. p. 130 (1897); Neumann, Elephant-Hunting, p. 363 (1898) (Lake Rudolf); Trouessart, Cat. Mamm. fasc. iv. p. 954 (1898).
Oryx biessa, Gray, Ann. Mag. N. H. (1) xviii. p. 232 (1846).

VERNACULAR NAMES:—*Beisa* of Arabs at Massowa (*Rüppell*); *Beida* (*Heuglin*); *Baet* of Somalis (*Swayne*); *Ari* of Danakils (*Heuglin*).

Height at withers about 46 inches. Colour of neck and body a tolerably uniform tawny. Head and throat with the same ornamentation of black stripes and patches as in the preceding species, but the nose-patch does not spread so far laterally, and does not fuse with the lower extremity of the stripe that runs from the eye; this stripe also stops short at a point about on a level with the corner of the mouth, and is not produced inferiorly on to the lower side of the jaw; thus the whitish muzzle is not surrounded by a complete black ring as is the case in *O. gazella*, and there is less black on the inter-ramal area and on the upper end of the throat. Hair of throat not produced to form a mane or beard. Ears black at tip and on rim as in *O. gazella*. Black spinal stripe more sharply defined than in that species and extending from a point near the middle of the rump; hind-quarters of the same colour as the body and neck, there being no black patch on the rump and none on the lower half of the thighs. The black stripe that passes backwards from the chest along the side of the body above the white belly is narrower than in *O. gazella*, and is not continued on to the thighs. Hind legs whitish, not black above the hocks, and without a black spot on front of the cannon-bone, but stained with black above the false hoofs and below the hocks. Fore legs whitish, banded as in *O. gazella*, but the stripe above the knee narrower and only extending about halfway up to the shoulder on the outer side, and to the chest on the inner. Tail-tuft black. Hairs along the neck and spine lying forwards, the parting situated on the rump.

Horns nearly straight, ribbed in their basal half; about 36 or 37 inches in length, often only about 30.

A skull gives the following measurements:—Basal length 14 inches, orbit to nose 12·75, greatest width 5·75.

Female. Similar to the male, but horns rather longer and thinner.

Hab. Western shores of the Red Sea from Suakin southwards to Danakil-land; Somaliland and British East Africa north of the Tana.

The famous traveller and naturalist, Dr. Eduard Rüppell, of Frankfort-on-the-Main, whose name we have already frequently mentioned in this work, was the discoverer of this fine Antelope, which he met with in 1832 on the coast of the Red Sea west of Massowa, and subsequently described and figured in his 'Neue Wirbelthiere.' Rüppell called this animal "*Beisa*," after the native name by which it was known to the Arabs of the district, and at the same time attempted to identify it with an Antelope which he had heard of but not obtained seven years previously in Dongola, there known as the "*Dammah*." But, as Heuglin has pointed out, it seems by no means certain that the "*Beisa*" of the coastland of Abyssinia is the same as the "*Dammah*" of Dongola. Although, therefore, the name "*dammah*," as will be seen by our list of synonyms, was published by Cretzschmar and Fischer before Rüppell's "*beisa*," it would be neither just nor reasonable upon this uncertain plea to deprive Rüppell, who certainly supplied the first recognizable description of it, of the name of this species.

Rüppell informs us that the *Beisa* in his time (about 1832) was not uncommon in the low-country at the back of Massowa, and extended northwards along the coast to Suakin. It was usually found in small families in the flat valleys which are slightly grassed, and was said to be fleet and shy, being much persecuted by the Turkish soldiers then in garrison at Massowa.

Mr. W. T. Blanford, F.R.S., met with this Antelope in the same district during the Abyssinian Expedition of 1867-68, and, in his volume on the 'Geology and Zoology of Abyssinia,' writes as follows:—

"On returning from the interior I stopped for three days at a halting-place in the semi-desert north of Massowa, and succeeded in shooting four of these superb and rare Antelopes. All were females; but there is little, if any, difference in the sexes, both having equally fine horns.

"The *Beisa* is found singly or in small herds, rarely exceeding ten in number, in the somewhat hilly barren country near the sea-coast. They are said to keep to the more hilly parts of Samhar. Near Annesley Bay, where the country is more wooded, this Antelope does not occur, but it abounds farther south in the Somali country, and the horns are brought in considerable numbers to Aden and Berbera. They are used as weapons by the Somalis.

"The principal food of the *Oryx* near Massowa is a coarse grass, almost resembling a diminutive bamboo. They appear to be grazers rather than browsers, although, like all Antelopes, they occasionally eat the young shoots of *Acacia* and other trees. They are quite diurnal in their habits, feeding in the morning and evening, in this respect

resembling the Gazelles, to which they are unquestionably closely allied. When we were in the Samhar country in July and August, the Oryx drank apparently every day, always coming to the water about one or two o'clock. It is probable that they drink less regularly in cold weather.

"The appearance of a herd of Oryx is very imposing. They are some of the most elegant and symmetrical of animals, their motions being those of a wild horse rather than of an Antelope. Their favourite pace appears to be either a steady quick walk or a trot; they rarely break into a gallop unless greatly alarmed. When frightened, they dash off, sometimes snorting and putting their heads down as if charging, raising their long tails, and looking very formidable. They are wary animals, though far less so than some other Antelopes.

"Like the Gazelles and true Antelopes, all equally inhabitants of deserts and open plains, the Oryx has a pointed foot, each of the divisions being rudely triangular. Its tracks may consequently be instantly distinguished from those of cattle or of any of the bovine Antelopes. So far as my acquaintance with the family goes, most of the forest and bush-hunting Antelopes—Koodoo, Nylgai, *Tetraceros*—have their feet formed like those of the *Cervidæ*, with rounded hoofs, whilst the Antelopes of the plain, and especially desert forms, have pointed hoofs."

Heuglin met with this Antelope further south on the Danakil coast of the Red Sea, and also in Northern Somaliland, where he states that it resorts to the more open sandy districts beset with low bushes (*Salvadora*), occasionally retreating into the lower hills.

But in Somaliland we have excellent accounts of its habits and distribution from modern observers—of whom we will first quote Captain Swayne, the leading authority on the game-animals of that country.

Writing of the Antelopes in his 'Seventeen Trips through Somaliland,' Col. Swayne sums up his great experience of the Beisa as follows:—

"The Oryx of Somaliland is a very stoutly-built, bovine Antelope, standing as high as a donkey, and inhabits open stony ground, or barren hills, or open grass plains. It is fairly common and very widely distributed over the Somali country, and it may be found in all kinds of country except in the thick jungle with aloe undergrowth (which is so much liked by the Lesser Koodoo), and the cedar-forests on the higher ranges. The best Oryx ground is in the Haud and in Ogádén.

"The Oryx feeds chiefly on grass, and is often found very far from water. It has a keen sight, and probably protects itself more by this than by its sense of hearing or scent. Oryxes are found in herds of from half a dozen to thirty or forty, chiefly composed of cows. Bull Oryxes are found wandering singly all over the country, and possibly these make up in number for the preponderance of cows in the herds.

"Sometimes two or three cows with growing calves will be found together, making

up a small herd of half a dozen. It is nearly impossible to distinguish which are the bulls in a herd, and they are so few in proportion to the cows that it is best, if shooting for sport alone, not to fire at a herd at all. The bull is slightly thicker in the neck and higher in the withers than the cow; and the horns, though an inch or two shorter in the bull, are more massive, especially about the base, and more symmetrical, whilst the cow's horns are frequently bent and of unequal length. The Oryx is often revengeful when wounded and brought to bay; twice I have seen a wounded one make a determined charge into a mob of Somális armed with spears.

“The Midgáns, who are armed with bows and poisoned arrows, hunt the Oryx with packs of savage yellow pariah-dogs. The thick skin round the withers of a bull is made by them into a white *gáshan* or fighting shield. The method of hunting, as carried out by the Midgáns in the Bulhár Plain, is as follows:—Three or four of them, with about fifteen dogs, go out just before dawn, and walk along silently through the scattered thorn-trees till fresh tracks are found, and these are followed till the game is sighted. By throwing stones, whistling, and other signs which the dogs understand, they are shown the herd, and settle down to their work. The dogs run mute, the men following at a crouching trot, which in a Somáli is untiring; and this lasts until the dogs open in chorus, having brought the game to bay. The Oryxes make repeated charges at the dogs, which they often wound or kill. If the latter can avoid the sharp horns of the mother they fasten on to a calf, and sometimes the whole herd will charge to the rescue. The Midgáns run up silently under cover of the bushes and let off a flight of poisoned arrows into the herd, which, seeing the human enemy, takes to flight. Frequently an animal wounded by a poisoned arrow takes a line of its own, and is in due time carefully followed up and found dead, or it may be pulled down in its weak state by the dogs.”

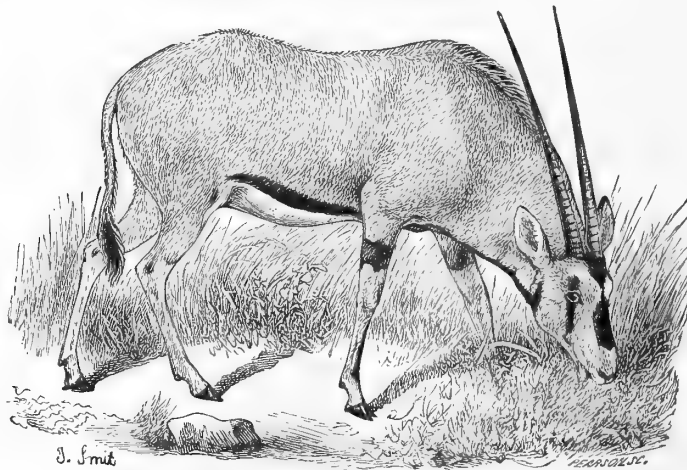
Mr. D. G. Elliot, in his report on the collection of the Mammals of Somaliland made for the Field-Columbian Museum of Chicago in 1896, writes of the Beisa as follows:—

“Oryxes are not often seen in the country north of the Golis Range, but their numbers increase as the Haud is traversed, and on the south of Toyo and in Ogaden they are plentiful. At a distance it is impossible to distinguish the bulls from the cows, as both carry horns, those of the cows more slender and usually longer than the average of bulls' horns. But this difference in size is not perceptible unless one is very close to the animals. The horns are annulated for two-thirds their length, then become smooth, and end in a sharp point. The average lengths of bulls' horns are not much over 30 inches, although occasionally specimens are obtained that are several inches longer, and the cows' horns sometimes reach a length of 37 or 38 inches. They are very formidable weapons, and it is dangerous to approach a wounded Oryx. In charging its enemy the Oryx puts its head low down between its fore legs, with the horns pointed forward not much above the ground, and rushes at the object of its hate with much swiftness. These lance-like horns are quite capable of passing entirely

through the body of an animal. Oryxes seem to be quite independent of water, and are often seen many miles from any place where it could be procured. They frequent the waterless, treeless plains, such as Toyo, Silo, &c., in herds sometimes of large size, and subsist upon the harsh dry grass common in such localities. The skin of a bull is very thick on the neck and withers, in some cases as much as three-quarters of an inch through. The natives select this part of the hide to make their shields, which are sufficiently tough to stop any spear or arrow. As the bulls are very pugnacious, no doubt their tough thick hides are a great protection against the lance-like horns, and save them from being run through this vital portion of the body."

Mr. Elliot's expedition brought home twelve specimens of the Beisa of both sexes and of various ages from the Toyo Plain, Hullier, Bodeleh, the Silo Plain, the Haud, and the Ogaden Country. But he tells us that this fine animal is already practically extinct north of the Golis Range, and can only be found in any numbers in the southern portion of the Haud and in the country beyond.

Fig. 94.



Female Beisa.

(From the Garden Guide Z. S. L., 1876.)

Mr. J. Benett Stanford, F.Z.S., a well-known sportsman in Somaliland, tells us a curious story about this Antelope. On one occasion when shooting in that country he killed a female Beisa, and, leaving his men to skin her, went on in pursuit of other game. On his return to the camp, late in the afternoon, he found a young Beisa frolicking about, and was greeted by one of

the party with the words "How *did* you catch it?" It appeared that the men had cut the young animal out from the dead mother, and found it perfectly formed in every respect. This young Antelope lived with the caravan for several months, and was eventually killed by an accident.

The following extract from Capt. Francis B. Pearce's recently published 'Rambles in Lion-Land' will show that, notwithstanding the persecutions of the numerous sportsmen who now visit the Somaliland Protectorate every winter, the Beisa is as yet by no means an extinct animal in the interior of that attractive country:—

"We struck camp after having spent a very successful week on the Tyuli Hills, and turned our faces south *en route* for the zebra-country. Shortly after leaving camp I saw the largest herd of Oryx I have ever seen. It is a difficult matter to estimate the number of a herd of animals unless one possesses some education in that line, but at the lowest estimate there could not have been less than five hundred head. This enormous herd galloped past us at a distance of a little over two hundred yards. It was a beautiful sight to watch. With glistening coats and horns laid back, they tore past. Both J—— and I were too fascinated to think of firing."

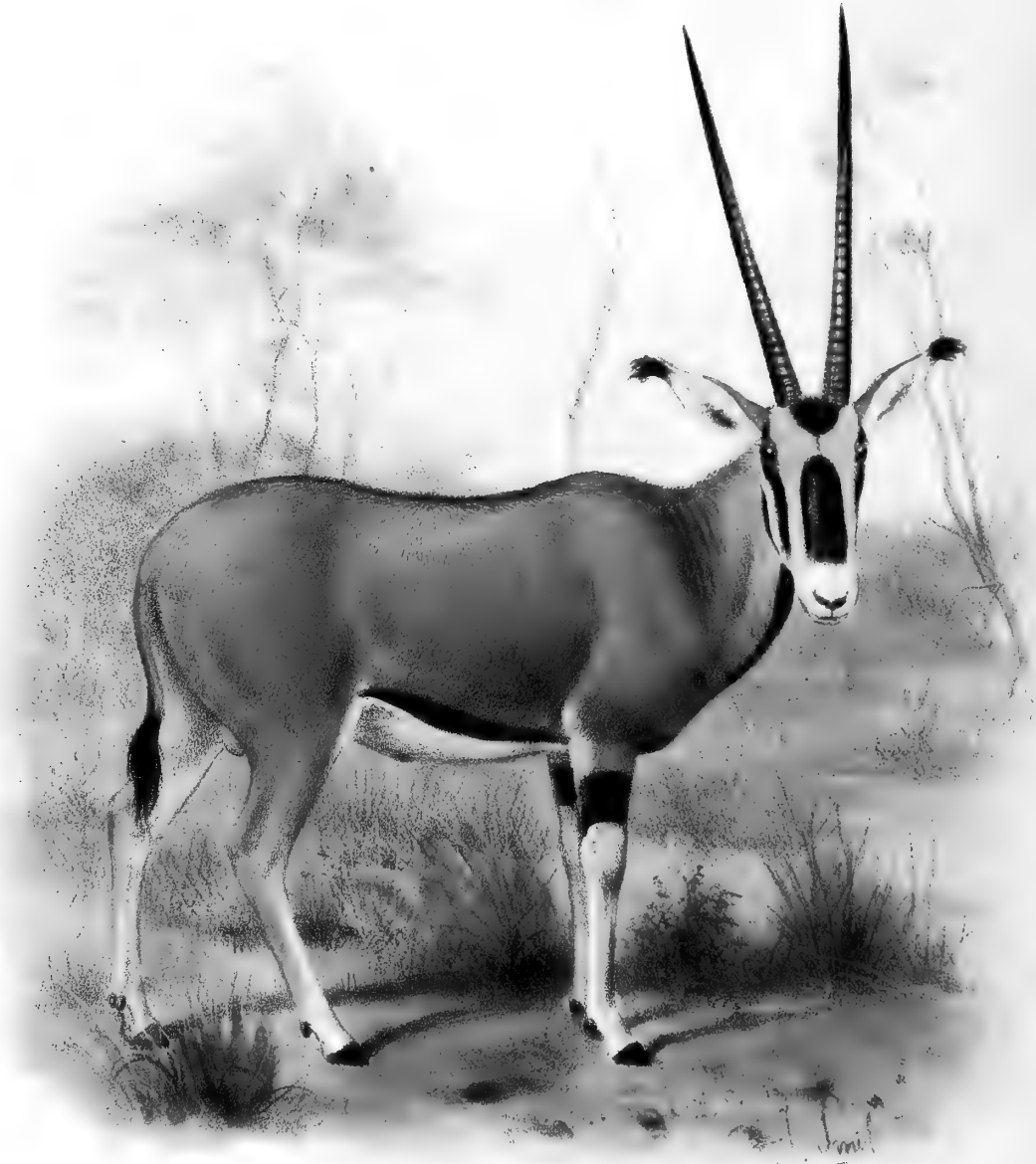
The Beisa is well known in the Zoological Gardens of Europe, and has bred in captivity on more than one occasion. The first living example of this Antelope (a male) was received by the Zoological Society of London, as a present from Admiral Cumming, in 1874, and a female was presented by the Sultan of Zanzibar in the following year, from which the figure in the Society's 'Garden Guide' for 1876 (see fig. 94, p. 70) was taken. This made a pair of this animal for the Collection, believed at that time to be the only pair in Europe. In 1877 and 1878 other specimens were obtained. On April 12th, 1881, the first calf was born, and in September 1885 a second calf from the same pair. At the present time there are three representatives of this Oryx in the Society's Collection, and specimens of it may also be seen in many of the Zoological Gardens on the Continent.

A coloured figure of the first Beisa calf born in the Zoological Society's Gardens will be found in the 'Proceedings' for 1881 (plate liv.).

In the British Museum there is an adult mounted female specimen of the Beisa Antelope, from the Red Sea coast, obtained in 1871. There is also the skull of an adult from the River Juba, obtained by Sir John Kirk and presented by him in 1879, besides other skins and skulls from various parts of Somaliland presented by Mr. W. F. Sinclair, Col. A. Paget, and Capt. Swayne.

Our figure of this species (Plate LXXXIV.) was lithographed by Mr. Smit for Sir Victor Brooke many years ago, and was taken, it is believed, from a specimen in the British Museum.

May, 1899.



Smit del. et lith.

The Tufted Beisa .
ORYX CALLOTIS .

Published by R.H. Porter

Hanhart imp.

117. THE TUFTED BEISA.

ORYX CALLOTIS, THOMAS.

[PLATE LXXXV.]

Oryx beisa, Hunter, in Willoughby's E. Africa, p. 289 (1889).

Oryx callotis, Thomas, P. Z. S. 1892, p. 195, pl. xiv. (head); Ward, Horn Meas. (1) p. 149 (1892), (2) p. 189 (1896); True, Proc. U.S. Nat. Mus. xv. p. 470, pl. lxxxvi. (1892) (full figure); Lyd. Horns and Hoofs, p. 248 (1893); Lugard, E. Afr. i. p. 534 (1893); Matsch. SB. nat. Fr. Berl. 1893, p. 103; Jackson, in Badm. Big Game Shooting, i. p. 293 (1894); Matsch. Säug. Deutsch-Ost-Afr. p. 135 (1895); Pousargues, Ann. Sci. Nat. (7) iv. p. 131 (1896); Jackson, P. Z. S. 1897, p. 454; Trouessart, Cat. Mamm. fasc. iv. p. 954 (1898).

VERNACULAR NAMES:—*Cheroa* of the Swahilis in Brit. E. Africa (Jackson); *Kiroha*, Swahilis of German East Africa (Stuhlmann); *Muhambura* in Kirongi (Stuhlmann); *Palla-Palla* or *Kolongo* in Uniamuesi (Matschie).

Of the same size and general characters as the preceding species, to which it is very closely allied. The colour seems to be usually of a richer ruddier tint, and the black stripe on the face that passes from the eye towards the corner of the mouth is generally, but not always, continued downwards on to the lower edge of the jaw, thence backwards, bounding the inter-ramal area on each side and uniting with the lower end of the stripe that runs from below the base of the ear to the throat. In some cases, however, the stripe in question stops short behind the corner of the mouth as in *O. beisa*. The frontal patch and the nose-patch are sometimes entirely separated, sometimes joined by a narrow stripe as in *O. beisa*. The stripes on the body and fore legs resemble those of *O. beisa*, but there is no black patch upon the front of the cannon-bone on the fore leg, such as is present in that species.

The most striking difference between the two species consists in the development of the hairs on the tips of the ears in *O. callotis* so as to form a long black tuft; in *O. beisa* the hairs at the extremity of the ear are scarcely longer than those covering the adjacent edges of that organ. Lastly, in *O. callotis*, the hairs along the median dorsal line are reversed in direction of growth from a point only a little behind the middle of the back; whereas in *O. beisa* the parting is situated on the rump.

Hab. British East Africa, south of the River Tana, and interior of German East Africa.

Southwards of the River Tana in British East Africa, or thereabouts, the Beisa appears to be replaced by a nearly allied form, distinguishable by the conspicuous tufts which adorn the tips of its ears and by other less noticeable characters. It will be easily understood that this animal was not at once distinguished from the typical form by those who first met with it, and was consequently referred to "*Oryx beisa*" by Mr. Hunter in his Appendix to Willoughby's 'Big Game in East Africa,' and by other earlier authorities.

It was not, in fact, until 1892 that the conspicuous difference of this species from *O. beisa*, as regards its ears, attracted notice, when Mr. Rowland Ward, F.Z.S., first called Thomas's attention to it. Thomas, after examining into the subject, brought it before the notice of the Zoological Society of London on March 15th of that year, and proposed to call the new form *Oryx callotis*. Thomas's communication was subsequently printed in the Society's 'Proceedings' accompanied by a good coloured figure of the mounted head of the typical specimen, which was subsequently presented by Messrs. Rowland Ward and Co. to the British Museum.

As will be seen by reference to Mr. Rowland Ward's 'Records of Big Game,' the horns of this typical specimen are among the shortest of the series of 18 specimens of this species of which measurements are there given, the longest pairs being over 30 inches in length. These latter are, no doubt, those of females, which in all the species of *Oryx* seem to be rather longer and thinner than those of males.

In the first volume of 'Big Game Shooting' in the 'Badminton Library,' Mr. F. J. Jackson gives us the following account of *Oryx callotis* in British East Africa:—

"The East African Oryx is known to the Swahilis as 'Cheroa.' The Cheroa is found in the Kilimanjaro district in greater numbers (particularly near Useri) than elsewhere. It is also plentiful in the Galla country, between the Sabaki and Tana rivers, and I have myself seen it within a mile of the sea at Merereni.

"It is found more often in open bush country than in the bare arid plains. It is not only a beautiful beast, but is very shy, difficult to approach, and exceedingly tough, and for these reasons many sportsmen covet its head more than the trophies of any other kind of Antelope. The skin of its neck is extraordinarily thick, and *à propos* of this, all head-skins preserved as trophies should have the skin of the neck shaved down to at least half its thickness to ensure its being properly cured.

"The Oryx is found in herds varying in number from six or eight up to thirty or forty. A bull Oryx is often found entirely by himself, and occasionally along with a herd of *Gazella granti* or other Antelopes. It is perhaps as well to warn sportsmen to approach Oryx, when lying wounded, with caution, as on one occasion my gun-bearer, on going up to cut the throat of an Oryx, received a severe blow on the thigh from the side of one of the wounded beast's horns. The blow might have been very serious had the Oryx caught him with the point of his horns instead of with the flat."

Mr. R. B. P. Cator, of the British East African Administrative Service, sends us the following account of his adventures with this Antelope:—

"On the morning of the 20th February, 1898, I fell in with a herd of Oryx on my way down from Machakos to Kibwezi. The herd consisted of some 15 to 20 animals or possibly more. When I first saw them they were feeding near some thickets on the edge of a broad open piece of ground that lay between them and myself, and I was unable to gain cover before I was detected. On seeing me the herd divided and made off in different directions, but, so far as I could judge, the two parts effected a junction before I saw them again. The country hereabout consists of open glades and meadows of all sizes alternating with impenetrable thickets, so being very anxious to secure a specimen of an Oryx, a very uncommon Antelope in this part of the country, I made a long detour, and, by good fortune, again hit off what was, I have not the least doubt, the same herd or a portion of it.

"Without detailing the various attempts that I made to get a good shot it is enough to say that I was fortunate enough to secure two specimens, the one a very fine bull and the other a cow.

"The horns of the bull measure respectively $33\frac{1}{2}$ " and 32 " on the outer curve; circumference of largest horn 7 " and distance from tip to tip 13 ": all these measurements exceeding those of the best East African Oryx given in Ward's book. The horns of the cow are fairly good but much worn and cracked."

Our figure of this Antelope (Plate LXXXV.) has been prepared by Mr. Smit from the skin and skull of the male specimen obtained on this occasion by Mr. Cator, who kindly placed them at our disposal for this purpose.

The Tufted Beisa extends south of the British Protectorate far into the interior of German East Africa.

Herr Matschie, in his valuable volume on the Mammals of the German Protectorate, includes this Antelope in his list, and gives a figure of it in the text. He tells us that it was met with in Southern Masailand, south-east of Irangi, by Stuhlmann, and in Northern Ugogo, between Mpapwa and Usandawe, by Neumann. This, so far as we know, gives its furthest extension south. We are not aware that the Tufted Beisa has ever been imported alive to Europe.

The typical head of *Oryx callotis* already mentioned is the only example of this form of Oryx in the collection of the British Museum.

May, 1899.

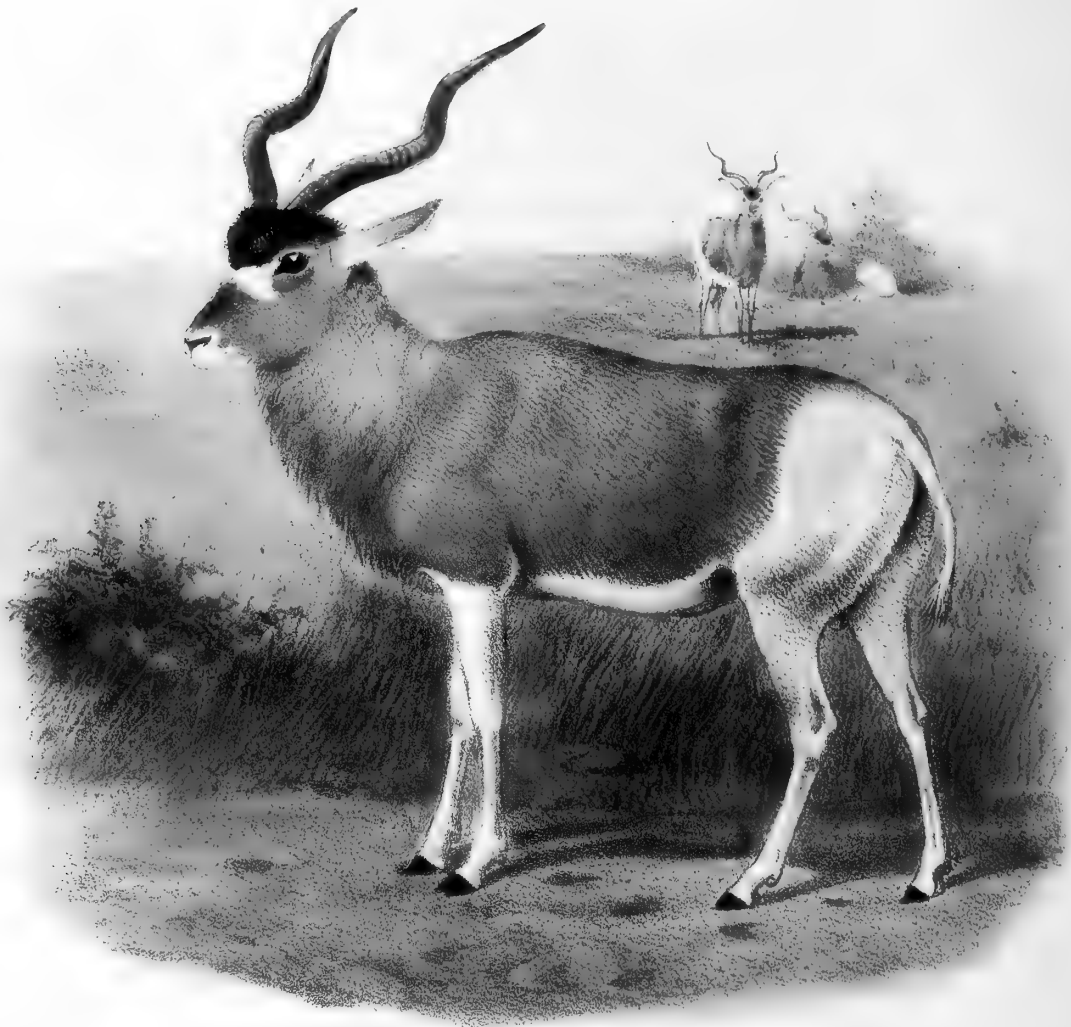
GENUS III. ADDAX.

Type.

Addax, Rafinesque, Analyse de la Nature, p. 56 (1815) . . . A. NASO-MACULATUS.

General characters as in *Oryx*, but with the horns spirally twisted; the hoofs expanded as in the Reindeer; a distinct, though short, mane on the forehead and sides of the neck; the hair along the middle line of the back not projecting towards the head; tail-tuft smaller.

Range of the Genus. North Africa, from Dongola to Senegal.



Wolf del. Smit lith.

The Addax .
ADDAX NASO-MACULATUS .

Published by R H Porter .

Hanhart imp.

118. THE ADDAX.

ADDAX NASO-MACULATUS (BLAINV.).

[PLATE LXXXVI.]

Cerophorus (Gazella) naso-maculata, De Blainville, Bull. Soc. Philom. 1816, pp. 75 & 78.

Antilope naso-maculata, Desm. N. Dict. d'Hist. Nat. (2) ii. p. 188 (1816); Blainville, Oken's Isis, 1819, p. 1095, pl. xii. figs. 4-7; id. Journ. Phys. 1819, pls., figs. 4 & 7; Desm. Mamm. ii. p. 456 (1822); Goldf. Schr. Säug. v. p. 1242 (1824 or 1818); Licht. Abh. Ak. Berl. 1824, p. 215; Less. Man. Mamm. p. 374 (1827); J. B. Fisch. Syn. Mamm. p. 462 (1829); Laurill. Dict. Univ. d'H. N. i. p. 617 (1839); Huet, Bull. Soc. Acclim. (4) iv. p. 269 (1887).

Antilope addax, Cretzschm. Zool. Atl. Rüpp. Reise, p. 19, pl. vii. (1826); Licht. Darst. Säug. pl. ii. (1827); H. Sm. Griff. An. K. iv. p. 193, pl., v. p. 328 (1827); Hempr. & Ehrb. Symb. Phys. Decas ii. pl. iv. (1828); J. B. Fisch. Syn. Mamm. p. 474 (1829); Oken, Allg. Naturg. vii. p. 1379 (1838); Wagn. Schr. Säug. Suppl. iv. p. 486 (1844), v. p. 437 (1855); Reichenb. Säug. iii. p. 118, pl. xxxvi. (1845); Schinz, Syn. Mamm. ii. p. 438 (1845); id. Mon. Antil. p. 36, pls. xl. & xli. (1848); Gieb. Säug. p. 296 (1853); Schweinf. Herz von Afrika, ii. p. 534 (1874).

Addax suturosus, Fitz. SB. Wien, lix. p. 178 (1869).

Antilope suturosa, Otto, N. Act. Nat. Cur. xii. p. 521, pl. xlvi. (1825); H. Sm. Griff. An. K. iv. pl. p. 206 (1827); Less. Man. Mamm. p. 382 (1827); J. B. Fisch. Syn. Mamm. p. 475 (1829); Laurill. Dict. Univ. d'H. N. i. p. 620 (1840); Schinz, Syn. Mamm. ii. p. 439 (1845); id. Mon. Antil. p. 34, pl. xxxix. (1848).

Antilope mytilopes, H. Sm. Griff. An. K. iv. p. 204, pl., v. p. 330 (1827).

Antilope gibbosa, Savi, Mem. Sci. Pisa, i. p. 17 (1828); id. Oken's Isis, 1832, p. 502.

Oryx addax, A. Sm. S. Afr. Quart. Journ. ii. p. 188 (1834); Jard. Nat. Misc. (1) vii. p. 205, pl. xxv. (1842); Sund. Pecora, K. Vet.-Ak. Handl. 1844, p. 206 (1846), id. Hornsch. Transl., Arch. Skand. Beitr. ii. p. 157; Reprint, p. 81 (1848).

Oryx naso-maculatus, Gray, List Mamm. B. M. p. 156 (1843).

Addax naso-maculatus, Gray, Ann. Mag. Nat. Hist. (1) xviii. p. 232 (1846); *id.* List Ost. B. M. p. 58 (1847); *id.* P. Z. S. 1850, p. 135; *id.* Knowsl. Men. p. 17 (1850); *id.* Cat. Ung. B. M. p. 108 (1852); Tristram, Sahara, p. 387 (1860); Gerrard, Cat. Bones Mamm. B. M. p. 240 (1862); Heugl. Ant. u. Büff. N.O.-Afr. (N. Act. Leop. xxx. pt. 2) p. 18 (1863); Fitz. SB. Wien, lix. pt. 1, p. 178 (1869); Gray, Cat. Rum. B. M. p. 36 (1872); *id.* Hand-l. Rum. B. M. p. 104 (1873); Heugl. N.O.-Afr. ii. p. 113 (1877); Garrod, P. Z. S. 1877, p. 4; Brehm, Thierl. iii. p. 235 (1880); ScI. List Anim. Z. S. (8) p. 139 (1883), (9) p. 154 (1896); Flow. & Lyd. Mamm. p. 345 (1891); Ward, Horn Meas. (1) p. 150 (1892), (2) p. 191 (1896); Lyd. Horns and Hoofs, p. 249 (1893); Pease, P. Z. S. 1896, p. 810 (habits and distribution); ScI. P. Z. S. 1896, p. 984; Pousargues, Ann. Sci. Nat. (7) iv. p. 131 (1896); Johnston, P. Z. S. 1898, p. 352 (Tunisia); Trouessart, Cat. Mamm. fasc. v. p. 955 (1898).

Addax addax, Jent. Cat. Ost. Leyd. Mus. (Mus. Pays-Bas, ix.) p. 136 (1887); *id.* Cat. Mamm. Leyd. Mus. (Mus. Pays-Bas, xi.) p. 167 (1892).

VERNACULAR NAMES :—*Abu-akasch* of Arabs of Senaar and Kordofan (*Hempr. & Ehrb.*). *Anjidohl* in Dinka and Djur; *Auel* in Bongo (*Schweinfurth*). *Akash* of Arabs on Upper Nile (*Heuglin*); *Bakra el onash* of Arabs of Tunisia (*Whitaker*); *Tamita* of Touaregs in S. Algeria (*Pease*).

Height at withers about 38 inches. Colour of head, neck, and body in winter a tolerably uniform brownish grey; in summer the hairy covering of the body between the neck and hind-quarters assumes a richer and redder hue, the head and neck remaining the same throughout the year. Mane on forehead nearly black, and back of head behind horns darkish brown; lips and chin white; a broad white stripe on each side of the face extending from near the middle of the cheek upwards in front of and above the eye, and usually meeting its fellow of the opposite side across the upper portion of the nose, though sometimes the union is interrupted in the middle by the black hairs of the frontal mane. Ears mostly white, sometimes blackish at the base; an ill-defined whitish patch sometimes present behind the eye and a black patch on the lower edge of the cheek close to the neck. Fore legs white, with the exception of a brown patch on the knee, a brown rim round the false hoofs, and a tinge of brown which extends downwards on to their upper portions from the shoulder; a black patch sometimes present between the shoulder and the throat; the dark colour of the back and flanks spreads for

a short distance on to the hind-quarters; otherwise the hind-quarters, tail, and hind legs are white, the rump and thighs being a dirtier white than the legs. As in the case of the front legs, however, there is a rim of brown hairs round the false hoofs, and the tail-tuft, when present, is brownish. Belly white. Hairs along middle of neck sometimes reversed.

The horns attain a length of about 28 inches in a straight line and about 36 following the spiral.

Skull and horns as described above. The measurements of a skull are:— Basal length 12 inches, greatest breadth 5·30, muzzle to orbit 8·25.

Female. Like the male, but horns thinner.

Hab. Desert-regions of North Africa from Dongola to Senegal.

The Addax belongs to the same group of desert-haunting Antelopes as the species of *Oryx* of which we have just treated, and is essentially of the same structure. But it is at once distinguishable by its spiral horns and expanded hoofs, and may properly be referred to another genus, which Rafinesque in 1815 seems to have been the first to call "*Addax*," adopting the name from Pliny and other early writers. In 1816 De Blainville gave the first scientific description of this Antelope, calling it *Antilope nasomaculatus*, from the conspicuous white blaze across the nose. Combining this with the generic term above mentioned, we obtain "*Addax nasomaculatus*" as the correct scientific name of this Antelope.

It should be stated that the description given by Pliny of his "*Strepsiceros, quem Addacem Africa appellat*" is very short and incomplete, and has been variously interpreted by subsequent writers. But as it was an African animal with twisted horns, and the native Arab name of the present species, according to Hemprich and Ehrenberg, is "*Abu Akass*" (the father of the twist), it seems highly probable that we have in it the veritable "*Addax*" of the ancients.

The first naturalist of modern days to obtain specimens of the Addax in its native wilds was Rüppell, who met with it in the deserts of Dongola south of Ambukol, where, he tells us, it lives in small families apart from all other species of Antelopes, and is hunted by the Arabs on horseback in summer time. Rüppell forwarded examples of both sexes of the Addax to Frankfort, where it was described and figured by Cretzschmar in 1826 from

Rüppell's specimens. Cretzschmar identified it as being without doubt the "*Addax*" of Pliny, and named it *Antilope addax*, being apparently unaware that it had been previously described by De Blainville from specimens which he had examined in London in the Pantherion of Bullock and in the Museum of the Royal College of Surgeons.

About the same period Hemprich and Ehrenberg had obtained examples of the same Antelope for the Berlin Museum, apparently from nearly the same district. These were first described and figured by Lichtenstein in his 'Darstellung der Säugethiere,' and subsequently by Hemprich and Ehrenberg themselves in their 'Symbolæ Physicæ.' They tell us that they were obtained about twenty hours' distant from Ambukol, in the Chor-el-Lebben, where these animals are hunted by the Kubabish Arabs on horseback, in the month of June. Three specimens were sent home, which we suppose are the same that are figured in their plate, and represent, according to their descriptions, an adult female and two young females with straight horns.

Our third great authority on the Mammals of North-east Africa, Th. v. Heuglin, informs us that the Addax extends northwards into the Libyan Desert of Egypt, to the Fayoum and the Oases, and is not rare in the Bayuda Desert. Though he writes as having met with this species himself, he does not give us the exact locality in which he came across it.

Passing westwards, we have no doubt of the occurrence of the Addax in suitable localities all through the Great Sahara, although we have little certain information on the subject, except that a pair of horns, brought back by Denham and Clapperton from their adventurous journey across Central Africa in 1822-24, is in the British Museum.

But the Addax is still to be found in Southern Tunis, whence living examples were formerly brought to England by Louis Fraser and other collectors. In his article on the larger Mammals of Tunisia, published in the Zoological Society's 'Proceedings' for 1898, Sir Harry Johnston tells us that this fine Antelope "is still a Tunisian animal, although now rarely heard of north of the limits of the real sandy desert."

The same kind friend and correspondent, writing to Sclater from Tunis in January 1898, says:—

"I have just come back from an interesting journey through the Tunisian Sahara, and back by Tebessa, as you suggested. I penetrated south to 32° nearly. I found that the Addax (though I did not see one) was still fairly abundant in the desert, and I

bought several very fine pairs of horns from the Arabs. But the finest pair that I saw was at Meduin (Military headquarters, Tunisian Sahara) in the house of the Commandant. He allowed me to measure and draw it (see the sketch, fig. 95). You will notice that this example has a third twist; the majority of male Addaxes only attain to two or two and a half, though I have a pair in my collection here which verges on the third turn.

“The cow Addax (see the drawing, fig. 96) has much slenderer and much less spiral horns, which have departed far less markedly from the Orygine type.”

Fig. 95.



Fig. 96.



Fig. 95.—Horns of male Addax, $32\frac{3}{4}$ inches along the curve. (From a pair in the possession of Major Pichot, at Meduin.)

Fig. 96.—Horns of female Addax, 31 inches in length along the curve. (From a pair in Sir Harry Johnston's collection.)

Another excellent authority on the Mammals of Tunisia, Mr. Joseph S. Whitaker, F.Z.S., has most kindly placed at our disposal the following results of his observations on this Antelope:—

“The Addax, which is called by the Tunisian Arabs *Bakrah-el-Ouash*, or Wild Cow, is still to be found in the inland desert-country of the south of the Regency, although

of late years, even in these remote and uninhabited districts, its numbers seem to have diminished considerably. This is said to be owing to the fact of the peace that has lately reigned between the Saharan Arabs and the Touaregs having enabled the former to devote themselves more to the chase than in the previous times of warfare. The meat of this animal, it appears, is much esteemed by the Arabs as food, while the hides are still more highly prized for the purpose of making the soles of shoes and sandals.

“With regard to the present range of the Addax in the Tunisian Sahara, I cannot speak from personal knowledge, never having myself penetrated sufficiently far inland to meet with it; but in the course of my travels from time to time in South Tunis I have done my best to obtain reliable information on the subject. Among others, Herr Spatz, who has resided for several years in South Tunis, and is, perhaps, as competent an authority on the matter as any living European, informs me that up to three years ago the Addax was to be met with in considerable numbers in the neighbourhood of Bir Aouine (or Bir Auin), which lies to the east of Berezof, or some eighty miles south of the Chott Djerid, thence extending its range in a southerly and south-westerly direction, throughout the sand-dune country, down to Ghadames, where, from all accounts, the species is abundant. During the last three years, however, it appears the Antelopes have become much scarcer in the country north of Ghadames, and this year they were not to be met with at all anywhere near Bir Aouine. Whether this is due to the incessant persecution of the Arab hunters above referred to, or whether it is merely due to dry seasons, and the consequent lack of food in these thirsty regions having kept the animals away, I cannot say; but as a proof of the recent defection of the Addax in the Tunisian Sahara I may mention the fact of a party of five native hunters this spring having only succeeded in obtaining seven of these Antelopes in an expedition lasting 37 days, while in 1895 a similar party killed ten of the animals in a short trip of 12 days. The Tunisian Arabs hunt the Addax in the same way as they do the pale desert Gazelle (*G. leptoceros*), viz. by stalking, in which art they are certainly proficient, and it is well for the preservation of the species, with all the keen-wittedness of its race, that these men are, as a rule, armed with but primitive flint-lock weapons, little better than gas-pipes, with a very limited range. Were it otherwise, the Addax would probably long ere this have been exterminated in this part of North Africa.

“This Antelope seems generally to be met with in very small herds, or in pairs, and the young are born, as a rule, in the winter or very early spring, never more than one being produced at a birth, according to my informants. The Arabs sometimes capture the young Addax alive, and I have on more than one occasion been offered fawns of a few weeks old.

“I have in my collection two complete skins of the Addax obtained in South Tunis in the month of May, both of a milk-white hue, evidently the summer coat, the hair being very short and fine; while other skins in my possession obtained in February and March are of an isabelline dun-colour, and with the hair rather long and coarse, the winter garb, which no doubt varies in intensity of colour according to the season. The thick frontal tuft of hair seems to be of a dark brown colour at all seasons, while part

of the face below the transversal white nose-band is a lightish brown, as is also the fringe of hair on the throat. On the nape there is a slight indication of a mane, but it

Fig. 97.



Head of a female Addax from a photograph (Mr. J. S. Whitaker).

is so slight in some specimens as to be scarcely noticeable. The tail is rather short and tufted. Both males and females carry beautifully-shaped spiral horns, those of the

former being, as a rule, longer and stouter than those of the latter. The horns vary somewhat in the amount of spiral twist, probably according to age, as will be seen by two specimens of which the following are the measurements :—

	inches.	inches.
“ Length along front curves	34½	33½
Do. in straight line	27	27
Circumference at base	6½	6½
Tip to tip	17¼	17

“ I also send a photograph of the head of a female Addax, almost adult (see fig. 97, p. 85).

“ Since writing the foregoing I have received from South Tunis the complete skin and head of a fine male Addax obtained in the early part of this year (1898). The horns of this specimen are remarkably long, being in fact quite a record pair, and measure as much as 38½ inches along the front curves, and 30½ inches in a straight line. I have presented this specimen to the National Museum at South Kensington.”

The Addax has likewise been the object of an expedition into the Sahara made by Mr. A. E. Pease, M.P., F.Z.S., who, in the Zoological Society's ‘ Proceedings ’ for 1896, has given us the following account of his adventures in search of it:—

“ In February 1895, furnished with all the information I could obtain from M. Foureau and natives familiar with the *Erg*, Sir Edmund Loder and I started from Biskra to reach the country between El Oued Souf and Rhadamis. After a week's journey across the desert by way of the great Chotts we reached the Oued Souf. At El Oued, the last outpost of the French in the direction of Rhadamis, we were stopped till Capitaine de Prandière had obtained instructions from the General of Division permitting us to go on. After a detention, made pleasant by the great kindness and hospitality of the three French officers in command of the native garrison, we had the disappointment of being told that we could not be allowed to proceed southwards. At the time we thought this very hard, for though we were aware that the Touaregs had lately raided the Chambas as near as Mey, we felt that a flying visit to the country east of Bir Beresof would be without danger, as we could be in and out again before our presence was discovered. But a few months later M. Foureau and a strong force were driven back from the south, though he had reached a point far beyond our proposed destination, and I think our hosts were entirely justified in their refusal. Our plan had been to reach Bir Beresof, and then to strike east for Bir Aoueen, where we should in all probability have come up with the Addax, which visits this district in large quantities in favourable years. The Addax country is the *Erg*, the great region of sand-dunes, covered more or less thickly with vegetation according to situation and rains. This sand-dune country covers hundreds—it may be said thousands—of miles and the Addax follows the rains. In certain districts it is not uncommon for rain not to fall for several

years in succession. In one year the Addax are only found far south of Rhadamis and Ain Taïba (S. of Ouargla), in other years they follow the rain as far north as the southern borders of the Chott Djereed in the east and the neighbourhood of Ain Taïba in the west. Without the help of the French and a good escort of Chambas it would be vain to attempt to reach the Rhadamis country by way of Bir Beresof; and the wells being sometimes nine days apart, it is a difficult route to follow.

"I heard when at Touzer that a M. Cornex had obtained a '*Begra el Ouash*' within a few days of Douz; possibly this was the Bubal, though I was assured that he had got the Addax. M. Cornex (a Swiss) had adopted the religion and dress of the Arabs, and had therefore facilities of reaching places and avoiding dangers that were quite exceptional.

"In 1894 the Touaregs raided as far north as the southern shores—if they can be called shores—of the Chott Djereed. In 1895 we crossed the western end of this Chott, and, so far as we could judge or learn, the Chott was without water in any part; it had been an exceptionally dry year, and the country between the mountains and the Djereed we found absolutely devoid of inhabitants.

"At El Oued there was in the fort a tame Addax familiarly called '*Begra*,' and this was the only living specimen we saw during our journey. It was not a very good example, but had rather a fine pair of horns. It had been presented by some Chambas to the Commandant."

From Morocco we have no intelligence of the Addax, although it will be doubtless found there in the desert south of the Atlas. From Senegal, likewise, we have little certain to record except the receipt of living animals of this species on more than one occasion, especially a fine pair now in the Zoological Garden at Antwerp, where Selater has lately examined them. We do not usually quote Rochebrune's '*Faune de la Sénégambie*,' as it is hardly a reliable authority, but we find that he says that the Addax is "common" in Cayor and Oualo on the right bank of the River Senegal, and this river is probably its southern limit on this side of Africa.

The Addax is occasionally, but not very frequently, brought to Europe alive. In the twelfth volume of the '*Nova Acta*' of the Leopoldino-Carolinian Academy (1824) will be found a figure and description by Dr. A. W. Otto of this Antelope, taken from a fresh specimen that had died in a menagerie. Otto described it as belonging to a new species, "*Antilope suturosa*," but it was manifestly only an Addax in its darker winter coat.

In 1827 Geoffroy St.-Hilaire and F. Cuvier published a description of this Antelope in their great work upon Mammals from a male specimen living in the Jardin des Plantes, received from the then Pasha of Egypt. Figures are

given of this animal (pls. 388, 389) in both its summer and winter dress, and it is pointed out that in the latter it is the *Antilope suturosa* of Otto.

The Zoological Society of London appear to have first received living examples of the Addax in 1849. In 1861 a fine male was presented to the Society by Sir John Gaspard Le Marchant, then Governor of Malta. In 1864 one was obtained by purchase, and in 1876 another. At the present time there are no examples of the Addax in the London Gardens, but last summer there was, as already stated, a fine pair in the Jardin Zoologique of Antwerp.

Our illustration of this animal (Plate LXXXVI.) was put upon the stone by Mr. Smit, some twenty years ago, from a water-colour sketch made for Sir Victor Brooke by Mr. Wolf. It represents an adult animal in summer pelage.

The British Museum contains a fine adult mounted male of this Antelope, from the Tunisian Sahara, lately presented by Mr. J. I. S. Whitaker; a front and horns from the Algerian Sahara, presented by Mr. Rowland Ward, F.Z.S.; a pair of horns brought home from Central Africa by Denham and Clapperton; and the specimen, formerly in Bullock's Museum, upon which de Blainville partly based his *Antilope naso-maculata*, and Hamilton Smith his *A. mytilopes*; besides other older specimens without exact localities.

May, 1899.

SUBFAMILY VII. *TRAGELAPHINÆ*.

General and Colour Characters.—Medium-sized or large bovine Antelopes, typically, but not invariably, marked with transverse white stripes on the body, a pair of white spots on the cheeks, a white stripe running inwards and downwards from the corner of the eye to form an incomplete **V**-shaped mark on the upper half of the nose, a large transverse white patch at the upper and another at the lower extremity of the throat, and a pair of white spots on the front of the pasterns, which are black or brown behind. The belly is never white, and often darker than the sides of the body. The typical colour, as exemplified in the females and young males, is tawny, fawn, or reddish brown; but the adult males often assume a deep brown or slaty hue, and differ strikingly from the females.

Horns generally present only in the male; arising just behind the orbit; usually spirally twisted, and always furnished at the base in front with a longitudinal ridge, which generally curves outwards from the base of the horn.

Skull without ante-orbital pits, but with large or small lachrymal vacuities, and usually with large pits on the frontal bones at the apertures of the supra-orbital foramina.

Muzzle large and naked.

Mammæ 4.

Range of the Subfamily. Peninsular India and Africa south of the Sahara.

The genera of this subfamily may be tabulated as follows:—

- a.* Hind limbs shorter than fore limbs, so that the withers stand higher than the hind-quarters. Head flatter behind the ears, the parietals and frontals lying almost in the same plane. Horns present in the male only, shorter than the face, not twisted 1. BOSELAPHUS.

- b*. Hind and fore limbs subequal in length, withers not appreciably higher than hind-quarters. Cranium more convex longitudinally. Horns longer than the face, spirally twisted.
- a'*. Horns present only in the male, inserted just behind eye and rising so as to form an obtuse angle with the plane of the face.
- a*². Horns flat behind at the base, with a strong external basal ridge and rarely more than two complete turns.
- a*³. Hoofs normal, short; back of the pasterns covered with hair.
2. TRAGELAPHUS.
- b*³. Hoofs exceedingly long; back of the pasterns naked.
3. LIMNOTRAGUS.
- b*². Horns rounded behind at the base, without external basal ridge, forming an open corkscrew spiral, with three complete turns.
4. STREPSICEROS.
- b'*. Horns present in both sexes, inserted farther behind the eye and directed straight backwards in the plane of the face.
5. TAUROTRAGUS.

GENUS I. BOSELAPHUS.

Type.

- Boselaphus*, Blainv. Bull. Soc. Philom. p. 75 (1816) B. TRAGOCAMELUS.
Portax, H. Smith, Griff. An. Kingdom, v. p. 366 (1827) B. TRAGOCAMELUS.
Tragelaphus, Ogilby, P. Z. S. 1836, p. 138 B. TRAGOCAMELUS.

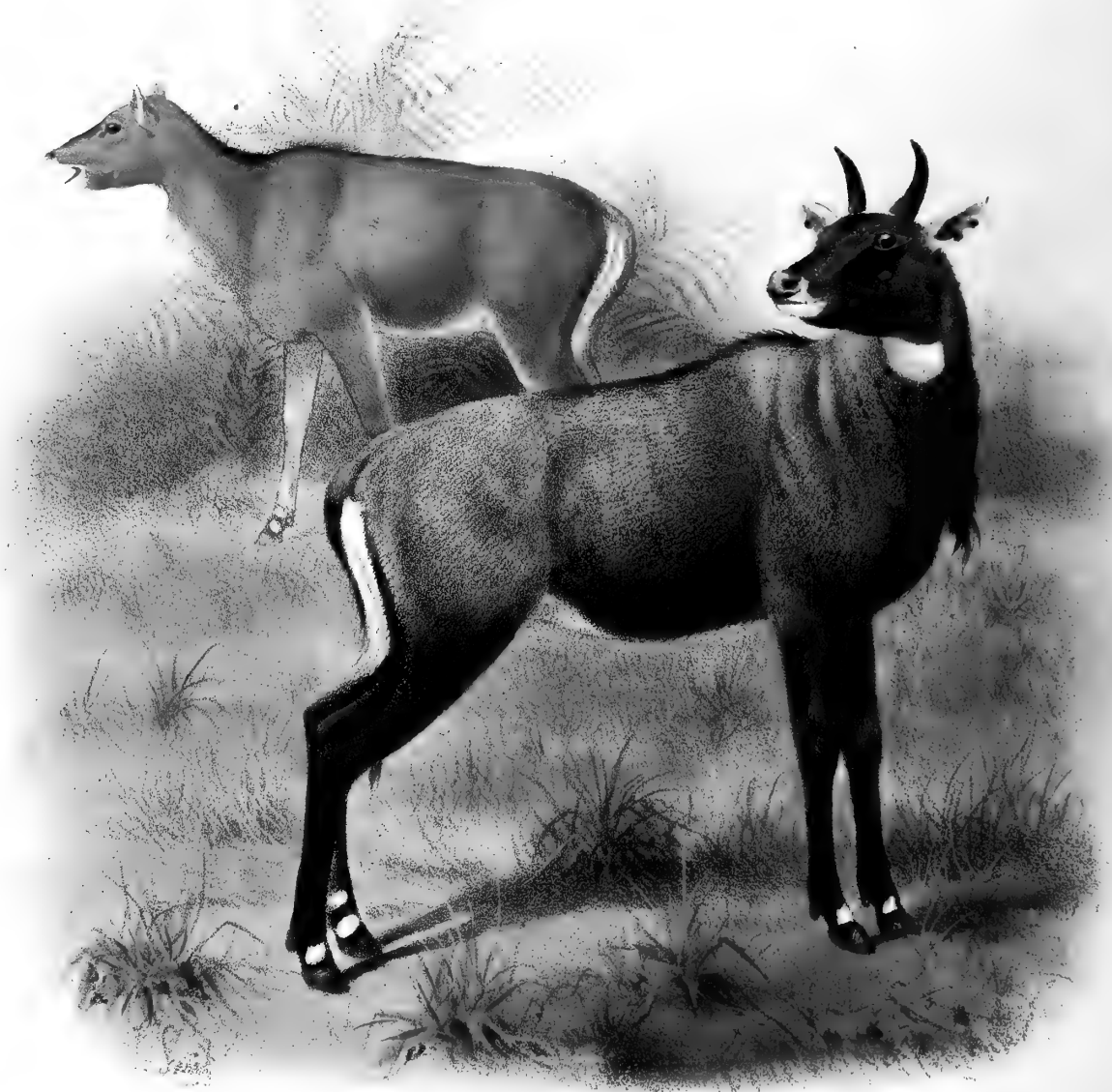
Of large size and somewhat heavy build, with the withers considerably higher than the hind-quarters. Muzzle large and naked. Ears small. Tail reaching the hocks, tufted at the end, more or less fringed at the sides.

Skull very flat above, the parietals nearly in the same plane as the frontals; occipital ridge strong. Molars with long crowns; those of the upper jaw with accessory column.

Horns present only in male, short, shorter than length of face, broad and triangular in section at the base, with strong anterior basal ridge; base of horn inclined obliquely backwards, transversely ridged, distal extremity nearly vertical, lightly curved, smooth, and tapering.

Range of Genus. Restricted to the Peninsula of India.

One species only.



J. Smit del. et lith.

The Nilgai .
BOSELAPHUS TRAGOCAMELUS .

Published by R.H. Porter

Hartnagel imp.

110. THE NILGAI.

BOSELAPHUS TRAGOCAMELUS (PALLAS).

[PLATE LXXXVII.]

- Antilope tragocamelus*, Pallas, Misc. Zool. p. 5 (1766); id. Spic. Zool. i. p. 9 (1767), xii. p. 13 (1777); Erxl. Syst. R. A. p. 279 (1777); Zimm. Spec. Zool. Geogr. p. 540 (1777); Gatterer, Brev. Zool. pt. i. p. 80 (1780); Schreb. Säug. pl. cclxii. (1784); Bodd. Elench. Anim. p. 140 (1785); Gm. Linn. S. N. i. p. 184 (1788); Kerr, Linn. An. K. p. 308 (1792); Donnd. Zool. Beytr. i. p. 625 (1792); Forst. Zool. Ind. p. 39 (1795); Lath. & Dav. Faun. Ind. p. 4 (1795); Link, Beytr. Nat. p. 99 (1795); Bechst. Syst. Uebers. vierf. Th. ii. p. 77 (1799); Shaw, Gen. Zool. pt. ii. p. 329, fig. 190, lower fig. (1801); Turt. Linn. Syst. Nat. i. p. 112 (1802); Tiedem. Zool. i. p. 409 (1808); G. Fisch. Zoogn. iii. p. 412 (1814); Afz. N. Act. Upsal. vii. p. 220 (1815); G. Cuv. R. A. i. p. 264 (1817); Schinz, Cuv. Thierr. i. p. 396 (1821); G. Cuv. H. N. Mamm. iii. pl. xlvi. (1824); Masson, Cuv. R. A. p. 318 (1836).
- Antilope (Bubalis) tragocamelus*, Licht. Mag. nat. Freund. vi. p. 164 (1814).
- Cemas tragocamelus*, Oken, Lehrb. Nat. iii., Zool. p. 729 (1816).
- Boselaphus tragocamelus*, ScL. List Anim. Z. S. (8) p. 137 (1883), (9) p. 163 (1896); Flow. & Gars. Cat. Ost. p. 260 (1884); Blanf. Faun. Brit. Ind., Mamm. p. 517 (1891); Sclater f. Cat. Mamm. Calc. Mus. p. 154 (1891); Flow. & Lyd. Mamm. p. 345 (1891); Ward, Horn Meas. (1) p. 151 (1892), (2) p. 192 (1896); Lyd. Horns and Hoofs, p. 145 (1893); id. Royal Nat. Hist. ii. p. 278 (1894); Trouessart, Cat. Mamm. pt. iv. p. 956 (1898).
- Portax tragelaphus*, Sund. Pecora, K. Vet.-Ak. Handl. lxx. p. 198 (1846) (corrected to *tragocamelus*, p. 323, 1847); id. Hornsch. Transl., Arch. Skand. Beitr. ii. p. 149 (*tragocamelus*, p. 315) (1848); Reprint, p. 73.
- Portax tragocamelus*, Gray, P. Z. S. 1850, p. 146; id. Knowsl. Men. p. 28, pl. xxix. (1850); id. Cat. Ung. B. M. p. 141 (1852); Adams, P. Z. S. 1858, p. 523; Wood, Ill. Nat. Hist. i. p. 667, fig. (1862); Gerr. Cat. Bones Mamm. B. M. p. 247 (1862); Blyth, Cat. Mamm. Mus. As. Soc. p. 165 (1863); Gray, Cat. Rum. B. M. p. 51 (1872); id. Hand-l. Rum. B. M. p. 121 (1873).
- Antilope picta*, Pallas, Spic. Zool. xii. p. 14 (1777); Schreb. Säug. pls. cclxiii. & cclxiii. b,

♂, ♀ (1784); **Bodd.** Elench. Anim. p. 141 (1785); **Gm. Linn. S. N. i.** p. 184 (1788); **Pennant**, Quadr. ed. i. p. 74, pl. vii. (1781), ed. 3, p. 83, pl. xiii. (1793); **Kerr**, Linn. An. K. p. 309 (1792); **Donnd.** Zool. Beitr. i. p. 625 (1792); **Lath. & Dav.** Faun. Ind. p. 4 (1795); **Link**, Beytr. Nat. p. 99 (1795); **Cuv.** Tabl. Elém. p. 163 (1798); **Bechst.** Syst. Uebers. vierf. Th. ii. p. 78, pl. 9 (1799); **Shaw**, Gen. Zool. pt. ii. p. 327, fig. 189 (1801); **Turt.** Linn. Syst. Nat. i. p. 112 (1802); **G. Cuv.** Dict. Sci. Nat. ii. p. 248 (1804); **Afz. N. Act.** Upsal. vii. p. 220 (1815); **G. Cuv. R. A. i.** p. 264 (1817); **Goldf.** Schreb. Säug. v. p. 1159 (1818); **Desmoul.** Dict. Class. d'H. N. i. p. 447 (1822); **G. Cuv. H. N. Mamm.** iii. pl. xlvi. (1824); **J. B. Fisch.** Syn. Mamm. p. 476 (1829); **Bennett**, Gard. & Menag. Z. S. i. p. 125 (1830); **Sykes**, P. Z. S. 1831, p. 105; **Masson**, Cuv. R. A. i. p. 318 (1836); **Waterh.** Cat. Mus. Z. S. (2) p. 42 (1838); **Schinz**, Syn. Mamm. ii. p. 449 (1845); **id.** Nat. Abb. d. Säug. p. 355, t. 161 (1824).

Antilope (Damalis) picta, **Schinz**, Mon. Antil. p. 44, t. 49 (1848).

Antilope (Bubalus) picta, **Laurill.** Dict. Univ. d'H. N. i. p. 625 (1861).

Antilope (Cephalolophus) picta, **Gieb.** Säug. p. 323 (1853).

Cemas picta, **Oken**, Lehrb. Nat. iii., Zool. p. 729 (1816).

Damalis picta, **J. Brooke**, Cat. Mamm. p. 64 (1828).

Boselaphus pictus, **Blainv.** Bull. Soc. Philom. p. 75 (1816); **Desm.** Mamm. ii. p. 471 (1822); **Lesson**, Man. Mamm. p. 384 (1827); **Gerv.** Dict. Sci. Nat., Suppl. i. p. 266 (1840); **Less. N. Tabl. R. A.**, Mamm. p. 181 (1842).

Portax picta, **Less.** Compl. Buffon, x. p. 304 (1836); **Gray**, List Mamm. B. M. p. 154 (1843); **Jardine**, Nat. Libr. xxii. p. 182, pl. xvi. (1845); **Wagner**, Schreb. Säug. Suppl. iv. p. 467 (1844); **id.** op. cit. v. p. 450 (1855); **Reichenb.** Säug. iii. p. 148 (1845); **Hutton**, Journ. As. Soc. Bengal, xv. p. 150 (1846); **Gray**, Cat. Ost. B. M. p. 59 (1847); **Horsf.** Cat. Mamm. E.-I. Comp. p. 170 (1851); **Jerdon**, Mamm. India, p. 272 (1867); **Fitz.** SB. Ak. Wien, lix. pt. 1, p. 181 (1869); **McMaster**, Notes on Jerdon's Mamm. p. 122 (1870); **Kinloch**, Large Game Shooting, i. p. 55 (1876); **Brehm**, Thierl. iii. p. 251, fig. (1880); **Sterndale**, Mamm. Ind. p. 476 (1884); **Kinloch**, Large Game Shooting, p. 93 (1885); **Jent.** Cat. Ost. Leyd. Mus. (Mus. Pays-Bas, ix.) p. 141 (1887); **id.** Cat. Mamm. Leyd. Mus. (Mus. Pays-Bas, xi.) p. 173 (1892); **Percy**, Badminton Big Game Shooting, ii. p. 353 (1894).

Antilope albipes, **Erxl.** Syst. R. A. p. 280 (1777); **Gatterer**, Brev. Zool. pt. i. p. 81 (1780); **G. Fisch.** Zoogn. iii. p. 411 (1814).

Boselaphus albipes, **Desm.** Nouv. Dict. d'Hist. N. (2) ii. p. 199, pl. xxxiii. fig. 2 (1816).

Antilope leucopus, **Zimm.** Spec. Zool. Geogr. p. 541 (1777); **Forst.** Zool. Ind. p. 39 (1795); **id.** Deser. Anim. p. 377 (1844).

Damalis risia, **H. Sm. Griff.** An. K. iv. p. 363 (1827); **Elliot**, Madras Journ. x. p. 226 (1839).

Damalis (Portax) risia, H. Sm. Griff. An. K. v. p. 366 (1827).

Tragelaphus hippelaphus, Ogilby, P. Z. S. 1836, p. 138; Rüpp. Verz. Senck. Mus. iii. pt. 2, p. 181 (1839).

Nylghau, Wm. Hunter, Phil. Trans. lxi. p. 170 (1771).

White-footed Antelope, Penn. Syn. p. 29, pl. vi. (1771); *id.* Quadr. i. p. 74, pl. vii. (1781); *id.* op. cit. ed. 3, p. 83, pl. xiii. (1793).

VERNACULAR NAMES :—*Nil, Nilgao* (♂), *Nilgai* (♀); *Roz Rojh, Rojra* in Hindustani; *Rú-i* in Dakhani, Mahratti, and Guzrati; *Guraya*, Gond; *Murim* (♂), *Susam* (♀), in Ho Kal; *Mánú-potú* in Tamil; *Mairu Maravi, Kard-Kadrai*, Canarese (*Blanford*).

Male. About four feet six inches in height at the withers. General colour of the head iron-grey, due to the hairs being black at the base and white at the extremities; nose, neck, and cheeks tinted with black; whitish grey above the eye; two small white cheek-spots generally traceable. Lips and chin white; a large white patch at the upper extremity of the throat; inter-ramal area also white. Ears greyish white, blacker behind towards the extremities, and furnished with two black spots on the outer edge in front. Upper parts of the body iron-grey, like the head; lower portion, chest, and belly black, except a median ventral white streak; groin, inner side of thighs above, and subcaudal area of rump pure white, the latter emphasized on each side by a black vertical streak on the buttocks. Tail white below and at the sides, grey above; tuft white at the base, black at the tip. Fore and hind limbs black inside and outside, except for two large white spots on the front and outer sides of the pasterns and on the outer and inner sides of the fetlocks; fetlock-spot of hind leg sometimes extending right round the front to form a complete half-ring; the corresponding spots on the fore legs much smaller, the outer obsolete. A long tuft of black hair on the throat below the white patch; a short hog-mane on the nape formed of stiff hairs, whitish at the base, blackish at the ends; parting of hair on the withers; behind this point a spinal mane of longish black hairs extends to nearly the middle of the back and is represented as far as the root of the tail by a narrow stripe of short black hairs.

Female. Without horns. Smaller and slighter than the male and of a fawn or tawny hue throughout, but with the same white patches and markings as in the male, the fetlock and pastern spots being very conspicuous

and set off with black. A short hog-mane on the nape, but no tuft on the throat.

Young male. Like the female in colour.

Measurements of an adult male skull:—Basal length 16·3 inches, greatest breadth 5·75, muzzle to orbit 10, horn 8·5.

Horns usually from 8 to 9 inches long, with a basal girth of about 8 inches, and rarely reaching a length of 11·75 inches, with a basal girth of 9·5.

Hab. The Peninsula of India from the base of the Himalayas to the south of Mysore; North-west Provinces, Eastern Punjab, Guzerat, and the Konkan; but not extending to the Indus on the west, nor into Eastern Bengal, nor into Malabar. Entirely absent from the countries to the east of the Bay of Bengal.

The Asiatic division of the Tragelaphine group, which, in the existing stage of the Earth's fauna, is represented only by the present species, is nearly as different in its structure as it is in its geographical range from its African brethren, being at once distinguishable by its short hind limbs, untwisted horns, bovine nose, and hypsodont molars, not to mention its very different style of colour. The Asiatic form might, in fact, be more naturally arranged as constituting a Subfamily of itself, but we are content to follow recent authorities who have associated this animal with the more typical Tragelaphs of Africa.

The "Nilgai" (said by some authorities to be more correctly written "Nilgau," from *nil* or *lil*, blue, and *gau*, cow) was first introduced into scientific literature by Pallas in his memoir on the genus *Antilope* published in 1766. Pallas's "*Antilope tragocamelus*," as he called this species, was based partly upon Ray, who quoted from Gesner, and partly on the description of Dr. James Parsons, F.R.S., who, in the forty-third volume of the 'Philosophical Transactions,' published in 1745, gave a very fair description of this animal from a living male specimen "brought," as he tells us, "from Bengal, and shown in London." There can be no doubt as to the identity of Parsons's "Quadruped," whatever we may say regarding the less accurate descriptions of Ray and Gesner, and it follows, consequently, that "*tragocamelus*" must be used as the earliest and most correct specific name of the Nilgai.

In the supplement to his memoir on the genus *Antilope* published in 1777,

besides *A. tragocamelus*, Pallas introduced into his list an *Antilope picta*, founded upon Pennant's "White-footed Antelope." On referring to Pennant's description and figure of this animal in his 'Synopsis of Quadrupeds,' there can be no doubt whatever that they likewise refer to the Nilgai. They were taken, as the author informs us, from a pair of animals living at Clermont in 1770. Following Pallas's second name, a large number of authorities, as will be seen by our list of synonyms, have used *pictus* and *picta* as the specific name of the Nilgai; but, as we have already pointed out, *tragocamelus* is prior in point of date, and being also unquestionably applicable, should have the preference.

Erxleben's name "*albipes*" and Zimmermann's "*leucopus*," both founded on Pennant's "White-footed Antelope," have likewise been proposed for the present species, but are also both later in date. Again, in 1827, Hamilton Smith adopted "*risia*" as the specific name of the Nilgai on account of some fancied objection to the term *picta*. But in this change few have been found to follow him. Finally, in 1836, Ogilby proposed to alter the name of the Nilgai to *hippelaphus*, because he thought it was the true Hippelaphus of Aristotle. This is possibly the case, but it does not necessitate the suggested change of the specific term.

As regards the generic name of the Nilgai, we have fortunately only two to choose from—*Boselaphus* of De Blainville, published in 1816, and *Portax* of Hamilton Smith, proposed in 1827. Of these two, according to the rules of Zoological Nomenclature, we employ the oldest; and the scientific name of the Nilgai consequently becomes *Boselaphus tragocamelus*, as was first adopted by Selater in 1883.

Before proceeding further we must call attention to the excellent account of the Nilgai read before the Royal Society in 1774 by the great physiologist and physician William Hunter and published, along with an excellent figure of the animal by Stubbs, in the 61st volume of the 'Philosophical Transactions,' from which we make the following extracts:—

"Among the riches which of late years have been imported from India may be reckoned a fine animal, the Nyl-ghau; which, it is to be hoped, will now be propagated in this country, so as to become one of the most useful, or at least one of the most ornamental beasts of the field. It is larger than any ruminant of this country, except the ox; its flesh probably will be found to be delicious; and, if it should prove docile

enough to be easily trained to labour, its great swiftness, with considerable strength, might be applied, one would think, to valuable purposes.

“Good paintings of animals give much clearer ideas than descriptions. Whoever looks at the picture, which was done under my eye by Mr. Stubbs, that excellent painter of animals, can never be at a loss to know the Nyl-ghau, wherever he may happen to meet with it. However, I shall attempt a description of the animal; and then give as much of its history as I have been hitherto able to learn. The account will be imperfect: yet it will give naturalists some pleasure in the meantime to know even a little of a large and elegant animal, which has not hitherto been described or painted.”

After a capital description of both sexes of this animal from the living specimens, Hunter proceeds as follows:—

“Of late years several of this species, both male and female, have been brought to England. The first were sent from Bombay by Gov. Cromelen, as a present to Lord Clive: they arrived in August 1767. They were male and female, and continued to breed every year. Afterwards two were brought over, and presented to the Queen by Mr. Sullivan. From Her Majesty’s desire to encourage every useful or curious enquiry in natural knowledge, I was permitted to keep these two for some time, which enabled me to describe them, and to get a correct picture made, and, with my brother’s assistance, to dissect the dead animal, and preserve the skin and skeleton. Lord Clive has been so kind to give me every help that he could furnish me with in making out their history; so has General Carnac, and some other gentlemen.

“At all the places in India, where we have settlements, they are rarities, brought from the distant interior parts of the country, as presents to Nabobs and great men. Lord Clive, General Carnac, Mr. Walsh, Mr. Watts, and many other gentlemen, who have seen much of India, tell me they never saw them wild. So far as I have yet found, Bernier is the only author who has ever mentioned them.

“In the fourth vol. of his Mémoires, he gives an account of a journey which he undertook, ann. 1664, from Delhi, to the province of Cachemire, with the Mogul Aurengzeb, who went to that terrestrial paradise, as it is esteemed by the Indians, to avoid the heat of the summer. In giving an account of the hunting, which was the Emperor’s amusement in this journey, he describes, among others, that of *le Nyl-ghau*, but without saying more of the animal than that the Emperor sometimes kills them in such numbers as to distribute quarters of them to all his Omrachs; which shows that they were there wild, and in plenty, and esteemed good or delicious food.

“This agrees with the rarity of these animals at Bengal, Madras, and Bombay; for Cachemire is the most northern province of the Empire, and it was on the march from Delhi to that place that Bernier saw the Emperor hunt them.”

Although, as we have already seen, living specimens of the Nilgai were long ago brought to Europe, little addition was made to our knowledge of this animal in its native state until the days of Elliot, Jerdon, and Hodgson.

In 1839 Sir Walter Elliot included the Nilgai in his catalogue of the Mammals of the Southern Mahratta country, where he states "it is found in the thick low jungles." Jerdon, in his volume on the Mammals of India, tells us that the Nilgai "frequents thin forests and low jungles, but is also often found in tolerably open plains with only a few scattered bushes. It associates in small herds, varying from 7 or 8 to 20 and upwards."

Mr. Robert A. Sterndale, whose popular manual on the Mammals of India and Ceylon was published in 1884, does not speak favourably of his experience of the flesh of the Nilgai as an article of diet:—"The Nilgao," he says, "feeds on Beyr (*Zizyphus jujuba*) and other trees, and at times devours such quantities of the intensely acrid berries of the Aoula (*Phyllanthus emblica*) that its flesh becomes saturated with the bitter elements of the fruit. This is most noticeable in soup, less so in a steak, which is at times not bad. The tongue and marrow-bones, however, are generally as much as the sportsman claims, and in the Central Provinces at least the natives are grateful for all the rest."

Col. Kinloch, who writes of the Nilgai mainly from a sporting point of view, gives us the following account of this animal:—

"The Nilgai does not hold a very high place among the Game-animals of India, and is seldom shot by any but young sportsmen, unless meat is required for camp-followers. It is, however, one of the largest and most conspicuous of the ruminants to be found in the plains, and no records of Indian sport would be complete without some notice of it.

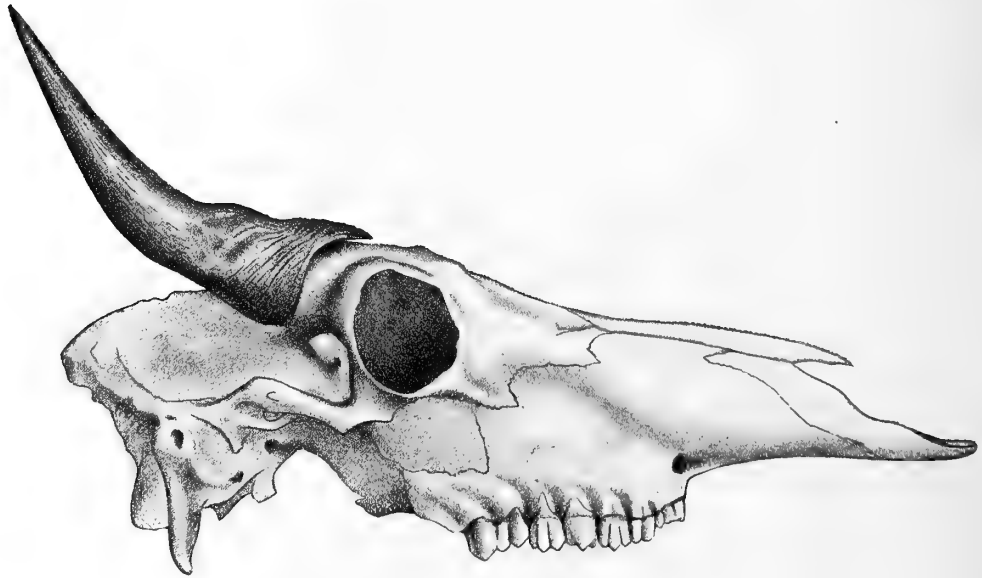
"The bull is a large and powerful beast, attaining a height of at least 14 hands at the withers, which are high and narrow like those of a horse. The neck is long and compressed, and the head slender and deer-like, the eyes being remarkably full and lustrous. The hind-quarters fall away considerably, giving the animal rather an awkward appearance. The legs are slender and wiry, and the hoofs rather upright. The tail is tufted, something like that of the domestic cow, but it is not so long in proportion, reaching only to the hocks. The color is a dark bluish grey, deepening to nearly black in very old individuals, while the legs are jet-black, curiously marked with white patches about the fetlocks. The throat is white, and from the lower part of it depends a long tuft of blackish hair, while the hair on the withers is developed into a thin upright mane.

"The cow is of a light brown colour, and is destitute of horns. The young males are like the females, but become gradually darker with age.

"Nilgai inhabit extensive grass- and tree-jungles, but appear to prefer those that are not very thick, and interspersed with occasional bare open spaces. Their favorite cover seems to be that composed of the 'dhák' or 'palás' tree (*Butea frondosa*). They are also fond of resorting to the sugar-cane fields, and they frequently commit considerable

damage among cultivation. They are generally to be found in herds, varying in number from four or five to twenty, and composed of both sexes; but occasionally small parties of old Blue Bulls, and even solitary bulls, are to be met with. In places where they are not disturbed, especially in some of the Native States, Nilgai are absurdly tame, but in districts where they are much molested they become extremely shy and wary. It must not therefore be supposed that they can always be easily shot, but they afford such a poor trophy that, as already mentioned, they are not much sought after. When they can be found sufficiently far from thick cover, they may be speared, and they then show capital sport; as they will probably lead a well-mounted horseman a chase of several miles. On hard ground I doubt if a *cow* Nilgai could be speared by a solitary hunter; the bull, being much heavier, is more easily ridden down.

Fig. 98.



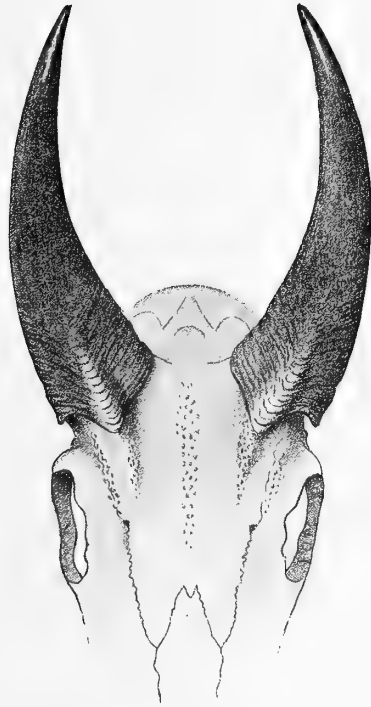
Skull and horns of an adult male Nilgai.
(Brit. Mus.)

“The flesh of a cow Nilgai is occasionally excellent, and the tongue and marrow-bones are supposed to be delicacies. They are, however, hardly worth shooting, except when one is in want of meat for Mahomedan servants: Hindoos, of course, will not touch the flesh.”

The Nilgai does well in captivity, and, as we have already mentioned, several of the original descriptions of this animal by the older writers were based on specimens brought alive to Europe. In 1824 both sexes of the Nilgai were well figured by Geoffroy Saint-Hilaire and F. Cuvier in their

'Histoire Naturelle des Mammifères,' from specimens living in the Jardin des Plantes. In 1845, as we learn from Gray, the Nilgai bred in the Knowsley Menagerie, and there was at that time a herd of a male and four females kept in one of the paddocks along with the Elands. In 1847 the half-grown male and young were drawn from some of these specimens by Waterhouse Hawkins, and the figures were published in the twenty-ninth plate of the 'Gleanings.' The Nilgai has been an inhabitant of the Zoological

Fig. 99.



Frontlet of an adult male Nilgai.
(Brit. Mus.)

Society's Menagerie from its commencement. In 1830 it was described and figured in the first of the two volumes on the 'Gardens and Menagerie of the Zoological Society' by Vigors and Bennett, and in February 1831, as recorded in the 'Proceedings,' a specimen of a young one, born at the Society's farm at Kingston, was exhibited and described at one of the Scientific Meetings. This appears to have been the first instance of its breeding in the Society's

Gardens, but since that date many other examples have been received, and the species has frequently bred in the Menagerie. On referring to the Society's registers we find that this has taken place in 1856, 1864, 1866, 1868, and 1869. As a general rule, two young ones are produced at the same birth; but the young animals, although they thrive well, are excessively shy and timid, as is also the case with many others of the Deer and Antelopes, so that, if frightened, they frequently injure themselves by rushing against the fences of their paddocks.

Our coloured illustration of the Nilgai (Plate LXXXVII.) has been prepared from specimens of both sexes of this animal now living in the Zoological Society's Gardens, where they were received in exchange on October 14th, 1896.

There is a good mounted example of the male Nilgai in the British Museum, obtained from the Zoological Society's Gardens in 1896, besides two other older mounted specimens kept in store. There are also specimens of heads of this animal from the Khalcote jungle south of Mhow, presented by Col. J. Evans, and from Jullunder near Sangor, presented by Mr. G. A. Carmichael, and some skulls and horns from Oude and the North-west Provinces, presented by Mr. A. O. Hume, C.B. From the last of these the drawings of the skull and horns and frontlet of an adult male (figs. 98 and 99) have been prepared.

November, 1899.

GENUS II. TRAGELAPHUS.

Type.

Tragelaphus, De Blainv. Bull. Soc. Philom. 1816, p. 75 T. SYLVATICUS.
Euryceros, Gray, Cat. Rum. B. M. p. 47 (1872). T. EURYCERUS.

Large or medium-sized Antelopes, with the facial, neck, body, and leg markings characteristic of the subfamily usually well expressed.

Hind-quarters as high as or higher than the withers; fore limbs not longer than hind limbs. Hoofs of normal form, their length along the anterior border about equal to the basal width from back to front; posterior surface of the pasterns covered with hair. Ears large and expanded.

Horns present only in the male; of medium length or long, always longer than the face; flat at the base behind; with a strong external basal ridge arising just behind the orbit and forming an obtuse angle with the plane of the nasals; spirally twisted, the twist affecting the whole horn with the exception of its extreme tip, but shallow and not taking the form of an open corkscrew spiral; the anterior ridge, which starts in front of the middle of the base of the horn, only reappearing once close to the tip.

Skull much less flat than in *Boselaphus*, the parietal region more depressed. Molar teeth with short crowns; those of the upper jaw with only a small accessory column.

Range of the Genus. Africa, south of the Sahara, from Senegambia, Abyssinia, and Somaliland, over the whole continent.

The species of this genus here recognized may be tabulated as follows:—

- a. Height at withers of adult male about 30 inches; horns from about 10 to 15 inches, normally with black tips; a white patch present upon the upper end of the throat.
- a'. A large white patch at the base of the fore leg on the inner side; inner side of fore leg from knee to fetlock and of hind leg from hock to fetlock white; body striped or spotted with white.
- a². Adult male a rich dark red colour above, and very distinctly marked with many white spots and stripes . . . 121. *T. scriptus*.

- b*². Adult male much duller or darker in colour, spots and stripes less numerous, the latter often absent.
- a*³. Colour yellowish brown ; an upper longitudinal white stripe.
120. *T. decula*.
- b*³. Colour darker and richer in adult ; no upper white stripe.
- a*⁴. White stripes visible in immature and sometimes retained by adult 123. *T. roualeyni*.
- b*⁴. White stripes usually absent in young and always in adult.
122. *T. sylvaticus*.
- b'*. Fore leg from base to fetlock on inner side a uniform yellowish brown ; hind leg similarly coloured, except for a white patch on front of hock ; no stripes or spots on body 124. *T. delamerei*.
- b*. Height at withers of adult male over 40 inches ; horns 24 inches or more in length, with amber-yellow tips ; no white patch at upper end of throat in either sex.
- a'*. Tail thickly hairy at sides and end ; inner sides of legs below knees and hocks fawn-coloured : adult male slate-grey, with mane of long hairs extending along throat, nape, and sides above belly ; females and young chestnut, with white stripes 126. *T. angasi*.
- b'*. Tail with tuft of hairs only at tip ; inner sides of legs below knees and hocks white in front ; adult male without mane and, like the female, chestnut with white stripes 125. *T. eurycerus*.



Wolf del. Smit lith.

The Decula Antelope.
TRAGELAPHUS DECULA.

Published by R.H. Porter

Hanhart imp.

120. THE DECULA ANTELOPE.

TRAGELAPHUS DECULA (RÜPP.).

[PLATE LXXXVIII.]

Antilope decula, Rüpp. Neue Wirb. Abyss. p. 11, pl. iv., ♂ ♀ (1838–1840); Schinz, Syn. Mamm. ii. p. 427 (1845); Huet, Bull. Soc. Acclim. (4) iv. p. 78 (1887).

Calliope decula, Rüpp. Verz. Senck. Mus. iii. pt. 2, p. 182 (1839).

Antilope (Tragelaphus) decula, Gerv. Dict. Sci. Nat. Suppl. i. p. 266 (1840); Less. N. Tabl. R. A., Mamm. p. 181 (1842); Reichenb. Säug. iii. p. 78 (1845); Gieb. Säug. p. 311 (1853).

Tragelaphus decula, Gray, List Mamm. B. M. p. 166 (1843); Sund. Pecora, K. Vet.-Akad. Handl. lxxv. p. 189 (1846); id. Hornschuch's Transl., Arch. Skand. Beitr. ii. p. 141; Reprint, p. 65 (1848); Wagn. Schreb. Säug., Suppl. iv. p. 442 (1844), v. p. 443 (1855); Schinz, Mon. Antil. p. 26 (1848); Gray, P. Z. S. 1850, p. 145; id. Knowsl. Men. p. 28 (1850); id. Cat. Ung. B. M. p. 139 (1852); Heugl. N. Acta Leop. xxx. p. 20, pl. i. figs. 5 *a*, *b* (1863); id. Faun. Roth. Meer. p. 16; Fitz. SB. Ak. Wien, lix. pt. 1, p. 174 (1869); Heugl. Reise Weiss. Nil, p. 319 (1869); Gray, Cat. Rum. B. M. p. 50 (1872); id. Hand-l. Rum. p. 120 (1873); Flower, P. Z. S. 1875, p. 186 (skull char.); Heugl. Reise in Nordost-Afr. ii. p. 120 (1877); Brooke, P. Z. S. 1878, p. 884 (skull char.); Jent. Cat. Ost. Leyd. Mus. (Mus. P.-Bas, ix.) p. 141 (1889); id. Cat. Mamm. Leyd. Mus. (Mus. P.-Bas, xi.) p. 173 (1892); Lyd. Horns and Hoofs, p. 252 (1893); Ward, Rec. Big Game, p. 196 (1896), p. 286 (1899); Pousarg. Ann. Sci. Nat. iv. pp. 81, 83 (1897).

Tragelaphus scriptus decula, Thos. P. Z. S. 1891, p. 388; Trouess. Cat. Mamm. p. 959 (1899).

Tragelaphus bor, Heugl. Reise N.O.-Afr. ii. p. 122 (1877).

VERNACULAR NAMES:—*Husch* (Arabic); *Dakula*, *Daggula*, *Dekula*, or *Dekuella* (Amharic); *Ber* (Djengish) (*Heuglin*).

Height at withers of adult male about 26 inches. Prevailing colour a yellowish or sandy brown, becoming darker upon the chest and belly and

upon the shoulder and lower portion of the hind-quarters. Edge of upper lip, chin, and interramal area white; a white spot on the cheek below the eye, a white patch at the upper and a second at the lower extremity of the throat. Hairs along spine darker brown and not noticeably tipped with white. A few white spots upon the haunches and a row of them extending along the sides of the body above the belly. Upper half of the body marked in front with a distinct white stripe, which extends longitudinally backwards from the shoulder. Transverse stripes generally entirely absent. Fore leg white on inner side at base and behind knee, also white on inner side of cannon-bone; a brown stripe extending along front of cannon-bone; white pastern-spots large and confluent. Hind limb coloured like the fore limb, but with the hocks white in front, not behind. Tail bushy, white below, with a darker tip. No collar of short hairs round base of neck. Horns short, scarcely 12 inches in length, black-tipped.

Female like male, but smaller, without horns, and with less dark colour upon the upper portions of the limbs and lower parts of body.

A male skull gives the following measurements:—Basal length 8 inches, nose to orbit 4·25, width 3·6.

Hab. Wooded districts of Abyssinia and Upper Nubia.

Like many other characteristic animals of North-eastern Africa, the present Antelope was one of the discoveries of the great explorer and naturalist Rüppell, who first described it in his volume upon new Mammals from Abyssinia which contained the results of his long investigations in that country. Rüppell called this species "*decula*," from the Latin transliteration of its Amharic native name, remarking at the same time that this word must not be confounded with "*thecula*," which is the Abyssinian name for the Hunting-dog (*Lycan pictus*). He remarks that the species belongs to the subgenus *Tragelaphus* of Blainville, and is closely allied to *T. sylvaticus* of the Cape, from which it is distinguishable by its smaller size and different colouring. Rüppell obtained a good series of this Antelope, and gives excellent descriptions of the adult male, the adult female, the two-year-old male, and the newly-born calf. He met with it in the bushy valleys of Central Abyssinia, round the lake of Dembea or Tana, where it feeds principally on small leaves of trees, and is said to be specially fond of the ripe fallen fruits

of the sycamore fig-tree. The Deculas pair in the month of May in this district, and produce their young ones in October. They are very quick and shy, but are occasionally hunted by the natives with dogs. Their flesh, according to Rüppell, is not particularly palatable.

The only other African explorer that appears to have come across this Antelope in its native wilds is Heuglin, who, however, does not favour us with a very distinct account of his experiences of it. In his memoir on the Antelopes and Buffaloes of North-east Africa, published in 1863, Heuglin states that the range of this species extends over the districts of Upper Nubia bordering on Abyssinia, Galabat, the River Settite, and Takeh. He also gives a figure of the skull of a specimen obtained by him, which he points out differs slightly in the shape of the horns from that figured by Rüppell and in some other particulars. In a subsequent work ('Reise in Nordost-Afrika') Heuglin has described what he considered to be possibly a different animal (although closely allied to the Abyssinian *T. decula*) from the banks of the White Nile, where it is called by the Djengs "Bor," in Bonga "Towa," and by the Dgurs "Burah." This Antelope he met with in pairs amongst the high grass and thick bushes of *Bauhinia* and *Acacia*-trees in the above-named districts. In case of its proving different from *T. decula* he proposed to designate it *Tragelaphus bor*.

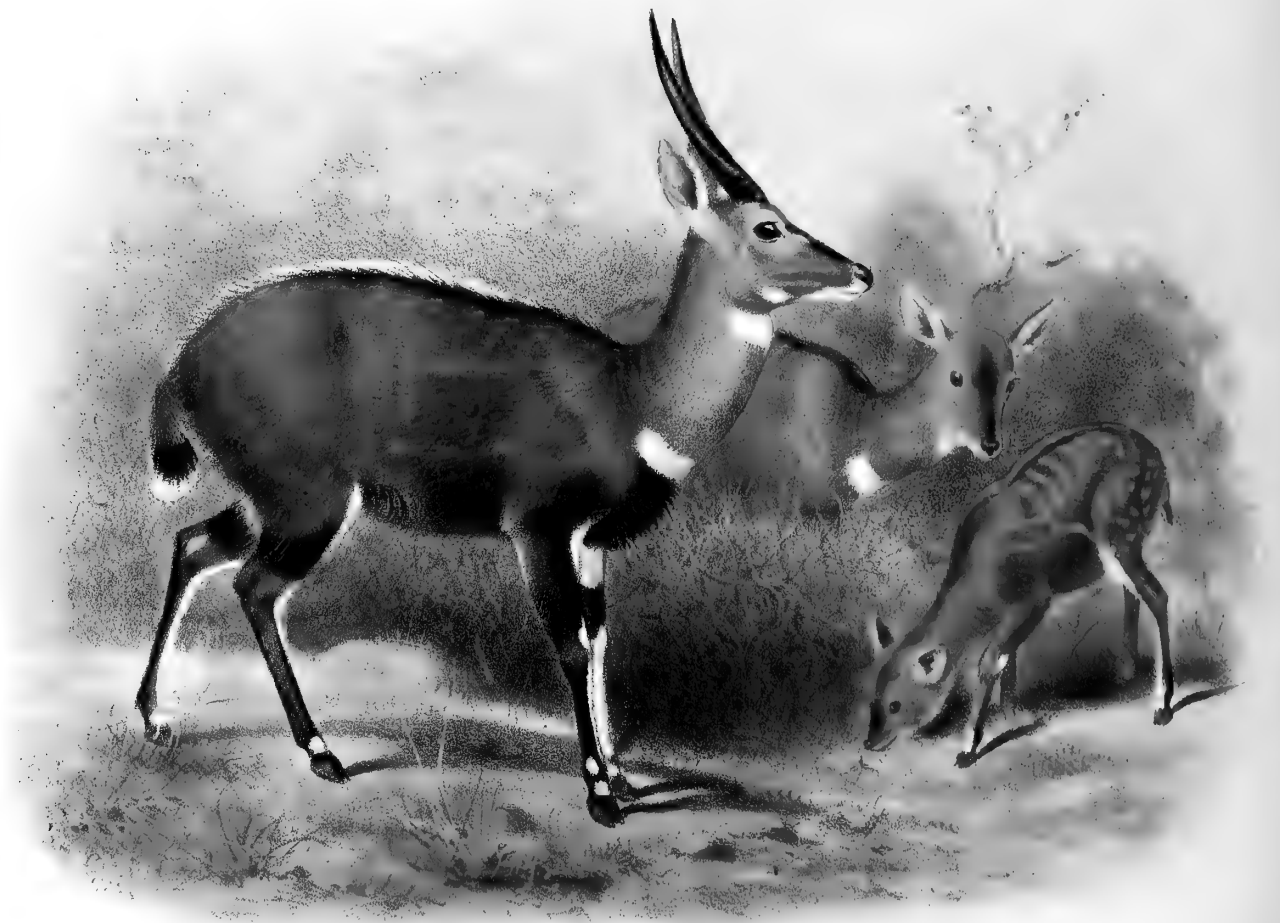
As will be seen by our subsequent remarks, it is not quite certain which of the species of this group of *Tragelaphus* occurs on the White Nile. It may be either the present *T. decula* or one of the forms of *T. scriptus*.

In the British Museum there is a skin of an immature male of this species, together with its skull, belonging to the series obtained by Rüppell in Abyssinia. There are also in the National Collection an adult mounted male and female from the Upper Atbara obtained in 1874 and 1876.

Our illustration (Plate LXXXVIII.), which was put upon the stone by Mr. Smit from a sketch prepared by Mr. Wolf under the directions of the late Sir Victor Brooke, is believed to have been taken from the mounted specimens in the British Museum.

So far as we know, no examples of this form of the Bushbuck have ever been brought to Europe alive.

November, 1899.



J. Smit del. et lith.

The Harnessed Antelope.
TRAGELAPHUS SCRIPTUS
Published by R. H. Porter.

Hanhart imp.

121. THE HARNESSSED ANTELOPE.

TRAGELAPHUS SCRIPTUS (PALLAS).

[PLATE LXXXIX.]

Subspecies *a*. TRAGELAPHUS SCRIPTUS TYPICUS.*Le Guib*, Buffon, Hist. Nat. xii. pp. 305, 327, pls. xl., xli. (1764), whence

Antilope scripta, Pallas, Misc. Zool. p. 8 (1766); id. Spic. Zool. i. p. 15 (1767), & xii. p. 18 (1777); Erxl. Syst. R. A. p. 276 (1777); Zimm. Spec. Zool. Geogr. p. 539 (1777); id. Geogr. Ges. ii. p. 111 (1780); Gatt. Brev. Zool. pt. i. p. 79 (1780); Schreb. Säug. pl. cclviii. (1784) (*ex* Buff.); Bodd. Elench. Anim. p. 140 (1785); Gm. Linn. S. N. i. p. 191 (1788); Kerr, Linn. An. K. p. 317 (1792); Donnd. Zool. Beitr. i. p. 640 (1792); Link, Beytr. Nat. p. 99 (1795); Shaw, Gen. Zool. p. 322, fig. 186 (1801); Turt. Linn. Syst. Nat. p. 115 (1802); Desm. N. Dict. d'H. Nat. x. p. 256 (1803); G. Cuv. Dict. Sci. Nat. ii. p. 245 (1804); G. Fisch. Zoogn. iii. p. 441 (1814); Licht. Mag. nat. Freunde, vi. p. 169 (1814); Afz. N. Acta Ups. vii. p. 220 (1815); Goldf. Schreb. Säug. v. p. 1212 (1818); Schinz, Cuv. Thierr. i. p. 396 (1821); Desmoul. Dict. Class. d'H. N. i. p. 447 (1822); H. Sm. Griff. An. K. iv. p. 274, v. p. 351 (1827); J. B. Fisch. Syn. Mamm. p. 472 (1829); Masson, Cuv. R. A., Atlas, pl. xl. fig. 1 (1836); Waterh. Cat. Mus. Z. S. (2) p. 42 (1838); Cuv. & Geoffr. Hist. Nat. Mamm. vii. tabb. 380, 381 (1842); Schinz, Syn. Mamm. ii. p. 428 (1845); id. Mon. Antil. p. 28, tab. xxx. (1848); Huet, Bull. Soc. Acclim. (4) iv. p. 273 (1887).

Cemas scriptus, Oken, Lehrb. Nat. iii., Zool. p. 734 (1816).*Calliope scripta*, Rüpp. Verz. Senck. Mus. iii. pt. 2, p. 182 (1839).*Antilope (Addax) scripta*, Laurill. Dict. Univ. d'H. N. p. 621 (1861).

Tragelaphus scriptus[*a*], Gray, List Mamm. B. M. p. 166 (1843); Jard. Nat. Libr., Mamm. xxii. p. 95, pl. i. (1845); Sund. Pecora, K. Vet.-Akad. Handl. lxx. p. 189 (1846); id. Hornschuch's Transl., Arch. Skand. Beitr. ii. p. 141; Reprint, p. 65 (1848); Gray, Cat. Ost. B. M. p. 146 (1847); id. P. Z. S. 1850, p. 145; id. Knowsl. Menag. p. 28, pl. iv. (1850); id. Cat. Ung. B. M. p. 138 (1852); Wagner, Schreb.

- Säug., Suppl. iv. p. 442 (1844), v. p. 443 (1855); **Temm.** Esq. Zool. Guin. p. 197 (1853); **Gerv.** H. N. Mamm. ii. p. 201, fig. p. 202 (1855); **Gerr.** Cat. Bones B. M. p. 246 (1862); **Fitz.** SB. Ak. Wien, lix. pt. 1, p. 174 (1869); **Gray,** Cat. Rum. B. M. p. 50 (1872); **id.** Hand-l. Rum. p. 120 (1873); **Flow.** P. Z. S. 1875, p. 186 (skull char.); **Garrod,** P. Z. S. 1877, p. 44 (anatomy); **Brehm,** Thierl. p. 242, fig. p. 243 (1880); **Sci.** Cat. An. Z. S. (8) p. 137 (1883), (9) p. 161 (1896); **Flow. & Gars.** Cat. Coll. Surg. p. 259 (1884); **Johnst.** River Congo, pp. 385, 391 (1884); **Jent.** Notes Leyd. Mus. x. p. 25 (1888); **Büttik.** Reisebilder, etc. ii. p. 380 (1890); **Flow. & Lyd.** Mamm. p. 347 (1891); **Ward,** Horn Meas. (1) p. 154 (1892), (2) p. 196 (1896); **id.** Rec. Big Game, p. 282 (1899); **Jent.** Cat. Ost. Leyd. Mus. (Mus. Pays-Bas, ix.) p. 141 (1887); **id.** Cat. Mamm. Leyd. Mus. (ibid. xi.) p. 172 (1892); **Lyd.** Horns and Hoofs, p. 251 (1893); **id.** Royal Nat. Hist. ii. p. 277, fig. (1894); **Trouess.** Cat. Mamm. p. 959 (1899); **Pousarg.** Ann. Sci. Nat. iv. 6, p. 82 (1899) (French Congo).
- Tragelaphus scriptus typicus*, **Thomas,** P. Z. S. 1891, p. 388; **Bryden,** in **Ward's** Great and Small Game of Africa, p. 480 (1899).
- Antilope phalerata*, **H. Sm.** Griff. An. K. iv. p. 275, v. p. 351 (1827); **Schinz,** Syn. Mamm. ii. p. 429 (1845).
- Antilope (Tragelaphus) phalerata*, **A. Sm.** S. Afr. Quart. Journ. ii. p. 219 (1834); **Less.** Compl. Buff. x. p. 296 (1836); **Gerv.** Dict. Sci. Nat. Suppl. i. p. 266 (1840); **Less.** N. Tabl. R. A., Mamm. p. 181 (1842); **Reichenb.** Säug. iii. p. 81 (1845).
- Tragelaphus phaleratus*[a], **Sund.** Pecora, K. Vet.-Akad. Handl. lxxv. p. 189 (1846); **id.** Hornschuch's Transl., Arch. Skand. Beitr. ii. p. 141; Reprint, p. 65 (1850); **Fitz.** SB. Ak. Wien, lix. pt. 1, p. 174 (1869).
- Antilope leucophæa*, **Forst.** Descr. An. p. 386 (1844) (*nec* Pall.).
- Tragelaphus gratus*, **Rochebrune,** Bull. Soc. Philom. Paris, 1882, p. 9; **id.** Faune de la Sénégamb., Mamm. p. 123, pl. viii. fig. 1 (1883)?
- Tragelaphus obscurus*, **Trouess.** Cat. Mamm. pt. iv. p. 958 (1898).
- Harnessed Antelope*, **Penn.** Hist. Quadr. (1) p. 71 (1781), (3) p. 81 (1793).

Subspecies *b.* TRAGELAPHUS SCRIPTUS ORNATUS.

- "*A new Antelope*," **J. Chapman,** Travels &c. vol. i. pp. 229-230 (1868).
- Bushbuck from the Chobe River*, **Selous,** Hunter's Wanderings, p. 208, & p. 285, pl.; **id.** P. Z. S. 1881, p. 753.
- Tragelaphus scriptus ornatus*, **Pocock,** Ann. & Mag. N. H., Jan. 1900.

VERNACULAR NAMES:—*Guib* of Negroes of Senegal (*Adanson*); *Zaloufe* or *Oualof* of the Gambia (*Whitfield*); *Red Deer* of the Liberians (*Büttikofer*); *Thamma* by the Batawana and *Tugwumgo* by the Bazèyè of the Upper Zambesi (*Chapman*).

Male adult. Height about 28 inches. General colour a rich dark red, passing in places into black. Head fawn-colour, with an ashy-black band extending from between the eyes to the muzzle; upper lip white at the sides; chin and interramal area white; two white spots on each cheek, the lower fusing with the white of the interramal area; a small white stripe running inwards from the eye, sometimes but not always present; whitish patch at base of ear; ear ashy black behind, a dark spot near the outer edge in front. Neck greyish fawn above, clouded with black towards the shoulders. Throat with two, upper and lower, white patches; area between the patches a dusky yellowish grey. Body a rich dark red at the sides, passing into black below, marked with about half-a-dozen transverse white stripes; a few white spots on the shoulders, and a large, though variable, number of white spots on the haunches; a white line, sometimes broken up into a series of spots, running longitudinally along the lower portion of the sides above the belly between the shoulder and the hind-quarters, and an upper longitudinal white stripe, sometimes long, sometimes short, running backwards from the shoulder. Tail red, with white edges and usually a black tip. Belly and chest blackish. Outer side of fore and hind legs blackish above the knees and hocks, reddish fawn below; inner sides white at the bases close up to body; a broad black band above the knee and hock; back and inner sides of the knee and front and inner side of hock white, whence a white stripe extends downwards along the inner side and anterior edge of the cannon-bone to the fetlock; fetlocks and pasterns blackish; pasterns with a large white patch in front.

Hairs on body longish. At the base of the neck there is a more or less well-defined collar of short hair passing inferiorly above the lower white neck-band. Along the back from the shoulders to the root of the tail extends a crest or mane of long hairs, black over the withers, tipped with white on the rest of the back. Horns as in preceding species.

The skull of an adult male gives the following measurements:—Basal length 8·25 inches, nose to orbit 4·75, width 3·5, horn 9·5.

Female similar to the male, but without horns, and without the black tints on the body; white markings very conspicuous.

Young like the female.

Hab. Forest-districts of Western Africa from Senegal to Angola, and extending thence to the Chobé on the south.

The Bushbucks of the typical section of the genus *Tragelaphus* appear to be spread all over Africa south of the Sahara, wherever wooded districts suitable for their mode of life are met with. But although they are all nearly similar in general structure they vary much in their markings and other minor characters, and it is an exceedingly difficult task to decide how far these differences should be regarded as specific or subspecific, or in some cases as merely individual variations. A much larger series of specimens from the various localities in the wide area over which this animal ranges than we can yet command is necessary before any certain conclusions can be arrived at on this subject. Meanwhile we propose to follow, as probably approximately correct, the view already put forward on this group by Thomas in his article on the *Tragelaphi*, published in the Zoological Society's 'Proceedings' for 1891, merely elevating the four forms there treated of as subspecies to the rank of species. Of these four species thus recognized we have already treated of one—*Tragelaphus decula*, which appears to be a somewhat isolated form only met with in Abyssinia and the immediately adjacent districts. We have now come to the true *T. scriptus*, which, on the contrary, seems to have a very wide distribution under its various phases.

The "Harnessed Antelope," as it is usually called in English, was first discovered in Senegal by the celebrated naturalist and traveller Adanson, who visited that Colony in the middle of the last century, and communicated many of his notes and specimens to Buffon. The latter described and figured it in his 'Histoire Naturelle' under the name "*Le Guib*," which Adanson gave as its native name in Senegal, stating that it is found in the woods and plains of the country of the Jaloufs and on the Senegal River. From Senegal also living specimens of both sexes of this Antelope were subsequently received at the Jardin des Plantes, and figured under the same name by F. Cuvier and Geoffroy St.-Hilaire in their great work upon Mammals. Pallas established his "*Antilope scripta*" upon Buffon's "*Guib*," stating that he had not himself met with examples of it. There can be no doubt, therefore, that this particular local form is entitled to be called *Tragelaphus scriptus*. Like most of the Senegalese mammals, it also occurs on the Gambia, where Whitfield, and, in more recent days, Dr. Rendall procured specimens which are now in the British Museum.

Descending the West-African coast we find the same species also recorded

from Liberia, where Herr Büttikofer and his fellow-explorers of that Republic, as recorded by Dr. Jentink, met with it in many localities and obtained a good series of specimens of it for the Leyden Museum.

In his 'Reisebilder aus Liberia' Büttikofer tells us that this Antelope is universally known to the Liberians as the "Red Deer," and is found wherever the forest is interspersed with meadows and plantations. Its palatable meat is often brought to the market in Moravia. It is the more easily obtained by the hunter because it is by no means shy, and often comes to feed into the vegetable-gardens adjoining the planters' dwellings. It is also frequently caught alive, and does well in captivity.

Pel, another well-known collector for the Leyden Museum, obtained for that institution examples of this Antelope on the Gold Coast, and there are specimens of it in the British Museum from Fantee, and from Mount Victoria in the Cameroons. We may therefore consider it established that the typical form of *Tragelaphus scriptus* is found all along the wooded districts of Western Africa from the Senegal River to the Cameroons. But as we proceed further south soon after this a slight alteration in the characters of this Antelope begins to appear.

Hamilton Smith, writing in Griffith's 'Animal Kingdom' in 1827, was the first to notice differences in the specimens of this species from the Congo, which had been sent home by Tuckey's Expedition, and proposed to name the Congo form *Antelope phalerata*. M. Pousargues, who has recently published an excellent essay on the Mammals of French Congo-land, informs us that only one of three specimens of this Antelope received at Paris from that country presented the special difference upon which Hamilton Smith mainly based his species—that is, the absence of the longitudinal white stripe on the shoulder and flanks,—and states his opinion that this character is of no systematic value. This opinion is supported by the fact that in one of the two bucks, referred to later on, from Senegambia, now living in the Society's Gardens, the stripe in question is very conspicuous, whereas in the other it is faintly defined and very short. It is significant, too, that the latter animal is the larger and apparently the older of the two. Hence it is not unlikely that the stripe tends to disappear in old individuals and that the type of *T. phaleratus* was nothing but an aged example of *T. scriptus*. However that may be, our knowledge of the Congo form is too incomplete to admit of our regarding it as distinct from the typical Senegambian *T. scriptus*.

Further to the south, in the valley of the Chobé and Upper Zambesi, *T. scriptus* is again met with, but under a modified form, which may for the present be regarded as a distinct subspecies. This animal was first discovered by Mr. Chapman on the Botletlie River, and subsequently on the Chobé by Mr. Selous, who described it in his 'Hunter's Wanderings' and in the Zoological Society's 'Proceedings' for 1881. Mr. Selous, in response to an inquiry on this point, kindly informs us that he has never seen a skin either of adult or young of the Chobé Bushbuck marked with an upper longitudinal white stripe; and we learn from his published observations on this animal, and from the skins of it that are now in the British Museum, that the females and young are much less strongly striped and spotted with white than are the adult males.

This does not appear to be the case as regards the typical *T. scriptus*; and although the entire absence of the upper white band in the form from the Chobé suggests the possibility of identity between it and the form from the Congo, we know nothing of the characters of the females and young of the latter to justify us in assigning the name *phaleratus* to the subspecies first figured and described by Mr. Selous. The animal for which we propose to adopt Mr. Pocock's name *T. scriptus ornatus* may be described as follows:—

Male adult. General characters as in *T. scriptus*. Height at withers of adult male about 28 inches. Colour dark red, with as many as seven or eight transverse white stripes, about six white spots on the shoulders, and as many as twenty on the hind-quarters, and a line of white spots passing longitudinally above the belly. Belly, chest, and limbs on outer side down to knees and hocks blackish. Face deep greyish fawn, with very faint white eye-spots. A dorsal crest of long white hairs extending from the shoulder to the root of the tail.

Young male. Pale reddish yellow, with spots and stripes much more faintly marked.

Female. Smaller than male, chestnut in colour, marked with only three or four faint white stripes and with fewer spots than in the other sex; belly reddish yellow, paler than the sides of the body; outer side of limbs chestnut above and below the knees and hocks.

Young female. Lighter red and less spotted than adult.

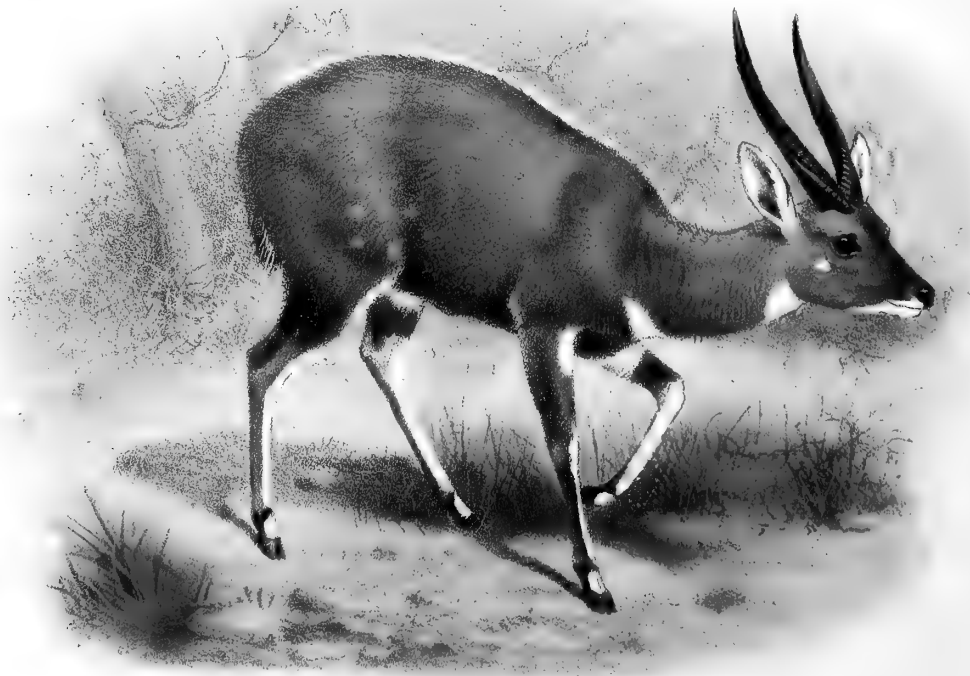
At the end of our list of synonyms of the typical form of this Antelope it will be observed that we have added, with a mark of doubt, *Tragelaphus gratus* of Rochebrune's 'Faune de la Sénégambie,' upon which Dr. Trouessart has based his *Tragelaphus obscurus*. All that can be said of Rochebrune's figure is that, if correctly drawn, it cannot have been taken from *Limnotragus gratus*, which is at once recognizable by its elongated hoofs, and that it is *more*

likely to have been based on an example of the present species. But we have already on more than one occasion alluded to the untrustworthiness of Dr. Rochebrune's work, and think it hardly worth while to discuss the subject further.

The Harnessed Antelope is frequently brought alive to Europe from the ports on the West Coast of Africa and does nicely in captivity. It was well represented in the great Knowsley Menagerie, where it frequently bred. In May 1845, as we learn from the 'Gleanings,' there was at Knowsley a herd of two males and four females, of which three were then expected to produce young. Both sexes were figured by Waterhouse Hawkins on the 28th plate of that work. Several specimens of it were sold at the dispersal of the Knowsley Menagerie in 1851.

The Zoological Society of London has exhibited specimens of this handsome Antelope ever since its gardens were instituted, but it does not appear to have bred there. Dr. Percy Rendall, F.Z.S., brought home a fine male from the Gambia in 1890, and in the following year a pair was presented to the Society by Sir R. B. Llewelyn, K.C.M.G., the Governor of that Colony. In Mr. Smit's illustration of this species (Plate LXXXIX.) the figures of the male and female were taken from the Zoological Society's specimens; the young one in the front was drawn from a specimen from Fantee, in the British Museum.

November, 1899.



Smit del. et lith.

Fig 1. Cumming's Bush-bok.
TRAGELAPHUS ROUALEYNI.
Fig 2. The Cape Bush-bok.
TRAGELAPHUS SYLVATICUS.

Hankart imp.

Published by R.H. Porter.

122. THE CAPE BUSHBUCK.

TRAGELAPHUS SYLVATICUS (SPARRM.).

[PLATE XC. FIG. 2.]

Antilope sylvatica, Sparrm. Act. Holm. 1780, p. 197, pl. vii. ; id. Reise etc. p. 517, pl. iii. (1784) ; id. Engl. Tr. i. p. 270, ii. p. 220, pl. vi. (1786) ; id. French Tr. i. p. 293, pl. iii. (lower fig.) (1787) ; Schreb. Säug. pl. cclvii. B (1784) ; Bodd. Elench. Anim. p. 141 (1785) ; Gm. Linn. S. N. i. p. 192 (1788) ; Kerr, Linn. An. K. p. 318 (1792) ; Donnd. Zool. Beitr. p. 643 (1792) ; Link, Beytr. Nat. ii. p. 99 (1795) ; Shaw, Gen. Zool. pt. ii. p. 348, fig. 193 (upper) (1801) ; Turt. Linn. Syst. Nat. i. p. 115 (1802) ; G. Cuv. Dict. Sci. Nat. ii. p. 246 (1804) ; Thunb. Mém. Ac. St. Pétersb. iii. p. 315 (1811) ; Licht. Reise, i. p. 647 (1811) ; Fisch. Zoogn. iii. p. 441 (1814) ; Afz. N. Acta Upsal. vii. p. 220 (1815) ; Burchell, List Quadr. p. 7 (1817) ; Goldf. Schreb. Säug. v. p. 1209 (1818) ; Schinz, Cuv. Thierr. i. p. 396 (1821) ; Desmoul. Dict. Class. d'H. N. i. p. 447 (1822) ; H. Sm. Griff. An. K. iv. p. 275, v. p. 350 (1827) ; J. B. Fisch. Syn. Mamm. p. 472 (1829) ; Smuts, En. Mamm. Cap. p. 87 (1832) ; Waterh. Cat. Mus. Z. S. (2) p. 42 (1838) ; Schinz, Syn. Mamm. ii. p. 428 (1845) ; id. Mon. Säugeth. p. 27, pl. xxix. (1848) ; Huet, Bull. Soc. Acclim. (4) iv. p. 480 (1887).

Antilope (Gazella) sylvatica, Licht. Mag. nat. Fr. vi. p. 173 (1814).

Antilope (Addax) sylvatica, Laurill. Dict. Univ. d'H. N. i. p. 621 (1861).

Cemas sylvatica, Oken, Lehrb. Nat. iii., Zool. p. 733 (1816).

Calliope sylvatica, Rüpp. Verz. Senck. Mus. iii. pt. 2, p. 182 (1839).

Antilope (Tragelaphus) sylvatica, Desm. Mamm. p. 469 (1822) ; Less. Man. Mamm. p. 383 (1827) ; A. Sm. S. Afr. Quart. J. ii. p. 218 (1834) ; Less. Compl. Buff. x. p. 296 (1836) ; Reichenb. Säug. iii. p. 78 (1845) ; Gieb. Säug. p. 309 (1853).

Tragelaphus sylvaticus, Blainv. Bull. Soc. Philom. 1816, p. 75 ; Desm. N. Dict. d'H. N. (2) ii. p. 197 (1816) ; Harris, Wild Anim. S. Afr. pp. 144-149, pl. xxvi. (1840) ; Gerv. Dict. Sci. Nat., Suppl. i. p. 266 (1840) ; Less. N. Tabl. R. A., Mamm. p. 181 (1842) ; Gray, List Mamm. B. M. p. 165 (1843) ; Sund. Pecora,

K. Vet.-Akad. Handl. lxxv. p. 189 (1846); *id.* Hornschuch's Transl., Arch. Skand. Beitr. ii. p. 141; Reprint, p. 65 (1848); Gray, Cat. Ost. B. M. pp. 59, 60, 146 (1847); *id.* P. Z. S. 1850, p. 145; Wagner, Schreb. Säug., Suppl. iv. p. 441 (1844), v. p. 443 (1855); Gray, Knowsl. Menag. p. 28 (1850); *id.* Cat. Ung. B. M. p. 139 (1852); Gerr. Cat. Bones Mamm. B. M. p. 246 (1862); Wood, Ill. Nat. Hist. i. p. 666, fig. (1862); Chapman, Travels &c. ii. p. 335 (1868); Fitz. SB. Ak. Wien, lix. pt. 1, p. 174 (1869); Gray, Cat. Rum. B. M. p. 50 (1872); *id.* Hand-l. Rum. p. 120 (1873); Drumm. Large Game, p. 425 (1875); Brooke, P. Z. S. 1878, p. 884; Selous, P. Z. S. 1881, p. 752; *id.* Hunter's Wand. p. 208 (1881); Flow. & Gars. Cat. Coll. Surg. p. 260 (1884); Bryden, Kloof and Karroo, p. 300, fig. (1889); Jent. Cat. Ost. Leyd. Mus. (Mus. P.-Bas, ix.) p. 141 (1887); Sel. f. Cat. Mamm. Calc. Mus. p. 154 (1891); Flow. & Lyd. Mamm. p. 347 (1891); Nicolls & Egl. Sportsm. S. Afr. p. 37 (1892); Ward, Horn Meas. (1) p. 152 (1892), (2) p. 194 (1896) (part.); Jentink, Cat. Mamm. Leyd. Mus. (Mus. P.-Bas, xi.) p. 173 (1892); Lyd. Horns and Hoofs, p. 252 (1893); Rendall, P. Z. S. 1895, p. 359 (Transvaal); Pousargues, Ann. Sci. Nat. iv. pp. 81, 83 (1897).

Tragelaphus scriptus sylvaticus, Thos. P. Z. S. 1891, p. 389; Kirby, in Ward's Great and Small Game of Africa, p. 484, pl. xiii. fig. (1899); Trouess. Cat. Mamm. p. 959 (1899).

Tragelaphus scriptus, Ward, Rec. Big Game, p. 282 (1899) (part.).

Le Bosbok, Buff. Hist. Nat., Suppl. v. p. 35, pl. xv. (1782).

Forest Antelope, Penn. Hist. Quadr. (3) i. p. 86 (1793).

VERNACULAR NAMES :—*Boschbok* of the Dutch; *Bushbuck* of the English at the Cape; *Inkonka* (♂), *Imbabula* (♀) of the Zulus (*Selous*).

General colours much as in the other species of this section, and especially as in *T. roualeyni*, but without any traces of transverse stripes either in the adult or immature stages. Adult male of a deep dark brownish black, with only a few small white spots on the haunches and one or two on the shoulders. Younger males reddish brown on the rump and sides, almost greyish brown above; a narrow white spinal stripe over the rump and about nine white spots on the haunches, with a line of white spots extending inferiorly above the belly. Horns 12 or 14 inches in length, rarely attaining to 16 inches.

Female. Without horns, of a light reddish brown, as in the immature male, with white spots on the hind-quarters, and sometimes a lateral line of white spots above the belly.

Hab. Forest-districts of South Africa up to the Limpopo, north of which it is replaced by *T. roualeyni*.

The Bushbuck, so named by the Dutch settlers at the Cape from its being an inhabitant of the forest (*bosch*), was first made known to science by the famous Swedish traveller and naturalist Sparrman, who obtained specimens of it during his expedition to the Cape, and described it on his return home in the 'Acta Holmiensia,' and subsequently in the several editions of his 'Travels.' Sparrman specially mentions Groot Vaders-bosch and Houtniquas-bosch, in the south of the Colony, as the districts in which he had encountered this Antelope.

The Bushbuck was also described and figured by Buffon in the 'Supplement' to his 'Histoire Naturelle' from information received from Allamand and first published in Schneider's edition of the 'Histoire Naturelle' issued at Amsterdam. It was likewise mentioned by Thunberg, Lichtenstein, and other earlier writers, who adopted Sparrman's scientific name for it. Little of moment, however, is added to our knowledge of its habits and range until we come to Harris's illustrated volume on the 'Game-Animals of Southern Africa,' published in 1840. In this work a special chapter is devoted to an account of the sport of hunting the Bushbuck along with the Grysbok and the Blue Duiker, which are all figured together in the twenty-sixth plate of Harris's 'Portraits.' This author discourses eloquently on the first-named Antelope as follows:—

"Aptly enough has this elegant and game-looking Antelope been designated the 'Bush-goat'; since, concealing itself during the day in the deepest glens of the wooded mountains, it quits not its retreat except during the matin hours, when it warily sallies forth to graze along the outskirts of the forest, or tempted by the bright moonlight nights, makes a foray upon the neighbouring gardens and cultivation. Slow of foot, and easily overtaken if surprised in open situations, it is wise to lie thus close in its native jungles, the thickest of which it traverses with ease—darting from one shrubbery to another, and forcing its elastic form through the plaited undergrowth, with its horns so crouched along the neck as to prevent their impeding progress by becoming entangled in the sylvan labyrinth. So perfectly does the voice of this singular species counterfeit the barking of a dog that the benighted wayfarer is said to have been decoyed by it into the most lonely depths of the forest, vainly hoping to discover some human habitation, whereas every step has but removed him further from the abodes of man. Combining singular elegance and vigour with the most marked and decided colouring, the Bushbuck stands quite by itself among the Antelopes of Southern Africa, and is to

be found only in those parts of the Colony and of Caffraria where sufficient cover exists to afford it a safe asylum. Naturally preferring solitude, the buck is nevertheless frequently found in the society of the doe, accompanied during the breeding-season by one or two kids, but never by adult individuals. Every specimen that I have seen displayed a bare ring around the neck, from which, by some process not satisfactorily explained, the hair had been removed as if through long confinement by a chain and collar. Very old subjects wear white stockings, gartered above the knee, and it is usual to find a narrow white tape along the back, partially concealed by the goat-like mane which bristles from the ridge of the spine. But of these characters none are constant, all being often absent in the female, and even in the non-adult male, whose lighter coloured coats are never so prominently 'picked out' as the dark robes of the patriarchs."

Messrs. Nicolls and Eglington, in their 'Sportsman in South Africa,' inform us that at the present time the Bushbuck is still plentiful in all the maritime divisions of the Cape Colony and Natal, wherever there are any considerable belts of thick bush. It is not usual to find more than a pair of adults together, and the animals seldom emerge from the impenetrable bush except at night-time, when they come out into the open glades to feed. The bare patches on the neck alluded to by Harris are explained by these authors to be caused by the horns being constantly thrown backwards along the neck, which thus becomes denuded of hair.

In the neighbourhood of Port Elizabeth we are told, and in other districts of the Colony, the Bushbuck is very strictly preserved, and battues are held every year about Easter-time, when large drives of them take place. Numbers of natives are employed with the assistance of dogs to beat the wooded kloofs, and to drive the game towards the guns, which are placed in the narrow necks of the valleys. Excellent sport is thus obtained.

When we proceed as far up the coast as the Limpopo the Cape Bushbuck, as we shall presently more fully explain, is replaced by Cumming's Bushbuck (*Tragelaphus roualeyni*). In this Bushbuck, as Mr. Selous informs us, the adult rams are of a brownish grey, often without a sign of any spots, and the adult females of a dark red with a few white spots. The young rams, however, are of a red colour and a good deal spotted, and have a few faint transverse stripes, while the young females are also more spotted than the old ones. If, however, Mr. Selous continues, we examine the Bushbucks found on the Zambesi to the east of the Victoria Falls, the adult rams are in colour like the young rams of the Limpopo, being of a dark red thickly

spotted on the haunches, shoulders, and sides with small white spots, with three or four faint white stripes down each side. On the other hand, if we take the Bushbucks found on the banks of the Chobé and in the country to the west of the Victoria Falls we find an animal of a very dark red colour, most beautifully spotted with large white spots, and ornamented in some cases with as many as eight well-defined white stripes and a long mane of white hair. This Bushbuck of the Chobé is that which, following Mr. Pocock, we have called *Tragelaphus scriptus ornatus* (v. s. p. 110).

On the whole, there seems to be little doubt that there are intermediate forms between what we have here treated of as three species of Bushbuck, but the question is by no means finally settled, and waits for a better and larger series of specimens than is at our command before a satisfactory conclusion can be arrived at.

The Cape Bushbuck does well in captivity, and is frequently brought to Europe. Living specimens of it may often be seen in the principal Zoological Gardens. The first example possessed by the Zoological Society of London appears to have been acquired in April 1859, when it was presented by the late Sir George Grey. Other specimens arrived in 1881 and 1887, and the Society has lately received good examples of it presented by its excellent correspondents Mr. J. E. Matcham of Port Elizabeth and Mr. W. Champion of Natal.

Our illustration of this species (Plate XC. fig. 2) was prepared by Mr. Smit from one of the specimens living in the Zoological Society's Gardens in May of the present year.

November, 1899.

123. CUMMING'S BUSHBUCK.

TRAGELAPHUS ROUALEYNI (CUMMING).

[PLATE XC. FIG. 1.]

Subspecies *a.* TRAGELAPHUS ROUALEYNI TYPICUS.

- Antelopeus roualeynei*, Cumming, Hunter's Life in S. Afr. ii. pp. 165, 168 (1850); Gray, P. Z. S. 1850, p. 146; id. Cat. Ung. B. M. p. 140 (1852).
- Tragelaphus roualeynei*, Fitz. SB. Wien, lix. pt. 1, p. 175 (1869); Selous, P. Z. S. 1881, p. 753; id. Hunter's Wand. p. 209 (1881); Matschie, Säug. D.-O.-Afr. p. 138 (1895); id. in Werther's Hochländ Deutsch-Ost-Afr. p. 257, plate (1898).
- Tragelaphus sylvaticus*, Pet. Reise n. Messamb. p. 183 (1852); Scl. P. Z. S. 1864, p. 105; Kirk, P. Z. S. 1864, p. 659; Johnst. P. Z. S. 1885, p. 218; id. Kilima Njaro Exped. p. 354 (1886); Hunter, in Willoughby's E. Afr. pp. 194, 288 (1889); Crawshay, P. Z. S. 1890, p. 655; Lugard, Rise E. Afr. Emp. i. p. 536, fig. (1893); Jacks. P. Z. S. 1897, p. 456 (Mau Plateau); Johnst. Brit. Centr. Afr. p. 309 (1897).
- Tragelaphus scriptus*, Thos. P. Z. S. 1894, p. 145; Lorenz, Ann. Mus. Wien, ix., Notiz. p. 62 (1894); Johnst. Brit. Centr. Afr. p. 306, fig. (1897).
- Tragelaphus scriptus roualeynei*, Thos. P. Z. S. 1891, p. 389, 1893, p. 504; True, P. U. S. N. Mus. 1892, p. 471; Scl. P. Z. S. 1893, pp. 507, 728; Thos. P. Z. S. 1896, p. 798; Rendall, Novitat. Zool. v. p. 211 (1898); Trouess. Cat. Mamm. p. 959 (1899).
- Tragelaphus sylvaticus roualeynei*, Jacks. Badm. Big Game Shooting, pp. 285, 306 (1894); id. in Ward's Great and Small Game of Africa, p. 481, pl. xiii. fig. (1899).

Subspecies *b.* TRAGELAPHUS ROUALEYNI FASCIATUS.

- Tragelaphus decula*, Swayne, P. Z. S. 1894, p. 317; id. Somaliland, p. 309; Ghika, Au Pays des Somalis, p. 184 (1898); Straker, in Ward's Great and Small Game of Africa, p. 478 (1899).
- Tragelaphus scriptus fasciatus*, Pocock, Ann. & Mag. N. H., Jan. 1900.

VERNACULAR NAMES:—*Serolomootlooque* of the Bakalahari on the Limpopo (Cumming); *Babala* of the Anyanga, *Mbawala* of the Agawa, *Imbabala* of the Angoni, and *Mpotu* of the Ahenga, and *Anyika* in British Central Africa

(*Crawshay*); *Mpougo* in Kinyamwesi (*Böhm*); *Mbawara*, *Mbala*, or *Mbawala* in Kisuaheli; *Dol* of Somalis (*Swayne*).

The typical form of this species is very nearly allied to the Bushbuck of the Cape Colony (*T. sylvaticus*), but is more strongly marked with white. Colour variable. Adult bucks sometimes nearly black or brownish grey, without traces of stripes and spots; sometimes marked with a few faint stripes and a few spots.

Females and immature males are redder in colour than adult bucks, and generally weakly striped and spotted.

Hab. From the Limpopo River across the Lower Zambesi to Nyasaland, and thence northwards to British East Africa and Somaliland.

The great sportsman Roualeyn Gordon Cumming was the first observer of this East-African form of the Bushbuck, and with characteristic audacity named it after himself. He seems to have first met with it on the Limpopo in June 1847, and in his 'Hunter's Life' has given us the following account of his discovery:—

"I was in a sequestered bend of the river, where the banks for several acres were densely clad with lofty reeds and grass which towered above my head as I sat on my horse's back. Beyond the reeds and grass were trees of all sizes, forming a dense shade; this is the general character of the Limpopo, as far as I have yet seen. I was slowly returning to my camp, in anything but good humour at my want of success with the game I had just been after, when, behold, an antelope of the most exquisite beauty, and utterly unknown to sportsmen or naturalists, stood broadside in my path, looking me full in the face. It was a princely old buck of the '*Serolomootlooque*' of the Bakalahari, or 'Bush-buck of the Limpopo.' He carried a very fine wide-set pair of horns. On beholding him I was struck with wonder and delight. My heart beat with excitement. I sprang from my saddle, but before I could fire a shot this gem of beauty bounded into the reeds and was lost to my sight. At that moment I would have given half what I possessed in this world for a broadside at that lovely antelope, and I at once resolved not to proceed farther on my expedition until I had captured him, although it should cost me the labour of a month.

"The antelope having entered the reeds, I gave my horse to my after-rider, and with my rifle on full cock and at the ready I proceeded to stalk with extreme caution throughout the length and breadth of the cover; but I stalked in vain; the antelope had vanished, and was nowhere to be found. I then returned to my steed and rode slowly up the river's bank towards my camp. I had ridden to within a few hundred yards of the wagons, and was meditating how I should best circumvent the *Serolomootlooque*, when once more this lovely antelope crossed my path; I had been

unwittingly driving him before me along the bank of the river. He trotted like a roebuck into the thick cover and then stood broadside among the thorn bushes. I sprang from my saddle, and guessing about his position, I fired and missed him; he then trotted along a rhinoceros's footpath, and gave me a second chance. Again I fired, and before my rifle was down from my shoulder the *Serolomootloque* lay prostrate in the dust. The ball had cut the skin open along his ribs, and entering his body had passed along his neck, and had lodged in his brains, where we found it on preparing the head for stuffing. I was not a little gratified at my good fortune in securing this novel and valuable trophy; he was one of the most perfect antelopes I had ever beheld, both in symmetry and colour. I had him immediately conveyed to camp, where I took his measurement, and wrote out a correct description of him for the benefit of naturalists. I christened him the '*Antelopus roualeyni*,' or 'Bushbuck of the Limpopo.'"

It is not, however, without considerable hesitation that we have decided to retain Cumming's name for the form of Bushbuck that, as will be presently seen, extends from the Limpopo River northwards to British East Africa and Somaliland. Although, according to Selous, the Bushbucks that are found on the Zambesi to the east of the Victoria Falls differ from those inhabiting the Limpopo (that is to say, from the typical *roualeyni*) in being of a dark red colour, thickly spotted on the haunches, shoulders, and sides, and marked with three or four faint white stripes, whereas the adult of the Limpopo form is a dark brownish grey, not striped, and often without a sign of spots, we venture to think there is sufficient evidence to show that these distinctions will not hold good when more material from the two rivers has been examined. For example, a fine series of skins of bucks of various ages sent by Sir Harry Johnston from Nyasaland, and presumably identical with the form observed by Selous on the Lower Zambesi, shows considerable variation in colour. The young male is yellowish red throughout, with about half-a-dozen spots on the hind-quarters and scarcely a trace of stripes. The adult is of a richer yellowish red, brighter on the hind-quarters, and passing into black on the shoulders, belly, and base of the neck, with a few white spots on the hind-quarters, and occasionally also on the shoulder, and sometimes a row of spots along the sides above the belly. Sometimes there are about three indistinct white stripes on each side, sometimes only one; but more often there are no traces of them to be seen, the presence or absence of the stripes being apparently independent of age. As we pass northwards into East Africa from Nyasaland the stripes, judging from accounts given by sportsmen and naturalists, seem to become more persistent, and in a mounted example in the British Museum, obtained on Manda Island, opposite Witu,

by Sir John Kirk, as will be seen by Mr. Smit's figure of this specimen (Plate XC. fig. 1), they are plainly visible. This specimen stands about 32 inches at the withers, and its horns surpass 14 inches in length, so there is no doubt as to its maturity. On the whole, the most reasonable course to pursue seems to be, at least for the present, to refer all the specimens met with in Eastern Africa, from the Limpopo to the Shebeyli, to one species.

We will now say a few words as to what the principal writers who have met with this Bushbuck in the more northern portion of its range have recorded of its habits and distribution. Mr. Crawshay, one of our best authorities on the Antelopes of Nyasaland, tells us that it is the commonest

Fig. 100.



Skull and horns of Cumming's Bushbuck.

(Brit. Mus.)

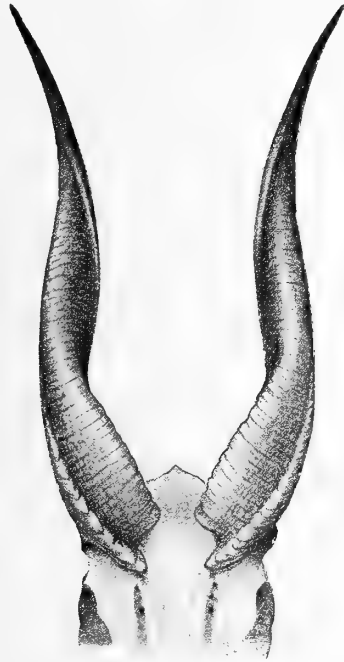
of all the Antelopes of that country. From the great variety that exists in the colour and markings of the Nyasan Bushbucks, Mr. Crawshay thought at first there must be more than one species; but after carefully examining a great many of both sexes, young and old, he came to the conclusion that there is only one, of the various stages of which he gives minute descriptions.

Sir Harry Johnston, in his 'British Central Africa,' gives us an excellent figure of the male Bushbuck, which he says is extremely common throughout the Protectorate. He describes its flesh as without exception the most delicious eating of any mammal in the world, "surpassing in tenderness and flavour that of the best Welsh mutton, or of any kind of venison."

In German East Africa, Herr Matschie informs us that Cumming's Bushbuck is also found all over the country, generally in the immediate neighbourhood of water, where it resorts to the thickest bush on the banks. Herr Matschie also gives a good figure of *Tragelaphus roualeyni*, in which, however, no traces of transverse bands are perceptible.

In British East Africa this Antelope, according to Mr. F. J. Jackson, is also common everywhere on the coast, and is to be met with as far west as the edge of the Mau Plateau, where, as he informs us (P. Z. S. 1897, p. 456), it is plentiful.

Fig. 101.



Frontlet of Cumming's Bushbuck.
(Brit. Mus.)

Further north in Somaliland the Bushbuck, although not met with anywhere on the high plateau, was found in the dense forests of the Webbe by Capt. Swayne during his second expedition in 1893. It is described by him as the most wary and difficult to shoot of all the game-animals he has ever encountered. It is often caught by the natives on the Webbe in staked pits, excavated in the jungles on the banks of the river.

Capt. Swayne has referred the Bushbuck of the Webbe to *T. decula*, but this is certainly not correct, as, according to his own description, it has "four or five white stripes, and sometimes as many as thirty white spots." In some

skins from Sen Morettu, on the Webbe, received from Capt. Swayne, now in the British Museum, there are four or five distinct white stripes on the flanks, both in adult and immature males, a few white spots on the hind-quarters, and a row of white spots extending along each side of the body above the belly. Although in some respects this form comes nearer to *T. scriptus*, we think it better for the present to regard it as a subspecific form of *T. roualeyni*, which, using Mr. Pocock's subspecific term, we call *T. roualeyni fasciatus*, and describe as follows:—

Height at withers about 26 inches. Head and legs of the same colour and pattern as in *T. roualeyni* and the other species of this section of the genus. General colour a reddish yellow, brighter on the hind-quarters, and distinctly blacker in the dorsal region, where the hair assumes a dusky greyish-brown hue. Body marked with four or five very distinct, mostly broad, white stripes, a row of white spots running along above the belly and a few white spots on the haunches. Hair on body shorter than in *T. roualeyni*. No distinct collar of short hair round the base of the neck, as in *T. roualeyni*, *T. sylvaticus*, and *T. scriptus*, the entire neck being covered with a coating of short silky hairs of the same length as those of the head, much shorter than those of the body, and of a dusky greyish-brown colour.

Young male redder in colour than the adult and equally strongly marked with white.

The skull of a subadult male gives the following measurements:—Basal length 8.25 inches, orbit to muzzle 4.6, greatest width 3.75.

In the British Museum are a skull of the typical *T. roualeyni* of the Limpopo, procured by Gordon Cumming, and a skin and skull from the Zambesi obtained by Mr. Selous. There is also in the Museum a good series of skins and skulls of this species from Zomba, Nyasaland, and its vicinity, transmitted by Sir Harry Johnston and Mr. A. Sharpe, of which we have already spoken, and from one of which our figures of the adult skull (pp. 126, 127) have been taken. From British East Africa the National Collection possesses the mounted adult male from Manda Island presented by Sir John Kirk (and figured on our Plate XC., as already mentioned), also a mounted female from the same source obtained in British East Africa about one hundred miles inland at 6° S. lat. Besides these there are Capt. Swayne's specimens from the River Webbe in the interior of Somaliland, already referred to.

We are not aware that any examples of this Bushbuck have been brought to Europe alive.

November, 1899.

124. DELAMERE'S BUSHBUCK.

TRAGELAPHUS DELAMEREI, Pocock.

Tragelaphus delamerei, Pocock, Ann. & Mag. N. H., Jan. 1900.

Of about the same size as *T. scriptus*. Head ruddy brown on the forehead, with a blackish band extending down the muzzle; cheeks fawn, with two small white spots; no white stripe running inwards from the corner of the eye; edge of upper lip and chin white; white patches at upper and lower ends of throat small, the former only just traceable. General colour of body dark yellowish brown above, paler below, and gradually passing into yellowish fawn upon the shoulder and upon the lower half of the hind-quarters. No traces of white stripes or spots observable either upon the body or upon the hind- or fore-quarters. Fore legs both outside and inside right up to the base yellowish brown, blackish all down the front from above the knee to the fetlocks; fetlocks and pasterns black, except for a pair of white spots on the pasterns in front. Hind legs coloured like fore legs, but paler above the hock and marked with a distinct white patch in front of the hock. Tail white below, dark at the tip. A collar of short hairs round the base of the neck. No long crest of hairs along the spine.

Hab. Somaliland.

A single nearly adult example of this species (fig. 102, p. 130), remarkable for the absence of white on the inner sides of the legs and on the body, was procured by Lord Delamere on his last sporting expedition into Somaliland at a place called "Sayer," and was kindly presented by him to the British Museum.

The specimen in question was examined by the person who skinned it for Lord Delamere, and, according to his evidence, was ascertained to be of the

male sex. But in the face of its bearing no traces of horns we are hardly disposed to accept this statement, which may well have been made in error. Even, however, if we take it to be the *female* of a *Tragelaphus*, we are unable to refer it to any known species, and we therefore insert it in what would seem to be its proper place under the name attached to it by Mr. Pocock.

Fig. 102.



Delamere's Bushbuck.

The accompanying figure of Delamere's Bushbuck has been prepared from the typical specimen in the British Museum.

November, 1899.



J. Smit del. et lith.

The Broad Horned Antelope.
TRAGELAPHUS EURYCEROS.

Published by R.H. Porter

Hanhart imp.

125. THE BROAD-HORNED ANTELOPE.

TRAGELAPHUS EURYCERUS (OGILBY).

[PLATE XCI.]

Antilope, sp., **Afz.** N. Acta Upsal. vii. p. 269, pl. viii. fig. 3; **H. Sm.** Griff. An. K. v. p. 361 (?).

Antilope eurycerus, **Ogilby**, P. Z. S. 1836, p. 120; **Waterh.** Cat. Mus. Zool. Soc. (2) p. 42 (1838); **Temm.** Esq. Zool. Guin. p. 190 (1853); **Huet**, Bull. Soc. Acclim. (4) iv. p. 468 (1887).

Antilope (Addax) euryceros, **Laurill.** Dict. Univ. d'H. N. i. p. 620 (1861).

Tragelaphus eurycerus, **Less.** N. Tabl. R. A., Mamm. p. 181 (1842); **Wagn.** Schr. Säug., Suppl. v. p. 441 (1855); **Gray**, P. Z. S. 1850, p. 144; *id.* Knowsl. Menag. p. 27, pl. xxiii. fig. 1 (horns) (1850); *id.* Cat. Ung. B. M. p. 136 (1852); *id.* P. Z. S. 1861, p. 276; **Gerr.** Cat. Bones B. M. p. 246 (1862); **Fitz.** SB. Ak. Wien, lix. pt. 1, p. 174 (1869); **Brooke**, P. Z. S. 1871, p. 485, pl. xxxix.; **Sci.** P. Z. S. 1883, p. 35; **Thomas**, P. Z. S. 1891, p. 387; **Flow. & Lyd.** Mamm. p. 347 (1891); **Ward**, Horn Meas. p. 158 (1892); *id.* Rec. Big Game, p. 202 (1896); **Jent.** Cat. Mamm. Leyd. Mus. (Mus. Pays-Bas, xi.) p. 172 (1892); **Lyd.** Horns and Hoofs, p. 254 (1893); *id.* Royal Nat. Hist. ii. p. 275 (1894); **Pousarg.** Ann. Sci. Nat. iv. p. 81 (1897); **Trouess.** Cat. Mamm. p. 957 (1898); **Bryden**, in **Ward's** Great and Small Game of Africa, p. 454, pl. xiii. fig. 3 (1899).

Euryceros euryceros, **Gray**, Cat. Rum. B. M. p. 48 (1872); *id.* Hand-l. Rum. B. M. p. 119 (1873); **Jent.** Cat. Ost. Leyd. Mus. (Mus. Pays-Bas, ix.) p. 141 (1887); *id.* Notes Leyd. Mus. 1888, pp. 23-25; **Büttik.** Reisebilder, ii. p. 380, cum fig. (1890).

Tragelaphus albo-virgatus, **Du Chaill.** Pr. Bost. Soc. N. H. vii. pp. 299-300 (1861); *id.* Expl. & Adv. Equat. Afr. p. 306, pl. (1861).

Tragelaphus albovittatus, **Gray**, P. Z. S. 1861, p. 276.

VERNACULAR NAMES:—*Trommé* of the Mandingos (*Temminck*); *Elk* of Liberians and *Guin* of the Veys in Liberia (*Büttikofer*); *Bongo* of Gaboon (*Du Chaillu*).

Height at the withers of the adult male about 43 inches. General colour of the head and body bright chestnut, with a white spinal stripe extending from the withers to the root of the tail, and about 14 or 15 transverse white stripes on the shoulders, flanks, and hind-quarters, passing from the spinal stripe above on to the belly beneath. Head with a patch of deeper colour upon the forehead, and extending about two inches below the eyes. An angular **V**-shaped white mark extending inwards from the eye on to the nose, interrupted in the middle line by a narrow brown band; chin and lips white; two or three cheek-spots large and sometimes fused together; interramal area and upper end of throat covered with hairs of a blackish hue; lower end of the throat with a very distinct transverse white band; chest and belly covered with short hair of a purplish-brown colour; area between the hind legs and beneath the tail up to the anus white. Fore legs blackish from the fetlocks to the knees, chestnut from the knees to the shoulders externally; white at the bases close to the chest, as also above the knees and between knees and fetlocks internally; a large white spot on the front of the pasterns. Hind legs chestnut down to the fetlocks on the outer side; front of the hocks and cannon-bones broadly white; fetlocks blackish or brownish, both without and within; a white patch on the pasterns as on the fore legs.

Hair short and close all over the body. No mane on the throat; hairs along the nape reversed, but scarcely forming a mane, being merely slightly elongated; behind the parting there is a short spinal mane. Tail bovine, thinly covered with hairs of the same colour as those of the body, and ending in a tuft of long hairs of a darker red tint*.

Horns massive, rather smooth, with weak anterior basal crest, amber-yellow tip, and a single twist; usually about 30 inches long round the curve and about 25 in a straight line. A skull gives the following measurements:— Basal length 14·5 inches, orbit to muzzle 8·5, greatest width 6·25.

Female. Similar to the male in markings, but without horns, and rather paler in colour and smaller in size.

Hab. Forests of the West-African coast-range, from Liberia to Gaboon.

* In our Plate XCI. the tail has been incorrectly represented as short and bushy, as in the other species of *Tragelaphus*.

Whether the horn from Sierra Leone, figured and described by Afzelius in his essay on Antelopes, published in the 'Nova Acta' of the Society of Sciences of Upsala in 1795, and subsequently referred to by Hamilton Smith and other authors, really belonged to the present species is somewhat uncertain, although such may very possibly have been the case. The first trustworthy introduction of this species to scientific literature is therefore due to Ogilby, a well-known authority on the Ruminants, who in 1836 established his *Antilope eurycerus* in a paper read before the Zoological Society of London on November the 22nd of that year. Ogilby's materials consisted of "two pairs of horns, one attached to the skull, the other to the integuments of the head," which had then "long existed in the Society's collection." Their origin was unknown, but they were believed to have come from Western Africa. These specimens, we may add, are now in the British Museum, to which they were transferred by the Zoological Society in 1858. One of the pairs was figured by Gray in the volume of the 'Gleanings from the Knowsley Menagerie,' published in 1850.

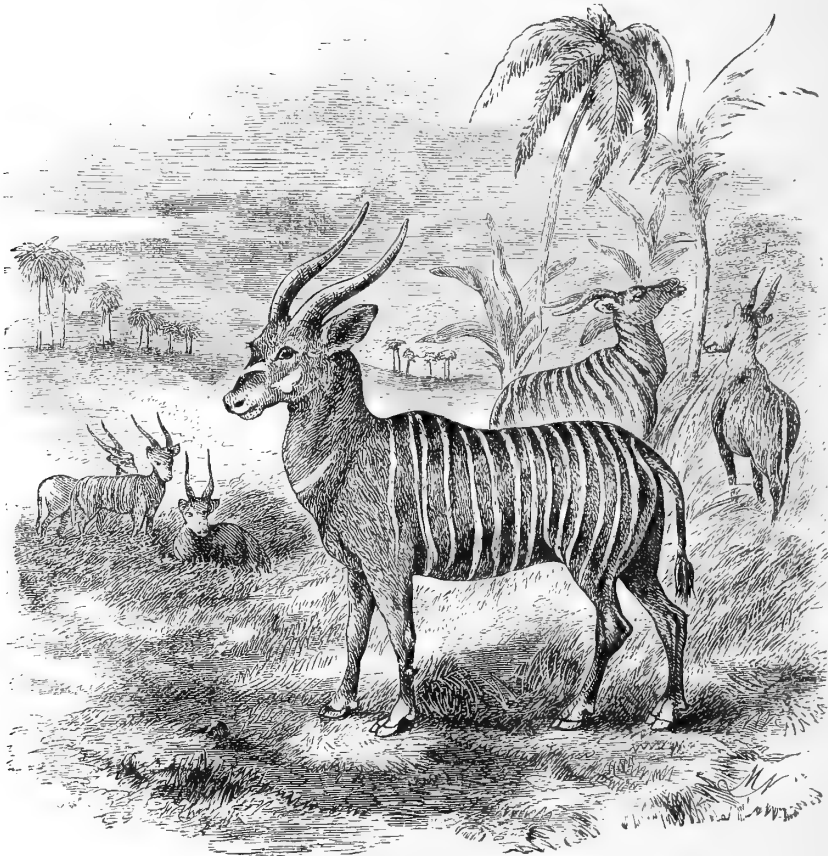
In 1853 Temminck recorded the existence of a pair of horns of this species in the Leyden Museum, and gave its vernacular name as the "Trommé" of the Mandings of Western Africa.

With this exception no addition appears to have been made to our knowledge of this Antelope until 1860, when Mr. P. B. Du Chaillu, who had met with it during his excursions in the interior of Gaboon from 1856 to 1859, described it before the Boston Society of Natural History as a new species, under the name *Tragelaphus albo-virgatus*. In the report of his paper published in the 'Proceedings' of that Society we find its locality given as the "forests about the head-waters of the Fernand-Vaz in the Aschankolo Mountains, 60 miles south of the Equator, and 140 from the coast." In the narrative of his travels, published in 1861, Mr. Du Chaillu writes of the same Antelope as belonging to the fauna of the "Rembo Region," the Rembo being one of the rivers that flows from these mountains, and tells us that it is "very shy, swift of foot, and exceedingly graceful in its motions." The full-page steel engraving that accompanies these remarks, which, by the kindness of Messrs. Murray, we are enabled to reproduce (fig. 103, p. 134), is stated to have been taken from a well-preserved specimen in his collection. The native name is given as "Bongo."

After describing his specimens in America, Mr. Du Chaillu brought them to this country, and disposed of them to the British Museum.

The late Dr. J. E. Gray, who was not very friendly with the great explorer, and had carried on a paper warfare with him in the 'Athenæum' journal, lost no time in bringing the specimens before the Zoological Society, where

Fig. 103.



The Bongo Antelope.

(From Du Chaillu's 'Travels in Equatorial Africa,' p. 306.)

he subjected them to a somewhat severe criticism. The supposed new species of *Tragelaphus*, he pointed out, was "evidently only a specimen of *Antilope eurycerus* of Ogilby." This was, no doubt, correct, but at the same time Mr. Du Chaillu's skin, imperfect as it was, was the first specimen of the animal, except the original two pairs of horns, acquired by the National

Collection, where it is now to be seen mounted in the Gallery, and allows an idea to be formed of the brilliant colours of this splendid Antelope. It will be found figured by Sir Victor Brooke, from a sketch by Wolf (put upon the stone by Smit), in the Zoological Society's 'Proceedings' for 1871. In the

Fig. 104.



Head and horns of the Broad-horned Antelope.
(P. Z. S. 1871, p. 488.)

same article is given a figure of the skull and horns of this Antelope, taken from one of the type specimens in the British Museum, which, by the kind permission of the Zoological Society, we are enabled to reproduce on the present occasion (fig. 104).

Besides Mr. Du Chaillu, the only travellers who have met with this beautiful Antelope in its native wilds appear to have been Messrs. Büttikofer and Stampfli, during their well-known researches in Liberia. From Dr. Jentink's article upon the mammals collected during their explorations we learn that these naturalists obtained a complete specimen of an adult male of this species near Hill Town, besides two skins on the Junk River and the Mahfa River. In the second volume of his 'Reisebilder aus Liberia' Heer Büttikofer gives a figure of the Antelope in the text, and informs us that it lives in the forests and feeds principally upon leaves of trees, on which it browses up to a height of eight feet.

Besides the typical specimens of Ogilby's *Antelope eurycerus* and Du Chaillu's *Tragelaphus albo-virgatus*, which, as already mentioned, are now in the British Museum, the National Collection contains a good mounted head of an adult male of this Antelope from Fantee, which is accompanied by a flat body-skin, and the mounted skeleton of an adult male from Gaboon.

We are not aware that any living examples of the Broad-horned Antelope have ever reached Europe.

Our figure of this species (Plate XCI.) has been drawn by Mr. Smit from the mounted specimen in the British Museum.

November, 1899.



Wolf del. Smit lith

Angas' Antelope .
TRAGELAPHUS ANGASI.

Published by R.H. Porter

Hanhart imp.

126. ANGAS' ANTELOPE.

TRAGELAPHUS ANGASI, ANGAS.

[PLATE XCII.]

Tragelaphus angasi, G. F. Angas, P. Z. S. 1848, p. 89, pls. iv. (♂), v. (♀); *id.* Kaffirs Illustrated, p. 51, pl. xxix. (1849); Gray, P. Z. S. 1850, p. 144; *id.* Knowsl. Menag. p. 27 (1850); *id.* Cat. Ung. B. M. p. 138 (1852); *Proudf.* P. Z. S. 1850, p. 199; *Baldwin*, Afr. Hunt. p. 76 (1854); *Gerr.* Cat. Bones B. M. p. 246 (1862); *Fitz.* SB. Ak. Wien, lix. pt. 1, p. 174 (1869); *Brooke*, P. Z. S. 1871, p. 485; *id.* P. Z. S. 1878, p. 884 (cranial characters); *Buckley*, P. Z. S. 1876, p. 285; *Thomas*, P. Z. S. 1891, p. 387; *Flow. & Lyd.* Mamm. p. 347 (1891); *Scl.* P. Z. S. 1892, p. 98 (Shiré R.); *Ward*, Horn Meas. p. 157 (1892); *id.* Rec. Big Game, p. 200 (1896); *Lyd.* Horns and Hoofs, p. 252 (1893); *Scl.* P. Z. S. 1893, p. 729 (B. C. Afr.); *Lyd.* Roy. Nat. Hist. ii. p. 275 (1894); *Rendall*, P. Z. S. 1895, p. 359 (R. Tembé); *Thomas*, P. Z. S. 1896, p. 798, 1897, p. 939 (B. C. Afr.); *Pousarg.* Ann. Sci. Nat. iv. p. 81 (1897); *Johnston*, Brit. Centr. Africa, p. 305 (1897); *Rendall*, Novitat. Zool. v. p. 212 (1898); *Trouess.* Cat. Mamm. p. 957 (1898); *Selous, Sharpe, and Neumann*, in *Ward's* Great and Small Game of Africa, pp. 455-462, fig. 39, & pl. xiii. fig. 4 (1899).

Strepsiceros angasi, *Turner*, P. Z. S. 1850, p. 171.

Euryceros angasii, *Gray*, Cat. Rum. B. M. p. 48 (1872); *id.* Hand-l. Rum. B. M. p. 119 (1873).

VERNACULAR NAMES:—*Inyala* of the Amatongas; *Bō* of the Shiré districts.

Height at withers of adult male about 42 inches; of lighter and more graceful build than *T. eurycerus*. General colour of head, neck, and body a slate-grey, with a tinge of yellowish red. Head with forehead reddish, and area around eye fawn-coloured; upper lip and chin white; two widely-separated white cheek-spots on each side; V-shaped white nasal stripe

distinct and mesially divided. Back of ear white below, tan above. Neck distinctly darker in hue than the shoulder and rest of the body; a transverse white patch at the lower end of throat; no corresponding patch at upper extremity of throat. Body from shoulder to root of tail marked with indications of about fourteen pale transverse stripes, some six of these standing out more clearly than the rest; a few white spots, mostly low down upon the haunches. Tail nearly black above, at sides, and at tip; white below. Fore legs black above the knee on the outer side and on inner side halfway up to the chest; a large white patch above close to chest; knee also white on inner side and behind; portion between knee and fetlock a rich fawn-colour; fetlocks and pasterns black behind and above the hoofs in front; a white spot on the inner side of fetlocks, and two on front of the pastern. Hind leg coloured like the front leg, with the front and inner side of the thigh and of the hock white, the two white patches separated by a black band; no white patch on the inner side of the fetlock.

Long mane of dark hair extending almost from chin along throat, chest, and each side of belly, and fringing the front of the thigh almost to the hock, and the back of it up to the root of the tail. There is also a dorsal mane extending from the nape to the neck, reversed from the base of the neck; the hairs black or brown in colour along the nape of the neck from the occiput to the shoulder, tipped with white from the shoulders to the tail. Tail cervine, thickly hairy throughout.

Horns black, pale amber-coloured at the tips, ridged in the basal half; about 29 inches long round the curve, and 24 in a straight line; usually with a single, and rarely with a double, curvature.

The skull of an adult male gives the following measurements:—Basal length 12 inches, orbit to muzzle a little over 7, width almost 5.

Female without horns and strikingly different from the male in colour. General colour a bright chestnut. Sides of the body and haunches marked with about eleven white stripes, those behind shoulder reaching almost to the ventral surface; ventral surface pale yellow; a few white spots on the haunches. Nose marked with a broad black band, which extends laterally on to the muzzle; a narrow black dorsal stripe, extending from the occiput to the root of the tail, intersected with white where the lateral stripes cross it. No mane on any part of neck, body, or hind-quarters.

Hab. South-eastern Africa, from Zululand to Southern Nyasaland.

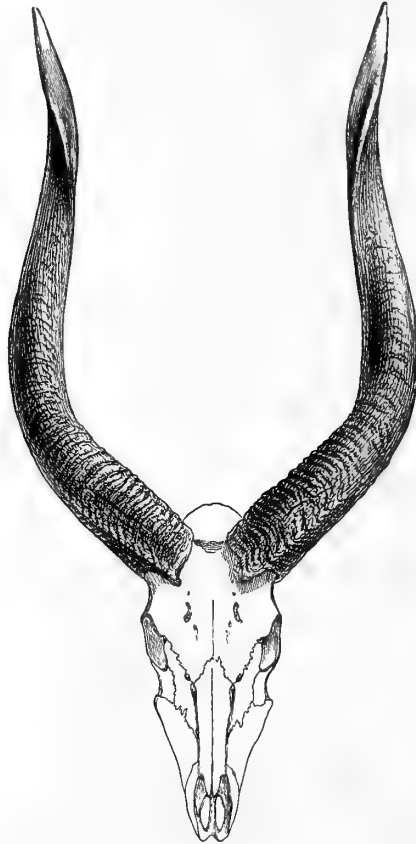
The discoverer of this fine Antelope, the late Mr. George French Angas, was an accomplished artist and traveller, and the author of several books on Africa and Australia. Angas first met with this species on the northern shores of St. Lucia Bay, in Zululand, during his journeyings in that district in 1847. Here, he tells us, it inhabits the low undulating hills, scattered with mimosa-bushes, which border the northern shores of the Bay. On returning to England, Angas showed his notes and sketches of this Antelope to the late Dr. Gray, who assured him of its being an animal new to science, and communicated them to the Zoological Society of London in the name of the discoverer. Angas was not successful in obtaining specimens for himself, as the Boers, he tells us, refused to part with them; and the two plates which illustrate his paper in the Zoological Society's 'Proceedings' were lithographed by Waterhouse Hawkins from his notes and sketches. It should also be mentioned that the Antelope was named, not after Angas himself, but after his father, Mr. George Fife Angas, of South Australia, who, we are told, had always "taken great interest" in his son's travels and researches in natural history. In a folio work called 'Kaffirs Illustrated,' published in 1849, Angas again figured this Antelope, on a plate containing representations of the male, female, and young, but did not furnish any further particulars concerning its life and habits.

The next observer of Angas' Antelope in its native wilds appears to have been a well-known hunter, Proudfoot, who met with it on the banks of the Maputa River, about sixty miles above its embouchure into Delagoa Bay, and exhibited specimens of both sexes, shot by himself, at a meeting of the Zoological Society of London on July 9th, 1851. On the Maputa, Mr. Proudfoot stated, on exhibiting his specimens, that the *Inyala*, as the natives call it, was at that time more plentiful than on the Umcoozi or Umbelozzi, in the same district, where it was found, though rarely. "They occur in small troops composed of one ram and four or five females, with their young: they always resort to the densest bush, and browse chiefly on shrubs."

In June 1854 the well-known African sportsman, William Charles Baldwin, was in Amatonga-land, on a hunting expedition from Natal. On the 25th of that month, as he tells us in his 'African Hunting,' he met with the first "Inyalas" he had ever seen, and succeeded in bagging a fine male, and subsequently more of them in the same district. A tinted lithographic plate in Baldwin's volume, drawn by Wolf, contains an excellent representation of a group of these Antelopes.

In 1871 the late Sir Victor Brooke published in the 'Proceedings' of the Zoological Society a figure of the head and horns of this Antelope, taken from a specimen in his own Collection. This figure, by the kind permission of that Society, we are now enabled to reproduce (fig. 105).

Fig. 105.



Head and horns of Angas' Antelope.
(P. Z. S. 1871, p. 487.)

The Hon. W. H. Drummond, another well-known sportsman, who was in South Africa from 1867 to 1872, writes of the "Nyala" as perhaps the most beautiful of all the Antelopes he had seen there. "Unfortunately," he says, "it does not exist except in low, fever-stricken districts, and I have never seen it south of the Bombo Range, about 28° S. lat., where it frequents the densest thickets it can find, and is wary and difficult to stalk." Mr. Drummond also,

in his volume on the 'Large Game of South and South-east Africa,' has given a lithographic plate with figures of both sexes of this animal.

When he wrote his 'Hunter's Wanderings,' in 1881, Mr. Selous, our leading authority on the game-mammals of South Africa, had never seen a living example of this Antelope. But in September 1896 he made a successful expedition to Amatonga-land in search of it, and subsequently wrote an account of his adventures on this occasion in 'The Field' newspaper, from which, by his kind consent, we make the following extracts.

Arriving at Lourenço Marques on September 21st, he was invited by a Mr. Wissels, a Cape colonist of German extraction, to visit his station near the junction of the Pongolo and Usutu Rivers, where Inyalas were said to be plentiful, and arrived there after a long tramp of several days through the swampy forests.

We will give Mr. Selous's account of his hunt after Inyalas in this district in his own words:—

"There were now abundant signs that I was approaching the haunts of the beautiful Antelope I had come so far to seek, as *Inyala* horns and skins were very much in evidence round Mr. Wissels's store, and several of the latter had manifestly been but recently killed.

"All these animals, I was assured, had been shot by the Amatonga within a short distance of the store, in the dense jungles lying in the angle between the Usutu and Pongolo Rivers, which I could now see covering some low ridges at a distance of not more than six or seven miles from where we stood. Had it not been for the rain, I should have gone on the same afternoon; however, I gathered a good deal of information, and arranged for a start with fresh carriers as early as possible the following day—my objective point being the kraal of an Amatonga head-man named Gugawi, who, I was told, lived a few miles up the Usutu River, on the very edge of the jungle where *Inyala* were said to be plentiful. I noticed, however, that my informants were not over confident about my being likely to shoot any of these animals.

"That night we had a most tremendous thunderstorm, the rain falling in torrents; and, as the place in which I was sleeping was not water-tight, I had rather a bad time of it, and was very glad when day broke.

"The thunderstorm had cleared the air, and Sunday, Sept. 27, dawned bright and clear, with every prospect of its being a fine day. I had all my things packed up pretty early, and with four new women-carriers, and accompanied by two men who knew the way to Gugawi's kraal, managed to get off about an hour after sunrise, and reached my destination before 10 o'clock. On our way we crossed the Usutu River—here a clear, swift-flowing stream, about 200 yards in breadth, running over a bed of sand. We waded across it, and found the water quite shallow for the most part, and never more than 3 feet deep.

“On reaching the kraal we were making for, I told Longman to cook me some breakfast, and whilst he was frying me some Reed-buck steaks, I had a talk with the head-man, Gugawi, and told him the reason of my visit. He replied that the ‘unbalaintendi’ were numerous in the jungle just behind his kraal, and promised to do his best to help me to secure the specimens I wanted, though, like everyone else, he said the animals were very cunning and difficult to get a sight of. As soon as I had had my breakfast I asked Gugawi to give me a man who was well acquainted with the habits of the *Inyala*, as I wished to go into the bush after them without any loss of time. He gave me one of his sons, and, accompanied by Longman and one of the Kaffirs who had come from Mr. Wissels’s store, we forthwith entered the jungle, which extended to within a few yards of the kraal. From this we were not distant more than 200 yards before we saw fresh *Inyala*-spoor plainly imprinted in the wet ground. The rain at least had done us this service, that it had washed out all old spoor and rendered any fresh tracks quite conspicuous. We now commenced to creep very cautiously through the thick thorny bush, making our way for the most part through tunnels made by hippopotami during their night excursions in search of food. We had usually to walk bent nearly double, often having to creep on our hands and knees; and, as the air was now very hot and steamy, we were soon bathed in perspiration. Now and again we came to little open spaces in the bush, and in one of these which we passed through soon after leaving the kraal I saw a very handsome Crested Guinea-fowl, which looked very much like the birds I have seen on the Central Zambesi, to the east of the Victoria Falls.

“We had been creeping about the bush in the uncomfortable manner I have described for about an hour, when we came suddenly upon a little circular opening some fifty or sixty yards in diameter. As we approached the edge of this open space, advancing very cautiously in a stooping attitude down a hippopotamus-path, my guide suddenly dropped to the ground. As he did so, I got a clear view past him, and saw standing amongst the grass and bush, just on the further side of the opening, what I knew was an *Inyala* ewe, as I could distinctly see it was reddish in colour. I could see no other animal near her, and, as I required two specimens of *Inyala* ewes, the one for the British and the other for the South-African Museum, I lost no time about firing at the animal in question, which I saw drop instantly to the shot. But even as she did so, there appeared in her place, or very close to where she had stood, a great black shaggy form, which, indistinctly as I could see it in the deep shadow of the bush, I knew was an *Inyala* ram, the first that my eyes had ever looked upon in the flesh. My rifle was a single-barrelled one; and before I could fire the shot that might make that rare and beautiful beast mine, I had to open the breech of my rifle, take another cartridge from my belt, slip it into the chamber, close the breech again, and then raise the rifle to my shoulder and take aim. All this meant time and noise. Would the *Inyala*, which stood like a statue by the dead body of its mate, give me the few seconds I required to take his own life too? I little thought he would; but he did; and as I raised my rifle once more, and took a quick but careful sight at his dark shoulder, I felt, as I pulled the trigger, that he was mine.

“As the report of the rifle sounded, he plunged madly forward and was instantly

lost to sight in the thick scrub. But I felt sure he carried death with him, and so it proved, for we found him lying dead not twenty yards from where he had stood when the bullet struck him. The fatal missile had passed right through his shoulders, and, having expanded on impact, had torn his heart to pieces. I had the dead ewe brought to where the ram had fallen, and laid them side by side; and then stood admiring them for a long time before I could bring myself to skin them. To thus secure a very fine pair of *Inyala* Antelopes—whose excellently-mounted skins are now safe in the Mammalian Gallery of the new Natural History Museum in Cromwell Road—on the very first day I had hunted for them, and after a little more than an hour's search, was indeed a most glorious and exceptional piece of good fortune; which, however, has been balanced by many and many a day that I can remember of unrequited labour in search of game.

“As soon as I had stripped the skins, with the leg-bones still attached, from my two beautiful specimens, I had them carried, together with the skulls, to Gugawi's kraal on the edge of the bush, and there spent the remainder of the day in preparing them for mounting. Of the meat, which was all brought in, I sent a couple of haunches over to Mr. Wissels, and then, after keeping a small piece for myself, gave the remainder to Gugawi to divide amongst his people as he thought fit.

“Next morning I was up and out in the bush just as day was breaking, accompanied only by my guide of yesterday and Longman, who, however, kept some distance behind, in order to allow my guide and myself to approach our game as noiselessly as possible. We had been creeping about in the dense jungle for some three hours without having seen anything, although there was a good deal of fresh spoor about, and twice we had heard *Inyalas* dash away through the bush without getting a sight of them, when suddenly my guide crouched to the ground, at the same time pointing towards a large ant-heap growing out of the dense scrub, and itself covered with undergrowth. Following the direction of his arm, I made out a reddish patch not fifteen yards away in the gloom of the bush; and taking it for an *Inyala* ewe, I fired into it point blank, as I required another specimen for mounting. At the shot the animal fell, and, on creeping up to it, I found that it was a young ram. It was something less in size than a full-grown female, from which it did not differ in any way in coloration, and the number and distribution of white stripes and spots. It was thus interesting, as showing that the *Inyala* changes in general colour from red to grey, only losing the rufous and orange tints on the ears and forehead, which were still conspicuous in the type-specimen described by Mr. Angas, when fully adult.

“On returning to the kraal, Gugawi proposed to take me to a spot some few miles higher up the Usutu, where he said there were plenty of *Inyalas*, whilst at the same time the bush was not so dense as near his kraal. Being by this time thoroughly sick of crawling about bent nearly double, I hailed with delight the idea of finding the game I was seeking in a country where I could walk upright, and visions of *Inyala* feeding through open glades passed through my mind; visions, alas! which were never realized, for in my small experience I never found these Antelope anywhere except in dense bush. However, I was glad of the change, and soon had everything ready for a move.

“In the afternoon we travelled some five or six miles up the river, and pitched camp in a bit of jungle near the water’s edge. The Usutu River is here very broad, and reminded me strongly of parts of the Chobi; but whereas the banks of the latter river, as I knew it in the early seventies, abounded in game of many descriptions, from the elephant downwards, there was not a track to be seen along the Usutu of any kind of animal with the exception of the *Inyala*. All the wealth of wild life which Baldwin saw in this same district forty years ago has melted away before the guns of the native Amatonga hunters; for, be it noted, this is a country in which but very little game has been killed by white men. Rhinoceroses, buffaloes, koodoos, waterbucks, impalas, lions, all are gone—the only game left being the *Inyalas*, which owe their preservation to the dense jungles in which they live; and even they are being rapidly killed off, as the natives are always after them, lying in wait for them in the paths made by the hippopotami, or creeping stealthily through the bush in their pursuit.

“It would be but tedious reading were I to continue to describe in detail my further bush-crawling experiences in search of *Inyalas*. Suffice it to say that on Oct. 1 and 2 I secured two more good rams, and preserved their heads for my own Collection. Although I should have liked to get a fourth ram for the South-African Museum, I did not think it prudent to remain any longer in my camp on the edge of a swamp, where I knew the air must be reeking with malarial poison, as, besides the exhalations from the marsh, the ground (from which I was only separated at nights by a little dry grass and a blanket) had been soaked to the depth of 2 feet by the recent rain, thus rendering the conditions more than usually unhealthy. The weather, too, was now again looking very threatening, and I did not relish the idea of any further lying out in the rain; as I knew, from former experience, that I should probably have to pay for the wettings I had already suffered by some attacks of fever—a disease from which I had been entirely exempt for seven years, but the poison of which I knew was still in my blood, and would be likely to be again stirred into activity by my recent exposure to unhealthy conditions.

“Hence, on Saturday, Oct. 3, I packed up my things and returned to Gugawi’s kraal, walking on in the afternoon to Mr. Wissels’s store, and thence to Lourenço Marques, Delagoa Bay, which I reached on October 7th, after a hot and weary tramp.”

Until lately the *Inyala* was believed to be restricted to the coast-lands of Eastern Africa south of the Zambesi. Recently, however, it has been discovered that this Antelope is likewise found further northward on the Upper Shiré, where it is known to the natives as the “Bō,” the *o* being pronounced very long. Mr. Alfred Sharpe, C.B., on his return to England at the end of 1891, first brought home a single flat skin of the so-called “Bō,” which was identified by Sclater as belonging to the male of this species, and other specimens have since been obtained in the same district. Mr. Sharpe’s information was that it is found only in a piece of thick scrubby

country bordering the Moanza River, which enters the Shiré on its right bank, near the Murchison Cataracts.

In 1895 a fine specimen of this Antelope was forwarded to the British Museum by Mr. Gerald Oliver, R.N., of H.M.S. 'Herald,' with the following information in an accompanying letter:—

"On the 5th of October, last year, I was shooting near a village called Mantana's (lat. 16° 30' S., long. 35° E.), about 7' W. by S. of Chilomo, near the right bank of the Shiré River. Impala (*Æpyceros melampus*) are very plentiful about this particular spot, but I had not been able to get a shot at a good head. Later in the day, wanting meat, I decided to kill what I could, and coming across a solitary doe I fired. Great was the astonishment of myself and boys to find I had killed a female Inyala. I took the skin to Chilomo, and was told it was the first Inyala ever known to have been killed about these parts, and that it was practically an unknown animal there.

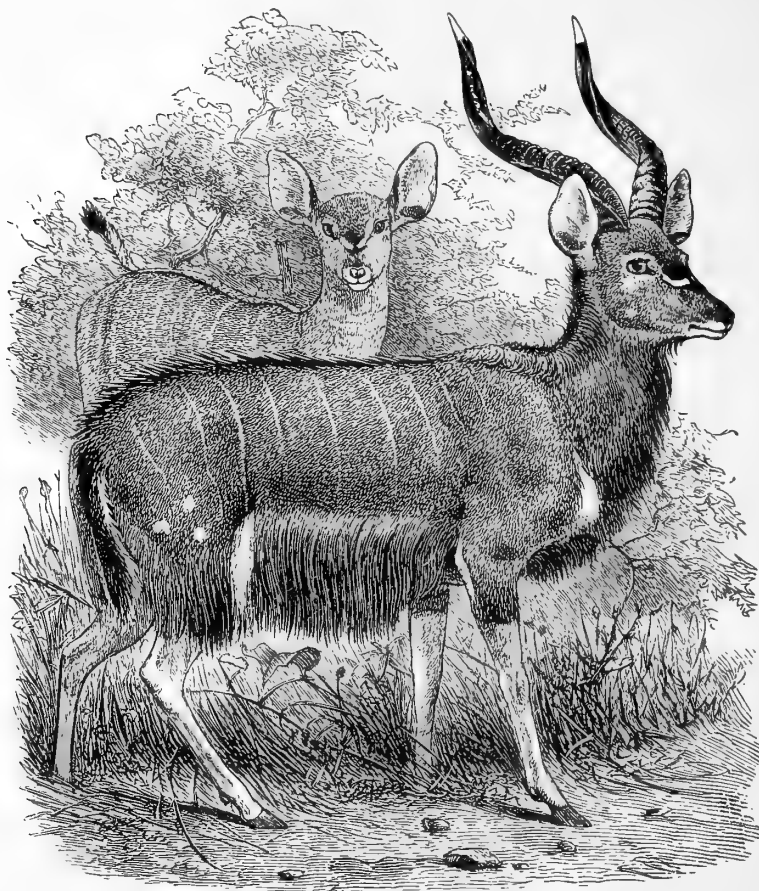
"On the 26th of October, near the same spot, a male Inyala was killed by the then Surgeon of this ship. On the 29th of October I saw together 2 Inyalas and 8 Impalas. On the following day, at dusk, I met with and killed a solitary male Inyala, whose skin I forward. The natives were tremendously excited, dancing about and exclaiming 'Bōōh,' 'Bōōh,' the local name for the Inyala. They examined the body with great care. I was told in the village that the natives, on account of some superstition, would not touch the meat. Our bluejackets, however, ate it, and it was very good. The skin was *remarkably* glossy and soft, and the hair was long under the neck."

In 1893 (see P. Z. S. 1893, p. 729) Selater found a skull of this Antelope in one of Mr. Crawshay's collections from the district of Lake Mweru, but we are not quite certain that it was actually obtained in that locality. Sir Harry Johnston, in his volume on 'British Central Africa,' sums up his information on this species as follows:—

"I am inclined to think that the Inyala Antelope of British Central Africa is limited in its range, so far as we yet know, to the Western and Upper Shiré districts and the Lake Mweru district, and that it may be of a different form from the Inyala of South-east Africa, inasmuch as the males retain the white spots and stripes on the skin to a greater extent, and do not assume such a grey fur at maturity. The Inyala, locally called Bōō, is a very rare animal, frequenting dense thickets. Its horns somewhat resemble those of the Bushbuck, but are much larger proportionately, much wider apart, and slenderer. They may measure as much as 22½ inches in length along the curve (I have a pair of horns giving this measurement). I have only twice seen skins of the adult animal. They were extraordinarily beautiful in colour, the females a deep chestnut, with narrow stripes and spots in pure white, and a black line along the middle of the back from the neck to the base of the tail; the male purplish-grey, with white markings."

There is also some reason for suspecting that the Inyala, or a nearly allied form, extends even as far north as British East Africa. This suspicion rests upon the evidence supplied by a pair of horns, not specifically distinguishable from those of the typical *Tragelaphus angasi*, which were procured from the Mau Forest by Mr. F. J. Jackson, C.B. These horns, which are now in the

Fig. 106.



Angas' Antelope, ♂ & ♀.

British Museum, were exhibited by Sclater before the Zoological Society of London in May 1897, and are figured on p. 455 of the Society's 'Proceedings' for that year (see fig. 107, p. 147). Unfortunately no skin accompanied the horns; and the specific determination of the Antelope that bore them is rendered uncertain on account of the description of the animal given by the

native hunter who killed it. This description, if accurate, certainly applies to a species of Bushbuck distinct both from the Inyala and from all the other known species of *Tragelaphus*. Hence it is earnestly to be hoped that Mr. Jackson will soon be successful in his attempt to clear up the mystery in which the identity of this interesting Antelope is involved.

We are not aware that any specimen of Angas' Antelope has ever been brought to Europe alive, and it is by no means commonly met with in our museums. The British Museum contains an adult pair mounted, obtained in

Fig. 107.



Horns of *Tragelaphus* sp. inc.
(P. Z. S. 1897, p. 455.)

St. Lucia Bay by Mr. R. S. Fellowes in 1871, also specimens from the Pongolo River, Zululand, obtained by Mr. Eastwood, and from the Maputa River, obtained by Proudfoot. There are also in the National Collection the specimens from Nyasaland procured by Mr. Sharpe, Sir Harry Johnston, Mr. Crawshay, and Lieut. Oliver, of which we have made mention above. Finally, there is a good mounted pair of specimens obtained by Mr. Selous during his special expedition in quest of this Antelope.

Our principal illustration of Angas' Antelope (Plate XCII.) was put upon the stone by Mr. Smit, under the directions of the late Sir Victor Brooke, from sketches made by Wolf, and was probably taken from the mounted specimens then in the British Museum. At the same time the woodcut (fig. 106, p. 146), also containing figures of both sexes, was prepared by Mr. Smit.

November, 1899.

GENUS III. LIMNOTRAGUS (nom. nov.).

Type.

Hydrotragus, Gray, Cat. Rum. B. M. p. 49 (1872) (*nec* Fitz.)* . . . L. SPEKII.

Medium or large-sized Antelopes allied to *Tragelaphus*, but with rougher and shaggier coats, longer legs, and with horns which more nearly approach those of *Strepsiceros*, as they show a strong tendency to assume a third twist. Further, *Limnotragus* differs strikingly from *Tragelaphus* and *Strepsiceros* in the structure of its feet, the hoofs being often nearly three times as long (measured along the front edge) as thick (measured along the margin of the pastern). Moreover, the skin which covers the back of the pastern is denuded of hair, and thick and horny, being practically of the same consistency as the upper rim of the posterior side of the hoof.

It is not without some hesitation that we refer to a separate genus those species of Tragelaphine Antelopes (hitherto placed in *Tragelaphus*) which have undergone certain special modifications of structure in adaptation to a semi-aquatic mode of life. In the species of *Tragelaphus* discussed in the preceding part of this work, as well as in all the other genera of Tragelaphinæ, the feet adhere to the digitigrade type characteristic of most of the ruminant artiodactyle Ungulates, retaining the short narrow hoofs and strong elastic ankles fitted for easy and swift progress over the firm soil of the veldt or woodland. In the species of *Limnotragus*, on the contrary, the feet are furnished with hoofs of relatively enormous length, which spread far apart at every step, and are obviously designed to enable their owner to pass over the soft soil of marshes and river-banks without sinking deeply into the ground. This modification is accompanied by an increase in the flexibility of the ankle-joints, which are capable of yielding to the weight of the body, so as to allow the false-hoofs and the smooth tough horny skin at the back of the pasterns to rest upon the soil, and thus to further augment the supporting area of the foot. It is these peculiarities in the structure of the feet, in conjunction with a length of limb exceeding that of other Tragelaphines, which impart to the species of *Limnotragus* that characteristic semiplantigrade aspect and that unusual

* *Vide* Sitz. Ak. Wien, Bd. lix. p. 175 (1869).

awkwardness of gait so noticeable in these Antelopes when walking upon firm resisting ground.

Up to the present time three species referable to this genus have been described, namely, *L. spekii* from E. Africa, *L. gratus* from Tropical West Africa, and *L. selousi* from the valley of the Zambesi. Unfortunately there are not at present available materials from the different parts of the area over which the genus ranges, sufficient to enable us to determine satisfactorily the exact value to be assigned to these three forms. Consequently, although the evidence, so far as it goes, tends to show that the characters upon which they have been based may ultimately prove to have merely a subspecific importance, we prefer, for the time being, to allow them to take the rank that was originally assigned to them by their respective describers, and to arrange them as three species.

Range of the Genus. Congo Valley and Lake-districts of Southern and Eastern Africa.

The three species may be shortly distinguished as follows:—

- a.* Size smaller; height at withers about 36 inches: sexes dissimilar; male blackish, female rufous 127. *L. spekii.*
- b.* Size larger; height at withers about 40 inches.
 - a'.* Sexes similar, blackish 128. *L. selousi.*
 - b'.* Sexes dissimilar; male blackish brown, female red . 129. *L. gratus.*



Wolf del. Smit lith.

Speke's Sitatunga.
LIMNOTRAGUS SPEKII.

Published by R.H. Porter.

Hanhant imp.

127. SPEKE'S SITATUNGA.

LIMNOTRAGUS SPEKII (SCLATER).

[PLATE XCIII.]

Tragelaphus spekii, Sclater, in Speke's Journ. of Discov. p. 223 (1863); id. P. Z. S. 1864, p. 103, pl. xii., 1880, p. 452, 1883, pp. 34-37; Heugl. Reise Weiss. Nil, p. 319 (1869); Brooke, P. Z. S. 1871, p. 485 (part.); id. P. Z. S. 1878, p. 884; Huet, Bull. Soc. Acclim. (4) iv. p. 83 (1887); Thos. P. Z. S. 1891, p. 388 (part.); Flow. & Lyd. Mamm. p. 347 (1891) (part.); Ward, Horn Meas. p. 155 (1892); id. Records, p. 197 (1896), (2) p. 292 (1899) (part.); Lugard, Rise E. Afr. Emp. i. p. 533 (1893); Lyd. Horns and Hoofs, p. 254 (1893); id. Royal Nat. Hist. ii. p. 276 (1894) (part.); Jackson, Big Game Shooting, p. 311 (1894); Matsch. Säug. Deutsch-Ost-Afr. p. 139 (1895); Trouessart, Cat. Mamm. p. 958 (1898) (part.); Gedge, in Ward's Great and Small Game of Africa, p. 476 (1899).

Eurycerus (Hydrotragus) spekii, J. E. Gray, Cat. Rum. B. M. p. 49 (1872) (part.).

Eurycerus spekii, Gray, Hand-l. Rum. p. 119 (1873) (part.).

Tragelaphus spekii spekii, Rothschild, Novit. Zool. v. p. 206 (1898).

VERNACULAR NAMES:—*Nzoé* of Karagweh (*Speke*); *Chobé* or *Njobé* of Uganda (*Gedge*).

Adult male. Height at the withers about 36 inches. General colour a tolerably uniform greyish brown, greyer on the sides of the neck; a dark median dorsal line running down the nape, over the withers, and then passing into white in the middle line of the back. Head with white ocular and cheek-spots and white chin, as in the other species of the genus. A few pale spots low down on the hind-quarters, an indistinct line of similar spots extending along the sides above the belly, and in the adult at last only very ill-defined white stripes on the body. Legs of a richer and darker brown than the body; fore legs pale behind the knee and down the inner side of the cannon-bone, the pastern-spots scarcely distinct; hind legs coloured like fore legs, but pale in front of the hock.

Horns without a third twist.

Subadult male of a darker brown than the adult and with the white markings even less distinct.

Adult female. Smaller than the male and of a rich dark red colour, blacker dorsally, with a dark spinal stripe and very faint indications of white stripes on the body. Fore legs blackish from above the knee; hind legs blackish from below the hock; pastern-spots distinct.

Young female more or less distinctly marked with white stripes and spots, and more yellowish in colour than the adult.

[We have taken our descriptions of this species from a series of skins, unfortunately for the most part imperfect and without determination of sex, that were brought from Lake Victoria by Herr Oscar Neumann, who has kindly lent them to us. Three of these skins appear to be those of males, while the remainder, four in number, are, judging by their colour, females, or young of doubtful sex. One of the latter has the hoofs very much worn, and must be regarded from this circumstance as adult, although it is very much smaller than the skin of what we suppose to be the adult male.]

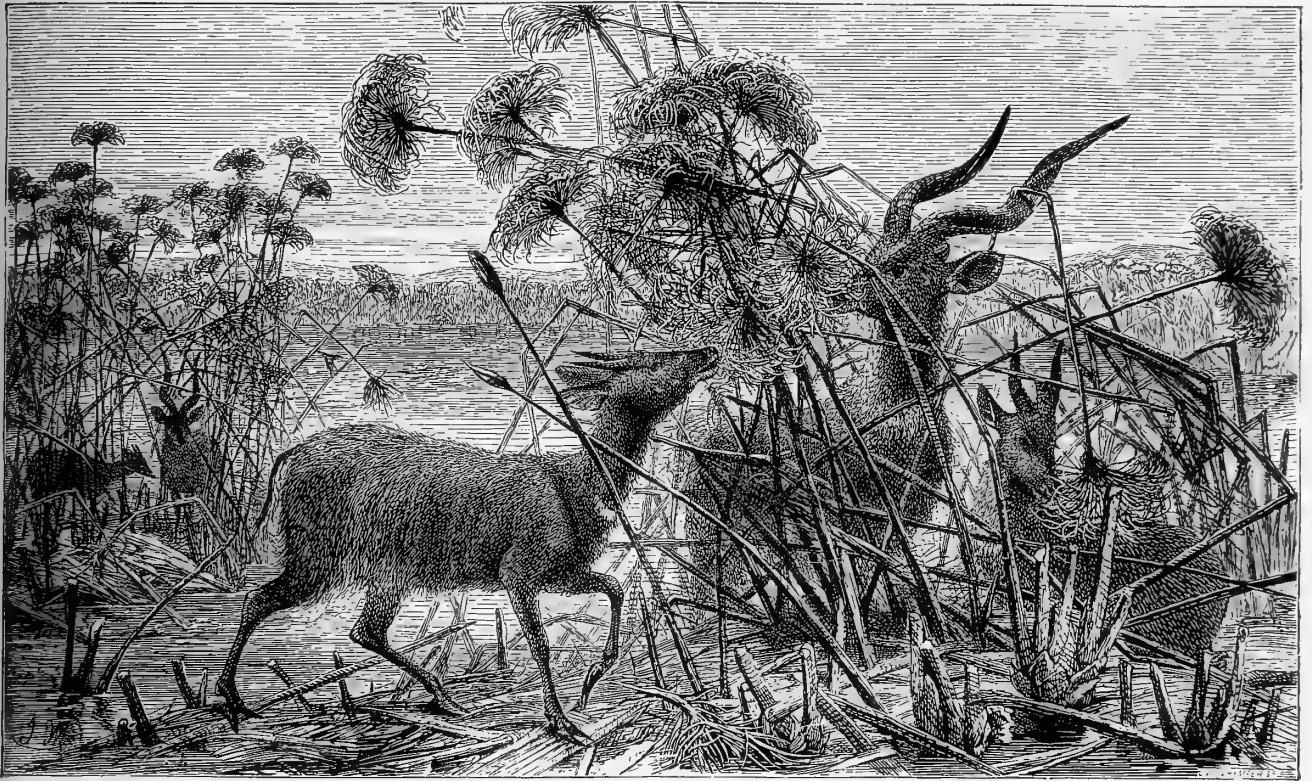
Hab. Lakes and swamps of Eastern Africa near Lake Victoria.

The name of John Hanning Speke will ever go down to posterity as that of one of the most enterprising and most successful of African Explorers. Speke, however, was by no means only an Explorer, he was also an ardent lover of Natural History, and during his many expeditions in Africa never failed to bring home such specimens as his rapid mode of travelling would allow him to carry with him. Amongst the discoveries of his celebrated journey of 1859-63 to the Victoria Nyanza was the present Antelope, which he met with in December 1861, when enjoying the hospitality of King Rumanika of Karagweh. The king presented Speke with a living example of a young male of this species, which had been captured in the high rushes at the head of one of the neighbouring Lakes, and also gave him the horns of an adult male specimen. We learn further, from Speke's 'Journal,' that King Rumanika was clad in a wrapper made of the skin of this Antelope, which is said to be much prized by the natives for its excellent quality. For the illustration of his 'Journal of Discovery,' published in 1863, Speke had a beautiful woodcut prepared by Wolf from these specimens, which, by

the kindness of Messrs. William Blackwood and Sons, we are enabled to reproduce on the present occasion (fig. 108).

Sclater's original description of this species, published in his report on the Mammal-collection made during Speke's journey, was based on Speke's specimens, and contained, besides a coloured illustration of the younger

Fig. 108.



Speke's Sitatunga in a Papyrus-swamp.
(Speke's 'Journal of Discovery,' p. 223.)

animal by Wolf, a drawing of the horns and feet of the adult, which, by the kind favour of the Zoological Society of London, we are allowed to use again here (see fig. 109, p. 154).

Since the days of Speke the Sitatunga of this district has rarely been met with by travellers, as, in addition to its being exceedingly wary and timid, the impenetrable nature of the papyrus-swamps, which are its habitual resort, precludes easy access to its retreats. It is, however, occasionally trapped or

speared by the native fishermen, and pairs of the horns thus obtained have occasionally reached Europe. The only recent traveller, so far as we know, that has personally encountered the 'Nzoe' in its native wilds is Mr. Ernest

Fig. 109.



Horns and feet of Speke's Sitatunga.
(P. Z. S. 1864, p. 104.)

Gedge, who has kindly favoured us with the following notes on this subject:—

“So far as is known at present, Speke's Antelope is not to be found anywhere in East Africa between the Victoria Nyanza and the coast—in fact, the only occasion on which I had the good fortune to encounter it was during my sojourn in the Budda

district of Uganda along with Capt. R. H. Williams, in the early part of 1893, under the following circumstances :—

“ We were told by the natives that these Antelopes (called by them ‘ *Chobé* ’ or ‘ *Njobé* ’) existed in great numbers on one of the small outlying islands which constitute the Sesse group in the Victoria Lake. Being anxious to prove the truth of this report, we embarked, and proceeded thither in canoes. The island in question, which is situated well out in the Lake at a distance of some 10 miles from the main island, was reached on the afternoon of the second day. The shores are low and rocky, and, with the exception of a small turf-covered portion at its southern extremity, it is entirely covered with dense, almost impenetrable bush, interspersed only by a number of fine trees, principally species of *Ficus*. In shape it is something like an irregular hour-glass, being possibly a third of a mile in length and a few hundred yards across its greatest width. A very short examination revealed the presence of the Antelopes, and finding it impossible to approach them by any ordinary methods of stalking, a drive was organized, with the aid of the canoemen, with most satisfactory results : the total bag amounted to 24 head, including some fine specimens both male and female. This afforded ample testimony to their extraordinary numbers, as, owing to the dense character of the bush, it was impossible to see more than a few yards in any direction, and many of them passed us unseen. The greater number were killed in the first drive, after which the majority took refuge in the Lake, which is said to be their habit when hard pressed, though Speke describes them as being fierce and aggressive under such circumstances. The specimens procured on this occasion have been identified as true Situngas, though it is impossible to imagine how they ever got on to the island, or came to frequent a locality which is so entirely at variance with their usual habits.

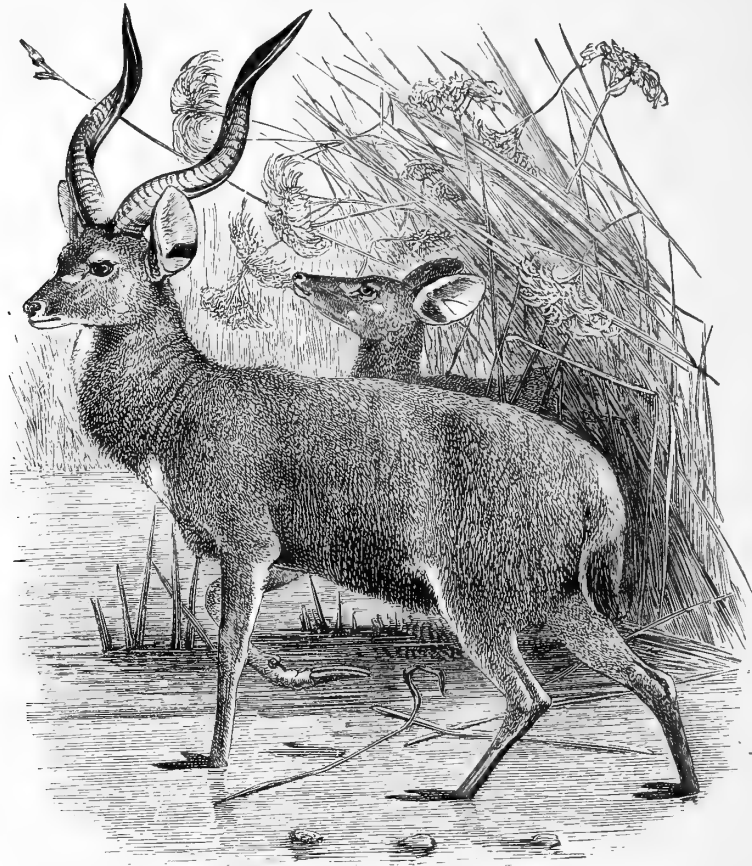
“ These Antelopes are said to have also existed formerly on a small neighbouring island, but to have been exterminated there by the Ba-Sesse canoemen.”

During his recent travels in Uganda, Herr Oscar Neumann also obtained a series of skins of this Antelope, which, as already mentioned, he has most kindly lent to us for examination. We are sorry not to have received any exact particulars respecting the specimens, except that they were procured from the natives in the districts of Kavirondo, Usoga, and Uganda, on the shores of Lake Victoria. Herr Neumann has also sent us two pairs of horns of this species, which were obtained from the “ Wakenji ” in the swamps west of Mount Elgon. Along with these specimens we have received for comparison from the authorities of the Berlin Museum a flat skin obtained by Herr Stuhlmann near the slopes of Mt. Ruwenzori.

The National Museum of this country is, we regret to say, very imperfectly furnished with specimens of the East-African form of the Situngas, containing only the original examples of Speke. It will be evident, therefore, that Herr Neumann’s kind assistance in this matter has been of considerable value to us.

Our coloured illustration of this Antelope (Plate XCIII.) was prepared by Wolf, under Sir Victor Brooke's instructions, from Speke's original specimens. It will be noticed that the artist has joined the horns of the adult animal to

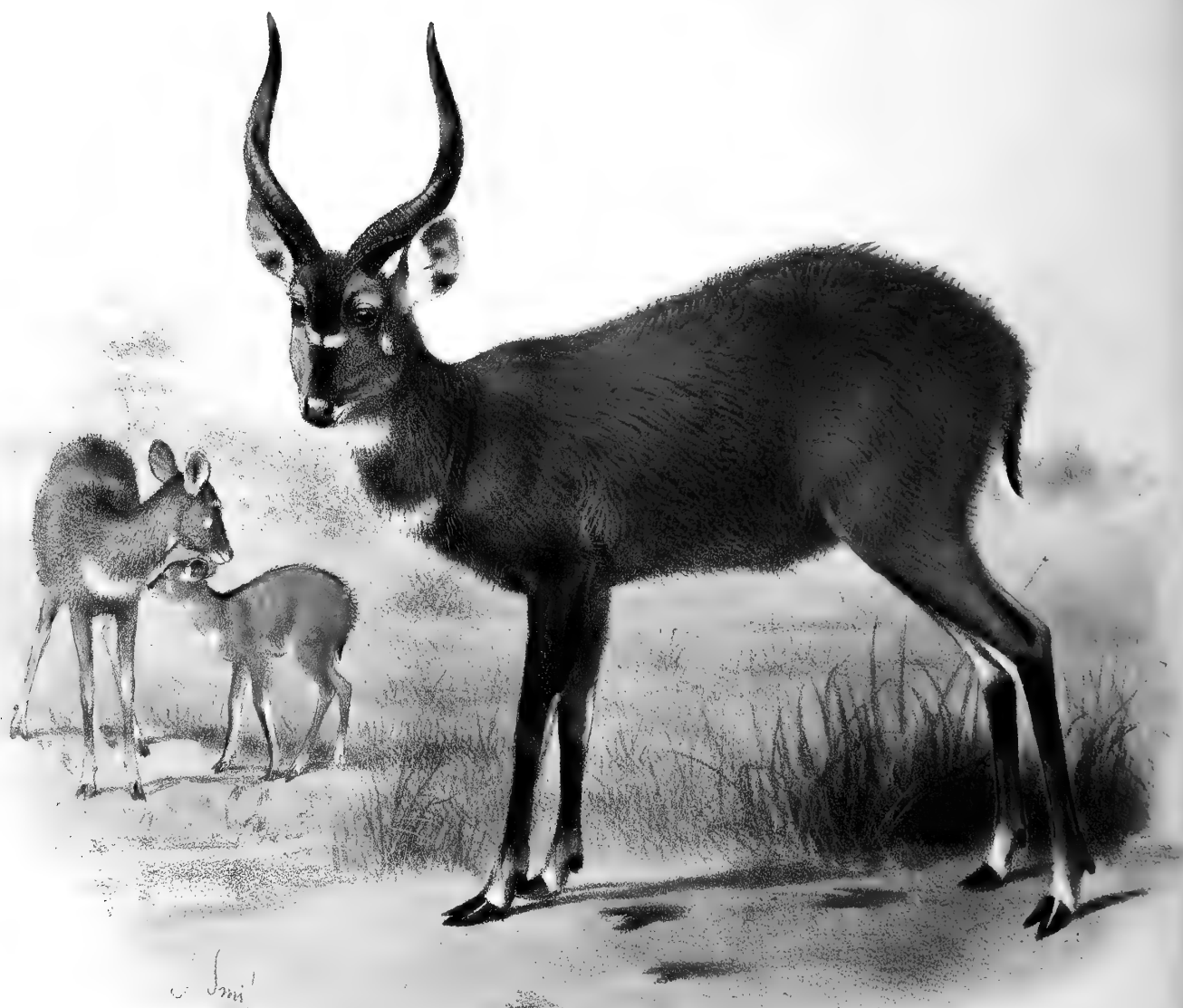
Fig. 110.



Speke's Sitatunga, ♂ et ♀.

a body which must have been copied from the young male, and has coloured the female from conjecture, representing it as greyish brown instead of yellowish red. The accompanying woodcut (fig. 110) was likewise prepared by Mr. Wolf under Brooke's directions.

April, 1900.



Smit del et lith.

Selous' Sitatunga
LIMNOTRAGUS SELOUSI.

Published by R. S. P. & Co.

Hanhart imp.

128. SELOUS'S SITATUNGA.

LIMNOTRAGUS SELOUSI (ROTHSCH.).

[PLATE XCIV.]

“*Nakong*,” Andersson, Lake Ngami, p. 449 (1856); Baines, Expl. S.W. Afr. p. 458 (1864).

Tragelaphus eurycerus, Layard, Cat. Mamm. S. Afr. Mus. p. 79 (1861).

Tragelaphus spekii, Kirk, P. Z. S. 1864, p. 659 (Chobé); Brooke, P. Z. S. 1871, p. 484 (part.), 1878, p. 884 (part.); Selous, P. Z. S. 1881, p. 753; id. Hunter's Wanderings, p. 210 (1881); Selater, P. Z. S. 1890, p. 590, pl. xlvii. (Lake Ngami), 1893, pp. 724, 729 (Lake Mweru); id. List An. Z. Soc. 1896, p. 163; Thomas, P. Z. S. 1891, p. 388 (part.); Flow. & Lyd. Mamm. p. 347 (1891) (part.); Nicolls & Egl. Sportsman in S. Afr. p. 40 (1892); Ward, Horn Meas. p. 155 (1892), p. 197 (1896) (part.); Lyd. Horns and Hoofs, p. 254 (1893); id. Royal Nat. Hist. ii. p. 276 (1894) (part.); Johnst. Brit. Centr. Afr. p. 306 (1897); Selous, in Ward's Great and Small Game of Africa, p. 470 (1899).

Tragelaphus selousii, Rothsch. Novit. Zool. v. p. 206 (1898); Rendall, *ibid.* p. 212.

Euryceros spekii, J. E. Gray, Hand-l. Rum. 1873, p. 119 (part.).

VERNACULAR NAMES:—*Waterskap* of Boers (Nicolls & Eglington); *Nakong* of Batauwani at Lake Ngami; *Sitatunga*, *Puvula*, and *Unzuzu* of the natives of the Chobé and Central Zambesi; *N'zoe* of the natives on the Lukanga River north of the Zambesi (Selous); *Mula* of the Awemba and *Nsowi* of the Ulungu and Mambwé districts of Mweru (Crawshay).

Adult male. Height at withers about 40 inches. Colour nearly uniform dark yellowish brown, becoming darker and of a more dusky hue on the shoulder, belly, and legs. Head a darker and richer brown, with a large whitish patch running inwards on each side from the inner corner of the eye; also a yellowish patch above the eye; two pale spots on the cheeks, the upper situated a short distance beneath the eye. Ears blackish behind, with a large grey patch below. Throat with an upper and lower white patch. Underside

of tail white. Fore legs white on the inner side at the base and behind the knee; spots on the pasterns faint; hind legs white on the inner side down to the hock.

Adult female. Without horns, but nearly resembling the adult male in colour.

The skull of an adult male (type) gives the following measurements:— Basal length 10·5 inches; orbit to muzzle 6·5; greatest width 4·5; horn 21 in straight line, 25·75 round the curve. Hoof: length along front 4·10; thickness from back to front 1·5.

These descriptions are taken from the skin and skull of an adult male (the type), obtained by Mr. Coryndon on the Barotze River, and kindly lent to us by the Hon. Walter Rothschild, M.P.

In his original diagnosis of *Limnotragus selousi*, Mr. Rothschild took

Fig. 111.



Outer view of the right foot of Selous's Sitatunga. $\frac{1}{3}$ nat. size.

the characters of the female from the specimen of this sex, from Lake Ngami, now living in the Zoological Society's Gardens. In the specimens of *L. selousi*, however, from the Barotze River the immature female is of a rich red colour, inclining to black in the dorsal region, whereas the female from Lake Ngami was at the time of its arrival in England, when only half-grown, of the same nearly uniform tint as it is now when fully adult. Moreover, Mr. Selous, who has seen many skins of this Antelope from the Chobé, kindly informs us, in reply to an inquiry on this point, that the young are, according to his experience, never rufous in colour; although when newly born they are marked with white stripes and spots which subsequently disappear.

We cannot explain these discrepancies at present, but must leave the matter as it stands for the investigation of future observers.

Hab. Swamps of the district of Lake Ngami and similar localities on the Zambesi and its tributaries; thence north to Lake Mweru.

The discovery of the existence of an Antelope of this water-loving group in South-west Africa was made even before Speke obtained his specimens of the last species in Karagweh. The well-known traveller, Charles John Andersson, met with the "Nakong," as he calls it, during his explorations of Lake Ngami. In the volume descriptive of his four years' wanderings, published in 1856, when calling attention to the great variety of large animals found in that district, more especially in the vicinity of the rivers, he mentions "two new species of Antelope, the *Nakong* and the *Leché*," and gives a lithographic plate, drawn by Wolf, to illustrate them as they appeared in their native haunts. Not having before him actual specimens of the former Antelope to draw from, the great artist had apparently only Andersson's somewhat imperfect information upon which to prepare his likeness of the "Nakong." He consequently gave a more prominent place in his illustration to the Leché (*Cobus lechee*), and hid the Nakong in a reed-bed, leaving only its kudu-like horns, of which Mr. Andersson's friend, Col. Steele, was fortunately able to supply specimens, plainly visible. Andersson speaks of the Nakong as a "Water-buck," which, by means of its peculiarly long hoofs, not unfrequently attaining a length of six or seven inches, is able to traverse with great facility the reedy bogs and quagmires with which the country abounds.

Another well-known African explorer, Thomas Baines, who penetrated far into South-west Africa from Walfisch Bay a few years later, also mentions the *Nakong* as amongst several new or little-known Antelopes found in that district.

About the same time also the South African Museum received specimens of this Antelope from the Lake Ngami district, through Mr. J. J. Wilson, of Otjimbingue, and Messrs. Chapman. Mr. Layard, in his Catalogue of the Mammals of that Museum, published in 1861, refers these specimens very doubtfully to *Tragelaphus eurycerus*, but shows very clearly by his description that they really belonged to the present species.

Sir John Kirk, in his article on the Mammals of Zambesia, read before the Zoological Society in 1864, mentions the "Nakong" as frequenting the papyrus and rushes on the River Chobé. He naturally refers it to *Tragelaphus*

spekii, with which, until quite recently, it was generally believed to be identical. In the same way Sir Victor Brooke, in his article on Speke's Antelope and its allied species, published in the Zoological Society's 'Proceedings' for 1871, comprises in his list of specimens of *Tragelaphus spekii* those of the two allied forms, which we here treat of as probably distinct. Of these, his specimens "h" ("frontal bones, horns, and feet; in the collection of Mr. Oswell") are, no doubt, referable to *Limnotragus selousi*.

Mr. Selous, in his excellent and often-quoted article on the Antelopes of Central South Africa (P. Z. S. 1881, p. 753), writes of this species (which Mr. Rothschild has appropriately named after the famous hunter) as follows:—

"This Antelope is only met with in the extensive swamps which exist in some parts of the interior of Africa. In the reed-beds of the Mababe, Tamalakan, and Machabe rivers it is to be found; and in the vast marshes through which the Chobe runs it must exist in considerable numbers, although, as it only emerges from the dense reed-beds at night, it is scarcely ever to be seen. In 1879 I tried hard to shoot some of these animals on the Chobe, searching for them in a canoe amongst the reed-beds at early dawn and after sunset; but though I disturbed several, and heard them splashing away amongst the reeds and papyrus, I only saw one female alive, though one morning I found a fine ram lying dead that had evidently been killed fighting with a rival during the night. The head and feet of this animal I preserved. The female that I saw was standing breast deep in the water, in the midst of a bed of reeds, feeding on the young shoots that just appeared above the water. When she saw us she at once made off, making a tremendous splashing as she plunged through the water. The natives told me that very often when these Antelopes are met with under similar circumstances they do not attempt to run, but, sinking down in the water, submerge their whole bodies, leaving only their nostrils above the surface, and trusting that their enemies will pass them unobserved; they (the Kafirs) then paddle close alongside and assegai them from the canoe. As all the Situtungas the skins of which I saw had been killed with assegais, and not shot, I have no doubt that this statement is correct. Another way the natives have of killing them is by setting fire to the reeds when they become quite dry, and then waiting for the Situtungas in their canoes in one of the channels of open water by which the marsh is intersected. Driven forwards by the advancing fire, the Antelopes are at last obliged to swim across the open water to gain the shelter of the reeds on the further side; and the natives are thus often enabled to cut off and assegai some of them in mid stream."

We have already alluded to the occurrence of this species in Barotze-land, where Mr. Coryndon obtained specimens for Mr. Rothschild. Still further

to the north-east we find that a species of the Sitatunga group, which, we suppose, should also be referred to *L. selousi*, occurs, according to Sir Harry Johnston, "in the swamps of Lake Mweru, in the Loangwa valley, and in other parts of British Central Africa." Mr. Richard Crawshay, C.M.Z.S., has favoured us with the following field-notes which he has drawn up as the result of his long experience with the animal-life of the district of Lake Mweru :—

"This Antelope is known by the people of the Itawa and Kabwiri—who are, as I have before mentioned, branches of the Awemba—as 'Mula.' By the people of Ulungu and Mambwe (where I suppose it is also found) it is known as 'Nsowi.'

"I had been six months or more at Mweru before any proof was forthcoming that such an animal existed. Then, when shooting wild-fowl on the outskirts of a vast and impenetrable swamp between Rhodesia and the Luao River, I came upon the remains of what had been a fine pair of horns just on the margin of the water. The horns had been submerged during the rains and were fast decaying. All that was recoverable was one fairly sound horn with a fragment of the frontal bone attached. This horn, I think, measured $21\frac{3}{4}$ inches.

"Some months later when at Mkula's, on the Chisela River, I was given by the chief a perfect, though smaller, pair of horns. A skin was also offered me—I don't know if it was *the* skin—but so discoloured with dirt and smoke, from lying in a native hut, that I did not think it worth having.

"Mkula told me there were a good many 'Mula' in the swamps below his town, and that one way or another his people had killed seven or eight during the six years or so he had been at the Chisela River, but that they were very difficult to get at, and when got at—viz., roused—even more difficult to kill.

"On expressing my eagerness to shoot, or at least see, a 'Mula,' he did not give me much hope of doing either the one or the other. A glance at the Chisela River reed-beds from a heap outside the town did not reassure me. All the same, during two visits to Mkula's—one the middle of July, the other at the very end of October 1892—I did my utmost to effect my object, spending the greater part of my time in the swamp, wading and wallowing in mud, water, and reeds, but found it killing work. Scarcely a native would follow me in a second attempt. The combined rays of the sun, mosquitos, leeches, and a most sickening stench from the swamp, proved a severe trial to my patience and perseverance. Ultimately I gave up without getting a shot at a 'Mula.' Luckily such hard labour earned some reward. I saw two 'Mula' and heard others, besides gaining an insight into their ways and haunts. Were I to try again for this Antelope under similar conditions, I would build a platform, 20 feet high or so, in the swamp, overlooking the feeding-grounds of the 'Mula,' and would watch from this platform say from 3.30 P.M. until dark. The remains of the 'Mula's' head from the Luao River swamp, as also the horns given me by Mkula, were sent home along with the other Antelopes' heads."

So far as we know, only two examples of this *Sitatunga* have ever reached Europe alive. Both of these are now living, in good health, in the Zoological Society's Gardens in the Regent's Park. The first arrival was a young female, received as a present from Mr. James A. Nicolls, F.Z.S., of Belmont House, Navan, Ireland, on October 14th, 1890. In a footnote to Nicolls and Eglington's 'Sportsman in South Africa' we are informed that the animal in question was captured by Mr. Nicolls alongside the dead body of its dam, which had been shot by him in the Taoke swamp, forty miles from Lake Ngami.

On referring to Mr. Nicolls's articles in the 'Field' newspaper, in which his "Travels and Sport along the Botletle River and round Lake Ngami" are narrated, we find the occurrence in question described as follows:—

"At midday (in August 1887) we arrived at Ku-Ku's. A native missionary, who has spent several years in this country representing the London Missionary Society, informed us that his efforts towards converting the Western Bamangwato tribes and Makobas to Christianity had up to the present proved unsuccessful. From him we also received intelligence that the Nakon waterbuck was very plentiful in the Taoke swamp, a distance of twenty miles off. This was indeed very joyful news to me, as I had always been most anxious to shoot a specimen of this animal, a prize which, I understood, had not previously been obtained by any white man, at least south of the Zambesi. However, Ku-Ku strongly advised me not to go shooting in the swamp till I had seen Moremi and obtained his permission to do so, on account, Ku-Ku said, of that chief being very unwilling to allow any strangers there, the district being used by his people as a place of refuge in case of another attack by the Matabele. I adopted his advice, which, as it turned out afterwards, was rightly given.

"I arrived at De Nokane, Moremi's town (a distance of 537 miles 680 yards from Khama's). The station occupied by the chief is situated on a small river which issues from the Okavango, and finally gets lost in the vast Taoke swamp.

"At midday I came to a large Makoba village, built on a small piece of rising ground adjoining the swamp. To the left, right, and front, as far as the eye could reach, there was nothing visible but vast patches of tall reeds; here and there, on portions of more rising ground, little groves of dwarf fan-palms; and occasionally, as if a godsend to relieve the monotony of such a dreary landscape, a towering palm waved its feathered head to the uncertain breeze.

"As I had still a long distance to walk before arriving at the spot most frequented by the Nakon, and as I desired to be there at least an hour before sundown (this, or shortly after daylight in the morning, being the only time at which a fair chance of a shot could be obtained), without making any delay, I at once entered the swamp, and for the first half-hour waded knee-deep in water, caused by a late overflow from the Taoke river, and my progress, although very tiring, was at least endurable. Resting for about twenty minutes on a small dry knoll, overgrown with fan-palms, my Makoba guides, of

whom I had three, pointed to a long green streak of rushes about three miles off, which, they assured me, was very much frequented by the game I was in search of. Progression now became more difficult, as the water not only became much deeper, but firm footing was more uncertain, owing to the burrowing of fish in the alluvial soil. One of my guides now took the lead, and with the end of his long fish assegai tried every inch of the ground in front as we went along. Notwithstanding his solicitude on my behalf, I had the misfortune to plunge head forward into a hole, thoroughly saturating my clothing and filling my rifle with water. It was nearly four o'clock in the afternoon when I arrived at another small island within 300 or 400 yards of the fringe of reeds I have before alluded to, and which was really the bed of the Taoke choked up by rotten vegetation and papyrus-roots, the river slowly percolating through the mass. Having enjoyed an hour's rest on this haven of safety, and the favourable time having arrived, I again proceeded onwards, and found that my work up to that time had been merely child's play, compared to that which I now had before me. There was no footing whatever obtainable, with the exception of a network of papyrus-roots, which stretched along in every direction, and was just sufficiently tough to support a man, the bog moving up and down at every footstep. To add to the charm of the situation, the mosquitoes, prematurely disturbed from their afternoon siesta, rose in clouds from the rotten swamp, biting my face, neck, and hands most viciously. Groping and staggering along in this manner till about an hour before sundown, I had seen no game, and was just beginning to give it up as a bad job, when one of the Makobas pointed out the figure of an animal lying, or standing, with a portion of its back and the whole head out of the water, about 200 yards away. It was a Nakon ram, carrying a very fine pair of horns; but from the position he was placed in, I saw there was no earthly chance of killing him at the distance. Thinking to approach a little, I advanced cautiously; but had scarcely proceeded a dozen yards when, as if out of the water, not more than 60 yards off, up jumped another one, bounding along crossways with a most convulsive-looking movement. I took a very hasty shot, and had the satisfaction of seeing the animal tumble over with a big splash in the water. It turned out, unfortunately, to be a doe, full-grown, with a young one at foot. I had shot my first Nakon, and I solemnly affirm it will certainly be my last, except under much more favourable circumstances. An attempt to bring out the carcass that night being utterly useless, two Makobas slept on the small island, and I myself turned back to the village, where I arrived long after midnight, and, although completely done up with fatigue, could not sleep a wink, owing to the myriads of mosquitoes which preyed on me the whole night long."

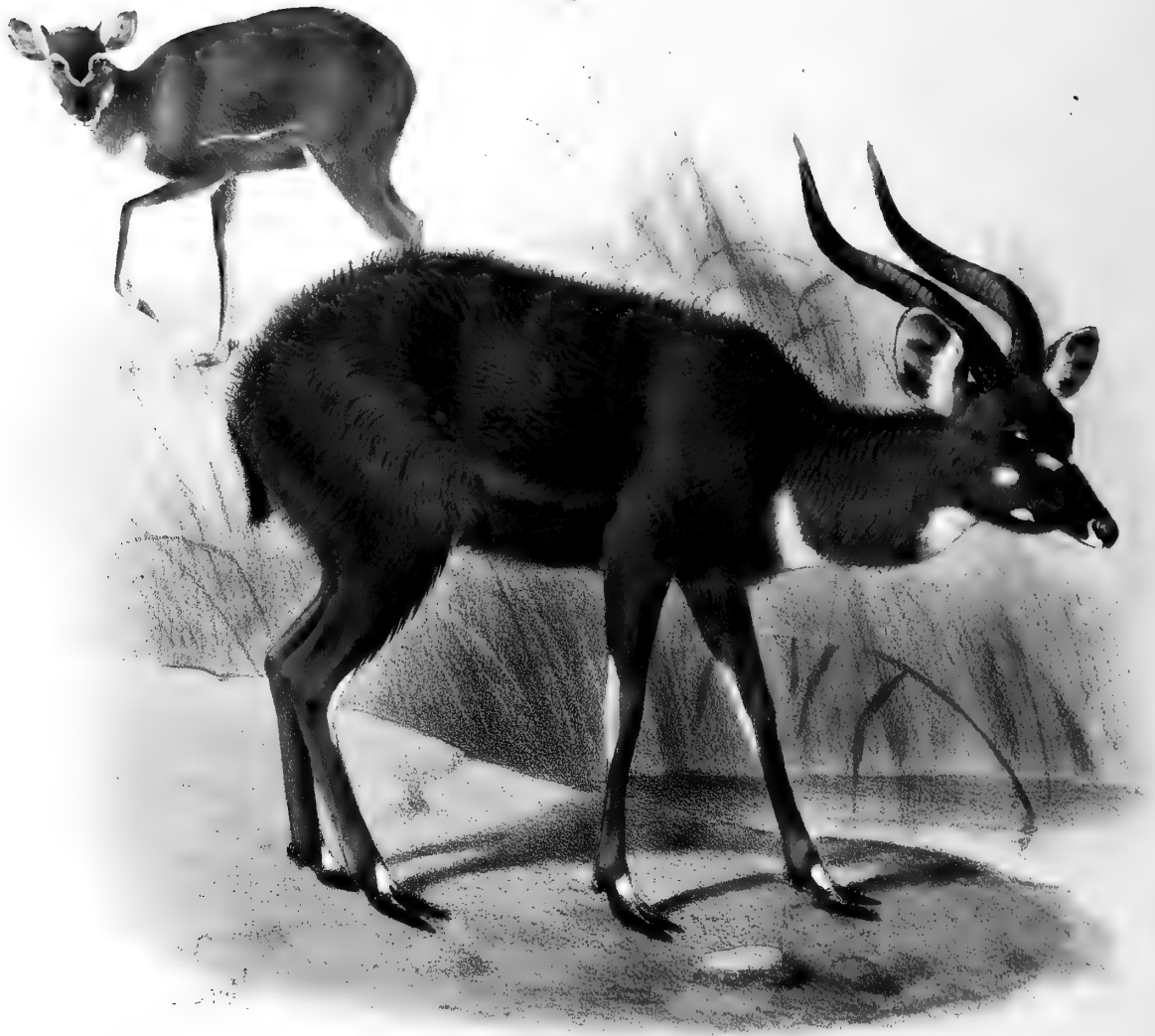
From Lake Ngami the little animal thus captured was carried by Mr. Nicolls and his companions in their waggon 800 miles to Kimberley, and thence brought by rail and steamer to London. On arrival at the Gardens it was placed in a sheltered compartment of the Gazelles' sheds, in which the yard in front was covered with dried peat-fibre in order to suit its elongated hoofs. Accompanying the Secretary's Report on the additions to the Society's

Menagerie in October 1890, in which its arrival was noticed, will be found a coloured plate by Mr. Smit, giving an accurate representation of the animal as it then appeared. The Sitatunga thus acquired quickly attained its full stature, and showing symptoms of readiness to breed, was placed, in 1894, in company with a male of the Congo species (*L. gratus*) which had been obtained by purchase from the Zoological Gardens, Hamburg, no male of its own species being available. From this union hybrids were born on February 12th, 1896, and on February 28th, 1897, being in each case of the female sex. The period of gestation was, in both cases, about seven months. The young animals in general appearance took after the colour of the female of *L. gratus*, being of a generally bright red colour with white lateral stripes and white spots on the haunches. Such a young one is well represented, along with its mother, in the background of our Plate XCIV. In June 1899 the Society were fortunate enough to obtain a fine adult male example of this Antelope from the Right Honourable Cecil J. Rhodes's Park at Groot Schuur, near Capetown, from which the principal figure in our Plate XCIV. has been taken. Mr. Rhodes kindly accepted in exchange for it one of the female hybrids above mentioned. The Society have therefore at present a unique pair of this scarce and beautiful Antelope in the Collection, besides the female hybrid born in 1896.

The specimens in the National Collection referable to this form of the Sitatunga comprise two pairs of horns from the Chobé River (*Selous*), one pair of young horns from Lake Ngami (*J. A. Green*), the skin of an adult from the Zambesi (*Chapman*), and a pair of horns from Lake Mweru (*Crawshay*).

When Mr. Rothschild separated this southern form of the Sitatunga as *Tragelaphus selousi* in 1898 (Nov. Zool. vol. v. p. 206), he did not distinctly state the specimen from which he took the description of the adult male, but we presume it to be the above-mentioned specimen from the Barotze District (*Coryndon*), which he has kindly lent us. For the type of his female, however, Mr. Rothschild expressly designates the female now living in the Zoological Society's Gardens. We are therefore, no doubt, correct in applying the appropriate specific name "*selousi*" to the present form.

April, 1900.



Smit del, et lith

The Congan Sitatunga.
LIMNOTRAGUS GRATUS.

Published by R.H. Porter.

Hanhart imp

129. THE CONGAN SITATUNGA.

LIMNOTRAGUS GRATUS (SCLATER).

[PLATE XCV.]

Antelope from the Cameroons, Mitchell, P. Z. S. 1848, p. 88.

Tragelaphus gratus, Sclater, P. Z. S. 1880, p. 452, pl. xlv. (♀), 1883, pp. 34, 36, pl. viii. (♂ ♀), 1889, p. 220; Huet, Bull. Soc. Acclim. (4) iv. p. 275, fig. 23 (1887); Thos. P. Z. S. 1891, p. 387; Flow. & Lyd. Mamm. p. 347 (1891); Ward, Horn Meas. p. 156 (1892); id. Records Big Game, p. 199 (1896); Lyd. Horns and Hoofs, p. 254 (1893); id. Royal Nat. Hist. ii. p. 276 (1894); Sci. List An. Z. S. 1896, p. 62, fig. 24; Trouessart, Cat. Mamm. p. 952 (1898).

Tragelaphus spekii, Peters, MB. Ak. Berlin, 1876, p. 484; Pousarg. Ann. Sci. Nat. iv. p. 78 (1897).

VERNACULAR NAMES:—*Kawe* and *Mburi* or *Mbuli* of natives in the Cameroons; *Nkaya* and *Nkoko* on the Congo.

Adult male about 40 inches at the shoulder. Colour a dark rich, nearly chocolate, brown, becoming blacker upon the forehead, nose, throat, belly, and legs. Head with a white patch extending on to the nose from the inner corner of the eye on each side; two white cheek-spots and sometimes a pale patch above the eye; chin and rim of the upper lip white; two white patches on the throat, one at its upper, the other at its lower end. Body with dorsal line white; a row of white spots extending laterally above the belly, about six more or less defined white stripes on the flanks and haunches, and some white spots on the hind-quarters. Fore legs white on the inner side at the base; the fetlocks and pasterns whitish in front: hind limbs white in front of the knee and on the inner side of the cannon-bone

down to the fetlocks; fetlocks and pasterns, like those of the fore limbs, whitish.

Horns with not more than two turns.

Female. Smaller than the male; of a rich chestnut-red, darker above than below; white markings on the head and body resembling those of the male in position and distinctness, but the spinal stripe black. Legs whitish on the inner sides below the knees and hocks; the outer sides dark in front down to the fetlock.

The skull of an adult male gives the following measurements:—Basal length 11·5 inches, orbit to muzzle 6·5, greatest width 4·75.

Hab. West Africa, from the Cameroons to the Congo.

The first allusion that we can find to the occurrence of a species of the Sitatunga-group on the West Coast of Africa is in the Zoological Society's 'Proceedings' for 1848, where it is recorded that the Secretary exhibited, at the meeting on June 13th, the skull and horns of an Antelope closely allied to *Antilope euryceros*, Ogilby, and read a letter in reference to it received from Capt. William Allen, R.N. Capt. Allen described the appearance of the animal from memory only, but stated that he had himself obtained the specimen at a place called Kokki on the Cameroons River. The pair of horns in question are now in the British Museum, and belong, in all probability, to the present species.

In 1871 Sir Victor Brooke read an excellent paper on Speke's Antelope and its allies before the Zoological Society of London. The list of specimens of his *Tragelaphus spekii* given in the 'Proceedings' contains examples of all three species of *Limnotragus*, as we here consider them. The figure (fig. 112, p. 167) of specimen "g" (which we are allowed to reproduce by the kindness of that Society) was taken, we believe, from a West-Coast example, and is therefore referable to *L. gratus*.

In 1880 Mr. Sclater received from Mr. R. W. Rolleston, of Liverpool, a flat skin of the very remarkable red female of this species, said to have been received from Gaboon. This was exhibited and described at the meeting of the Zoological Society on June 15th of that year, and a new species—*Tragelaphus gratus*—was founded upon it. Sclater's original description was accompanied by a beautiful figure of the animal prepared by Joseph Wolf,

and put upon the stone by Smit. Soon after this date Sclater was able to acquire some further information concerning this interesting Antelope. On visiting the Menagerie of the Jardin des Plantes at Paris in the autumn of the same year, his attention was called to a pair of Antelopes lately received from the Jardin d'Acclimatation, which he at once recognized as being the male and female of his *Tragelaphus gratus*. On returning to England, Sclater sent the

Fig. 112.



Horns of Congan Sitatunga.
(P. Z. S. 1871, p. 486.)

typical skin of *Tragelaphus gratus* to Paris for comparison, and convinced M. Milne-Edwards of its identity with the living pair. Visiting the Jardin des Plantes again in 1881, Sclater had the pleasure of inspecting for the second time this fine pair of Antelopes, which were then accompanied by a young female, born in the previous December. Mr. Keulemans, being at that

time in Paris, was employed to execute a water-colour drawing of these Antelopes, which was subsequently published in the Zoological Society's 'Proceedings' along with further notes on the same subject. M. Milne-Edwards informed Mr. Sclater that the female of the pair had been received from the Jardin d'Acclimatation in March 1876, and the male in November 1879, and that both were believed to have come from Gaboon. The female had brought forth her young one on December 4th, 1880, after a period of gestation of 7 months and 24 days. A young male had likewise been born of the same mother in December 1881, but had not lived long.

Besides those of Paris, several other Gardens in continental Europe have of late years obtained specimens of *Limnotragus gratus*, which, singularly enough, when we consider its habits in a state of nature, appears to thrive in captivity and to breed with facility. There are at present small herds of this species in the Zoological Gardens of Hamburg and Amsterdam. Dr. Kerbert, the Director of the last-named Garden, has kindly sent us for this work a list of the nine individuals bred in that establishment from 1891 to 1896, which is here subjoined:—

	Female covered.	Young born.	Sex.	Period of gestation.
1.	18.4.91	26.12.91	♂	days. 252
2.	31.7.91	28.3.92	♂	240
3.	26.5.92	5.2.93	♀	255
4.	3.7.92	17.3.93	♂	257
5.	21.6.93	4.3.94	♂	256
6.	22.6.93	7.3.94	♂	258
7.	9.7.94	15.3.95	♂	249
8.	30.8.94	6.5.95	♀	249
9.	25.5.95	24.1.96	♀	245

Dr. Kerbert observes that the colour of the young males and females when born is exactly like that of the mother, but that the sexes are easily distinguishable by the white hairs in the middle of the black stripe over the back in the males.

The Zoological Society of London have not as yet been so successful in the treatment of this Antelope. They received their first female in 1885, but lost it. A male purchased in 1894 bred with the female *L. selousi*, as already mentioned, and produced two hybrids. A young female bred at Amsterdam, and received in September 1898, was lost shortly after its arrival.

Fig. 113.



Head of the male Congon Sitatunga, from the specimen in the British Museum.

(P. Z. S. 1883, p. 36.)

In our illustration of this species (Plate XCV.) the male has been drawn by Mr. Smit from the adult specimen above mentioned, now in the Zoological Society's Gardens. The female, in the background, was drawn from the typical skin (now in the British Museum) upon which Sclater founded the species in 1880.

The National Collection likewise contains a skin of an adult male (with horns) of this Antelope, obtained by Mr. du Chaillu in Gaboon, and a stuffed adult male from the same country obtained by purchase. From this last specimen the drawing of the head (fig. 113, p. 169) was taken by Mr. Smit in 1883. It has been kindly lent us for this work by the Zoological Society of London.

April, 1900.

GENUS IV. STREPSICEROS.

	Type.
<i>Strepsiceros</i> , Hamilton Smith, Griff. An. K. v. p. 365 (1827)	S. CAPENSIS.
<i>Calliope</i> , Ogilby, P. Z. S. 1836, p. 138	S. CAPENSIS.

Large-sized Antelopes resembling *Tragelaphus* and *Limnotragus* in that the horns are spirally twisted and present only in the male; but differing from these two genera in that the horns are rounded behind at the base, with a scarcely appreciable external ridge, and form from two and a half to three complete turns with a more open spiral curvature. Further differing from *Limnotragus*, but resembling *Tragelaphus*, in the structure of the feet, which are adapted for progression on hard ground. Tail thickly hairy at the sides as in *Limnotragus* and in most of the species of *Tragelaphus*.

Range of the Genus. Eastern and Southern Africa from Abyssinia and Somaliland to Cape Colony, extending in Western Africa as far north as the Congo region.

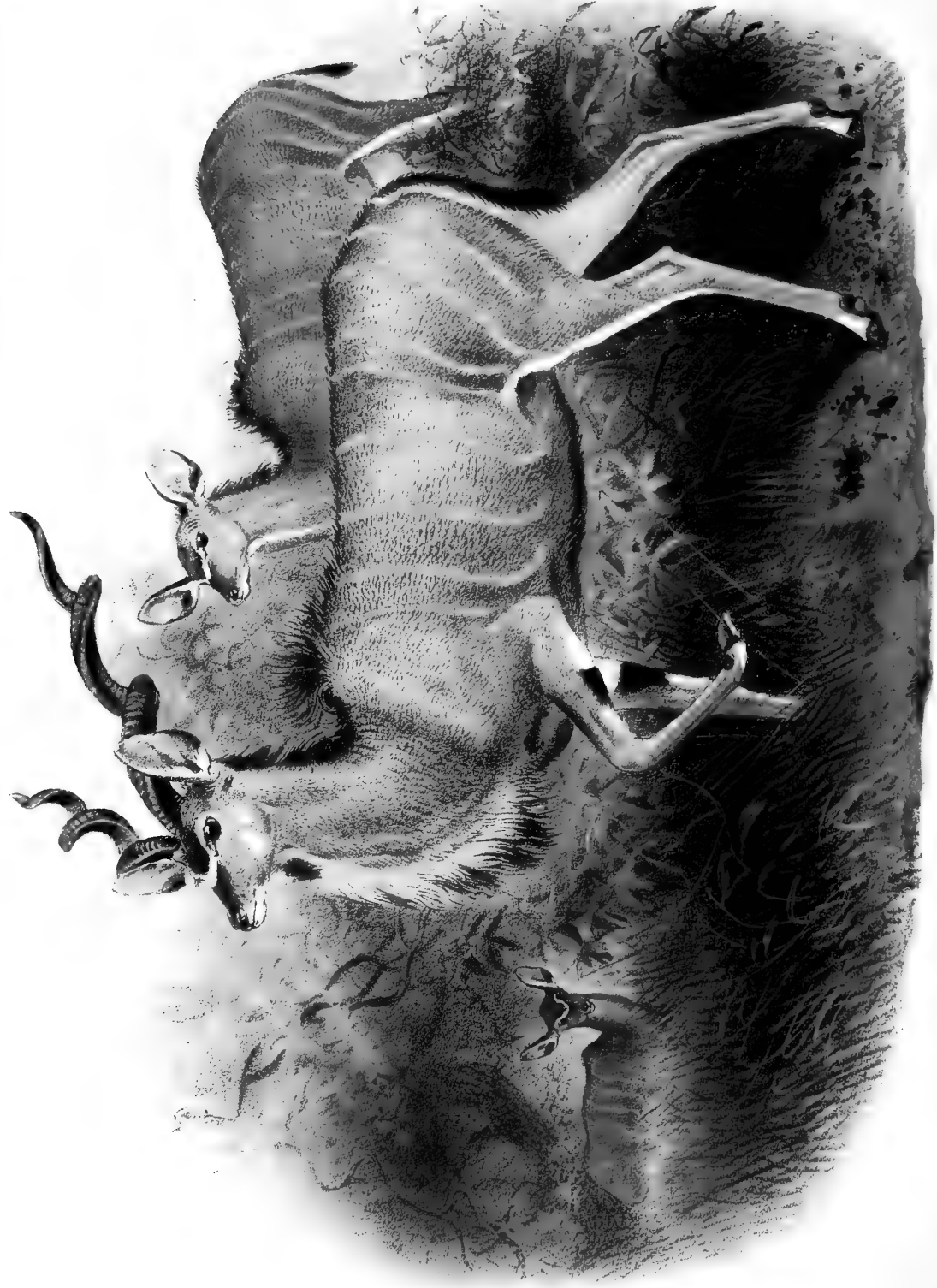
The two known species of this genus may be recognized as follows:—

- a. Height of adult male about four feet or over; horns with a bold and open spiral curvature and strongly diverging from the base; a mane of hairs running along throat in male; no white patches on the throat in either sex, and transverse body-stripes varying from four to ten.

130. *S. capensis*.
- b. Height of adult male only a little over three feet; horns with much less open curve and but little diverging from base; no throat-mane in the male; two white throat-patches in both sexes, and transverse body-stripes almost always more than twelve 131. *S. imberbis*.



1916



The Greater Kudu.
STREPSICEROS CAPENSIS.

Published by R.H. Fisher

Walford. Smith. lith.

Hatchard imp.

130. THE GREATER KUDU.

STREPSICEROS CAPENSIS (A. SMITH).

[PLATE XCVI.]

- Le Condoma*, Buffon, Hist. Nat. xii. p. 301, pl. xxxix. fig. 1 (1764).
Le Condoma ou Coësdoës, Allamand, in Schneider's ed. Buffon, Suppl. vol. iv. p. 143 (1781); Buff. Hist. Nat., Suppl. vi. p. 124, pl. xiii. (1782).
Antilope strepsiceros, Pallas, Misc. Zool. p. 9 (1766); id. Spic. Zool. i. p. 17 (1767), xii. pp. 19, 69 (1777); Erxl. Syst. R. A. p. 282 (1777); Zimm. Spec. Zool. Geogr. p. 542 (1777); id. Geogr. Ges. ii. p. 115 (1780); Gatt. Brev. Zool. pt. i. p. 81 (1780); Schreb. Säug. pl. cclxvii. (1784); Bodd. Elench. Anim. p. 142 (1785); Gmel. Linn. S. N. i. p. 192 (1788); Penn. Quadr. i. p. 77 (1781), p. 88, pl. xiv. (1793); Kerr, Linn. An. K. p. 319 (1792); Donnd. Zool. Beitr. i. p. 643 (1792); Link, Beytr. Nat. ii. p. 99 (1795); G. Cuv. Tabl. Elém. p. 164 (1798); Shaw, Gen. Zool. pt. 2, p. 334, fig. 185 (upper) (1801); Turt. Linn. Syst. Nat. i. p. 116 (1802); Desm. N. Dict. d'Hist. Nat. vi. p. 129 (1803); G. Cuv. Dict. Sci. Nat. ii. p. 246 (1804); Tiedemann, Zool. i. p. 410 (1808); Thunb. Mém. Ac. St. Pétersb. iii. p. 317 (1811); G. Fisch. Zoogn. iii. p. 439 (1814); Afz. N. Acta Upsal. vii. p. 220 (1815); G. Cuv. R. A. i. p. 263 (1817); Burchell, List Quadr. p. 7 (1817); Goldf. Schreb. Säug. v. p. 1207 (1818); Schinz, Cuv. Thierr. i. p. 396 (1821); Burchell, Travels, i. pp. 337, 374 (1822); Desmoul. Dict. Class. d'H. N. i. p. 447 (1822); G. B. Fisch. Syn. Mamm. p. 471 (1829); Rüpp. Neue Wirbelth. Abyss. p. 26 (1835-40); Masson, Cuv. R. A. i. p. 317 (1836); Waterh. Cat. Mus. Z. S. (2) p. 42 (1838); Forst. (J. R.) Descr. Anim. pp. 36, 377 (1844); Schinz, Syn. Mamm. ii. p. 430 (1845); id. Mon. Antil. p. 28, pl. xxxi. (1848); Drummond, Large Game, p. 425 (1875).
Antilope (Gazella) strepsiceros, Licht. Mag. nat. Freund. vi. p. 172 (1814).
Capra strepsiceros, Thunb. Resa, ii. p. 100 (1789); Engl. Tr. ii. p. 89 (1793).
Ovis strepsiceros, Müller, Linn. Natursyst. i. p. 429, pl. xxvi. figs. 1 & 2 (1773).
Cerophorus (Tragelaphus) strepsiceros, Blainv. Bull. Soc. Philom. 1816, p. 75.
Antilope (Tragelaphus) strepsiceros, Desm. Dict. d'H. N. (2) ii. p. 197 (1816); id. Mamm. ii. p. 468 (1822); Less. Man. Mamm. p. 383 (1827); Gerv. Dict. Sci.

- Nat. Suppl. i. p. 266 (1840); Less. N. Tabl. R. A., Mamm. p. 181 (1842); Wagn. Schreb. Säug., Suppl. iv. p. 445 (1844), v. p. 440 (1855); Gieb. Säug. p. 311 (1853).
- Tragelaphus strepsiceros*, Heugl. Reise Weiss. Nil, p. 319 (1869); id. Säug. Reise Nordost-Afr. p. 113, fig. (1877).
- Antilope (Addax) strepsiceros*, Laurill. Dict. Univ. d'H. N. i. p. 620 (1861).
- Damalis strepsiceros*, H. Sm. Griff. An. K. iv. p. 359 (1827).
- Damalis (Strepsiceros) strepsiceros*, H. Sm. op. cit. v. p. 365 (1827).
- Calliope strepsiceros*, Ogilby, P. Z. S. 1836, p. 138; Rüpp. Senck. Mus. iii. pt. 2, p. 181 (1839).
- Strepsiceros strepsiceros*, Smuts, En. Mamm. Cap. p. 92 (1832); Peters, Reise Mossam. p. 190 (1852); Jent. Cat. Ost. Leyd. Mus. (Mus. Pays-Bas, ix.) p. 140 (1887); id. Notes Leyd. Mus. ix. p. 173 (1887) (Mossamedes); id. Cat. Mamm. Leyd. Mus. (Mus. Pays-Bas, xi.) p. 172 (1892); Rendall & Rothschild, Novitat. Zool. v. p. 212 (1898); Matschie, in Werther's Die mittl. Hochl. Deutsch-Ost-Afr. p. 254, fig. 27 (1898); De Winton, P. Z. S. 1898, p. 768.
- Antilope strepsiceros*, Less. Compl. Buff. x. p. 303 (1836); Reichenb. Säug. iii. p. 145 (1845).
- Strepsiceros strepsiceros zambesiensis*, Lorenz, Ann. Mus. Wien, ix., Notizen, p. 62 (1894).
- Strepsiceros capensis*, A. Sm. S. Afr. Quart. J. ii. p. 223 (1834); Harris, Wild Anim. S. Afr. pp. 103-107, pl. xx. (1840).
- Strepsiceros kudu*, Gray, List Mamm. B. M. p. 155 (1843); id. Cat. Ost. B. M. p. 59 (1847); id. P. Z. S. 1850, p. 143; id. Knowsley Menag. p. 26, pl. xxiv. fig. 2 (1850); Jard. Nat. Libr. xxii., Mamm. p. 180, pl. xx. (1850) (Koodoo); Gray, Ann. Mag. Nat. Hist. (2) viii. p. 225 (1851); id. Cat. Ung. B. M. p. 133, pl. xvii. figs. 1, 2 (1852); Gerv. Hist. Nat. Mamm. ii. p. 200 (1855) (Coudou); Gerr. Cat. Bones Mamm. B. M. p. 245 (1862); Wood, Ill. Nat. Hist. i. p. 663, fig. (1862); Sclater, P. Z. S. 1864, p. 105; Kirk, P. Z. S. 1864, p. 659; Fitz. SB. Ak. Wien, lix. pt. 1, p. 176 (1869); Blanf. Zool. Abyss. p. 270 (1870); Gray, Cat. Rum. B. M. p. 46 (1872); id. Hand-l. Rum. p. 117 (1873); Buckley, P. Z. S. 1872, p. 454, 1876, pp. 284, 291; Garrod, P. Z. S. 1877, p. 4 (anatomy); Bocage, P. Z. S. 1878, p. 745 (Angola); Brehm, Thierl. iii. p. 227, fig. (1880); Selous, P. Z. S. 1881, p. 751; id. Hunter's Wand. p. 207 (1881); Scl. List An. Z. S. p. 136 (1883), p. 160, fig. 23 (1896); id. P. Z. S. 1884, p. 47, fig. 2 (horns) (*nec* fig. 1); Johnston, River Congo, pp. 386, 391 (1884); id. P. Z. S. 1884, p. 542; Flow. & Gars. Cat. Ost. Coll. Surg. p. 258 (1884); Lort Phillips, P. Z. S. 1885, p. 931; Hunter, in Willoughby's E. Africa, p. 287 (1889); Bryden, Kloof and Karroo, pp. 291, 292 (1889); Crawshay, P. Z. S. 1890, p. 659; Jent. Mus. Pays-Bas, xii. p. 211 (1890); Scl. fil. Cat. Mamm. Calc. Mus. p. 153 (1891); Flow. & Lyd. Mamm. p. 348 (1891); Inverarity, Journ. Bombay Nat. Hist. Soc. vi. no. 4, p. 463, pl. (1891); Nicolls & Eglin. Sportsm. in S. Afr. p. 52

(1892); Ward, Horn Meas. p. 159 (1892), p. 203 (1896); Lugard, Rise of E. Afr. Emp. i. p. 531 (1893); Sci. P. Z. S. 1892, pp. 102, 118; Swayne, P. Z. S. 1892, p. 301; Lyd. Horns and Hoofs, p. 256 (1893); id. Royal Nat. Hist. ii. p. 273, pl. (1894); Jackson, Big Game Shooting (Badm. Libr.), pp. 288, 304 (1894); Thos. P. Z. S. 1894, p. 145; Matschie, Säug. Deutsch-Ost-Afr. p. 136 (1895); Swayne, Somaliland, p. 302, fig. facing p. 144 (1895); Thos. P. Z. S. 1896, p. 798; Elliot, Publ. Mus. Chicago, Zool. i. p. 132; Bryden, Nat. & Sportsm. in S. Afr. pp. 241-250 (1897); Pousarg. Ann. Sci. Nat. iv. p. 81 (1897); Jackson, P. Z. S. 1897, p. 454; Ghika, Pays des Somalis, p. 181 (1898); Trouess. Cat. Mamm. ii. pt. 4, p. 960 (1898); Lydekker, Selous, Buckley, & Inverarity, in Ward's Great and Small Game of Africa, pp. 440-451, pl. xiii. fig. 1 (1899).

Damalis (Strepsiceros) capensis, A. Sm. Illust. Zool. S. Afr. pls. xlii., xliii. (1859).

Antilope tendal, Cretzschm. Atl. Rupp. Reise, Säug. p. 22 (1826); J. B. Fisch. Syn. Mamm. p. 475 (1829).

Antilope chora, J. B. Fisch. Syn. Mamm. p. 475 (1829).

Strepsiceros kudu abyssinicus, Fitz. SB. Ak. Wien, lix. pt. 1, p. 176 (1869).

Strepsiceros excelsus, Sund. Pecora, K. Vet.-Ak. Handl. lxxv. p. 196 (1846); id. Hornsch. Transl., Arch. Skand. Beitr. ii. p. 147; Reprint, p. 71 (1848).

?? *Antilope torticornis*, Herm. Obs. Zool. i. p. 87*.

Cerf du Cap de Bonne-Espérance, Colini, Acta Acad. Theod. Palat. . pp. 487-491, pl. (1766).

Striped Antelope, Penn. Syn. Quadr. pp. 31, 224 (1771); id. Hist. of Quadr. (1) i. p. 76, (3) i. p. 88, pl. xiv.

Koedoe, Sparrm. Reise, p. 511 (1784); Engl. Tr. ii. p. 213 (1786); French Tr. p. 237 (1787).

Le Condoma, Huet, Coll. Mamm. Mus. d'Hist. Nat. p. 47, pl. xli. fig. 1 (1808).

The Koodoo, Daniell, Afr. Scenery, no. 6 (1812); Baldwin, Afr. Hunting, p. 376 (1863); Johnston, Kilima-Njaro Exped. pp. 301, 354 (and of most English sportsmen and naturalists).

VERNACULAR NAMES:—*Koedoe* of the Dutch, and *Kudu* or *Koodoo* of the English Colonists at the Cape; *Tolo* of Bechuana; *Ee-bala-bala* of Amandables; *Ee-zilarwa* of Makalakas; *Noro* of Mashunas; *Unza* of Masubias; *Unzwa* of Makubas; *Muzeelona* of Batongas; *Dwar* of Masuras (*Selous*). *Unganza* of Kaffirs (*Drummond*). *Mivimveh*, *Njellet*, *Neled*, and *Jelled* of the Arabs of the Upper Nile; *Garna* or *Qarna* and *Nellet* at Massaua; *Ungütir* of Hamran Arabs; *Agasehn*, *Agasen*, and *Agasen* in Amharic (*Heuglin*). *Goder* and *Gouriali* in Somaliland (*Swayne*).

* Based upon a horn which, from the description, might be referred to almost any species of the Tragelaphinae, except *Boselaphus*, or even to *Capra falconeri*.

Adult male. Height at withers about 50–52 inches. General colour of body varying from reddish to pale slaty bluish grey, the latter especially prevalent in older animals, and perhaps due, in part, to the scantiness of the hair revealing the tint of the skin. Neck brown on each side at its base and darker than the shoulders, becoming paler towards its anterior extremity. Head darker fawn than the anterior end of the neck, whitish around the eye, a white bar running inwards from the corner of each eye and forming an incomplete V-shaped mark on the nose; two or three white cheek-spots; edge of the upper lip and chin white, the white of the chin extending back on to the fore part of the inter-ramal area. From the middle of this area back to the hinder end of the throat extends a thickish mane of white and blackish-brown hairs; no white patches on the throat. There is also a dorsal mane passing from the occiput, backwards along the nape, over the withers and down the spine to the root of the tail; the mane brown on the neck and shoulders, white along the back. Sides of the body and hind-quarters marked with white stripes, which vary in number from about four in the northern forms to about nine or ten in the southern. Tail white below, black at the tip. Belly greyish, blacker in the middle. Fore legs of a rich fawn down the front, whitish at the base on inner side and behind the knee, also on the inner and posterior side of the cannon-bone, a pale blackish-brown patch above the knee on the inner side; fetlocks and pasterns also rich fawn, black behind; the white pastern-spots only just traceable. Hind leg coloured like the fore leg; inner side of the thigh at the base and anterior side down to the hock white, the white fading away between the hock and the pastern.

Horns with bold and open spiral curvature, measuring about 40 inches or more in a straight line, and an additional 12 inches or so round the curve; distance between the tips varying, irrespective of the length, from about 24 to nearly 40 inches. The skull of an adult gives the following measurements:—Basal length 15 inches, orbit to muzzle 9, greatest width 6·33.

Female. Generally similar to the male, but hornless and smaller and slighter; similarly marked with white, but the ground-colour of the body of a tolerably uniform fawn, becoming darker above.

Young redder in colour than the adult and strongly marked with white.

Hab. Africa south of the Zambesi, extending on the west into Angola, and on the east throughout East Africa up to Abyssinia, mostly in the higher districts.

We come now to one of the largest and finest of the whole long series of African Antelopes. In Mr. John Millais's well-known 'Breath from the Veldt,' drawings of the heads of the Sable Antelope and the Kudu occupy a conspicuous position on the cover. Mr. Millais, than whom there can be no better judge, although he rather gives the palm to the Sable, admits that the Kudu surpasses its rival "in elegance and general appearance" when dead, but gives the Sable preference when seen alive on the veldt. It is really a difficult question, he allows, to decide between the "two rival beauties." But we will proceed to the history of the Kudu.

Although the Kudu was certainly known to Kolben and other visitors to the Cape in early days, Buffon was the first writer to give us a good account of it. In the twelfth volume of his 'Histoire Naturelle,' published in 1764, Buffon introduced it into his work under the title of "Le Condoma," and gave a figure of its unmistakable horns from a pair in the possession of the Marquis de Marigny. In these horns Buffon recognized the animal previously indicated by Kolben as a "kind of large Wild Goat." In the sixth volume of the Supplement to the 'Histoire Naturelle,' published in 1782, Buffon entered into fuller particulars of the Kudu, which he now called the "Condoma ou Coësdoës," apparently recognizing that the first of these names had been based on a mistake or misspelling. He was also now able to give a figure of the whole animal from a well-preserved skin received from "the interior of Africa." Further information was added, taken from the Dutch edition of the 'Histoire Naturelle,' which had been then recently published by Schneider in Amsterdam, and to which Prof. Allamand had contributed a description of this animal, based on a specimen living in 1776 in the Menagerie of the Prince of Orange, to whom it had been sent by Joachim van Plattenberg, then Dutch Governor of the Cape. In his first essay on the genus *Antilope*, published in 1766, the great naturalist, Pallas, placed the Kudu sixteenth in his list, basing it mainly on the "Condoma" of Buffon, and proposed for it the specific name "*strepsiceros*." Although, therefore, the Kudu could not have been the *Strepsiceros* of classical authors (which was in all probability the Addax), there can be no question that the *Antilope strepsiceros* of Pallas, as based on Buffon's "Condoma," is this species.

In 1827, Hamilton Smith, writing on the Mammals in Griffith's 'Animal Kingdom,' used the term *Strepsiceros* as one of the subgeneric divisions of his genus *Damalis*, thus, according to the views of modern systematists,

creating a new generic name, which has ever since been universally employed for the Kudu. Although many authorities are of opinion that the adoption of a specific name for the genus ought not to interfere with its usage for the species also, and consequently that the present animal ought to be called *Strepsiceros strepsiceros*, such has not been our custom in the present work, and it is consequently necessary to search out the second given specific name. For this there may be said to be two generally recognized claimants—first, “*capensis*,” bestowed upon it by Dr. Andrew Smith in 1834; and, secondly, “*kudu*,” applied to it by Gray in 1843. Of these we are inclined to adopt the former as first given, although the latter has been more generally accepted.

It is true no doubt that so long ago as 1816, in his ‘*Lehrbuch der Zoologie*,’ Oken introduced the Kudu into his list of the species of the genus “*Cemas*” under the heading “*C. kuhdu, Strepsiceros, Cervus capensis*.” But it does not seem to be quite certain that Oken hereby intended to bestow on the Kudu a new specific name, and under these circumstances it would be objectionable, we think, to call the Kudu, *Strepsiceros kuhdu* (Oken). It has therefore been decided to employ Andrew Smith’s name, concerning which there can be no doubt whatever, for the present Antelope, and to designate it *Strepsiceros capensis*.

The well-known travellers Sparrman (1785), Thunberg (1795), Daniell (1804), Burchell (1822), and Steedman (1835), all met with the Kudu during their journeyings in different parts of the Cape Colony, in the more remote parts of which it was still plentiful in their days. Harris (1836–37) states that although at that period the Kudu was still found in many of the more retired portions of the Colony, he did not himself meet with it until he had entered the “prolific environs” of the Cashaan Mountains of Pretoria. Harris claims for the Kudu the “right and title to the sovereignty of *all* the Antelopes.” Other species of this group, he allows, may be “stately, elegant, or curious,” but the Kudu is “absolutely regal.”

Harris, in the letterpress to his ‘*Portraits*,’ describes the habits of the Kudu in the Cashaan Mountains in the following lively manner:—

“There in the depths of solitary woods, by human foot untrod, the noble animal occurs in such every-day abundance, that many a gory trophy was realized; but his great sagacity, wildness, and self-possession, demanding the most skilful generalship to out-manœuvre him, the pursuit necessarily differs altogether from the usual stamp of

African hunting, and involves no inconsiderable acquaintance with the subtleties of woodcraft. We have here no dashing among countless herds, no helter-skelter riding by the side of a closely-packed phalanx; yet have we a quarry well worth the hardest day's fag on foot to triumph over. Shunning both the open plain and the society of the multitude, the crafty fellow never ventures from his almost inaccessible fastness, unless during the morning and evening; and even then must he be sought *au pied* amid the dark upland dells which usually form his solitary abode. With all his wits about him, the lordly bull, active and powerful, may now and then be detected browsing at grey dawn upon some rugged hill summit, or ranging some grassy slope, either alone, or escorted by a small troop of skittish dames, all seeming alike his sentinels; but taking the note of alarm from the slightest noise, he stamps his brave foot upon the ground, tosses his spiral frontlet to the blue sky, and once fairly in motion, never stops to look behind until he has gained the threshold of his sanctuary. There, in some deep chasm which the sunbeam rarely penetrates, among tangled ravines, and hollows densely clothed with trees and brushwood, he lazily reclines during the solar heat, beside some fern-clad stone, and leisurely turns the cud until the cool breezes of eventide once more invite him from his snug retreat."

Amongst modern authorities on the Great Game-mammals of South Africa, we may select passages from the writings of Mr. Kirby and Mr. J. Millais as giving us good ideas of the present localities of the Kudu and its usual habits. In his already-mentioned 'Breath from the Veldt,' Mr. Millais writes as follows:—

"Though the species is gone from the countries south of the Transvaal, there is still a very fair number in the northern forests of that country, and these are not confined to 'a few troops which still linger,' as most books on the subject would give us to understand. The fact is, very little hunting goes on in these countries, owing to absence of water and thickness of the bush; the amount of game still to be found there cannot therefore be very much less than in the greater part of Mashonaland, which is very much hunted. I think the following speaks for itself. Four hunters whom I trekked up with each killed on an average ten Koodoos in three months, besides a lot of Pallah and Blue Wildebeests; and this too, in every instance, close to the main road in the Transvaal. If then they could do this, there must surely be a very fair quantity of game in the hundreds of untrodden miles in the south-west and east of the several drifts of the Limpopo. In Mashonaland the Koodoo is probably only reduced in numbers near the transport roads, while it is still plentiful in the neighbourhood of all the rivers and pans of that country where the bush is suitable to its habits."

In his well-known volume on the 'Haunts of Wild Game,' Mr. F. V. Kirby introduces us to the habits of the present species in the following terms:—

"Koodoo frequent rocky bush-covered hills—the rougher and more apparently inaccessible they are the better they like them; but in the Low Country they are equally

at home in the heavy belts of bush which line the rivers and water-courses. As a rule, in the latter district they are fairly easy to run into on horseback, although individual bulls and the cows will display great speed and endurance; but in the hill country it requires much patience and care to circumvent an old bull successfully. Unfortunately for themselves, Koodoo are of a most curious disposition, and seldom run far without standing and looking back at their pursuer. Their leaping powers are marvellous, and I have seen them clear obstacles 8 feet in height with apparent ease. Their sense of hearing is very acute—one needs only to look at the large, rounded, mobile ears to be satisfied on that point; and I believe they trust more to that sense for their safety than to any other. Though almost invariably found in the near neighbourhood of water, I fancy they can go for a long time without drinking, judging by the extensive dry areas in which I have found them.”

Mr. W. L. Sclater, in his new volume on the Mammals of South Africa, states that within the limits of his work (that is Africa south of the Zambesi and Cunene Rivers) the Kudu is still probably the most abundant and widespread of the larger Antelopes. Within the Cape Colony, Mr. Sclater tells us, the Kudu is yet to be met with in the southern districts, from the Riversdale and Prince Albert divisions, eastwards to Albany and Fort Beaufort. It is stated to be even abundant in the bush-country along the Koonap and Great Fish Rivers. In the northern parts of the Colony it is also fairly common in parts of Griqualand West and Prieska. In German South-west Africa, Bechuanaland, Rhodesia, the northern and eastern parts of the Transvaal, the Portuguese territories, and in Zululand it is also fairly plentiful in suitable localities. In the South-African Museum at Capetown there are mounted specimens of a male Kudu from near Barberton in the Transvaal, and of a female from Koonap in the Albany division of the Cape Colony.

But the Kudu, as we shall see, ranges far beyond the limits of Mr. Sclater's South Africa, and we will now proceed to trace its distribution throughout Eastern Africa into the northern territories of Abyssinia and the Egyptian Soudan.

In Nyasaland, Mr. Crawshay tells us, the Kudu is to be met with practically all over the Protectorate, especially in the rugged wooded highlands away from the haunts of men. In the Portuguese provinces on the coast, according to Peters, it appears to be likewise generally distributed. Proceeding to German East Africa, we find it also widely diffused there, extending westwards up to Lake Tanganyika, although, as Herr Matschie tells us, it is “nowhere common.” In British East Africa, Mr. F. J. Jackson informs us, the Kudu is

“a rare beast and only found in certain places.” There are always “a few,” he says, “in the Teita country west of Ndara and Kisigao, and on the banks of the Tsavo River, down which it ranges from the head-waters to the Sabaki, and then north up the Athi. All these districts are more or less undulating, very rough, dry and stony, and covered with thick bush.” Further north, Graf Teleki shot two Greater Kudus a few miles to the south of Lake Barengo, and Dr. Donaldson Smith, in the course of his travels, saw one at El Madu in about 4° N. lat. Mr. Arthur H. Neumann met with the Greater Koodoo near Lake Rudolf, as related in his ‘Elephant-hunting,’ but considers it very uncommon in the districts which he traversed. Passing northwards to Somaliland, we find the Kudu more abundant on the higher grounds. Capt. Swayne informs us that it inhabits the top of Wagar Mountain and the Golis Range, which rise to about 6800 feet.

Lieut.-Col. H. D. Olivier, R.E., F.Z.S., who has recently returned from a hunting excursion in Northern Somaliland, has favoured us with the following notes:—

“I first came across the Greater Koodoo in the Golis Range, and I also found it to the west of Hargeisa and near Milmil, as far south as lat. 8°. The first locality, however, was the only one where I pursued it, and it was there more abundant than in the two last-mentioned places. The Golis Range consists of a series of high bluffs under which lies a sort of undercliff forming a lower plateau. This is grown over with gigantic Euphorbias and dense brushwood, interspersed with huge boulders which have fallen from the cliffs above. The Koodoo apparently lie up in very thick patches of such jungle, at least I always found this the case, and the first intimation of their presence was invariably a crash as the quarry dashed off, generally out of sight. Their habit, however, of stopping after a hundred yards or so, to examine the cause of their alarm, is often fatal to them. They seem to lie pretty close, and on one occasion I walked all round one without discovering it, which we did eventually by finding its tracks at the end of our circuit and following them up. The Koodoo browse on the young shoots, and I have also found them eating the smaller kinds of Euphorbias.

“At the time I was looking for them the rainy season was on, and I think this much assisted us, for it rendered tracking easy and our movements less noisy than they would have been in the dry weather. During five days’ shooting we saw five good bucks, and secured three of them. I found that when alarmed they did not travel very far, and that by patiently following the tracks we generally came up to them within a couple of miles. All the bucks I came across were solitary, and the hinds seemed to live in small herds of from three to seven or eight. A sportsman could not wish for a grander sight than a startled Koodoo dashing off along the hillside, or standing on the look-out on some point of vantage. Their flesh is poor eating, and their hides are of little value from an ornamental point of view, but the head and neck, and the ruff, when well mounted, form a splendid trophy.”

The existence of the Kudu in Abyssinia has long been recorded, and it would appear to be found all over the wilder and more wooded parts of that country from 3000 to 9000 feet in altitude. According to Rüppell, however, who in 1835 first identified it with the Cape animal, the Kudu descends nearly to the sea-coast near Massoua. Heuglin has likewise recorded its presence in the Egyptian territories of the Atbara, Galabat, and Bogos north of Abyssinia, as well as in Kordofan and in the more elevated districts of the White Nile. Thus we see that throughout the eastern part of Africa the Greater Kudu is one of the most widely distributed of the larger Antelopes.

On the West Coast of Africa the range of the Kudu is much more limited. It occurs, no doubt, in German South-west Africa, and has been recorded by Anchieta from Angola, but we are disposed to consider its alleged existence in the Congo Valley as not yet proven. Nor are we aware of any evidence of its occurrence further north on the West Coast.

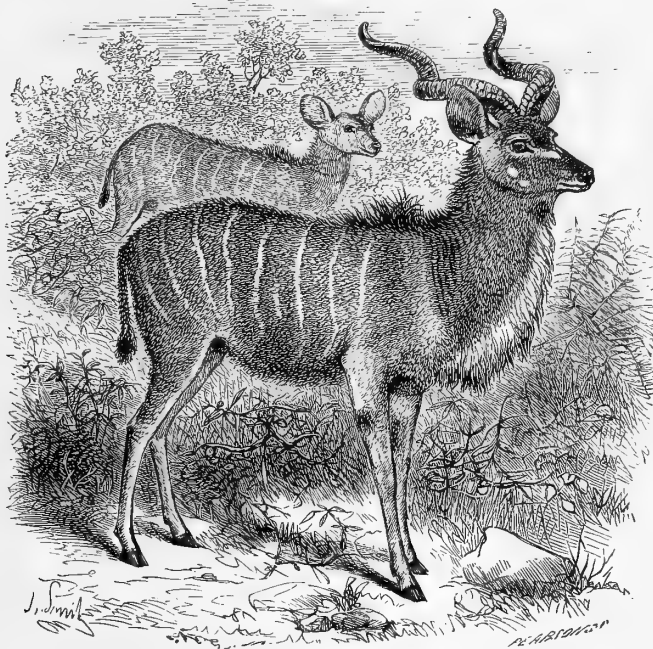
It is singular that, while its near relatives the Eland and the Bushbucks thrive in captivity, the Kudu never appears to accommodate itself well to existence in European menageries. During his long experience Sclater has had opportunities of seeing many Kudus in various Zoological Gardens, but does not recollect a single case in which such an animal appeared to be in perfect health and condition and likely to do well. The first Kudu received by the Zoological Society of London arrived in 1860 along with other animals from the Cape, presented by the late Sir George Grey. It was a female and did not live long. In June 1868 a young male, from Upper Nubia, was acquired by purchase, but was also quickly lost. Nor have the Society been much more successful with specimens acquired in 1873, 1874, 1880, and 1895, although a female purchased in 1873 lived nearly seven years in their Gardens.

The accompanying woodcut (fig. 114, p. 183) was prepared by Mr. Smit from the pair of Kudus which were living together in the Society's Gardens from 1874 to 1879.

Wolf's beautiful drawing of this Antelope (Plate XCVI.) was prepared some twenty-five years ago for Sir Victor Brooke, and exhibited at the Zoological Society's Meeting in June 1875, in order to show the differences between this species and the Lesser Kudu, but we regret to say we have been unable to ascertain upon what materials it was based.

In the Gallery of the British Museum of Natural History at South Kensington there is to be seen a very fine and large mounted male specimen of the Greater Kudu, which was shot by Mr. F. C. Selous on the Macloutsi River, Upper Limpopo, in May 1890, and presented by that gentleman to the National Collection. This splendid animal stands 59 inches in height at the

Fig. 114.

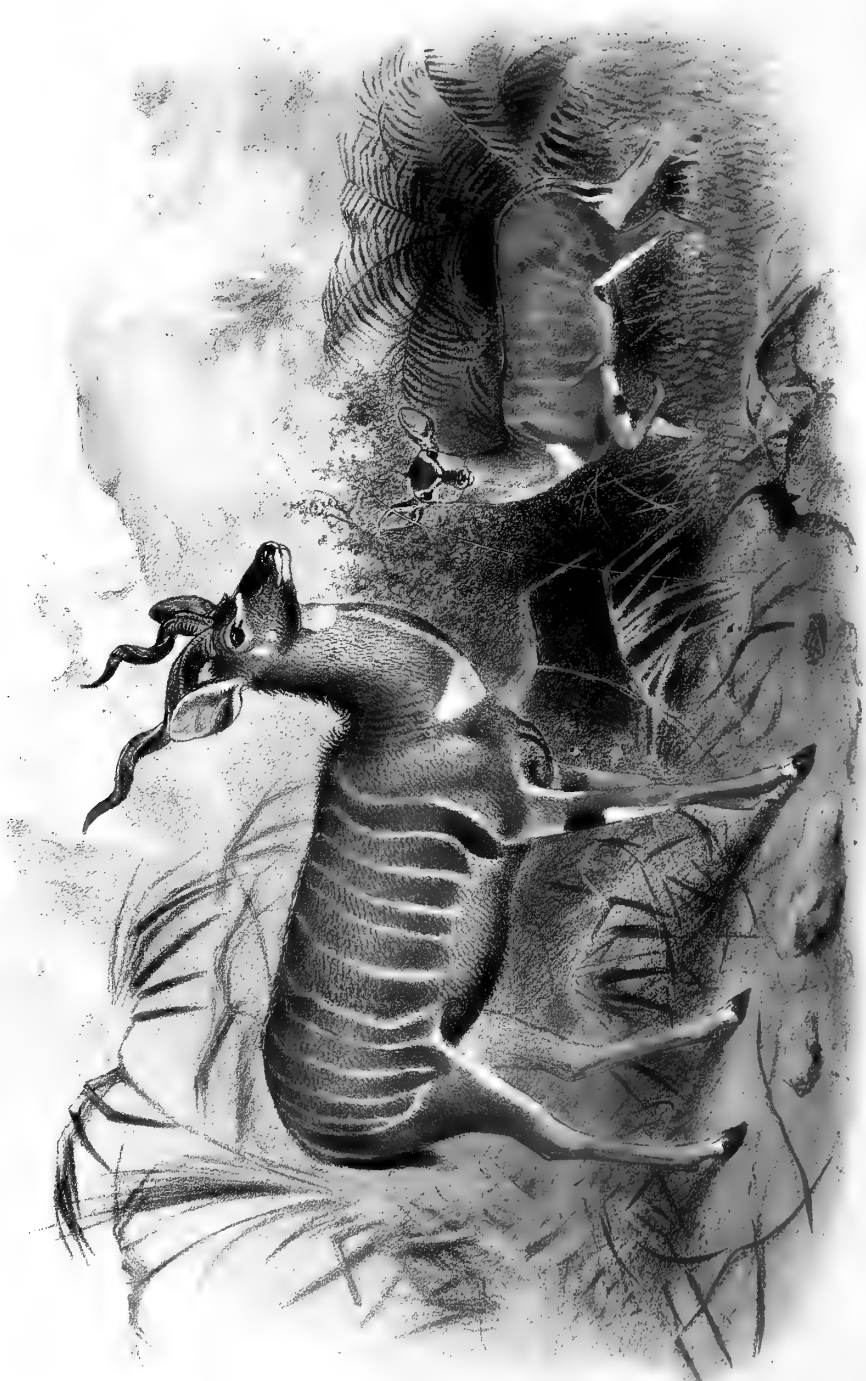


Male and female Kudu.
(Garden Guide, 1879, p. 22.)

withers and its horns are 43 inches long in a straight line. There are also other specimens of the Kudu (skins, skulls, or horns) in the British Museum from Bogos-land, Abyssinia, the Shiré Highlands of British Central Africa, and the Cape Colony.

April, 1900.





The Lesser Kudu.
STREPSICEROS IMBERBIS.

Published by R.H. Pater

Walden. Sent. lith.

Heart imp

131. THE LESSER KUDU.

STREPSICEROS IMBERBIS, BLYTH.

[PLATE XCVII.]

Strepsiceros imberbis, Blyth, P. Z. S. 1869, p. 55; Sclater, P. Z. S. 1878, p. 441, 1884, p. 45, pl. iv., & p. 539; Lort Phillips, P. Z. S. 1885, p. 931; Huet, Bull. Soc. Acclim. (4) iv. p. 76 (1887); Hunter, in Willoughby's E. Afr. p. 288 (1889); Jentink, Notes Leyd. Mus. xii. pp. 211-221 (1890); Flow. & Lyd. Mamm. p. 348 (1891); Inverarity, Journ. Bombay N. H. Soc. vi. p. 465, pl. (1891); Ward, Horn Meas. 1892, p. 163, 1896, p. 208; Jent. Cat. Mamm. Leyd. Mus. (Mus. Pays-Bas, xi.) p. 172 (1892); Sclater, P. Z. S. 1892, pp. 102, 118; Swayne, P. Z. S. 1892, p. 302; Lugard, Rise E. Afr. Emp. i. p. 537 (1893); Lyd. Horns and Hoofs, p. 252 (1893); id. Royal Nat. Hist. ii. p. 274 (1894); Jackson, Big Game Shooting, i. p. 304 (1894); Matsch. Säug. Deutsch-Ost-Afr. p. 137 (1895); Swayne, Somaliland, p. 303 (1895); Elliot, Publ. Chicago Mus., Zool. i. p. 134 (1897); Pousarg. Ann. Sci. Nat. iv. p. 81 (1897); Jackson, P. Z. S. 1897, p. 454; Ghika, Pays des Somalis, p. 182 (1898); Matsch. in Werther's Die mittl. Hochländ. Deutsch-Ost-Afr. p. 255 (1898); Trouessart, Cat. Mamm. ii. pt. 4, p. 961 (1898); De Winton, P. Z. S. 1898, p. 768; Inverarity, in Ward's Great and Small Game of Africa, p. 451 (1899).

Strepsiceros kudu, Horsf. Cat. Mamm. E. I. Comp. p. 170 (1851) (part.).

Strepsiceros kudu, var., Gray, P. Z. S. 1850, p. 143; id. Ann. Mag. Nat. Hist. (2) viii. p. 225 (1851); id. Cat. Ung. B. M. p. 133 (1852) (part.).

Strepsiceros tendal, Gray, Hand-l. Rum. p. 118 (1873) (*nec* Fischer).

Strepsiceros kudu abyssinicus, Fitz. SB. Ak. Wien, lix. p. 176 (1869).

Tragelaphus strepsiceros, Kirk, P. Z. S. 1873, p. 195; Brooke, P. Z. S. 1875, p. 470.

Dwarf Koodoo, Kirk, P. Z. S. 1878, p. 441.

VERNACULAR NAMES:—*Arreh* ♂, *Adir* ♀ (Elliot); *Godir* (Swayne and Ghika); *Kungu* of the Swaheli in B. E. Afr. (Jackson).

Adult male. Height at the withers about 40 inches. Prevailing colour in the body, head, and neck deep yellowish grey, blackish on the muzzle,

cheek, inter-ramal area, and belly; upper lip and chin white, one or two white spots on the cheeks and a strongly defined **V**-shaped mark at the base of the muzzle between the eyes; ears whitish at the base and round the rim in front. Throat with a conspicuous white patch at its base and fore extremity. A narrow black stripe running along the nape of the neck from the occiput to the withers; a white stripe passing along back from the withers to the root of the tail. Sides of the body and hind-quarters marked with from 11-14, sometimes confluent, white stripes, the first of these crossing the shoulder, the last very short and close to the root of the tail. Tail white beneath, black at the tip. Fore leg grey at the base, the rest of the limb a rich fawn-colour from above the knee to the hoofs, with a large white patch on the inner side at the base, white behind the knee, a black patch just above the knee on the inner side; cannon-bone blackish behind; pasterns black behind, marked with two, sometimes confluent, white spots in front. Hind leg on the inner side and front of the thighs down to the hock white, from the hock downwards bright fawn; front of the pastern and inner side of the fetlock white. A scanty but longish mane on the nape of the neck and withers, and a short but thick crest of hair running along the back. Hair on the sides of the neck and the throat very short, shorter than on the shoulders.

Horns of the male less divergent and with the spiral curvature much closer and less open than in *S. capensis*, the ridge forming a nearly straight axial line; length in a straight line about two feet, round the curve about two feet six inches. The skull of an adult male gives the following measurements:—Basal length 11.75 inches, orbit to muzzle 6.75, greatest width 4.20.

Female. Like the male, but without horns, and smaller and slighter in build; without a mane on the neck; white marks on the head and throat less pronounced; head more uniformly fawn, and body of a rich reddish fawn only tinged with grey; neck duller than the body.

Young male. Like the female, but assuming the grey coat of the adult before it reaches its full size.

Hab. Somaliland and the maritime district of British East Africa.

The late Edward Blyth, well known for many years as the zealous Curator of the Museum of the Asiatic Society of Bengal, was the first to point out that the Kudu had a smaller brother, which, though nearly allied, was

specifically quite distinct from its better-known relative. Although it is probable that Blyth was wrong in some of the identifications of previous writers which he assigned to the present species, he was undoubtedly correct in his general views on the subject, and had the merit of assigning to the new *Strepsiceros* the appropriate name *imberbis*, which at once distinguishes it from its neck-maned ally.

It is singular that while the Greater Kudu, as we have just shown, has such a widely-extended range in Africa, the Lesser Kudu is restricted to a comparatively very small area, extending only, so far as is certainly known, from Somaliland in the north to the coast-region of British Central Africa in the south.

After Blyth the Smaller Kudu appears to have next attracted the attention of Sir John Kirk. Writing to Sclater from Zanzibar, where he was British Consul, in 1873, Sir John stated that he had obtained from the Brava coast a living female Kudu which appeared to belong to a smaller species than the ordinary form (*cf.* P. Z. S. 1873, p. 195). Two years later, in June 1875, the late Sir Victor Brooke exhibited at a meeting of the Zoological Society of London original drawings by Wolf of the two Kudus, and pointed out the distinctions between them (see P. Z. S. 1875, p. 470). These drawings are, as we have every reason to believe, the originals from which the figures (Plates XCVI. and XCVII. of the present work) were prepared by Smit.

In 1878 Sir John Kirk obtained from the Sultan of Zanzibar another specimen of what he called the "Dwarf Kudu" from the southern part of the Somali country, and sent it off to the Zoological Society (see P. Z. S. 1878, p. 441). Unfortunately, however, the animal died on its way home.

It was not, therefore, until 1884 that good specimens of the Lesser Kudu were received in Europe, and a proper comparison could be made between it and the larger and better-known species. This was done by Sclater, and the results were stated in a communication made to the Zoological Society on February 5th of that year. Sclater's materials were mainly a pair of animals which he had seen alive in the previous October in the menagerie of his friend the late Mons. J. M. Cornély, of Château Beaujardin, Tours. The young male of this pair, having died, was kindly sent to London by M. Cornély and formed the subject of a plate, drawn by Smit, which accompanies Sclater's article on this animal in the Zoological Society's 'Proceedings.' On the occasion of reading his paper, Sclater was likewise able to exhibit an adult head of the Lesser Kudu which had been sent home by Sir John Kirk,

Fig. 115.



Horns of Lesser and Greater Kudus.
(P. Z. S. 1884, p. 47.)

and a pair of horns of a rather younger male of the same animal, belonging to Mons. Cornély, which had been received by him through Mr. Hagenbeck, of Hamburg, from Somaliland, along with the living pair of animals just mentioned.

By the kind favour of the Zoological Society we are enabled to reproduce here (fig. 115, p. 188) the comparative illustration of the horns of two species of Kudu which accompanies Selater's paper on this subject in the Society's 'Proceedings.'

Mr. E. Lort Phillips, F.Z.S., appears to have been one of the first English sportsmen who personally met with the Lesser Kudu in Somaliland and realized its difference from the Greater Kudu. This was in the winter of 1884-85, when Mr. Lort Phillips visited that country along with Messrs. James, Aylmer, and Thrupp. In his notes on the Antelopes obtained during this journey (see P. Z. S. 1885, p. 931), Mr. Lort Phillips informs us that the Lesser Kudu was met with on the northern slopes of the high plateau of Northern Somaliland, where it resorts to thick covert, and that it was not usually found far from water. Since that date most, if not all, of the numerous British shooting-parties in Somaliland have succeeded in obtaining heads of this beautiful species.

Capt. Swayne, our leading authority on the Antelopes of Somaliland, writes of the Lesser Kudu as follows:—

"This is, to my mind, quite the most beautiful of all the Somali Antelopes, and the skin is more brilliantly marked and the body more gracefully shaped than that of the Greater Koodoo.

"The Lesser Koodoo is found in thick jungles of the larger kind of thorn-tree, especially where there is an undergrowth of the *hig* or slender-pointed aloe, which is of a light green colour and grows from four to six feet high. This Antelope may also be found hiding in dense thickets of tamarisk in the river-beds. It is not met with in the open grass plains, and I have never seen one in the cedar-forests on the top of the Gólis. Its favourite haunts used to be along the foot of this range, and I do not think its numbers have been much diminished of late years. By far the best Lesser-Koodoo ground I have ever visited is the thick forest on the banks of the Webbe, near Imé and Karanleh. These Webbe specimens are different from those found under Gólis, as they are smaller, have shorter horns, are still more brilliantly marked, and have hoofs nearly twice as long. The hoofs of a Webbe Lesser Koodoo are, like those of a Webbe Bush-buck, of extraordinary length.

"The Lesser Koodoo likes to be near water, and, living as it does amongst the densest thickets, has its ears wonderfully well developed. It has powerful hind-quarters, and is

a strong leaper, the white bushy tail flashing over the aloe-clumps as it takes them in great bounds. They are very cunning, and will stand quite still on the farther side of a thicket listening to the advancing trackers, then a slight rustle is heard as they gallop away. The best way to get a specimen is to follow the fresh tracks of a buck, the sportsman advancing in a direction parallel with that of the tracker, but some fifty yards to one flank and in advance; a snap-shot may then be got as the Koodoo bounds out of the farther side of a thicket, but you may be months in the country before getting a really good buck. They go in herds of about the same number as do the Greater Koodoos. Old bucks are nearly black and the horns become smooth by rubbing against trees; and scars of all sorts remain on the neck, being the result of wild rushes through the jungle and fights with other bucks. The average length of a good buck's horns is about 25 inches from base to tip. The longest I have shot or seen was between 27 and 28 inches in length in a straight line. The horns are very sharp, but I have never seen a Lesser Koodoo attempt to charge."

Lt.-Col. H. O. Olivier, R.E., who has lately made a short hunting-tour in Somaliland, sends us the following field-notes on the Lesser Kudu:—

"The Lesser Koodoo is, I consider, a more difficult animal to circumvent than the Larger Koodoo. They are met with in thick scrubby jungle and are extremely wary. I found that when once they had seen us it was almost hopeless to get a shot, as they have a habit of standing in deep shade looking back over a fork of a tree or through the top of a bush along their back track, and one cannot evade their eyesight, however quietly one moves. Moreover, they constantly go off down-wind.

"They seem to be partial to moving in a restricted range, for I found that when following their tracks they always worked round in a circle. They are also very partial to disused zarebas, which they visit for the sake of the grass found there, and the finest animal I ever saw was observed sunning itself in the middle of such a zareba about 9 o'clock in the morning. Naturally I had not my rifle, and my shikari, who had it, did not see the Koodoo, and though I followed it for some six hours I never got a chance at it; but it was a real beauty.

"I was fortunate in twice getting shots at animals before they saw me by coming unexpectedly on them and not tracking them, which latter operation is a weariness to the flesh and exasperating to the temper. I found the Lesser Koodoo at the foot of the Golis Range, and in considerable numbers on the Farfan and Dachato Rivers; also to the west of Hargeisa, and indeed in the Hargeisa jungle itself. They seemed to go in very small parties; I never saw more than two together, and at the time I was in Somaliland, *i. e.* from May to August, the tracks were always solitary.

"They appear often to fall victims to wild beasts, more often than most Antelopes. I found one killed by a lioness, another by a panther, and a third by wild dogs. Both the last were bucks—in fact I came across many more males than females, but this may have been chance.

"Their coat of slaty grey with irregular stripes harmonizes wonderfully with the

foliage, and, as in the case of the Cheetah in India, exactly reproduces the chequered shade of sunshine through leaves."

We have already spoken of the occurrence of the Lesser Kudu on the Brava Coast in Southern Somaliland, and this species is stated by Mr. Hunter to be one of the commonest Antelopes on the Tana River. The same writer informs us that it is also found in the bush round Taveta, and on the Kikavo River near the Sogonoe Hills, but is seldom met with near Kilimanjaro. As Mr. F. J. Jackson writes ('Big Game Shooting,' vol. i. p. 304), the Lesser Kudu is confined, in British East Africa, principally to the belt of dry bush-country which extends from the coast to 100 miles inland. Mr. Jackson continues his remarks with the subjoined interesting notes on this species:—

"I was told by Messrs. Hopley and Bird-Thompson, on their return from a trip up the Tana river in 1891, that many of these Antelopes had fallen victims to the cattle disease (anthrax), and that they found several dead in the bush between the river and the northern boundaries of the Elkambani. These beautiful beasts are bush feeders. They should be sought for in the early morning and again in the evening, in the open bush which usually fringes thick bush, in which they take up their quarters for the day. They are generally found in small parties of two or three does and a buck, though, like the Bush-buck, both single bucks and does are often seen by themselves. At Marereni, in 1886, I witnessed a fight between two bucks. On emerging from the bush, I suddenly came across them, and watched them for about a quarter of an hour as they fought with great fury, in spite of my being to windward of them, and not more than 400 yards off at the time. They fought so furiously, and kept their heads together so long, that I thought they had got their horns locked together, and I attempted to take advantage of them whilst in this position, and ran across the sandy open space intervening between us, but before I got within range they separated and bolted. The jumping powers of the Lesser Kudu are simply marvellous. When I first went to Africa, I kept a record of the length of the strides of the various game-beasts when at full gallop, but unfortunately lost it, and never took the subject up again. I remember, however, measuring the jump of one of these beasts, which struck me at the time as being very wonderful. She had been chased by a hyæna along a narrow footpath in a dense bush. In the middle of a path was a thick green bush about 5 ft. high, round which the path took a turn, and then went straight on again. The Kudu had taken a flying leap over this bush, and the distance between the spoor of her hind feet where she took off and the edge of the bush was 15 ft. The diameter of the bush was 6 ft., and the distance from the edge of the bush on the further side to where she landed—*i. e.* to the spoor-marks of her hind feet—another 10 ft., in all 31 feet. The hyæna had given up the chase some 30 yards further on, where the Kudu had entered the bush. The note of alarm of this beast is a distinct and loud bark, much resembling that of an 'old man' baboon. Lesser Kudu appear to bark only when they scent danger but are unable to see it. As

I have said before, many natives will not touch the flesh of this beast, as it causes them great pain in the mouth and gums."

We have already mentioned the fact that a living pair of the Lesser Kudu was received at the Château Beaujardin, Tours, from Somaliland, by Mons. Cornély in 1884. In April 1886 Mons. Cornély was kind enough, having lost the female of a pair of these Antelopes then in his garden, to part with the solitary male in favour of the Zoological Society of London. This was the first specimen received in England; but in April 1889 a second example, likewise a young male, was presented to the Society's Collection by Mr. George S. Mackenzie, F.Z.S. In July 1898 a third young male was obtained by purchase. But none of these individuals, we regret to state, can be said to have done well in the Regent's Park. We are not aware of any specimen of this Antelope having been received in any of the many continental Gardens.

In the British Museum, besides the old stuffed specimen received from the East Indian Museum, which may be considered the real type of Blyth's species, there is mounted in one of the large glass-cases in the Gallery the young male presented by Mons. Cornély to Sclater and figured in the Zoological Society's 'Proceedings,' as already mentioned. This was subsequently presented by Sclater to the National Collection. In the same glass-case there are also mounted a fine adult male from Somaliland, presented by Mr. R. McD. Hawker, and a female from British East Africa, presented by Mr. Rowland Ward. There are also skins and skulls in the Museum presented by Sir John Kirk, Col. Paget, Capt. Swayne, and other donors.

Our drawing of this beautiful Antelope (Plate XCVII.) was put upon the stone by Mr. Smit from the sketch made for Sir Victor Brooke by Wolf in 1875, of which we have already spoken.

April, 1900.

GENUS V. TAUROTRAGUS.

	Type.
<i>Oreas</i> , Desm. Mamm. ii. p. 471 (1822) (<i>nec</i> Hübner, 1806)	T. ORYX.
<i>Taurotragus</i> , Wagn. Schr. Säug., Suppl. v. p. 439 (1855)	T. ORYX.
<i>Doratoceros</i> , Lyd. Field, lxxviii. p. 130 (1891)	T. ORYX.

Very large, heavily-built, bovine Antelopes, differing from the rest of the Tragelaphinæ in the presence of horns in both sexes. Horns longer than the face, arising well behind the orbits and directed backwards in the plane of the nasal bones, massive (in the male) and furnished with a strong but close spiral twist in the basal half; the anterior crest large, making a complete circuit of the horn and reappearing on its anterior surface near the middle when the horn is unworn, and always at some distance from the tip.

Hair on the forehead longer than on the rest of the head, and forming, in old males, a thick and stiff mat; hair on the nape forming a short mane reversed in the direction of the growth, the parting close to the withers. Throat furnished with a flap of loose skin, or dewlap, which bears a beard-like tuft of hairs.

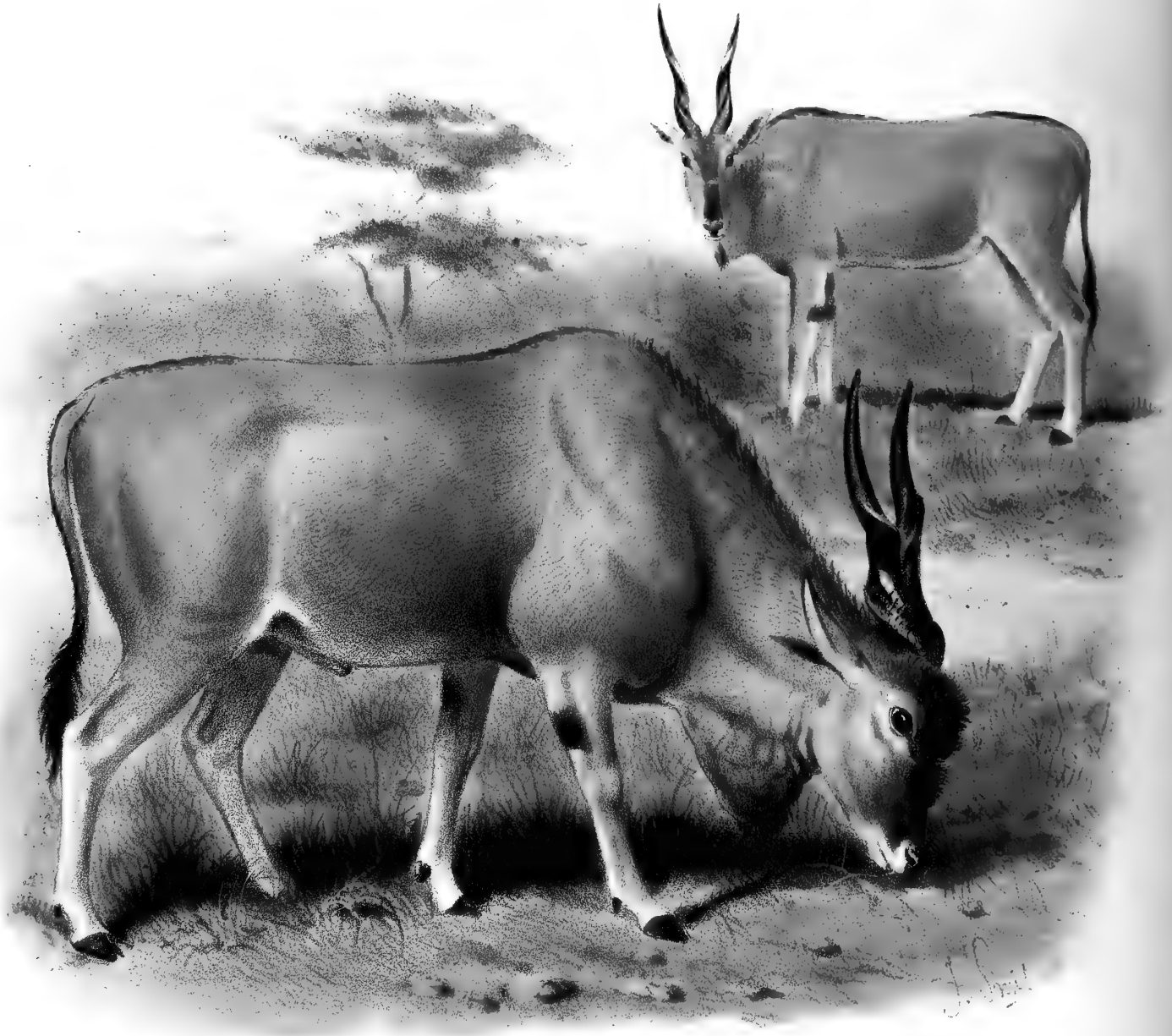
Tail reaching to the hocks, covered with short hair, but tufted at the tip.

Female. Like the male, but slighter in build; without the thick frontal mat of hair; horns longer, thinner, less strongly crested, and usually much less twisted. Mammæ 4.

Range of the Genus. Africa south of the Sahara, from Senegambia and the White Nile in the north to Cape Colony in the south.

The two species of this genus may be shortly diagnosed as follows:—

- A. Ears narrow and pointed; neck brown like the body. 132. *T. oryx*.
- B. Ears large and expanded; neck black, with a white posterior margin.
133. *T. derbianus*.

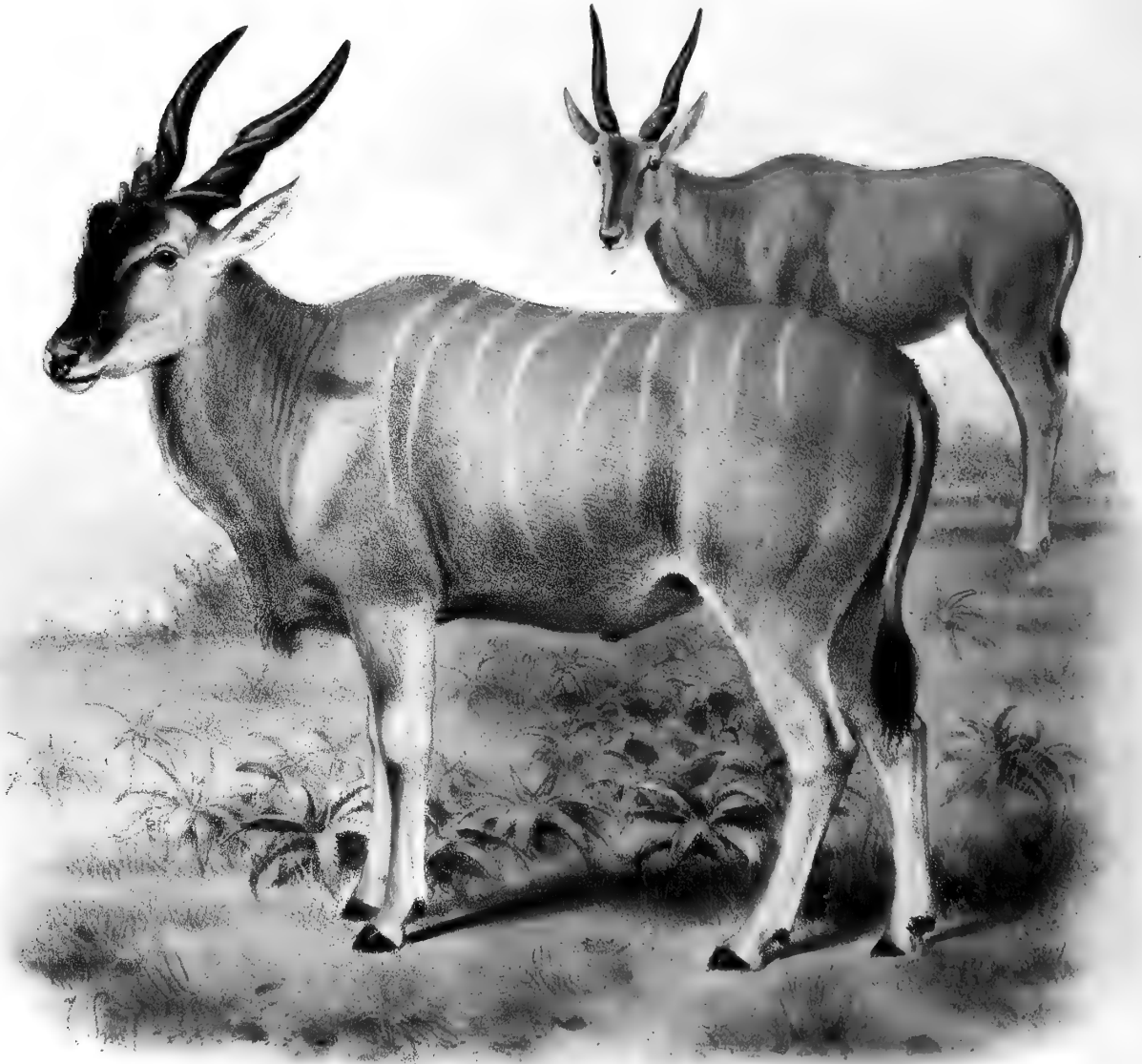


Smit del, et lith.

The Eland.
TAUROTRAGUS ORYX.

Published by R.H. Porter

Hanhart imp.



Smit del, et lith

Livingstones' Eland.
TAUROTRAGUS ORYX LIVINGSTONII .

Published by R.H. Porter

Hanhart imp

132. THE ELAND.

TAUROTRAGUS ORYX (PALL.).

[PLATES XCVIII. & XCIX.]

Subspecies *a.* TAUROTRAGUS ORYX TYPICUS.

- Le Coudous*, Buffon, Hist. Nat. xii. p. 357, pl. xlvi. *b* (horns).
Le Canna, Allamand, in Buff. H. N. (Schneider's ed.), Suppl. v. p. 16, pl. vii. (1781);
 Buff. H. N. Suppl. vi. p. 116, pl. xii. (1782).
Kaapsche Eland, Vosmaer, Regn. An. tab. xvii. (1783).
Antilope oryx, Pallas, Misc. Zool. p. 9 (1766); id. Spic. Zool. i. p. 15 (1767); Müller,
 Natursyst. Suppl. p. 55 (1776); Erxl. Syst. R. A. p. 275 (1777); Zimm. Spec.
 Zool. Geogr. p. 539 (1777); Gatt. Brev. Zool. i. p. 79 (1780); Sparrm. Reise,
 p. 504, pl. xii. (1784); id. Engl. Transl. i. p. 131, & ii. pp. 96 & 204, pl. i. (1786);
 Lath. & Davies, Faunul. Ind. p. 4 (1795); G. Cuv. Tabl. Elém. p. 163 (1798);
 Licht. in Forster's Descr. Anim. p. 33. n. 379 (1844).
Taurotragus oryx, Lyd., Selous, & Penrice, in Ward's Great and Small Game of Afr.
 pp. 421-439, pl. xii. figs. 1-3 (1899).
Antilope oreas, Pallas, Spic. Zool. xii. p. 17 (1777); Zimm. Geogr. Ges. ii. p. 109
 (1780), iii. p. 269 (1783); Schreb. Säug. pl. cclvi. (1784); Bodd. Elench. Anim.
 p. 139 (1785); Gm. Linn. S. N. i. p. 190 (1788); Kerr, Linn. An. K. p. 317
 (1792); Donnd. Zool. Beitr. i. p. 639 (1792); Lath. & Davies, Faunul. Ind. p. 4
 (1795); Link, Beytr. Nat. ii. p. 100 (1795); Bechst. Syst. Uebers. vierf. Th. ii.
 p. 642 (1800); Shaw, Gen. Zool. pt. 2, p. 319, pl. clxxxv. (1801); Turt. Linn. Syst.
 Nat. i. p. 115 (1802); Desm. N. Dict. d'H. Nat. vi. p. 376 (1803), xxiv. p. 32
 (1804); G. Cuv. Dict. Sci. Nat. ii. p. 244 (1804); Thumb. Mémoires. Ac. St. Pétersb.
 iii. p. 314, fig. p. 106 (1811); Licht. Reise, i. p. 155 (1811), ii. pp. 39 & 646
 (1812); G. Fisch. Zoogn. iii. p. 422 (1814); Afz. N. Acta Upsal. vii. p. 220
 (1815); G. Cuv. R. A. i. p. 263 (1817); Burchell, List of Quadr. p. 7 (1817);
 id. Travels, i. p. 245 (1822); Goldf. Schreb. Säug. v. p. 1153 (1818); Gray, Med.

- Rep. xv. p. 307 (1821); **Schinz**, Cuv. Thierr. i. p. 396 (1821); **Desmoul.** Dict. Class. d'H. N. i. 447 (1822); **J. B. Fisch.** Syn. Mamm. p. 477 (1829); **Masson**, Cuvier's R. A. i. p. 317 (1836); **Schinz**, Syn. Mamm. ii. p. 449 (1845); **Gieb.** Säug. p. 200 (1853); **Drumm.** Large Game, pp. 137 & 425 (1875); **Huet**, Bull. Soc. Acclim. (4) iv. p. 471 (1887).
- Capra oreas*, **Thunb.** Resa, ii. p. 66 (1789); **id.** Engl. Transl. ii. p. 58 (1793).
- Antilope (Bubalis) oreas*, **Licht.** Mag. nat. Freunde, vi. p. 153 (1814).
- Antilope (Buselaphus) oreas*, **Reichenb.** Säug. iii. p. 142 (1845).
- Antilope (Boselaphus) oreas*, **Desm.** N. Dict. d'H. N. (2) ii. p. 201 (1816); **A. Sm.** S. Afr. Quart. Journ. ii. p. 222 (1834); **Less.** Compl. Buff. x. p. 302 (1836); **Wagn.** Schr. Säug., Suppl. iv. p. 465 (1844).
- Antilope (Addax) oreas*, **Laurill.** Dict. Univ. d'H. N. p. 620 (1861).
- Antilope (Oreas) oreas*, **Desm.** Mamm. ii. p. 471 (1822); **Schinz**, Nat. Abbild. Säug. p. 301, pl. cxxvii. (1827); **id.** Mon. Antil. p. 45, pl. l. (1848); **Less.** N. Tabl. R. A., Mamm. p. 181 (1842).
- Antilope (Taurotragus) oreas*, **Wagn.** Schr. Säug., Suppl. v. p. 439 (1855).
- Cerophorus (Boselaphus) oreas*, **Blainv.** Bull. Soc. Philom. 1816, p. 75.
- Damalis (Boselaphus) oreas*, **H. Sm.** Griff. An. K. v. p. 364 (1827).
- Damalis oreas*, **H. Sm.** Griff. An. K. v. p. 355, pl. (1827); **Sund.** K. Vet.-Ak. Handl. lxx. p. 199 (1846); **id.** Hornsch. Transl., Arch. Skand. Beitr. ii. p. 150; Reprint, p. 74 (1848).
- Boselaphus oreas*, **Smuts**, En. Mamm. Cap. p. 90 (1832); **Harris**, Wild Anim. S. Afr. p. 24, pl. vi. (1840); **Gerv.** Dict. Sci. Nat., Suppl. i. p. 267 (1840); **Jard.** Nat. Libr. xxii., Mamm. p. 177, pl. xix. (1845); **Gray**, List Mamm. B. M. p. 155 (1843); **id.** Cat. Ost. B. M. p. 59 (1847); **id.** Knowsl. Menag. pls. i. & ii. (1850); **A. Sm.** Ill. Zool. S. Afr. pls. xl. & xli. (1859); **Fitz.** SB. Ak. Wien, lix. pt. 1, p. 179 (1869); **Brehm**, Thierl. iii. p. 245, fig. (1880) (*Busephalus*).
- Cemas alces*, **Oken**, Lehrb. Nat. iii. p. 735 (1816)
- Damalis canna*, **H. Sm.** Griff. An. K. iv. p. 357 (1827).
- Damalis (Boselaphus) canna*, **H. Sm.** Griff. An. K. v. p. 365 (1827).
- Antilope (Oreas) canna*, **Desm.** Mamm. ii. p. 471 (1822); **Less.** Man. Mamm. p. 384 (1827).
- Boselaphus canna*, **Smuts**, En. Mamm. Cap. p. 91 (1832); **Gray**, List Mamm. B. M. p. 155 (1843).
- Antilope (Boselaphus) canna*, **A. Sm.** S. Afr. Quart. Journ. ii. p. 223 (1834).
- Antilope (Buselaphus) canna*, **Reichenb.** Säug. iii. p. 145 (1845).
- Oreas canna*, **Gray**, P. Z. S. 1850, p. 143; **id.** Ann. & Mag. Nat. Hist. (2) viii. p. 225 (1851); **id.** Knowsl. Menag. p. 27 (1850); **id.** Cat. Ung. B. M. p. 134, pl. xvii. figs. 3, 4 (1852); **Gerr.** Cat. Bones B. M. p. 244 (1862); **Wood**, Ill. Nat. Hist. i. p. 665, fig. (1862); **Kirk**, P. Z. S. 1864, p. 659; **Gray**, Cat. Rum. B. M. p. 47 (1872); **id.** Hand-l. Rum. p. 118 (1873); **Flower**, P. Z. S. 1875, p. 186

- (skull char.) ; Buckley, P. Z. S. 1876, pp. 284–292 ; Garrod, P. Z. S. 1877, p. 4 *et seq.* (anatomy) ; Max Schmidt, P. Z. S. 1880, p. 307 (duration of life) ; Selous, P. Z. S. 1881, p. 749 ; *id.* Hunter's Wand. p. 204 (1881) ; *Scl. List An. Z. S.* 1883, p. 138, 1896, p. 160 ; Flow. & Gars. Cat. Ost. Coll. Surg. p. 258 (1884) ; Bryden, Kloof and Karroo, p. 291 (1889) ; *Scl. fl. Cat. Mamm. Calc. Mus.* p. 152 (1891) ; Flow. & Lyd. Mammals, p. 348 (1891) ; Nicolls & Eglinton, Sportsm. in S. Afr. p. 54 (1892) ; Ward, Horn Meas. p. 165 (1892), p. 211 (1896) ; Lyd. Horns and Hoofs, p. 258 (1893) ; *id.* Royal Nat. Hist. ii. p. 269, fig. (1894) ; *Scl. P. Z. S.* 1896, p. 506 ; Pousargues, Ann. Sci. Nat. iv. p. 81 (1897) ; Trouess. Cat. Mamm. ii. pt. 4, p. 962 (1898).
- Oreas oreas*, Jent. Cat. Ost. Leyd. Mus. (Mus. Pays-Bas, ix.) p. 140 (1887) ; *id.* Cat. Mamm. Leyd. Mus. (Mus. Pays-Bas, xi.) p. 172 (1892).
- Antilope triangularis*, Günther, P. Z. S. 1889, p. 73 (Zambesi) ; *Scl. P. Z. S.* 1896, p. 506.
- Dorotoceros triangularis*, Lyd. Field, lxxviii. p. 130 (1891) ; *id.* Ann. & Mag. Nat. Hist. (6) viii. p. 192 (1891) ; *id.* Horns and Hoofs, p. 260 (1893).

Subspecies *b.* TAUROTRAGUS ORYX LIVINGSTONII.

- New or Striped Variety of the Eland*, Livingstone, Missionary Travels, p. 210 (cum fig.) (1857).
- Striped Eland*, Baldwin, Afr. Hunting, p. 384 (1863).
- Oreas livingstonii*, *Scl. P. Z. S.* 1864, p. 105 ; Kirk, P. Z. S. 1864, p. 659 ; Selous, P. Z. S. 1883, p. 32 ; Pousargues, Ann. Sci. Nat. iv. p. 81 (1897).
- Oreas livingstoni*, Rendall, Novitat. Zool. v. p. 213 (1898).
- Oreas canna livingstoni*, Jacks. Big Game Shooting (Badm. Libr.), pp. 285–286 (1894) ; *Scl. P. Z. S.* 1895, p. 690 (skull) ; *id.* List of An. (9) p. 160 (1896) ; Jacks. P. Z. S. 1897, p. 456 ; Thomas, P. Z. S. 1898, p. 394 ; Trouess. Cat. Mamm. ii. pt. 4, p. 962 (1898).
- Oreas oreas* and *O. livingstoni*, Matsch. Säug. Deutsch-Ost-Afr. p. 141, fig. 73 (1895) ; *id.* in Werther's Die mittl. Hochländ. Deutsch-Ost-Afr. p. 259, figs. 31 & 32, & p. 260 (1898).
- Antilope (Taurotragus) livingstonii*, Heugl. Reise Weiss. Nil, p. 319 (1869).
- Taurotragus oreas livingstonii*, *Scl. P. Z. S.* 1893, p. 507.
- Taurotragus oryx livingstoni*, Lyd., Sharpe, & Jackson, in Ward's Great and Small Game of Afr. pp. 421–439 (1899).
- Antilope (Damalis) oreas*, Peters, Reise n. Mossamb., Säug. p. 192 (1852).
- Oreas canna*, Hunter, in Willoughby's E. Afr. p. 287 (1889) ; Thomas, P. Z. S. 1893, p. 504, 1894, p. 145, 1896, p. 797 (Brit. Centr. Afr.) ; Lugard, Rise E. Afr.

Emp. p. 529 (1893); Bocage, P. Z. S. 1878, p. 745; id. J. Sci. Lisboa, ii. p. 25 (1890) (Angola); Crawshay, P. Z. S. 1890, p. 658 (Nyasaland).
Oreas derbii, Johnst. River Congo, p. 391 (1884)?.

Subspecies *c.* TAUROTRAGUS ORYX GIGAS.

Alces oreas, Schweinf. Im Herz. Afr. i. p. 387 (1874).

Antilope oreas, id. ibid. ii. pp. 264-266 (horns).

Taurotragus (Bosephalus) oreas, Heugl. N. Act. Leop. xxx. p. 19 (1863); id. Reise Weiss. Nil, p. 319 (1869).

Taurotragus (Boselaphus) gigas, Heugl. N. Act. Leop. xxx. p. 19, pl. i. fig. 2 (1863); id. Reise Weiss. Nil, p. 318 (1869); Fitz. SB. Ak. Wien, lix. pt. 1, p. 179 (1869).

VERNACULAR NAMES:—*Eland* of the Dutch at the Cape; *Canna* or *Tiganna* of the Hottentots; *Pohu* of the Bachapins (*Burchell*). *Pofu* of the Bechuanas; *Impofo* of the Amandabele, Zulu, and Kafirs; *Ee-pofo* of the Makalakas; *Insefo* of the Masubias and Batongas; *Doo* of the Masurwa Bushmen; *Mofu* of the Mashunas (*Selous*). *Sofu* and *Nchefoo* in Nyasaland (*Sharpe*). *Mpofu* (Swaheli); *Musu* in Siruwa, B.E.A. (*Jackson*). *Qualqual* (Djeng), *Adgar* (Djur), *Newarreh* (Dor) on the White Nile (*Heuglin*).

Adult male, at the withers, about five feet ten inches or, according to some writers, sometimes considerably over six feet in height. Body, head, legs, and neck of a tolerably uniform tawny colour, but often assuming a slaty-grey hue in old age, owing to the rubbing off of the hair and the consequent exposure of the skin beneath. Frontal mat of hairs varying from yellowish brown to black, apparently becoming darker with age; nose generally ashy black; lips and chin white. Ears narrow and pointed, of a uniform greyish-fawn tint, with at most a small black patch on the lower rim in front. A narrow black spinal stripe, extending from the withers to the base of the tail. Tail-tuft and tuft of hair on the dewlap black. Legs like the body, but, on the inner side, sometimes with a greyish patch above the knee on the pasterns; back of the pasterns and narrow rim above the hoofs and false hoofs black.

Horns about 30 inches or more in length.

Female like the male in colouring, but smaller and more slightly built; the horns thinner, less strongly crested, and less twisted, but usually longer and (exceptionally) reaching a length of 34 inches.

The subspecies *T. o. livingstonii* is generally similar to the typical form,

but has the coat of a ruddier fawn-colour, and is ornamented on each side of the body and hind-quarters with from about eight to eleven narrow vertical white stripes: these are strong upon the flanks and faint upon the haunches; they commence from the black spinal stripe and gradually fade away upon the belly and lower part of the thighs. In the typical form, moreover, there is a large black patch on the inner and posterior side of the fore leg above the knee. Horns reaching about 32 inches.

Female differing from the male in the same respects as in *T. o. typicus*.

The subspecies *T. o. gigas* is based on a pair of horns obtained by Heuglin on the White Nile, and distinguished by their large size, great length (35 inches), and strong corrugations. From Schweinfurth's observations we learn that this form carries well-marked body-stripes throughout life, sometimes 15 in number. In these two respects it would seem to approach *Taurotragus derbianus*, but Schweinfurth says nothing about the black neck of the last species.

Hab. South Africa, from the Cape Colony (where it is now extinct) to Angola on the west and to the Transvaal and Mozambique on the east, and thence up to the Zambesi; at its northern limits passing into the striped form (*T. o. livingstonii*), which extends throughout Eastern Africa up to and rather beyond Mount Kenia; also found on the White Nile and in the adjacent districts (*T. o. gigas*).

At the close of the long series of Antelopes we arrive at the largest and finest form of the whole group, and one, moreover, that might well become of great economical importance to mankind, if proper measures were taken for its acclimatization.

The "Eland," as it is now universally called, was well known to the early settlers of the Cape, where it received its name from some fancied resemblance to the Elk (*Alces machlis*), which is the "Eland" of the Hollanders and the "Elenn" or "Elendthier" of the Germans. It must have been size, we suppose, more than any other point of similarity, that induced the Dutchmen to apply such an unsuitable name to this animal.

The old traveller Peter Kolben, about 1719, gave the first recognizable, though rather misleading, account of the Eland, which at that epoch was still found in the mountains near Capetown. In 1764 Buffon, in the twelfth

volume of his 'Histoire Naturelle,' called it "Le Coudous," or, at any rate, gave unmistakable figures of its horns under that name, which, we suppose, he had by some error transposed to it from the Kudu (*Strepsiceros capensis*). It was mainly upon Kolben's *Alces capensis* and Buffon's "Coudous" that Pallas, in his first essay on the genus *Antilope* (1776), based his *Antilope oryx*, alleging that it "seemed to be" the *Antilope oryx* of ancient authors! At the same time he states that he had examined a complete skeleton of this animal in the Museum of Prince William of Holland. Very unfortunately, in his second and amended list of the Antelopes, Pallas proposed to make a change in his former names by transferring the term "*oryx*" to another animal (the *Antilope bezoartica* of his first memoir) and assigning the new name "*oreas*" to the Eland. This change, however, we may say, has been generally acquiesced in, and the name *oreas* has been almost universally applied to the Eland, either specifically or generically, until modern days, when the zealous searchers after priority have resuscitated Pallas's long-forgotten term "*oryx*." This, indeed, seems certainly to be the earliest specific name applicable to the present animal and should, in strict justice, be adopted.

As regards its generic name the Eland has been equally unfortunate. Desmarest, in 1822, first proposed to use "*Oreas*" as a subgeneric term for this form; and Gray, in 1850, employed it as a genus, combining it with the specific term "*canna*," so that the name of the Eland became *Oreas canna*. As will be seen by our list of synonyms, this name was generally adopted, and has been in constant use for the present species for the last twenty years. We have, however, shown that "*oreas*," as a specific term, must give place to "*oryx*"; and in like manner "*Oreas*" cannot stand as a generic term for the present animal, because it has been previously employed in zoology as a genus of Lepidoptera (1806) and as a genus of Mollusca (1808), both of which antedate Desmarest's use of it in 1822. Under these circumstances it is necessary to adopt the next given name, *Taurotragus* of Wagner, and the correct scientific name of the Eland, according to modern usage, will be *Taurotragus oryx*.

Having now stated at full length our reasons for the unwelcome but necessary change of name of this Antelope, we will resume our comments on its literary history.

In the Supplement to his 'Histoire Naturelle,' published in 1782, Buffon was able to give an improved account of the Eland. This was mostly copied

from Allamand's article inserted in Schneider's edition of the 'Histoire Naturelle,' issued at Amsterdam in the previous year, and was accompanied by a perfectly recognizable figure of the whole animal under the name of "Le Cauna," adopted from its supposed Hottentot appellation. Shortly afterwards (1783) Vosmaer, in a number of his 'Regnum Animale,' published a full description and coloured figure of the Eland from a specimen then living in the Menagerie of the Prince of Orange in Holland, probably the same as that from which Allamand had taken his information. Sparrman, who visited the Cape about this period, also gave a good account of the structure and habits of this Antelope, as observed by him in the Alexandria and Somerset-East Divisions of the Colony. Paterson, in 1790, recorded having met with Elands in Caledon, as also in the Van-Ryndorp and Uitenhage Divisions a few years previously. Thunberg, another well-known traveller and naturalist (1795), found the Eland in Uniondale, and Lichtenstein in Calvinia, Aberdeen, and Middelburg (1803-4). Our countryman Burchell, as recorded in his 'Travels,' came across Elands in 1822, in Prieska, Herbert, and Britstown, and found them numerous in Hanover.

We may now pass on to the days of Harris, whose celebrated hunting-expedition into the interior took place in 1836 and 1837. Even at that date the Eland was pronounced to be extinct in the Cape Colony, but was met with in abundance on the banks of the Vaal River, where Harris feasted himself and his followers on its succulent meat.

By all classes in Africa, Harris writes, the flesh of the Eland is deservedly esteemed over that of any other animal :—

"Both in grain and color it resembles beef, but is far better tasted and more delicate, possessing a pure game flavor, and exhibiting the most tempting looking layers of fat and lean—the surprising quantity of the former ingredient with which it is interlarded exceeding that of any other game-quadruped with which I am acquainted. The venison fairly melts in the mouth; and as for the brisket, *that* is absolutely a cut for a monarch."

It is right, however, to mention that other experienced authorities do not altogether agree with Harris's pronouncement on this subject. Mr. Selous, for example, states his opinion that the flesh of the Eland has been "very much over-estimated," and is "not to be compared in flavour with that of the Buffalo, Giraffe, Hippopotamus, and White Rhinoceros." (*De gustibus non est disputandum!*)

Harris describes the favourite haunts of the Eland on the Vaal River in his days as follows:—

“The Eland frequents the open prairies and low rocky hills interspersed with clumps of wood, but is never to be met with in a continuously wooded country. Rejoicing especially in low belts of shaded hillocks, and in the isolated groves of *Acacia capensis* which, like islands in the ocean, are scattered over many of the stony and gravelly plains of the interior, large herds of them are also to be seen grazing like droves of oxen on the more verdant meadows, through which some silver rivulet winds in rainbow brightness betwixt fringes of sighing bulrushes. Fat and lethargic groups may be seen scattered up and down the gentle acclivities, some grazing on the hill side, and others lazily basking in the morning sun-beam. Advancing they appear to move like a regiment of cavalry in single files, the goodliest bulls leading the van; whereas during a retreat these it is that uniformly bring up the rear. As the day dawned over the boundless meads of the Vaal River spread with a rich carpet of luxuriant herbage, and enamelled with pastures of brilliant flowers, vast droves of these lordly animals were constantly to be seen moving in solemn procession across the profile of the silent and treeless landscape, portions of which were often covered with long coarse grass, which when dry and waving its white hay-like stalks to the breeze, imparted to the plain the delusive and alluring appearance of ripe cornfields.”

Since Harris issued his work in 1840 all the writers on the game-animals of Southern Africa have devoted more or less space to the Eland. Delagorgue, who published his travels in 1847, found this Antelope in plenty in Zululand. Methuen, in his ‘Life in the Wilderness’ (1848), describes its habits in the Kalahari Desert, and Livingstone (1857) alludes to the Eland as being able to exist without water, and states that one may see hundreds of them in places thirty or forty miles distant from that element. The Hon. W. H. Drummond, in his ‘Rough Notes on the Large Game of South Africa,’ has devoted a whole chapter to the pursuit of the Eland, which he met with on the Black and White Umvalosi Rivers, and in other districts, but not within the Colony itself, in which, according to Bryden, it became extinct between 1840 and 1850, having probably lingered longer in the waterless deserts of Bushman’s Land than in any other locality.

Finally, Mr. H. A. Bryden, writing in 1897, in his ‘Nature and Sport in South Africa,’ on the rapidly disappearing forms of South-African game, laments the noblest of all the Antelopes of the world as taking the lead in this sad progress. At the present time, he says, one must go far north into the parched and pathless recesses of the Upper Kalahari before the

“vanishing Eland” can be reached, and “even in these unexplored wilds these rare creatures can nowadays be scarcely considered safe.” Mr. Bryden proceeds to describe the progress of its extermination now going on as follows:—

“Directly the rain falls, hunters from among the Bakwèna, Bangwaketse, and Bamangwato tribes, well-mounted, and armed with breech-loading rifles, penetrate to the innermost recesses of the Kalahari, and, wandering from one pool of rain-water to another, deal destruction among the game, and especially among the Giraffes and Elands. That Elands are still plentiful in these regions of the Kalahari I can personally testify, having found them in numbers, and procured specimens in two or three days’ hunting from the desert road between Khama’s and the Botletli river (between Inkonanè and Kannè) within recent years. Coming down country, too, I saw at Sechele’s town—Molepolole—numbers of horns and heads of freshly slain Elands, some of them magnificent examples, which had been recently shot by Bakwèna hunters. But that, even in the North Kalahari, these and other game can long resist the incessant war of extermination waged against them, I am much more than doubtful.”

Thus we see that the typical brown unstriped Eland, which formerly pervaded the whole of the Cape Colony and the adjacent districts, and in 1652 (according to Van Riebeck) was found even on Table Mountain, is now, as nearly as possible, extinct; although its closely-allied white-striped brother, called Livingstone’s Eland, after the distinguished explorer and missionary, is still to be met with in the countries further north. As regards the points of difference between Livingstone’s Eland and the typical form, which we will now proceed to explain, we cannot do better than quote from Mr. Selous’s excellent article on the subject lately published in Mr. Rowland Ward’s ‘Great and Small Game of South Africa’:—

“The Eland of South-western Africa, as described by the earlier European travellers who visited the Cape Colony in the seventeenth and eighteenth centuries, and more recently figured by Sir Cornwallis Harris from specimens obtained in 1837 in what is now British Bechuanaland and the Western Transvaal, was of a uniform pale fawn-colour from birth, though the coats of the older animals gradually became so thin that the dark colour of the underlying skin showed more and more through the scanty hair, giving them a general greyish appearance, the old bulls often looking a bluish-black in deep shade, and being described by the colonists as ‘blue bulls.’ On the other hand, all the Elands found throughout Rhodesia and Eastern South Africa, and wherever I have travelled to the north of the Zambesi, are striped. The calves are a rich reddish-fawn in ground-colour, with a dark mark down the back, black patches on the insides of the fore-legs, and eight or nine conspicuous white stripes on each side.”

As these striped Elands grow up, Mr. Selous continues, they differ considerably one from another. Both bull and cow become of a bluish grey as their coats become thinner with age, and at a little distance the white stripes are often indistinguishable, although as long as there is any hair left they can always be seen on close inspection. Also the dark patches on the inner sides of the front legs become more faint with age, and in very old animals disappear altogether.

Mr. Selous also points out that intermediate forms are found between the two subspecies of Elands, and that, in fact, there is a complete passage through a long series of variations from one form to the other.

That this is the case is shown clearly by Mr. Selous's own observations. He writes (in the same work) as follows:—

“In April 1879 I shot some Elands in the Northern Kalahari, between Bamangwato and the Botletli River. None of these Elands showed any signs of stripes, but two of them had light grey patches on the insides of the fore-legs. About 150 miles farther north, however, nearly all the Elands that I shot were more or less striped, though in most cases the stripes were so faint that they only became apparent on a close inspection. Travelling northwards towards the Chobi River, I found that although Elands were still to be met with, on which no stripes could be detected, most of them were more or less plainly striped, the patches on the insides of the fore-legs becoming gradually darker at the same time. North of the Chobi, and between that river and the Zambesi, the Elands, taken as a whole, become well striped, and the dark markings on the insides of the fore-legs more and more conspicuous, many individuals being as richly marked as the real *Taurotragus oryx livingstonii*, which was first observed by Dr. Livingstone at Sesheke, immediately north of the Central Zambesi. Thus, speaking from my own experience, I should say that all the Elands found in South Africa at the present day south of the 23rd parallel of latitude are grey Elands (*Taurotragus oryx typicus*), but that north of that parallel of latitude a tendency to show white stripes on each side of the body, and dark patches on the insides of the fore-legs, together with a dark median line down the centre of the back, from the withers to the tail, commences. I would say further that this tendency is at first confined to certain individuals, but becomes more general, and the white stripes and dark markings gradually more intensified in individuals, as one travels north and north-east, until north of the Zambesi and in Mashunaland, and all over South-eastern Africa, all the Elands are striped without exception, and all of them show black patches on the insides of the fore-legs and a dark mark down the centre of the back, and often a white arrow-shaped mark across the nose, as in the Koodoo and Bushbuck.”

Mr. Bryden and other well-known authorities on the game-animals of South Africa entirely confirm Mr. Selous's observations.

Under these circumstances it seems quite impossible to treat Livingstone's Eland as a distinct species, but, as will be seen by our list of synonyms, we have placed it under a different heading, and have assigned most of the references to Elands north of the Zambesi to *Taurotragus oryx livingstonii*.

We will now, starting from the Zambesi, endeavour to trace the Eland into the most northern part of its range.

Peters, in his 'Reise nach Mossambique,' gives several localities for the Eland in the Portuguese Provinces on the Zambesi. Mr. R. Crawshay, who

Fig. 116.



Skull and horns of Livingstone's Eland, ♂.
(P. Z. S. 1895, p. 690.)

has devoted great attention to the Antelopes of Nyasaland, tells us that the Eland is widely distributed there, both on the hills and on the wooded plains at the foot of them, and gives many localities in which they are to be met with. As regards its markings, he informs us that it is subject to great variety in British East Africa, "both in colour and as regards the plainness or otherwise of the white stripes." In a single troop, individuals may be seen

varying from a light tawny yellow to the slaty blue of old age, while in some the stripes are clearly defined, in others faintly, and in others again they are not distinguishable at all.

In 1895 Sir Harry Johnston, K.C.B., F.Z.S., presented to the Zoological Society of London a remarkably fine pair of horns of Livingstone's Eland, which are now suspended in their meeting-room at Hanover Square. The animal which carried them was shot in 1893 in Nyasaland between Zomba and Lake Chilwa. By the kind favour of that Society we are able to insert in these pages a copy of the figure of these horns (fig. 116, p. 205), which was published in the 'Proceedings' for 1895.

When we go further north into German East Africa, the Eland appears to be not quite so abundant, although Herr Matschie mentions it as found in Usagara, and it was seen by Neumann between the Pangani River and Irangi during his recent journey, besides having been met with in Ugogo by Speke and Grant in former years.

In British East Africa it would appear to be more prevalent again, although somewhat local. Mr. Jackson, in his volume on 'Big Game,' writes as follows concerning its range and habits in that country :—

"The striped variety of the Eland is the only one found in British East Africa. It is known to the Swahilis as 'Mpofu,' and is decidedly a local beast. It is seen more often in open bush and country thinly wooded with mimosa-trees than quite out in the open. In 1887 it was plentiful round Taveta, where I have seen as many as from sixty to seventy in one herd. In the open bush country west of Mount Kisigao Elands are fairly numerous. Other places in which they are found are the park-like country below Ndi in Teita; the open country east of Ndara and north of Mount Maungu; and the Siringeti plains. I have also seen them between Lakes Nakuro and Baringo, and again in Turkwel, in the Suk country. As a rule they go about in herds of from four or five up to fifteen or twenty. Sometimes two or three bulls will be found together, but very often an old bull is met with quite by himself."

Mr. S. L. Hinde has kindly favoured us with the following field-notes of his recent experience of the Eland in British East Africa :—

"Having just returned from British East Africa, where I have spent the greater part of the last five years, the following field-notes may be of some interest to you. The Eland of East Africa, which, so far as I have observed, has well-marked white stripes on its back and haunches, is both rare and wary. It is reported to have suffered severely from the rinderpest in the early nineties. In the bush-country within 200 miles of the coast, and more particularly in the neighbourhood of what is known as the Taro

Desert, Elands have always been met with, and are even now comparatively numerous. But the heads from the herds in this neighbourhood, if one may judge by the few specimens which have been obtained, have usually small and misshaped horns. Outside the bush-country, on the Mkindu and the Athi Plains, herds of the Eland are occasionally met with, but there is no doubt that they migrate from one district to another. It is commonly reported that Elands were never seen on the Athi Plains until a few years ago, but at present, during the months of June, July, and August, Elands are generally to be found in the vicinity of the Athi river. In these months of the years 1898 and 1899 there were, to my knowledge, two or three herds of Elands on the Athi Plains. The largest herd that I observed contained over 60 head, but I have never seen a really good pair of horns from this neighbourhood."

Count Teleki, as we are informed by Herr v. Höhnel in his narrative of the first expedition to Lake Rudolf, met with the Eland on the Likipia plateau, north of Mount Kenya, where, according to a letter addressed by v. Höhnel to Sclater, they encountered a herd of about 170. But we are not aware of any evidence of its being found further north in British East Africa or in any part of Somaliland. Here, therefore, we appear to have reached its furthest limits in this direction, but further west, in the Valley of the Nile, there is good evidence of the existence of this form of Antelope in much higher latitudes.

The famous explorer Baron von Heuglin was the first traveller who recorded the existence of an Eland in the districts of the Upper Nile, although v. Pruyssenaer (as Heuglin states) had previously recognized its occurrence on the Bahr el-Abiad and Bahr-el-Sobat. But Heuglin, having obtained a pair of Eland's horns from the Upper White Nile, about 7° N. lat., referred them, on account of their large size, to a new species, "*Boselaphus gigas*." He gives a figure of these horns and states that they measure 35 inches in length, and show a distance of 32 inches between the two points. We have thought it advisable to reproduce Heuglin's figure of this remarkable pair of horns (see fig. 117, p. 208). In a subsequent work ('Reise in das Geb. d. Weiss. Nil') Heuglin adds that his *Taurotragus gigas* is found in pairs and singly in the forests of the Djur River and amongst the Arol negros.

The well-known traveller Schweinfurth, in his 'Im Herzen von Afrika,' also alludes more than once to the existence of the Eland on the upper confluents of the White Nile. In the first place, he met with it in Bongoland, where he says that it resorts to the drier slopes of the hills during the rains, and descends to the valleys in the winter months. In the second volume of his narrative, Schweinfurth mentions it again, and gives two figures of the

horns of what he calls the Central-African Eland, of two very different forms. Schweinfurth states that the skin is plainly striped, and that this is certainly no mark of youth, because he has seen very old examples which had about

Fig. 117

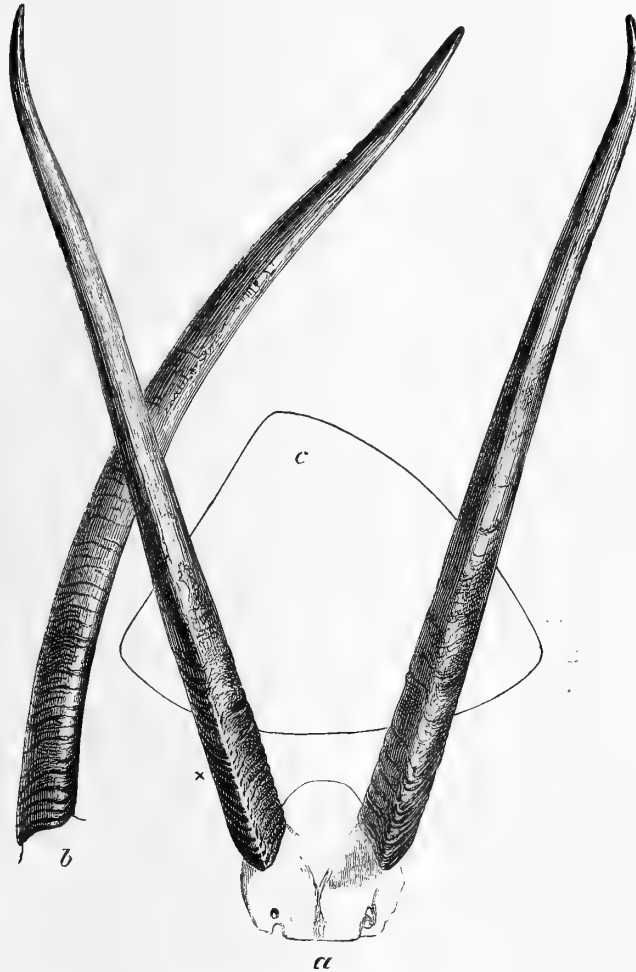


Horns of *Taurotragus oryx gigas*.
(Heuglin, Ant. u. Büff. N.O.-Afr. pl. i. fig. 2.)

fifteen narrow parallel stripes, about a finger in breadth, on both sides. It is quite evident, therefore, that the Eland of this part of Africa belongs to the striped form. It may be identical with *T. o. livingstonii*, but, as Heuglin

has given it a name, we will allow him the benefit of the doubt for the present, and will call this northern striped form *Taurotragus oryx gigas* until further investigations have been made.

Fig. 118.



Abnormal horns of female Eland.

a, front view ; *b*, side view ; *c*, transverse section at spot marked *x*.

(P. Z. S. 1889, p. 74.)

Before closing our systematic account of the Eland we must say a few words respecting some curious horns which were at first ascribed to a new and unknown Antelope, but are now generally admitted to be nothing more than

abnormal horns of the cow Eland. These horns were first brought before the scientific world by Dr. Günther, who exhibited a pair of them at a meeting of the Zoological Society in 1889, and stated that they had been obtained on the frontiers of Natal. Dr. Günther's opinion was that they belonged to an unknown Antelope of the Tragelaphine group, but under the uncertainty as to what form they were most nearly allied, he proposed to designate the presumed species *Antilope triangularis*. Through the courtesy of the Zoological Society of London, and with Dr. Günther's kind permission, we are able to reproduce here the illustration of these horns (fig. 118, p. 209) which accompanied Dr. Günther's paper in the Society's 'Proceedings.'

Writing of these horns in 1891, Mr. Lydekker was so convinced of their essential difference from those of any other known Antelope that he proposed to raise the animal that bore them to generic rank under the name "*Doratoceros*."

Some years subsequently, in 1896, Sclater obtained, on loan, a fine pair of horns of nearly similar character from Mr. Justice Hopley, of Kimberley, and, after comparing them with the typical pair of *Antilope triangularis* in the British Museum, came to the conclusion that they must have belonged to the same species of Antelope. Mr. Justice Hopley's pair were not quite so long, rather more incurved backwards, and less broadly spread; they were also smoother at the base, showing but slight traces of corrugations. When exhibiting these horns to the Zoological Society, Mr. Sclater stated that he could see nothing whatever to negative the opinion, already prevailing amongst other naturalists, that these horns were abnormal horns of the cow Eland, which had grown into a lengthened form without making the ordinary twist usually observable in that species and in other Tragelaphs. It is right to add that Mr. Lydekker himself is now also of the same opinion, and has stated ('Horns and Hoofs,' p. 260) that these horns "are almost certainly abnormal specimens of those of a cow Eland."

As we have already stated, living examples of the Eland were received in Holland from the Cape as long ago as about 1783, when they were described by Vosmaer and others as being in the menagerie of the Prince of Orange. In England the first examples of this species of which we can find any record were those which constituted the herd in the celebrated menagerie of Edward, 13th Earl of Derby, President of the Zoological Society of London. There is, unfortunately, little information available as to the origin and history of

this celebrated herd, but from some notes published by Lord Derby in the first volume of the 'Gleanings,' we learn that the first specimens received were obtained for him by Mr. Burke from the Cape in November 1842, and consisted of two males and a female. The female first bred in August 1843, and produced young in 1844, 1845, and 1846, at which date Lord Derby remarked that he had in his possession four males and two females of this Antelope. At the dispersal of the Derby Menagerie by auction in October 1851 the Knowsley herd consisted of two males and three females. These passed into the Gardens of the Zoological Society of London, having been selected out of the whole stock by the Council of the Society in virtue of a bequest by Lord Derby to that Society of any group of animals in his collection that they might prefer.

The original stock of the Zoological Society's herd of Elands consisted, therefore, of these five animals received by the Society in December 1851. Of these an old female had been born at Knowsley in 1846, and the other individuals, two males and two females, had been imported by Lord Derby in 1850. These animals thrive well in their new quarters and began to increase rapidly. As will be seen by the list given in Wolf and Sclater's 'Zoological Sketches' (vol. i.), two calves were born in 1853, three in 1854, four in 1855, and four in 1856. The first additions made to the original stock were a female presented by the late Sir George Grey in April 1859, and a male received in exchange from Viscount Hill in November of the same year. Since the date of its first institution the Zoological Society's herd of Elands has never failed, although occasionally reduced to somewhat small dimensions. Nearly every year one or more Eland-calves have been born in the Gardens, and care has been taken to lose no opportunity of introducing fresh blood whenever the occasion has offered. At the present moment, however, we regret to say, in consequence of the great difficulties now prevailing in obtaining living examples of the larger Antelopes of Africa, the Eland is represented in the Society's Antelope-House by only two specimens, namely, a male, about six years old, bred in the Jardin d'Acclimatation of Paris, and received on October 12, 1898, and a young female, purchased of Herr Reiche, of Alfeld, in April 1899. The latter is more rufous in colouring and shows slight traces of stripes, which, however, she may probably lose when quite adult.

From these two specimens our illustration of *Taurotragus oryx typicus* (Plate XCVIII.) has been prepared by Mr. Smit.

Besides the Zoological Society's animals, the only herd of Elands that we are aware of now existing in this country is that belonging to the Duke of Bedford, the President of the Zoological Society of London, which is kept in the beautiful Park at Woburn, along with a splendid series of Deer and other Ungulates. Through the kindness of His Grace we have been furnished with the following particulars concerning this herd, which now consists of fourteen individuals. Three of these are adult females, two of which were purchased from dealers, and the third from the Zoological Society of London, in whose Gardens it was bred. The adult male was purchased of Herr Reiche, of Alfeld. Five young males and two females have been bred at Woburn up to the end of 1899. Three calves, one male and two females, have been born at Woburn since the commencement of the present year.

Allusion has already been made to the Elands possessed by the late Roland, Viscount Hill, who, about the year 1861, possessed a fine herd of these animals. When visited by Sclater about that date, Lord Hill's stock consisted of three males and seven females, which were kept at his Lordship's residence Hawkstone, in Shropshire. They were the produce of individuals principally purchased by him from the Zoological Society, and were kept in grazing paddocks in Hawkstone Park. Unfortunately, a few years later Lord Hill lost his interest in these animals and got rid of them.

About the same period John, 2nd Marquis of Breadalbane, likewise purchased a herd of Elands, which, however, we believe, was not maintained long after the Marquis's death in 1862.

In almost all the Zoological Gardens of the Continent also the Eland is a well-known object of interest, and in many of them, until the last few years, has thriven well and produced its kind; but, as already mentioned, the supply of Elands from abroad has recently much decreased, and at the present time there is a great difficulty in keeping our herds of Elands in Europe up to the mark by the necessary introduction of fresh blood.

One of the chief ornaments of the Mammal-Gallery in the British Museum is the mounted pair of Livingstone's Elands obtained by Mr. F. C. Selous in Mashonaland in 1883. The male (as Mr. Selous informs us) was shot near Sadza's Kraal, west of Marandalla's, a station on the main road from Salisbury to Umtali, in July of that year, and the female near Salisbury in the following October. The male stands $67\frac{3}{4}$ inches high at the withers, and carries a pair of horns $22\frac{1}{2}$ inches in length in a straight line; the female is $57\frac{1}{2}$ inches in

height, and has horns 27 inches in length. In both these animals the lateral stripes are well defined, and there are no black patches above the knee on the fore leg of the male, though in the female the patches are slightly visible. These specimens are fair representatives of *Taurotragus oryx livingstonii*, and have been figured as such in our illustration (Plate XCIX.), prepared by Smit. But it is right to add that it appears that the skins have apparently shrunk slightly in drying, as in his measurements of the male specimen in question, lately given in the 'Great and Small Game of Africa' (p. 426), Mr. Selous states that the height of this animal, "taken on the naked carcase after the skin had been removed," was 69 inches. Moreover, in former days there were probably still larger specimens, as such reliable authorities as Barrow and Harris agree in stating that the old male Elands were known to attain a height of $6\frac{1}{2}$ feet at the withers.

There are also in the National Collection other skins and skulls of the Eland obtained by Mr. Selous, and a number of other specimens, amongst which we may specify a skull and horns of a female from Nyasaland, presented by Sir Harry Johnston, and a skull and horns from the district of Kilimanjaro, presented by Mr. F. J. Jackson in 1892. We may remark that examples of the Eland of the White Nile (the problematical *T. o. gigas*) are much wanted to complete the series in the National Collection, besides which specimens from other definite localities in Eastern Africa and Angola would be very acceptable.

April, 1900.



Waterhouse Hawkins, del. Smit, lit.

The Derbyan Eland.
TAUROTRAGUS DERBIANUS.

Published by R.H. Porter.

Hanhart imp.

133. THE DERBIAN ELAND.

TAUROTROGUS DERBIANUS (GRAY).

[PLATE C.]

- Boselaphus oreas*, Gray, Cat. Ost. B. M. p. 145 (1847).
Boselaphus derbianus, Gray, Ann. Mag. Nat. Hist. xx. p. 286 (1847); id. Silliman's Amer. Journ. v. p. 279 (1848); id. P. Z. S. 1850, p. 144; id. Ann. Mag. Nat. Hist. (2) viii. p. 226 (1851); id. Knowsl. Menag. pl. xxv. (1850); Gerv. H. N. Mamm. ii. p. 201, pl. xxxviii. (1855); Fitz. SB. Ak. Wien, lix. pt. 1, p. 179 (1869).
Oreas derbianus, Gray, Knowsl. Menag. p. 27 (1850); id. Cat. Ung. B. M. p. 136 (1852); Gerr. Cat. Bones B. M. p. 245 (1862); Winwood Reade, P. Z. S. 1863, p. 169, pl. xxii.; id. 'Savage Africa,' p. 398 (cum tab.) (1864); Gray, Cat. Rum. B. M. p. 47 (1872); id. Hand-l. Rum. p. 118 (1873); Rochbr. Faune Sénégalamb. p. 120, pl. vii. fig. 2 (1883); Jent. Cat. Ost. Leyd. Mus. (Mus. Pays-Bas, ix.) p. 141 (1887); Ward, Horn Meas. pp. 165-168 (1892), p. 211 (1896); Lyd. Horns and Hoofs, p. 260 (1893); id. Royal Nat. Hist. ii. p. 273 (1894); Pousargues, Ann. Sci. Nat. iv. p. 81 (1897); Sci. P. Z. S. 1898, p. 349 (horns).
Antilope (Taurotragus) derbianus, Wagn. Schr. Säug., Suppl. v. p. 439 (1855).
Taurotragus derbianus, Lyd. & Bryden, in Ward's Great and Small Game of Afr. p. 439, pl. xii. fig. 2 (1899).
Oreas colini, Rochbr. Bull. Soc. Phil. Paris, (7) vii. p. 8 (1883); id. Faune Sénégalamb. p. 121, pl. vii. fig. 1 (1883).

VERNACULAR NAMES:—*Gingi-ganga* or *Djik-i-junka* of the Mandingoes of Senegambia (*Whitfield* and *Winwood Reade*).

Exact height at withers unknown, but probably equal to, if not exceeding, that of the preceding species (70 inches). Forehead covered with hair of a rich ruddy-brown hue, extending from the base of the horns to a point below the level of the eyes; nose black; sides of the head dusky brown or dark

fawn ; a whitish stripe running inwards and forwards from the inner edge of the eye on each side ; upper lip and chin white. Ears large and expanded, much larger than in the other species ; the margins broadly white in front and ornamented on the lower side with a large black patch ; the posterior surface mostly black, brownish at the base. Neck covered with long hair of a dark brown or black colour, blacker towards the shoulder than in front ; base of the neck bordered by a white collar, directed obliquely upwards and backwards at least halfway up to the withers. Body of a rich ruddy fawn-colour, becoming paler or nearly white below, the middle of the belly black ; a broad black stripe of longer hairs extending all down the spine from the neck to the root of the tail ; sides of the body and haunches ornamented with thirteen or fourteen narrow white stripes, commencing at the dorsal stripe above and gradually fading away on the lower part of the belly and hind-quarters. Legs down to the knees and hocks of the same colour externally as the body, whitish on the inner side ; there is a large black patch on the fore leg above the knee on the posterior and inner sides. Horns very large and massive, diverging from the base, the divergence in some cases amounting almost to a right angle ; length of horns up to about 34·25 inches.

Female. Smaller than the male, and without the mat of hairs on the forehead ; horns smaller and less divergent than in the male, but much more strongly twisted and crested than in the females of the other species.

Hab. Senegal and the Gambia Colony.

Just as the Kudu, which is spread over the greater part of southern and eastern Africa, has a smaller relative (the Lesser Kudu) confined to Somaliland, so the Eland, which has a still wider range, has a near, but quite distinct, ally in a limited part of western Africa. But in the latter case the ally is what is called a "representative form," since the typical Eland does not occur in the same country, whereas in Somaliland both the Greater and Lesser Kudus are found together in one district.

The discovery of the West-African Eland is due to the researches of the collector, J. Whitfield, who was employed by the thirteenth Earl of Derby to procure living specimens of the larger Antelopes and other animals for his celebrated Knowsley Menagerie. With this object Whitfield made several expeditions to the River Gambia, and on his return, in 1846, brought with

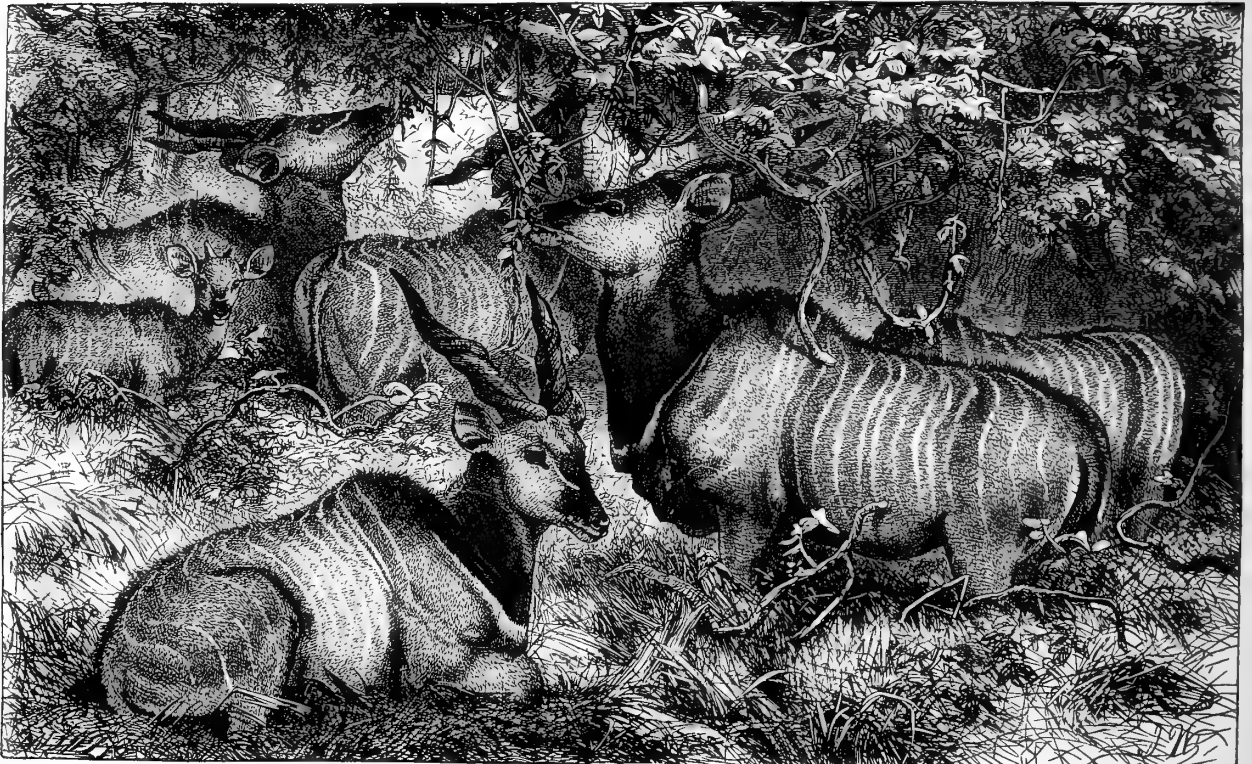
him some horns of a large Antelope nearly resembling those of the South-African Eland, but "larger, longer, and much heavier." In his expedition of 1847 Whitfield succeeded in procuring from the same district the upper part of the skull and horns of a male and the flat skins (unfortunately without heads or feet) of an adult male and female of this animal, of which the native name was said to be "*Gingi-ganga*." It was upon these specimens that the late Dr. Gray, in October 1847, established his species *Boselaphus derbianus*, by publishing a short description of it in the 'Annals and Magazine of Natural History' for that month. It has been imagined, and even stated in print, that living specimens of this Eland were received by Lord Derby; but such, we believe, was not the case. The drawings made by Waterhouse Hawkins, and subsequently issued in the 'Gleanings from the Knowsley Menagerie,' were taken, we believe, not from living examples, but from the specimens brought home by Whitfield, as already mentioned.

So far as we know, no further information respecting this remarkable Antelope was brought to Europe until 1863, when the well-known African traveller, the late Mr. Winwood Reade, returned to England from one of his expeditions into Western Africa. Along with other spoils of the chase, Reade brought with him a head and skin of the present Antelope, which he at first believed to be undescribed; but on inspecting them, at Reade's request, Sclater at once recognized them as belonging to the little-known Derbian Eland, and persuaded Reade to exhibit them at a meeting of the Zoological Society of London in May of that year. Reade's notes upon this occasion were subsequently published in the Society's 'Proceedings' and illustrated by a plate drawn by Joseph Wolf from Mr. Reade's specimens. So little is known of this most interesting Antelope, that we propose to give Mr. Reade's account of it at full length as follows:—

"When I was on the Casamanza, a river of Senegambia, in December 1862, I was informed of the existence of an enormous Antelope, double the size of the Senegal Bullock, with horns lying backwards, a black mane, and white stripes on its sides. My French host informed me that it was unknown in France, which is quite true, as, in fact, its very existence has been denied by French naturalists. I asked where this animal was most abundant, and was told in the bamboo-forest of Bambunda, about fifty miles north-east of Sedhu, where I was staying. I immediately rode over to a village called Nussera, situated on the borders of the forest, taking a rifle with me. The hunters of that village told me that at that time it would be impossible to kill the *Djik-i-junka*, the bush being dark, as they expressed it; but that in a few weeks they would

burn the tangled undergrowth of the forest and the high grass of the plains, according to their annual custom. They would then have a *battue*; hundreds of people would collect, and the animated nature, towards the close of the day, would be driven into a large plain. There Antelopes, Gazelles, Wild Boars, Porcupines, &c. would be found so exhausted that many of them could be killed with sticks; and indeed only a limited number of guns were allowed in case of accidents. Accordingly I made an arrangement with them that the first specimen they killed should be sent to Sedhu, where my friend

Fig. 119.



Herd of Derbian Elands.
(From Winwood Reade's 'Savage Africa.')

M. Rapet would buy it for me, and send it on. Thus I obtained one specimen; the others I purchased at Macarthy's Island, Gambia.

"I made inquiries of the hunters of Nussera as to the habits of the Derbian Eland. They told me that the forest was its home; that it never of its own accord entered the plains; that it never grazed, but that the bull would tear down branches of trees for the does and fawns to feed upon.

"A fawn, destined for le Jardin des Plantes, was once sent by M. Rapet from the

Casamanza, but it died at Goree. When I was at Macarthy's Island, I saw a fawn of this Antelope which was in the possession of an officer of the 2nd West Indian Regiment; it was extremely tame, allowing itself to be caressed, and was so young that it used to be fed on milk."

Some further details on the subject will be found in Winwood Reade's 'Savage Africa,' where they are accompanied by a beautiful lithographic plate

Fig. 120.



Horns of Derbyan Eland.
(P. Z. S. 1898, p. 349.)

representing a herd of Derbyan Elands, drawn by Joseph Wolf and signed with his initials. This plate (fig. 119, p. 218) by the kindness of Messrs. Smith, Elder, & Co., we are enabled to reproduce in the present work.

Since Winwood Reade's visit to the West Coast, although several heads of the Derbyan Eland have been obtained at the Gambia by Dr. Percy Rendall and others, little additional information has been received on the subject. In 1898 Sir R. B. Llewellyn, K.C.M.G., the Governor of the Colony, brought

home, amongst other spoils of the chase, a fine pair of horns of this Antelope, which were exhibited by Sclater at a Meeting of the Zoological Society on May 5th of that year. A figure of them was given in the 'Proceedings,' which the kindness of the Society enables us to reproduce (fig. 120, p. 219) on the present occasion. These horns are of large dimensions, measuring 31 inches in length from the base in a straight line, and about $11\frac{1}{2}$ inches round their bases. They are apparently those of an adult male animal.

Mr. J. S. Budgett, F.Z.S., who made a zoological expedition to the Gambia last year, specially with a view of collecting and observing the river-fishes, has favoured us with the following notes on what he saw of the Derbian Eland during several visits to the upper districts of the Protectorate:—

"The Derbian Eland of the Gambia is known to the Mandingoes by the name of '*Jinke-janko*.' It does not seem to be very abundant, and is undoubtedly very shy. During my stay on the river, several pairs of horns were found in the possession of natives. Two were met with on the south bank, west of M'Carthy's Island, and one at Koina, on the north bank, 100 miles east of M'Carthy's Island. All these had been procured in the year 1899.

"A head of a young female was taken from a carcase floating down the river near Yarbutenda by Mr. P. E. Wainwright, the travelling Commissioner of the M'Carthy's Island district, and presented to me.

"I was assured by Mr. Wainwright that the hair on the neck of this animal was 'bluish,' though the animal was a good deal decomposed.

"I myself, one day in May 1899, saw a large herd of very large Antelopes in the distance near the town of Berreef on the north bank of the Gambia, about 15 miles from Yarbutenda. I have little doubt that these were Derbian Elands, though I was not fortunate enough to secure one. They were of an extremely light colour all over the body, but the head and neck were darker, and the horns appeared rather short and straight at the distance of 400 yards."

Before concluding our account of the Derbian Eland, it is necessary to say a few words respecting the supposed new species of Eland described by M. Rochebrune in the 'Bulletin' of the Société Philomathique of Paris in 1883, and subsequently in his 'Fauna of Senegambia,' although we are not generally willing even to allude to this most untrustworthy publication. So far as we can make out, the specimens of this animal promised in the text of M. Rochebrune's work to be sent to the Gallery of the Museum of Paris have never reached that Institution, and the only evidence we have, therefore, for

its existence is contained in M. Rochebrune's descriptions and figures. As well as we can judge from these and from the extreme improbability of there being a species of Eland in Senegal different from that of the Gambia, we

Fig. 121.



Front view of the horns of the Derbian Eland.

are inclined to place the so-called *Oreas colini* as a synonym of the present species. The figure of the head given by Rochebrune is stated to have been

taken from a sketch made by "M. le Dr. Colin" of a head of this animal obtained in the forest of Kita in Senegal. In this figure the whole head of the animal is represented as of a nearly uniform slaty grey, with the exception of a patch of reddish hair on the forehead at the base of the horns and a black patch in the middle of the nose. These are certainly striking differences, if we could trust them as being accurate, but we do not know how far M. le Dr. Colin's sketch was correctly made, nor what alterations the copier of it may have introduced into M. Rochebrune's plate. We cannot admit the existence of the supposed new species upon such unsatisfactory evidence.

The authorities of the Liverpool Museum have most kindly sent up to us for examination the specimens of the Derbian Eland now in the Derby Museum, Liverpool, which are probably those from which the original figures in the 'Gleanings' were drawn by Waterhouse Hawkins. The frontlet is apparently that of an adult specimen, as will be seen from our view of it (fig. 121, p. 221) prepared by Mr. Grönvold. The horns measure $30\frac{1}{2}$ inches in length from base to tip, the tips are nearly 23 inches apart in a straight line. The two flat skins which accompany it are without heads, and the legs have been cut off at the knees.

In the British Museum there are frontlets of one female and two male specimens of the Derbian Eland, obtained at the Gambia by the same collector (Whitfield) and presented by Lord Derby. In the same collection there is a flat skin brought home by Winwood Reade, and the head of a female, dried with the skin on, obtained by Dr. Percy Rendall on the Gambia.

The material available not being, in our opinion, sufficient for the preparation of a correct figure of the Derbian Eland, we have thought it best, as our illustration of this Antelope, to copy, on a reduced scale (Plate C.), the original figures of the Derbian Eland drawn by Waterhouse Hawkins for plate xxv. of the 'Gleanings.'

We admit, however, that these are by no means satisfactory, for the head and legs of the specimens from which the figures were taken are absent, and the details as to these parts in the figures were probably filled up from conjecture. Wolf's figure of the head of Reade's specimen in the 'Proceedings' is, no doubt, more accurate, but in this example the legs are likewise deficient.

April, 1900.

APPENDIX.

LIST OF THE SPECIES AND SUBSPECIES OF ANTELOPES DESCRIBED
AS NEW DURING THE PROGRESS OF THIS WORK.

Genus BUBALIS. (Vol. I. p. 5.)

BUBALIS NEUMANNI.

Bubalis neumanni, Rothschild, Ann. & Mag. N. H. ser. 6, xx. p. 376 (1897).

Mr. Rothschild has based this species upon two skulls with horns, of male and female, and parts of a skin obtained by Mr. A. H. Neumann on the east shore and to the north-east of Lake Rudolf. He describes it as follows:—

“The horns of this species differ widely from those of *Bubalis major* (Blyth), of West Africa, and *B. buselaphus* (Pall.), of Northern Africa and Arabia, in being slenderer and in their tips being inverted, instead of pointing outwards or straight behind. The nearest ally seems to be *B. tora* (Gray) of Upper Nubia, Abyssinia, and Kordofan, which, however, has more slender horns, with more distinct rings, reaching almost round, a broader forehead, and a generally paler coloration. The horns also diverge much more in *B. tora*, as shown at a glance by the distances between the tips of the horns, as recorded in R. Ward’s ‘Horn Measurements.’

“The horns of *B. neumanni* measure as follows:—

“Circumference at base, ♂ 273 millim., ♀ 183; total length along the curves, ♂ 420, ♀ 345; tip to tip, ♂ 206, ♀ 249.

“The rings of the horns are not very prominent and do not reach all round.

“Breadth of skull at forehead, ♂ 100 millim., ♀ 80; length of skull from base of horn to upper lip, along the side in a straight line: ♂ 430, ♀ 403 millim.

“Colour of hair fulvous fawn, much richer on the back, where there are also some darker spots, which may be stains or natural; below very much

paler. Chin blackish, tip of tail black. The male is brighter and darker in colour than the female. There are also on the back some patches with longer, thicker, almost whitish-buff hair, perhaps remains of the winter fur."

Genus CONNOCHÆTES. (Vol. I. p. 93.)

CONNOCHÆTES TAURINUS JOHNSTONI.

Connochætes taurinus johnstoni, Scl. P. Z. S. 1896, p. 616, pl. xxvii.

Under this subspecific name Sclater has shortly described and figured the local form of the Brindled Gnu that occurs on the plains of the Shiré Highlands, Nyasaland. The difference consists mainly in the generally brownish colour of the body, and the broad whitish band across the face beneath the eyes. The mane is black or blackish as in *C. taurinus typicus*, not white as in *C. albo-jubatus*.

Some good field-notes on the same animal by Mr. R. Crawshay are appended to Sclater's remarks.

Genus CEPHALOPHUS. (Vol. I. p. 121.)

CEPHALOPHUS HECKI.

Cephalophus hecki, Matsch. SB. Ges. nat. Freund. Berlin, 1897, p. 158.

Herr Matschie has proposed this name for the geographical form of *C. monticola* (Bk. of Ant. i. p. 191) which occurs in Mozambique. The type is an adult male in the Berlin Museum from Mozambique, and there was also at the time of the description a specimen living in the Zoological Garden of Berlin.

CEPHALOPHUS LUGENS.

Cephalophus lugens, Thos. P. Z. S. 1898, p. 393.

This is a member of the group of *C. monticola*, but larger and of darker colour than any other of the three species of that section—*C. monticola*, *C. melanorheus*, and *C. equatorialis*. The typical specimens were obtained by Mr. A. Sharpe's native hunters in Urori (or Usango), within the frontiers of German East Africa, north of Lake Nyasa, at an altitude of about 3000 feet.

CEPHALOPHUS LEUCOPROSOPUS.

Cephalophus leucoprosopus, O. Neumann, SB. Ges. nat. Freund. Berlin, 1899, p. 18.

This species was based upon a pair of Antelopes living in the Zoological Garden, Berlin, stated to have been received from Angola. It is smaller than *C. coronatus*, and belongs to the same group, with hornless females (*Sylvicapra*, Ogilby). Its general colour is brown with a darker back; legs black; tail above black, beneath white. The species is remarkable for the colour of the head, in which the top of the nose and a triangular spot in front of the eyes are black; the forehead is red; the outer sides of the ears, hinder part of the head, and under-jaw are brownish. Round the eye runs a broad white line, which extends towards the nose in sharp contrast to the black colour; a spot at the base of the ear and the insides of the ears are also white.

Genus RAPHICERUS. (Vol. II. p. 33.)

RAPHICERUS CAMPESTRIS.

Dr. Jentink (Notes Leyd. Mus. xxii. p. 38, 1900) proposes (for reasons stated by him) to alter the name of the Antelope which we have described and figured as *Raphicerus campestris* to *Pediotragus horstockii*.

In the same paper Dr. Jentink describes an allied form from Mossamedes as *Pediotragus kelleni*. This species is based on two skulls in the Leyden Museum, obtained by the brothers v. d. Kellen at Cahama, Kakulovar River, Upper Cunene.

RAPHICERUS SHARPEI.

Raphiceros sharpei, Thos. P. Z. S. 1896, p. 796, pl. xxxix.

This is a species of *Raphicerus* with the white markings of the Grysbok *R. melanotis*, but with the feet of the Steinbok (*R. campestris*), having no supplementary hoofs.

The type (an adult male) was obtained by Mr. Alfred Sharpe in Southern Angoniland, B.C.A., and presented to the British Museum.

Genus NESOTRAGUS. (Vol. II. p. 49.)

NESOTRAGUS LIVINGSTONIANUS ZULUENSIS.

Nesotragus livingstonianus zuluensis, Thos. Ann. & Mag. N. H. ser. 7, ii. p. 317 (1898).

Thomas shows (*op. cit.*) that the form of *Nesotragus livingstonianus* from

Zululand, which was referred by him (P. Z. S. 1893, p. 237) and by us in the present work (ii. p. 55) to the typical form, is subspecifically different. It is generally of a grizzled fawn-colour instead of deep rufous, and the fetlocks are only indistinctly blackish behind, instead of being prominently black all round. This subspecies seems also to have finer horns.

Genus MADOQUA. (Vol. II. p. 67.)

MADOQUA CAVENDISHI.

Madoqua cavendishii, Thos. P. Z. S. 1898, p. 278.

This species was established on a skull and a skin procured by Mr. H. S. H. Cavendish during his journey in N.E. Africa, probably in the neighbourhood of Lake Rudolf. It is a large species apparently allied to *M. damarensis*, but of "darker general colour, with broader and differently-shaped nasals, a higher and more open nasal cavity, and with separated premaxillæ."

Genus COBUS. (Vol. II. p. 95.)

COBUS SMITHEMANI.

Cobus smithemani, Lyd. P. Z. S. 1899, p. 981, pl. lxxi.

This species is based on a flat skin obtained by Mr. F. Smitheman, F.Z.S., in the neighbourhood of Lake Mweru, and indicates a large Antelope with long shaggy hair on the nape of the neck allied to *C. maria*, but without a white patch on the withers, which are chestnut, and without a white line down the back of the neck.

COBUS NIGROSCAPULATUS.

Adenota nigroscapulata, Matschie, SB. Ges. nat. Freund. Berlin, 1899, p. 15.

This species is based upon an old mounted specimen in the Darmstadt Museum which was obtained years ago by Harnier on the Bahr-el-Gebel between 6° and 7° N. lat. The horns have eighteen rings and are nearly parallel; they measure from base to tip 35.4 centim. in a straight line.

The ground-colour of the fur is yellow; the eye-region, a circular mark in front of the ears, rim round the nostrils, under lips, under neck, whole under surface, and inner sides of legs are white; the sides of the head, the whole

body and a broad band across the breast, the hind margins of the shoulders, and thighs are yellow; an oval nose-spot, a broad band from the side of the neck, bordering the white breast, over the shoulders down to the hoofs are black, as are the groins and the hinder feet; a white ring surrounds the hoofs.

COBUS VARDONI LODERI.

Cobus vardoni loderi, Lyd. P. Z. S. 1899, p. 983.

On a skull and horns in the collection of Sir E. G. Loder, F.Z.S., from an unknown locality (of which a figure is given), Mr. Lydekker bases this subspecies of the Poku (*cf.* Bk. of Ant. vol. ii. p. 141). A somewhat similar specimen was obtained by Mr. Smitheman near Lake Bangweolo, and it is thought possible therefore that these specimens may belong to *C. smithemani*, described in the same paper.

Genus CERVICAPRA. (Vol. II. p. 155.)

CERVICAPRA THOMASINÆ.

Cervicapra thomasinæ, Scl. P. Z. S. 1900 (May 8th).

Under this name Sclater has recently described and figured a species of Reedbuck, met with in Nyasaland, which he has characterized as follows:—“*C. quoad formam C. arundinum* fere similis, sed colore albo, in dorso cineraceo et pedibus antice fulvo-brunneis, ut videtur, satis diversa: alt. ad humeros 35 poll.—*Hab.* in ripis Laci Nyasæ, Afr. or.”

CERVICAPRA FULVORUFULA SUBALBINA.

Cervicapra fulvorufula subalbina, Kirby, P. Z. S. 1897, p. 897.

This is either a partially albino variety or a local form of *Cervicapra fulvorufula*, discovered by Mr. F. V. Kirby, F.Z.S., on the mountains of the Lydenburg district of the Transvaal. It differs from typical specimens in having the legs white from the knees down, white hoofs, a pure white tail above and beneath, a white spot on the forehead, and a more or less clearly defined white stripe down the back of the neck and along the dorsal line.

There are two specimens of this Antelope in the British Museum, presented by Mr. Kirby.

Genus LITHOCRANIUS. (Vol. III. p. 227.)

LITHOCRANIUS SCLATERI.

Lithocranius sclateri, O. Neumann, SB. Ges. nat. Freund. Berlin, 1899, p. 19.

This name has been proposed for the form of *Lithocranius* that occurs in Somaliland. It is rather larger and has finer horns, as we have stated (see our remarks, vol. iii. p. 230). It is now pointed out that the typical form of East Africa is redder than that of Somaliland, that it has black knee-tufts, and shows a slight difference in the white markings of the tail.

Genus HIPPOTRAGUS. (Vol. IV. p. 3.)

HIPPOTRAGUS LANGHELDI.

Hippotragus langheldi, Matsch. SB. Ges. nat. Freund. Berlin, 1898, p. 182.

Under this name it seems that the same geographical form is described as that which we have called *Hippotragus equinus rufo-pallidus* (suprà, p. 14), ex *H. rufo-pallidus*, Neumann, P. Z. S. 1898, p. 850. The type of *H. langheldi* is from Tabora, German East Africa; it is diagnosed as follows:—" *H. bakeri* affinis; colli jubâ tricolore, subtùs albâ, supernè brunneâ nigro marginatâ; pectore nigrescente, caudæ basi nigerrimâ."

INDEX.

- Acronotus*, i. 5.
 — *bubalis*, i. 7, 15.
 — *caama*, i. 33, 39.
 — *lehwel*, i. 8.
 — *lunatus*, i. 85.
Addax, iv. 1, 77, 79.
 — *addax*, iv. 80.
 — *naso-maculatus*, iv. 77, **79 (Pl. lxxxvi.)**,
 80.
 — *suturosus*, iv. 79.
Adenota, ii. 95.
 — *kob*, ii. 131.
 — *koba*, ii. 131.
 — *lechee*, ii. 127, 149.
 — *leucotis*, ii. 127.
 — *megaceros*, ii. 121.
 — *sing-sing*, ii. 105.
Ægoceros bakeri, iv. 14.
 — *koba*, iv. 15.
 — *leucophæus*, iv. 14, 15.
 — *niger*, var. *kirkii*, iv. 32.
Æpyceros, iii. 2, 15.
 — *melampus*, iii. 15, **17 (Pl. xlviii.)**,
 25.
 — — *holubi*, iii. 18.
 — — *johnstoni*, iii. 18.
 — — *typicus*, iii. 18.
 — *petersi*, iii. **25**.
 — *suara*, iii. 18.
Aigocerus, iv. 3.
 — *barbata*, iv. 14.
 — *ellipsiprymnus*, ii. 97.
 — *equinus*, iv. 13.
 — *harrisi*, iv. 32.
 — *leucophæus*, iv. 6, 14.
Aigocerus niger, iv. 31.
Alcelaphus, i. 5.
 — *albifrons*, i. 79.
 — *bubale*, i. 8.
 — *bubalinus*, i. 8.
 — *bubalis*, i. 8, 39.
 — —, var. *tunisianus*, i. 11.
 — *caama*, i. 21, 34, 39, 45.
 — *cokei*, i. 27.
 — *hunteri*, i. 53.
 — *jacksoni*, i. 39.
 — *lichtensteini*, i. 27, 45.
 — *lunatus*, i. 85.
 — *major*, i. 11.
 — *pygargus*, i. 74.
 — *senegalensis*, i. 59.
 — *tora*, i. 15.
 — (*Damalis*) *hunteri*, i. 53.
Alces oreas, iv. 198.
Algazel, iv. 43.
Ammodorcas, iii. 2, 217.
 — *clarkei*, iii. 217, **219 (Pl. lxxiii.)**.
Antelope, Angas', iv. 137.
 —, *Beatrix*, iv. 51.
 —, *Blue*, iv. 5.
 —, *Bongo*, iv. 134.
 —, *Broad-horned*, iv. 131.
 —, *Chinese*, iii. 84.
 —, *Decula*, iv. 105.
 —, *Forest*, iv. 118.
 —, *Four-horned*, i. 215.
 —, *Harnessed*, iv. 109, 110.
 —, *Hunter's*, i. 53.
 —, *Indian*, iii. 14.
 —, *Leucoryx*, iv. 51, 65.

Antelope, Livingstone's, ii. 55.

—, Roan, iv. 13.

—, Royal, ii. 61.

—, Sable, iv. 31.

—, Senegal, i. 67.

—, Striped, iv. 175.

—, White-faced, iv. 74.

—, White-footed, iv. 95.

—, Zanzibar, ii. 51.

Antelopus roualeyni, iv. 123.

Antidorcas, iii. 2, 53.

— *euchore*, iii. 53, **55** (**Pl. li.**),
56.

Antilope, iii. 2, 3.

— *acuticornis*, ii. 42, 44.

— *addax*, iv. 79.

— *adenota*, ii. 137.

— *albifrons*, i. 79.

— *albipes*, iv. 94.

— *algazella*, iv. 43.

— *altifrons*, i. 204.

— *annulipes*, ii. 138.

— *arabica*, iii. 115, 120.

— *arundinaceus*, ii. 157, 165.

— *arundinum*, ii. 157.

— *aurita*, iv. 14.

— *barbata*, iv. 14.

— *beatrice*, iv. 52.

— *beisa*, iv. 65.

— *bennettii*, iii. 119.

— *besoartica*, iv. 51.

— *bezoartica*, iii. 6; iv. 57.

— *bilineata*, iii. 6.

— *bohor*, ii. 166.

— *brevicaudata*, ii. 25.

— *bubalis*, i. 7, 15, 33.

— *burchilli*, i. 204.

— *buselaphus*, i. 7.

— *caama*, i. 33, 35, 39.

— *cærulescens*, ii. 157.

— *campstris*, ii. 41, 43.

— *capensis*, i. 111; ii. 42; iv. 6.

— *capreolus*, ii. 189.

— *cervicapra*, iii. 3, **5** (**Pl. xlvii.**).

— *chickara*, i. 216.

— *chiru*, iii. 46.

Antilope chora, iv. 175.

— *cinerea*, ii. 158, 160.

— *colus*, iii. 32.

— *cora*, iii. 115.

— *corinna*, iii. 100.

— *cuvieri*, iii. 79, 109.

— *dama*, iii. 205, 209.

— —, var. *orientalis*, iii. 205, 210.

— *dammah*, iv. 65.

— *decula*, iv. 105.

— *defassa*, ii. 115.

— —, var. *abyssinica*, ii. 115.

— —, var. *senegalensis*, ii. 105.

— *dorcas*, i. 33, 73, 75; iii. 99, 115,
151.

— —, var. *persica*, iii. 90.

— *doria*, i. 171.

— *dorsata*, iii. 56.

— *eleotragus*, ii. 157, 175.

— *ellipsiprymnus*, ii. 97.

— *ensicornis*, iv. 44.

— —, var. *asiatica*, iv. 51.

— *equina*, iv. 13.

— *euchore*, iii. 55.

— *eurycerus*, iv. 131.

— *fasciata*, i. 171.

— *forfex*, ii. 137.

— *frederici*, i. 179.

— *fulva*, ii. 172.

— *fulvo-rubescens*, ii. 42.

— *fulvorufula*, ii. 175.

— *gazella*, iii. 100; iv. 43, 58.

— *gibbosa*, iv. 79.

— *glauca*, iv. 6.

— *gnu*, i. 95, 111.

— *gorgon*, i. 95.

— *grimmia*, i. 167, 195.

— *grisea*, i. 73; ii. 36, 37.

— *gutturosa*, iii. 79, 83.

— *hastata*, ii. 21.

— *hazenna*, iii. 120.

— *hemprichiana*, ii. 70.

— *hemprichii*, ii. 70.

— *hodgsoni*, iii. 45.

— *ibex*, ii. 42.

— *isabellina*, ii. 158.

Antilope isidis, iii. 151.
 — *kemas*, iii. 46.
 — *kevella*, iii. 100.
 — *klippspringer*, ii. 6.
 — *kob*, ii. 137.
 — *koba*, i. 60; ii. 105.
 — *korrigum*, i. 59.
 — *lævipes*, iii. 163.
 — *lalandia*, ii. 175.
 — *lanata*, ii. 190, 191.
 — *landiana*, ii. 175.
 — *leptoceros*, iii. 137.
 — *lervia*, ii. 138.
 — *leucophæa*, iv. 5, 110.
 — *leucopus*, iv. 94.
 — *leucoryx*, iv. 43, 51.
 — *leucotis*, ii. 127.
 — *lichtensteini*, i. 45.
 — *lunata*, i. 85.
 — *maculata*, i. 73.
 — *madoqua*, i. 199, 200; ii. 25, 70.
 — *marsupialis*, iii. 55.
 — *maxwelli*, i. 181.
 — *melampus*, iii. 17.
 — *melanotis*, ii. 35, 37.
 — *melanura*, ii. 16; iii. 159.
 — *mergens*, i. 203, 206.
 — *mhoks*, iii. 213.
 — *nhorr*, iii. 210, 213.
 — *minuta*, i. 191.
 — *montana*, ii. 25.
 — *monticola*, i. 191.
 — *moschata*, ii. 51, 55, 56.
 — *mytilopes*, iv. 79.
 — *naso-maculata*, iv. 79.
 — *nictitans*, i. 203, 206.
 — *nigra*, iv. 31.
 — *ocularis*, i. 204.
 — *ogilbyi*, i. 161.
 — *oleotragus*, ii. 158.
 — *oreas*, iv. 198.
 — *oreotragus*, ii. 5, 157.
 — *orientalis*, iii. 84.
 — *oryx*, iv. 57.
 — *ourebi*, ii. 15, 17.
 — *pallah*, iii. 18.

Antilope pallida, ii. 36.
 — *pasan*, iv. 58.
 — *pediotragus*, ii. 36.
 — *perpusilla*, ii. 62.
 — *personata*, i. 73.
 — *phalerata*, iv. 110.
 — *philantomba*, i. 181.
 — *picta*, iv. 93.
 — *picticaudata*, iii. 71.
 — *pluto*, i. 175.
 — *ptox*, i. 204.
 — *pygarga*, i. 73; iii. 56.
 — *pygmæa*, i. 181, 191; ii. 61.
 — *quadricornis*, i. 215.
 — *quadriscopa*, i. 119.
 — *recticornis*, iv. 57.
 — *redunca*, ii. 165, 171.
 — *regia*, ii. 62, 65.
 — *reversa*, ii. 171.
 — *rubro-albescens*, ii. 36.
 — *rufa*, ii. 172.
 — *rufescens*, ii. 36.
 — *ruficollis*, iii. 205.
 — *rupestris*, ii. 42.
 — *rupicapra*, iii. 6.
 — *saccata*, iii. 56.
 — *saiga*, iii. 31.
 — *saliens*, iii. 56.
 — *saltans*, iii. 56.
 — *saltatrix*, ii. 6; iii. 56.
 — *saltatrixoides*, ii. 6.
 — *saltiana*, ii. 69, 71.
 — *scoparia*, ii. 15, 17.
 — *scripta*, i. 73; iv. 109.
 — *scythica*, iii. 32.
 — *senegalensis*, i. 59, 60, 63.
 — *silvicultrix*, i. 125.
 — *sing-sing*, ii. 105.
 — *soemmerringii*, iii. 179, 195.
 — *berberana*, iii. 196.
 — *spinigera*, ii. 62, 65.
 — *strepiceros*, iv. 173, 174.
 — *subgutturosa*, iii. 89.
 — *subquadricornutus*, i. 216.
 — *subulata*, ii. 44.
 — *suturca*, iv. 79.

Antilope sylvatica, iv. 117.
 — *tao*, iv. 43.
 — *tatarica*, iii. 31.
 — *taurina*, i. 95, 97.
 — *tetracornis*, i. 216.
 — *tilonura*, iii. 159.
 — *torticornis*, iv. 175.
 — *tragocamelus*, iv. 93.
 — *tragulus*, ii. 41, 43.
 — — *melanotis*, ii. 35.
 — — *pallida*, ii. 36.
 — — *rupestris*, ii. 42.
 — *triangularis*, iv. 197.
 — *truteri*, iv. 14.
 — *tzeiran*, iii. 84.
 — *unctuosa*, ii. 105.
 — *vardonii*, ii. 141.
 — *villosa*, ii. 190.
 — *zebra*, i. 171.
 — *zebrata*, i. 171.
 — (*Addax*) *euryceros*, iv. 131.
 — (—) *oreas*, iv. 196.
 — (—) *scripta*, iv. 109.
 — (—) *strepsiceros*, iv. 174.
 — (—) *sylvatica*, iv. 117.
 — (*Alcelaphus*) *caama*, i. 27.
 — (*Boselaphus*) *canna*, iv. 196.
 — (—) *oreas*, iv. 196.
 — (*Bubalis*) *leucophæa*, iv. 5, 14.
 — (—) *oreas*, iv. 196.
 — (—) *oryx*, iv. 51, 58.
 — (—) *picta*, iv. 94.
 — (—) *tragocamelus*, iv. 93.
 — (*Cephalolophus*) *dorsalis*, i. 155.
 — (—) *melanorheus*, i. 185.
 — (—) *natalensis*, i. 139.
 — (—) *punctulatus*, i. 180.
 — (—) *rufilatus*, i. 167.
 — (—) *whitfieldi*, i. 180.
 — (*Cephalophus*) *burchelli*, i. 203.
 — (—) *cærulea*, i. 191.
 — (—) *coronatus*, i. 196.
 — (—) *maxwelli*, i. 179, 180.
 — (—) *ogilbyi*, i. 160.
 — (—) *perpusilla*, i. 191.
 — (—) *philantomba*, i. 179.

Antilope (Cephalophus) platous, i. 203.
 — (—) *ptoox*, i. 203.
 — (—) *quadriscopa*, i. 124.
 — (—) *sylvicultrix*, i. 125.
 — (*Dama*) *aldræ*, iii. 205.
 — (—) *mhorr*, iii. 213.
 — (—) *nanguer*, iii. 209.
 — (*Damalis*) *oreas*, iv. 197.
 — (—) *picta*, iv. 94.
 — (*Egocerus*) *leucophæa*, iv. 6.
 — (*Gazella*) *capreolus*, ii. 189.
 — (—) *grimmia*, i. 195.
 — (—) *oreotragus*, ii. 5.
 — (—) *pygmæa*, ii. 61.
 — (—) *saiga*, iii. 32.
 — (—) *strepsiceros*, iv. 173.
 — (—) *subgutturosa*, iii. 89.
 — (—) *sylvatica*, iv. 117.
 — (*Grimmia*) *grimmia*, i. 167.
 — (—) *quadricornis*, i. 215.
 — (—) *sylvicultrix*, i. 125.
 — (*Neotragus*) *madoka*, ii. 70.
 — (—) *pygmæa*, ii. 61.
 — (—) *saltiana*, ii. 69.
 — (*Egocerus*) *ellipsiprymna*, ii. 97.
 — (*Oreas*) *canna*, iv. 196.
 — (—) *oreas*, iv. 196.
 — (*Oryx*) *bezoastica*, iv. 44.
 — (*Ourebia*) *oreotragus*, ii. 5.
 — (—) *scoparia*, ii. 15.
 — (*Raphicerus*) *acuticornis*, ii. 42.
 — (—) *subulata*, ii. 42.
 — (*Redunca*) *bohor*, ii. 165.
 — (*Spinigera*) *spiniger*, ii. 62.
 — (*Tuurotragus*) *derbiamus*, iv. 215.
 — (—) *livingstonii*, iv. 197.
 — (—) *oreas*, iv. 196.
 — (*Terpone*) *longiceps*, i. 131.
 — (*Tetraceros*) *quadricornis*, i. 215.
 — (*Tragelaphus*) *decula*, iv. 105.
 — (—) *ogilbyi*, i. 161.
 — (—) *phalerata*, iv. 110.
 — (—) *strepsiceros*, iv. 173.
 — (—) *sylvatica*, iv. 117.
 — (*Tragulus*) *oreotragus*, ii. 5.
Antilopinæ, iii. 1.

- Beira, iii. 241, 245.
 Beisa, iv. 65.
 —, Tufted, iv. 73.
 Biche des Mariannes, i. 216.
 Blaauw-bok, iv. 5.
 Black-buck, iii. 5, 13.
 Blessbok, i. 79.
 Blue-buck, iv. 5.
 Bohor, ii. 165.
 Bontebok, i. 73.
Bos connochætes, i. 112.
 — *gnou*, i. 111.
 — *gnu*, i. 111.
 Bosbok, Le, iv. 118.
Boselaphus, iv. 89, 91.
 — sp., i. 39.
 — *albipes*, iv. 94.
 — *bubalis*, i. 8, 11, 15.
 — *caama*, i. 8, 21, 34.
 — *canna*, iv. 196.
 — *derbianus*, iv. 215.
 — *lichtensteini*, i. 45.
 — *major*, i. 11.
 — *oreas*, iv. 196, 215.
 — *pictus*, iv. 94.
 — *tragocamelus*, iv. 91, **93 (Pl. lxxxvii.)**.
 Bubal, i. 7.
 —, West-African, i. 11.
Bubalidinxæ, i. 3.
Bubalis, i. 3, 5.
 — *albifrons*, i. 79.
 — *bubalis*, i. 15.
 — *buselaphus*, i. 5, 6, **7 (Pl. i.)**.
 — *caama*, i. 6, **33 (Pl. iv.)**, 39, 60.
 — *colcei*, i. 6, **27 (Pl. iii.)**.
 — *hunteri*, i. 53.
 — *jacksoni*, i. 6, **39**.
 — *jinela*, i. 67.
 — *koba*, i. 63.
 — *korrigum*, i. 59.
 — *lehwel*, i. 11.
 — *leucoprymnus*, i. 45, 48.
 — *lichtensteini*, i. 6, **45 (Pl. v.)**.
 — *lunatus*, i. 63, 85.
 — *major*, i. 6, **11**.
 — *mauretanica*, i. 8, 14.
Bubalis neumanni, iv. **223**.
 — *pygarga*, i. 74.
 — *senegalensis*, i. 59.
 — *swaynei*, i. 6, **21 (Pl. ii.)**.
 — *tora*, i. 6, **15**.
 — *tunisianus*, i. 13.
 Bushbuck from the Chobe River, iv.
 110.
 —, Cape, iv. 117.
 —, Cumming's, iv. 123.
 —, Delamere's, iv. 129.
Butragus, i. 93.
 — *corniculatus*, i. 96.
 Caama, i. 33.
Calliope, iv. 171.
 — *decula*, iv. 105.
 — *scripta*, iv. 109.
 — *strepsiceros*, iv. 174.
 — *sylvatica*, iv. 117.
Calotragus, ii. 33.
 — *campestris*, ii. 41.
 — *capreolus*, ii. 190.
 — *hastata*, ii. 21.
 — *melanotis*, ii. 35.
 — — *pallida*, ii. 36.
 — *montanus*, ii. 25.
 — *oreotragus*, ii. 6.
 — *oureby*, ii. 15.
 — *rufescens*, ii. 36.
 — *saltatrix*, ii. 6.
 — *saltatrixoides*, ii. 6.
 — *saltianus*, ii. 69.
 — *scoparius*, ii. 15.
 — *spiniger*, ii. 62.
 — *tragulus*, ii. 42.
 Canna, iv. 195.
Capra aethiopica, iv. 14.
 — *cervicapra*, i. 7; iii. 5.
 — *dorcas*, i. 7; iii. 9.
 — *gazella*, iv. 57.
 — *grimmia*, i. 203; ii. 41.
 — *jubata*, iv. 14.
 — *leucophaea*, iv. 5.
 — *monticola*, i. 191.

- Capra oreas*, iv. 196.
 — *perpusilla*, ii. 63, 64.
 — *pygargus*, iii. 56.
 — *pygmæa*, ii. 61, 64, 65.
 — *sayga*, iii. 32.
 — *scripta*, i. 73.
 — *strepsiceros*, iv. 173.
 — *sylvestris*, i. 206.
 — — *africana*, i. 203.
 — *tatarica*, iii. 31.
Caprea campestris gutturosa, iii. 83.
Catoblepas, i. 93.
 — sp. inc., i. 105.
 — *gnu*, i. 111.
 — *gorgon*, i. 95.
 — *operculatus*, i. 112.
 — *reichei*, i. 96.
 — *taurinus*, i. 95.
Cemas, i. 93.
 — *alces*, iv. 196.
 — *algazel*, iv. 43.
 — *arundinaceus*, ii. 158.
 — *cana*, i. 203.
 — *capreolus*, ii. 189.
 — *colus*, iii. 32.
 — *dama*, iii. 209.
 — *dorcas*, iii. 99.
 — *glaucus*, iv. 6.
 — *gnu*, i. 111.
 — *kevella*, iii. 100.
 — *maculata*, iii. 101.
 — *marsupialis*, iii. 55.
 — *melanura*, ii. 16.
 — *oreotragus*, ii. 5.
 — *oryx*, iv. 51.
 — *pasan*, iv. 58.
 — *picta*, iv. 94.
 — *pygargus*, i. 73.
 — *pygmæa*, ii. 61.
 — *scriptus*, iv. 109.
 — *strepsiceros*, iii. 6.
 — *sylvatica*, iv. 117.
 — *tragocamelus*, iv. 93.
Cephalolophus, i. 121.
 — *æquatorialis*, i. 189.
 — *doriæ*, i. 171.
Cephalolophus harveyi, i. 145.
 — *jentinki*, i. 131.
 — *natalensis*, i. 145.
 — *sylvicultor*, i. 125.
Cephalophinæ, i. 119.
Cephalophorus, i. 121.
 — *natalensis*, i. 139.
 — *pygmæus*, ii. 61.
 — *zanzibaricus*, ii. 51.
 — *zebra*, i. 171, 174.
Cephalophus, i. 119, 121.
 — *abyssinicus*, i. 124, **199** (Pl. xxii. fig. 1).
 — *æquatorialis*, i. 124, **189**.
 — *altifrons*, i. 204.
 — *anchietæ*, i. 185.
 — *aureus*, i. 149.
 — *badius*, i. 155.
 — *bicolor*, i. 192, 193.
 — *breviceps*, i. 155.
 — *burchelli*, i. 203, 204.
 — *cæruleus*, i. 191.
 — *callipygus*, i. 123, **165**.
 — *campbelliæ*, i. 204.
 — *coronatus*, i. 124, **195** (Pl. xxii. fig. 2).
 — *doriæ*, i. 123, **171** (Pl. xx.).
 — *dorsalis*, i. 123, **155** (Pl. xix. fig. 2).
 — — *castaneus*, i. 155, **156**.
 — — *typicus*, i. 153, **155**.
 — *frederici*, i. 180.
 — *grimmi*, i. 121, 124, **203** (Pl. xxiii.), 205.
 — — *flavescens*, i. 205.
 — *grimmia*, i. 167, 195, 204.
 — *harveyi*, i. 123, **145** (Pl. xvii.).
 — *hecki*, iv. **224**.
 — *hemprichianus*, ii. 79.
 — *jentinki*, i. 122, **131** (Pl. xv.).
 — *leucogaster*, i. 123, **153**.
 — *leucoprosopus*, iv. **225**.
 — *longiceps*, i. 126.
 — *lugens*, iv. **224**.
 — *madoqua*, i. 199.
 — *maxwelli*, i. 121, 123, **179** (Pl. xxi. fig. 2), 182, 185, 192.

- Cephalophus melanoprimumus*, i. 126.
 — *melanorheus*, i. 124, **185**.
 — *sundevalli*, i. 185, 187.
 — *typicus*, i. 185.
 — *mergens*, i. 203, 204.
 — *monticola*, i. 124, **191 (Pl. xxi. fig. 1)**.
 — *natalensis*, i. 123, **139 (Pl. xvi.)**.
 — *niger*, i. 123, **175 (Pl. xiv. fig. 1)**.
 — *nigrifrons*, i. 123, 145, **149 (Pl. xviii. fig. 1)**.
 — *ocularis*, i. 204.
 — *ogilbyi*, i. 123, **161 (Pl. xviii. fig. 2)**.
 — *philantomba*, i. 179.
 — *platous*, i. 203.
 — *ptoox*, i. 203.
 — *punctulatus*, i. 126, 180.
 — *pygmæus*, i. 192.
 — *sundevalli*, i. 185.
 — *ruficrista*, i. 126.
 — *rufilatus*, i. 121, 123, **167 (Pl. xix. fig. 1)**.
 — *cuvieri*, i. 167.
 — *spadix*, i. 123, **135**.
 — *spiniger*, ii. 62.
 — *sylvicultrix*, i. 121, 122, **125 (Pls. xiii. & xiv. fig. 2)**.
 — *whitfieldi*, i. 180, 181.
 — (*Nanotragus*) *pygmæus*, ii. 61.
 — (*Ourebia*) *saltiana*, ii. 69.
 Cerf du Cap de Bonne-Espérance, iv. 175.
Cerophorus (Alcelaphus) bubalis, i. 7.
 — (—) *caama*, i. 33.
 — (*Antilope*) *cervicapra*, iii. 6.
 — (—) *gutturosa*, iii. 83.
 — (—) *saiga*, iii. 32.
 — (*Boselaphus*) *gnu*, i. 111.
 — (—) *oreas*, iv. 196.
 — (*Cervicapra*) *acuticornis*, ii. 42.
 — (—) *dama*, iii. 209.
 — (—) *eleotragus*, ii. 157.
 — (—) *grisea*, ii. 36.
 — (—) *pygmæa*, ii. 61.
 — (—) *quadricornis*, i. 215.
 — (—) *redunca*, ii. 171.
 — (—) *saltiana*, ii. 69.
 — (—) *stenbock*, ii. 42.
Cerophorus (Gazella) corinna, iii. 101.
 — (—) *euchore*, iii. 55.
 — (—) *kevella*, iii. 100.
 — (—) *kob*, ii. 137.
 — (—) *naso-maculata*, iv. 79.
 — (—) *pygarga*, i. 73.
 — (—) *subgutturosa*, iii. 89.
 — (*Oryx*) *gazella*, iv. 43.
 — (—) *leucophæus*, iv. 6.
 — (—) *leucoryx*, iv. 51.
 — (—) *oryx*, iv. 58.
 — (*Tragelaphus*) *strepsiceros*, iv. 173.
Cervicapra, ii. 93, 155.
 — *arundinum*, ii. 155, **157 (Pl. xliii.)**.
 — *bezoartica*, iii. 6.
 — *bohor*, ii. 155, **165**.
 — *capreolus*, ii. 189.
 — *chanleri*, ii. 156, **183**.
 — *clarkei*, iii. 219.
 — *defassa*, ii. 115.
 — *ellipsiprymnos*, ii. 97.
 — *fulvorufula*, ii. 156, 168, **175 (Pl. xlv.)**.
 — *subalbina*, iv. **227**.
 — *leucotis*, ii. 127.
 — *redunca*, ii. 155, 156, **171 (Pl. xliv.)**, 174.
 — *thomasi*, iv. **227**.
Cervicaprina, ii. 93.
Cervus pusillus guineensis, ii. 61.
 — (*Stylloceros*) *latipes*, i. 216.
 Chiru, iii. 45, 48.
Cobus, ii. 93, 95.
 — *crawshayi*, ii. 96, **109 (Pl. xxxiv.)**, 110.
 — *defassa*, ii. 95, 96, 105, **115 (Pl. xxxvi.)**.
 — *ellipsiprymnus*, ii. 95, **97 (Pl. xxxii.)**.
 — *kob*, ii. 95, 96, 131, **137 (Pl. xl.)**.
 — *lechee*, ii. 95, 96, **149 (Pl. xlii.)**.
 — *leucotis*, ii. 96, **127 (Pl. xxxviii.)**.
 — *maria*, ii. 96, **121 (Pl. xxxvii.)**.
 — *nigroscapulatus*, iv. **226**.
 — *penricei*, ii. 96, **113 (Pl. xxxv.)**.
 — *senganus*, ii. **145**.
 — *sing-sing*, ii. 105.
 — *smithmani*, iv. **226**.
 — *thomasi*, ii. 96, **131 (Pl. xxxix.)**, 135.

- Cobus unctuosus*, ii. 95, **105 (Pl. xxxiii.)**.
 — *vardoni*, ii. 96, **141 (Pl. xli.)**.
 — — *loderi*, iv. **227**.
 Coësdoës, iv. 173.
Colus, iii. 29.
 — *saiga*, iii. 32.
 — *tataricus*, iii. 31.
 Condoma, iv. 173, 175.
Connochætes, i. 3, 93.
 — *albojubatus*, i. 94, **105**.
 — *gorgon*, i. 95.
 — *gnu*, i. 93, 94, 96, **111 (Pl. xii.)**, 112.
 — *taurinus*, i. 93, 94, **95 (Pl. xi.)**, 96,
 105.
 — — *albojubatus*, i. 105, 106.
 — — *johnstoni*, iv. **224**.
 Corine, iii. 100.
 Coudous, iv. 195.

 Dacris, iv. 27.
Dama, iii. 65.
Damalis, i. 5, 51.
 — *albifrons*, i. 79.
 — *bubalis*, i. 7.
 — *caama*, i. 33.
 — *canna*, iv. 196.
 — *jimela*, i. 67.
 — *korrigum*, i. 59, 67.
 — *lunata*, i. 85.
 — *oreas*, iv. 196.
 — *picta*, iv. 94.
 — *pygarga*, i. 74.
 — *risia*, iv. 94.
 — *senegalensis*, i. 59, 67.
 — *strepsiceros*, iv. 174.
 — *tiang*, i. 63, 67.
 — *tiang-riel*, i. 63.
 — *zebra*, i. 171.
 — (*Boselaphus*) *canna*, iv. 196.
 — (—) *oreas*, iv. 196.
 — (*Portax*) *risia*, iv. 95.
 — (*Strepsiceros*) *capensis*, iv. 175.
 — (—) *strepsiceros*, iv. 174.
Damaliscus, i. 3, 51.
 — *albifrons*, i. 51, **79 (Pl. ix.)**.

Damaliscus hunteri, i. 51, **53 (Pl. vi.)**.
 — *jimela*, i. 42, 51, **67, 69**.
 — *korrigum*, i. 51, **59 (Pl. vii.)**.
 — *lunatus*, i. 51, **85 (Pl. x.)**.
 — *pygargus*, i. 51, **73 (Pl. viii.)**.
 — *tiang*, i. 51, **63, 64**.
 Dibatag, iii. 219, 222.
 Dik-dik, Damaran, ii. 79.
 —, Günther's, ii. 89.
 —, Kirk's, ii. 83.
 —, Phillips's, ii. 75.
 —, Salt's, ii. 69.
 —, Swayne's, ii. 73.
 Docoï, iv. 15.
Doratoceros, iv. 193.
 — *triangularis*, iv. 197.
Dorcas, iii. 65.
 — *dorcas*, iii. 100.
Dorcotragus, iii. 2, 239.
 — *megalotis*, iii. 239, **241 (Pl. lxxv.)**.
 Duiker, Abbott's, i. 135.
 —, Abyssinian, i. 199.
 —, Banded, i. 171.
 —, Bay, i. 155.
 —, Black, i. 175.
 —, Black-fronted, i. 149.
 —, Black-rumped, i. 185.
 —, Blue, i. 191.
 —, Common, i. 203.
 —, Crowned, i. 195.
 —, Harvey's, i. 145.
 —, Jentink's, i. 131.
 —, Maxwell's, i. 179.
 —, Natal, i. 139.
 —, Ogilby's, i. 161.
 —, Peters's, i. 165.
 —, Red-flanked, i. 167.
 —, Uganda, i. 189.
 —, White-bellied, i. 153.
 —, Yellow-backed, i. 125.

 Eland, iv. 195.
 —, Derbian, iv. 215.
 —, Kaapsche, iv. 195.
 —, Striped, iv. 197.

Egocerus, iv. 3.

Eleotragus, ii. 155.

— *arundinaceus*, ii. 158, 165, 175.

— *bohór*, ii. 165.

— *capreolus*, ii. 189.

— *eleotragus*, ii. 157, 175.

— *isabellinus*, ii. 158.

— *reduncus*, ii. 158, 165, 171, 175.

— *vardoni*, ii. 141.

— *villosus*, ii. 190.

— (*Pelea*) *capreolus*, ii. 189.

Eudorcas, iii. 65.

Euryceros, iv. 103.

— *angasi*, iv. 137.

— *euryceros*, iv. 131.

— *spekii*, iv. 151, 157.

— (*Hydrotragus*) *spekii*, iv. 151.

Gazella, iii. 2, 65.

— *africana*, iii. 5, 100.

— *albifrons*, i. 79.

— *arabica*, iii. 68, **115 (Pl. lix.)**.

— *bennetti*, iii. 65, 68, 95, 115, **119 (Pl. lx.)**.

— *christii*, iii. 120.

— *cineraceus*, iii. 109.

— *colus*, iii. 32.

— *cora*, iii. 115.

— *corinna*, iii. 109.

— *cuvieri*, iii. 68, **109 (Pl. lviii.)**, 125.

— *dama*, iii. 67, 70, 205, **209**.

— *dorcas*, iii. 65, 68, **99 (Pl. lvii.)**, 100, 109, 137, 151.

— — *sundevalli*, iii. 101.

— *euchore*, iii. 55.

— *fuscifrons*, iii. 120, 123.

— *granti*, iii. 69, **179 (Pl. lxxix.)**, 187.

— —, var. *gelidjensis*, iii. 187.

— — *notata*, iii. 191.

— *gutturosa*, iii. 67, **83 (Pl. liv.)**, 84.

— *hazenna*, iii. 120.

— *hillieriana*, iii. 90.

— *Indica cornibus rectis longissimis nigris*, iv. 57.

— *Indicæ cornu singulare*, iv. 51.

— *isabella*, iii. 69, **151 (Pl. lxxiv.)**.

Gazella kevelia, iii. 100, 109.

— *lævipes*, iii. 65, 159.

— — *senegalensis*, iii. 163.

— *leptoceros*, iii. 65, 68, **137 (Pl. lxxiii.)**.

— — *loderi*, iii. 148, 149.

— *loderi*, iii. 137.

— *marica*, iii. 68, **95 (Pl. lvi.)**.

— *melanura*, iii. 159.

— *mhorri*, iii. 65, 70, **213 (Pl. lxxii.)**.

— *mongolica*, iii. 90.

— *muscatensis*, iii. 69, **155 (Pl. lxxv.)**.

— *naso*, iii. 125.

— *notata*, iii. 69, **191**.

— *pelzelni*, iii. 68, **133 (Pl. lxxii.)**.

— *petersi*, iii. 69, **187**.

— *picticaudata*, iii. 67, **71 (Pl. lii.)**.

— *przewalskii*, iii. 67, **79 (Pl. liii.)**.

— *pygarga*, i. 73.

— *reticornis*, iv. 57.

— *ruficollis*, iii. 69, **205 (Pl. lxxi.)**.

— *rufifrons*, iii. 65, 69, **163 (Pl. lxxvii.)**.

— *rufina*, iii. 69, **167**.

— *soemmerringi*, iii. 69, **195 (Pl. lxx.)**.

— — *berberana*, iii. 198, 203.

— — *typica*, iii. 197.

— *spekei*, iii. 68, **125 (Pl. lxi.)**, 133.

— *subgutturosa*, iii. 65, 68, **89 (Pl. lv.)**.

— —, var. *yarkandensis*, iii. 90, 93, 94.

— *thomsoni*, iii. 69, **171 (Pl. lxxviii.)**.

— *tilonura*, iii. 69, **159 (Pl. lxxvi.)**.

— *vera*, iii. 115.

— *walleri*, i. 57; iii. 229.

Gazelle, Arabian, iii. 115, 117.

—, Banded, iii. 191, 192.

— à bourse sur le dos, iii. 55.

—, Dama, iii. 209.

—, Dorcas, iii. 99, 108.

—, Edmi, iii. 109, 113, 114.

—, Flabby-nosed, iii. 127.

—, Grant's, iii. 179, 181, 182.

—, Heuglin's, iii. 159, 160.

—, Indian, iii. 119.

—, Isabella, iii. 151, 154.

—, Loder's, iii. 137, 147.

—, Marica, iii. 95.

—, Mhorri, iii. 213.

- Gazelle, Mongolian, iii. 83, 87.
 —, Muscat, iii. 155, 156.
 —, Pelzeln's, iii. 133, 135.
 —, Persian, iii. 89.
 —, Peters's, iii. 187, 188.
 —, Przewalski's, iii. 79.
 —, Red-fronted, iii. 163.
 —, Red-necked, iii. 205.
 —, Rufous, iii. 167, 168.
 —, Soemmerring's, iii. 195.
 —, Speke's, iii. 125, 128, 129, 131.
 —, Thomson's, iii. 171, 172, 173.
 —, Tibetan, iii. 71, 73.
 —, Tzeiran, La, iv. 5.
 Gemsbok, iv. 57.
 Gerenuk, iii. 229, 231, 232.
 Gnu, Brindled, i. 95.
 —, White-bearded, i. 105.
 —, White-tailed, i. 111.
 Gorgon, i. 93.
 — *fasciatus*, i. 96.
 Grimm, Le, i. 167.
Grimmia, i. 121.
 — *burchelli*, i. 204.
 — *campbelliae*, i. 204.
 — *grimmia*, i. 196.
 — *irrorata*, i. 204.
 — *madoqua*, i. 199.
 — *mergens*, i. 205.
 — *nictitans*, i. 204.
 — *ocularis*, i. 204.
 — *splendidula*, i. 209.
 Grysbok, ii. 35.
 Guévei, i. 121, 179.
 Guib, Le, iv. 109.

 Hartebeest, i. 33, 39.
 —, Cape, i. 33.
 —, Cooke's, i. 27.
 —, Jackson's, i. 39.
 —, Lichtenstein's, i. 45.
 —, Swayne's, i. 21.
Heleotragus ellipsiprymnus, ii. 97.
 — *leché*, ii. 149.
 — *vardoni*, ii. 141.
Hippotraginae, iv. i.

Hippotragus, iv. 1, 3.
 — *bakeri*, iv. 4, 14.
 — *equinus*, iv. 3, **13** (Pls. **lxxvii.** & **lxxviii.**), 14, 15.
 — — *bakeri*, iv. 4, 14.
 — — *gambianus*, iv. 4, 15.
 — — *rufo-pallidus*, iv. 4, 14.
 — — *typicus*, iv. 4, 13.
 — *koba*, iv. 15.
 — *langheldi*, iv. **228.**
 — *leucophaeus*, iv. 3, **5** (Pl. **lxxvi.**), 6, 14.
 — *niger*, iv. 3, 4, **31** (Pls. **lxxix.** & **lxxx.**).
Hydrotragus, ii. 95; iv. 149.
 — *leucotis*, ii. 127.

Ibex imberbis, iii. 31, 33.

 Kaapsche Eland, iv. 195.
Kemas, iii. 43.
 — *hodysoni*, iii. 45.
 Kével, iii. 100, 163.
 — *gris*, iii. 109.
 Klipspringer, ii. 5.
 Kob, Buffon's, ii. 137.
 —, Senga, ii. 145.
 —, Thomas's, ii. 131.
 —, White-eared, ii. 127.
Kobus, ii. 95.
 — *adansoni*, ii. 137.
 — *defassa*, ii. 115.
 — *ellipsiprymnus*, ii. 97.
 — *kob*, ii. 131.
 — *lechée*, ii. 149.
 — *leucotis*, ii. 127, 131.
 — *maria*, ii. 121.
 — *megaceros*, ii. 121.
 — *sing-sing*, ii. 105, 115.
 — *vardoni*, ii. 141.
 Koedoe, iv. 175.
 Kokoon, i. 95.
Kolus, ii. 95.
 — *ellipsiprymnus*, ii. 97.
 — *sing-sing*, ii. 105, 115.
 Koodoo, iv. 175.

- Koodoo, Dwarf, iv. 185.
Korin, iii. 65.
 Korrigum, i. 59.
 Kudu, Greater, iv. 173.
 —, Lesser, iv. 185.
- Lechee, ii. 149.
Leptoceros, iii. 65.
 — *abuharab*, iii. 137.
 — *cuvieri*, iii. 137.
 Leucoryx, iv. 43.
Limnotragus, iv. 90, 149.
 — *gratus*, iv. **165** (Pl. **xcv.**).
 — *selousi*, iv. **157** (Pl. **xciv.**).
 — *spekii*, iv. 149, **151** (Pl. **xciii.**).
Lithocranius, iii. 2, 227.
 — *sclateri*, iv. **228**.
 — *walleri*, iii. 227, **229** (Pl. **lxxiv.**).
 — (*Gazella*) *walleri*, iii. 229.
- Madoqua, ii. 69.
Madoqua, ii. 2, 67.
 — *cavendishi*, iv. **226**.
 — *damarensis*, ii. 68, **79**, 80.
 — *guentheri*, ii. 68, **89** (Pl. **xxxi.**
fig. 1).
 — *hemprichii*, ii. 70.
 — *kirki*, ii. 68, **83**.
 — *phillipsi*, ii. 68, **75** (Pl. **xxxi. fig. 2**),
 77.
 — *saltiana*, ii. 67, **69** (Pl. **xxx.**).
 — *swaynei*, ii. 67, **73**.
Minytragus, ii. 59.
Moschus grimmia, i. 203.
 — *pygmæus*, ii. 61.
- Nagor*, ii. 155, 171.
 "Nakong," iv. 157.
Nanger, iii. 65.
 — *mhorr*, iii. 213.
 Nanguer, iii. 209, 213.
Nanotragus, ii. 59.
 — *campestris*, ii. 41.
 — *damarensis*, ii. 79.
 — *hastatus*, ii. 21, 29.
- Nanotragus livingstonianus*, ii. 55.
 — *melanotis*, ii. 36.
 — *montunus*, ii. 25.
 — *moschatus*, ii. 51.
 — *nigricaudatus*, ii. 23.
 — *oreotragus*, ii. 6.
 — *perpusillus*, ii. 62.
 — *pygmæus*, ii. 61.
 — *regius*, ii. 62.
 — *scoparius*, ii. 15, 21.
 — *spiniger*, ii. 62.
 — *tragulus*, ii. 42.
Neotraginæ, ii. 1.
Neotragus, ii. 2, 59, 67.
 — sp., ii. 89.
 — *campestris*, ii. 41.
 — *damarensis*, ii. 79, 83.
 — *haggardi*, ii. 29.
 — *hemprichianus*, ii. 70.
 — *hemprichii*, ii. 70.
 — *kirkii*, ii. 83, 89.
 — *melanotis*, ii. 36.
 — *nigricaudatus*, ii. 23.
 — *pygmæus*, ii. 59, **61** (Pl. **xxix.**).
 — *saltianus*, ii. 69, 73, 75, 79.
 — *scoparius*, ii. 16.
 — *tragulus*, ii. 42.
Nesotragus, ii. 2, 49.
 — *livingstonianus*, ii. 49, **55**, 57
 — *zuluensis*, iv. **225**.
 — *moschatus*, ii. 49, **51** (Pl. **xxviii.**),
 55.
- Nilgai, iv. 93.
 Nylghau, iv. 95.
- Onotragus*, ii. 95.
 — *lechee*, ii. 149.
Onyx onyx, iv. 58.
Oreas, iv. 193.
 — *canna*, iv. 196.
 — *livingstonii*, iv. 197.
 — *colini*, iv. 215.
 — *derbianus*, iv. 215.
 — *derbii*, iv. 215.
 — *livingstonii*, iv. 197.
 — *oreas*, iv. 197.

- Oreotragus*, ii. 2, 3.
 — *griseus*, ii. 36.
 — *megalotis*, iii. 241.
 — *oreotragus*, ii. 6.
 — *saltator*, ii. 3, **5** (Pl. xxv.), 6.
 — *saltatrix*, ii. 6.
 — *saltatrixoides*, ii. 6.
 — *scoparius*, ii. 15, 23.
 — *tragulus*, ii. 41.
 — *typicus*, ii. 6.
Oribi, Abyssinian, ii. 25.
 —, Cape, ii. 15.
 —, Gambian, ii. 23.
 —, Haggard's, ii. 29.
 —, Peters's, ii. 21.
Oryx, iv. 1, 41.
 — *addax*, iv. 79.
 — *beatrice*, iv. 42, **51** (Pl. lxxxii.).
 — *beisa*, iv. 42, **65** (Pl. lxxxiv.), 73.
 — *bezoarticus*, iv. 44.
 — *biessa*, iv. 66.
 — *callotis*, iv. 42, **73** (Pl. lxxxv.).
 — *capensis*, iv. 57.
 — *ensicornis*, iv. 44.
 — *gazella*, iv. 41, 42, 43, **57** (Pl. lxxxiii.), 58.
 — *leucoryx*, iv. 41, **43** (Pl. lxxxii.), 44.
 — — *pallasi*, iv. 52.
 — *naso-maculatus*, iv. 80.
 — *oryx*, iv. 58.
Ourebi du Sénégal, ii. 23, 172.
Ourebia, ii. 2, 13.
 — *haggardi*, ii. 13, **29**.
 — *hastata*, ii. 13, **21**.
 — *montana*, ii. 13, **25**.
 — *nigricaudata*, ii. 13, **23** (Pl. xxvi.).
 — *scoparia*, ii. 13, **15**, 17.
Ovis strepsiceros, iv. 173.
Ozanna, iv. 3.
 — *nigra*, iv. 32.

Pallah, iii. 17, 23.
 —, Angolan, iii. 25, 26.
Pantholops, iii. 2, 43.
 — *hodgsoni*, iii. 43, **45** (Pl. 1.).
Pediotragus, ii. 33.
Pediotragus campestris, ii. 41.
 — *hostockii*, iv. 225.
 — *kelleni*, iv. 225.
 — *neumanni*, ii. 47.
 — *rufescens*, ii. 36.
 — *tragulus*, ii. 42.
 — — *grayi*, ii. 43.
Pelea, ii. 93, 187.
 — *capreolus*, ii. 187, **189** (Pl. xlvi.).
Poku, ii. 141.
Portax, iv. 91.
 — *picta*, iv. 94.
 — *tragelaphus*, iv. 93.
 — *tragocamelus*, iv. 93.
Potamotragus, i. 121.
 — *melanoprymnus*, i. 126.
Procapra, iii. 65.
 — *gutturosa*, iii. 84.
 — *picticaudata*, iii. 71.

Quadriscopa smithii, i. 124.

Raphicerus, ii. 2, 33.
 — *campestris*, ii. 33, **41** (Pl. xxvii. fig. 1); iv. 225.
 — *melanotis*, ii. 33, **35** (Pl. xxvii. fig. 2).
 — *neumanni*, ii. 33, 46, **47**.
 — *sharpei*, iv. **225**.
Redunca, ii. 155.
 — *bohor*, ii. 165.
 — *capreolus*, ii. 189.
 — *defassa*, ii. 115.
 — *eleotragus*, ii. 157, 175.
 — *isabellina*, ii. 158.
 — —, var. *algoensis*, ii. 158.
 — —, var. *caffra*, ii. 158.
 — —, var. *multiannulata*, ii. 158.
 — *lalandii*, ii. 175.
 — *montana*, ii. 25.
 — *nagor*, ii. 172.
 — *redunca*, ii. 172.
 — *scoparia*, ii. 15.
Reedbuck, ii. 157, 165.
 —, Chanler's, ii. 183.
Rhébok, Roi, ii. 175.

- Rhébok, Vaal, ii. 189.
Rhime, iii. 142, 143.
Ritbok, ii. 157.
- Saiga, iii. 31.
Saiga, iii. 2, 29.
— *colus*, iii. 32.
— *saiga*, iii. 32.
— *tatarica*, iii. 29, **31 (Pl. xlix.)**.
Sassaby, i. 85.
Scopophorus, ii. 13.
— *hastatus*, ii. 21.
— *montanus*, ii. 21, 23, 25.
— *ourebi*, ii. 15.
— — *grayi*, ii. 16.
— *scoparius*, ii. 16.
Sing-sing, ii. 105.
Sitatunga, Congan, iv. 165.
—, Selous's, iv. 157.
—, Speke's, iv. 151.
Spinigera, ii. 59.
Springbuck, iii. 55, 61.
Steinbok, ii. 41.
—, Neumann's, ii. 47.
Strepsiceros, iv. 90, 171.
— *abyssinicus*, iv. 175, 185.
— *angasi*, iv. 137.
— *capensis*, iv. **173 (Pl. xcvi.)**, 174.
— *cervicapra*, iii. 6.
— *excelsus*, iv. 175.
— *imberbis*, iv. **185 (Pl. xcvi.)**.
— *kudu*, iv. 174, 185.
— *strepsiceros*, iv. 174.
— *suara*, iii. 18.
— *tendal*, iv. 185.
— *zambesiensis*, iv. 174.
Sylvicapra, i. 121.
— *caffra*, i. 204.
— *campbellia*, i. 204.
— *coronata*, i. 195.
— *frederici*, i. 180.
— *grimmia*, i. 167, 196.
— *madoqua*, i. 199.
— *mergens*, i. 204.
— *ocularis*, i. 204.
— *ogilbyi*, i. 161.
- Sylvicapra philantomba*, i. 180.
— *pygmaea*, i. 185, 191.
— *sylvicultrix*, i. 125.
- Tackhaitse, iv. 14.
Taurotragus, iv. 90, 193.
— *derbianus*, iv. 193, **215 (Pl. c.)**.
— *oreas livingstonii*, iv. 197.
— *oryx*, iv. 193, **195 (Pls. xcvi., xcix.)**.
— — *gigas*, iv. 198.
— — *livingstoni*, iv. 197.
— — *typicus*, iv. 195.
— (*Boselaphus*) *gigas*, iv. 198.
— (—) *oreas*, iv. 198.
- Tehicara, i. 216.
Terpone, i. 121.
— *longiceps*, i. 126, 131.
Tétel, i. 15.
Tetraceros, i. 119, 213.
— *chickara*, i. 216.
— *iodes*, i. 216.
— *paccerois*, i. 216.
— *quadricornis*, i. 213, **215 (Pl. xxiv.)**, 216.
— — *subquadricornutus*, i. 216.
— — *typicus*, i. 215.
— *striaticornis*, i. 216.
— *subquadricornutus*, i. 216.
- Tiang, i. 63.
Topi, i. 67.
Tora, i. 15.
Tragelaphinae, iv. 89.
Tragelaphus, iv. 90, 91, 103.
— *albo-virgatus*, iv. 131.
— *albovittatus*, iv. 131.
— *angasi*, iv. 104, **137 (Pl. xcii.)**.
— *bor*, iv. 105.
— *decula*, iv. 104, **105 (Pl. lxxxviii.)**.
— *delamerei*, iv. 104, **129**.
— *eurycerus*, iv. 104, **131 (Pl. xci.)**, 157.
— *gratus*, iv. 110, 165.
— *hemprichii*, ii. 70.
— *hippelaphus*, iv. 95.
— *madoqua*, i. 199.

- Tragelaphus melanotis*, ii. 35.
 — *mergens*, i. 204.
 — *montanus*, ii. 25.
 — *obscurus*, iv. 110.
 — *oreotragus*, ii. 5.
 — *phaleratus*, iv. 110.
 — *pygmæus*, i. 191.
 — *roualeynei*, iv. 104, **123** (Pl. xc. fig. 1).
 — — *fasciatus*, iv. 123.
 — — *typicus*, iv. 123.
 — *scriptus*, iv. 103, **109** (Pl. lxxxix.),
 118, 123.
 — — *decula*, iv. 105.
 — — *fasciatus*, iv. 123.
 — — *ornatus*, iv. 110, 114.
 — — *roualeynei*, iv. 123.
 — — *sylvaticus*, iv. 118.
 — — *typicus*, iv. 109, 110.
 — *selousii*, iv. 157.
 — *spekii*, iv. 151, 157, 165.
 — — *spekii*, iv. 151.
 — *strepsiceros*, iv. 174, 185.
- Tragelaphus sylvaticus*, iv. 103, 104, **117**
 (Pl. xc. fig. 2), 123.
 — — *roualeynei*, iv. 123.
 — *tragulus*, ii. 41.
Tragops, iii. 65.
 — *bennettii*, iii. 119.
Tragopsis, iii. 65.
 — *bennettii*, iii. 120.
 — *hazenna*, iii. 120.
Tragulus, ii. 59.
 — *melanotis*, ii. 35.
 — *pediotragus*, ii. 36.
 — *pygmæus*, ii. 61.
 — *rupestris*, ii. 42.
- Waterbuck, Common, ii. 97.
 —, Crawshay's, ii. 109.
 —, Defassa, ii. 115.
 —, Gray's, ii. 121.
 —, Penrice's, ii. 113.
 Whitemouth, iv. 15.

